



**City Council
Regular Meeting
AGENDA**

(to be held both at the physical and virtual locations below)

Civic Center Council Chamber ♦ 300 Seminary Avenue ♦ Ukiah, CA 95482

To participate or view the virtual meeting, go to the following link: <https://us06web.zoom.us/j/87542445328>

Or you can call in using your telephone only:

- Call (toll free) 1-888-788-0099
- Enter the Access Code: 875 4244 5328
- To Raise Hand enter *9
- To Speak after being recognized: enter *6 to unmute yourself

Alternatively, you may view the meeting (without participating) by clicking on the name of the meeting at www.cityofukiah.com/meetings.

September 17, 2025 - 5:15 PM

1. ROLL CALL

2. PLEDGE OF ALLEGIANCE

3. AB 2449 NOTIFICATIONS AND CONSIDERATIONS

4. PROCLAMATIONS/INTRODUCTIONS/PRESENTATIONS

- 4.a. Receive Presentation of Exceptional Employee Recognition Awards.

Recommended Action: Receive a presentation of the Exceptional Employee Recognition Awards.

Attachments: None

- 4.b. Council to Receive Presentation on the Ukiah Valley Golf Course 2025/2026 Capital Improvement Plan.

Recommended Action: Receive a presentation on the Ukiah Valley Golf Course 2025/2026 Capital Improvement Plan.

Attachments:

1. Ukiah Golf Course CIP 2025 2026
2. UMGC completed photos FY25
3. UVGC CIP Power Point 2025 2026

5. PETITIONS AND COMMUNICATIONS

6. APPROVAL OF MINUTES

- 6.a. Approval of the Minutes for the September 3, 2025, Regular Meeting.
Recommended Action: Approve the Minutes for the September 3, 2025, Regular Meeting.
Attachments:
1. 2025-09-03 CC Draft Minutes

7. **RIGHT TO APPEAL DECISION**

Persons who are dissatisfied with a decision of the City Council may have the right to a review of that decision by a court. The City has adopted Section 1094.6 of the California Code of Civil Procedure, which generally limits to ninety days (90) the time within which the decision of the City Boards and Agencies may be judicially challenged.

8. **CONSENT CALENDAR**

The following items listed are considered routine and will be enacted by a single motion and roll call vote by the City Council. Items may be removed from the Consent Calendar upon request of a Councilmember or a citizen in which event the item will be considered at the completion of all other items on the agenda. The motion by the City Council on the Consent Calendar will approve and make findings in accordance with Administrative Staff and/or Planning Commission recommendations.

- 8.a. Approval of Budget Amendment in the Amount of \$126,000 for Cybersecurity with Convergent Computing (CCO).
Recommended Action: Approve a budget amendment in the amount of \$126,000 for cybersecurity with Convergent Computing (CCO).
Attachments:
1. Contract No 1314-128
2. Contract No 1314-128-A1 - Amendment
3. Cybersecurity_Roadmap_Briefing_Summary
- 8.b. Notification to Council of a Billing Error that Affected the Retention Amount on the Kirby Construction Company Contract for Specification No 24-04, Electric Service Center Tenant Improvements and Fire Damage Repair.
Recommended Action: Approve notification from Staff and approve final payment of the 5% retention to Kirby Construction Company.
Attachments: None
- 8.c. Consideration of Adoption of Resolution Appointing Chantal Simonpietri to the Public Spaces Commission.
Recommended Action: Adopt Resolution appointing Chantal Simonpietri to the Public Spaces Commission.
Attachments:
1. Chantal Simonpietri Application
2. Resolution 2014-48
3. Simonpietri Nomination - Orozco
4. Proposed Resolution
- 8.d. Consideration of Additional Funding for the Proposed Ukiah Electric Vehicle Charging Stations Project, and Approve Corresponding Budget Amendment.
Recommended Action: Approve additional funding for the Ukiah Electric Vehicle Charging Stations Project, and approve corresponding budget amendment, in the amount of \$72,502.
Attachments:
1. CEC-ChargePoint_REV Grant Participation Agreement_Ukiah_(7-30-2024)_Final
2. Contribution Cost Amendment
- 8.e. Authorization for the City Manager to Negotiate and Execute an Amendment to the Contract for Medical Control Oversight with Dr. Brandon Begley, Extending the Contract to the End of the 25/26 Fiscal Year and an Increase in the Amount of \$51,600.

Recommended Action: Authorize the City Manager to negotiate and execute an amendment to the contract for Medical Control Oversight with Dr. Brandon Begley, extending the contract to the end of the 25/26 Fiscal Year and increasing the contract by \$51,600.

Attachments:

1. Contract 2021-181 (1)tb

9. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

The City Council welcomes input from the audience. If there is a matter of business on the agenda that you are interested in, you may address the Council when this matter is considered. If you wish to speak on a matter that is not on this agenda that is within the subject matter jurisdiction of the City Council, you may do so at this time. In order for everyone to be heard, please limit your comments to three (3) minutes per person and not more than ten (10) minutes per subject. The Brown Act regulations do not allow action to be taken on audience comments in which the subject is not listed on the agenda.

10. COUNCIL REPORTS

11. CITY MANAGER/CITY CLERK REPORTS

12. PUBLIC HEARINGS (5:30 PM)

- 12.a. Conduct a Public Hearing and Consideration of the Lookout Peak Trail Project Including the Adoption of a Resolution Adopting the California Environmental Quality Act (CEQA) Initial Study and Mitigated Negative Declaration (ISMND) Prepared for the Lookout Peak Trail Project; and Authorize the City Manager to Negotiate a Donation of Trail Construction by the Ukiah Valley Trail Group.

Recommended Action: 1) Adopt a resolution adopting the California Environmental Quality Act (CEQA) Initial Study and Mitigated Negative Declaration (ISMND) prepared for the Lookout Peak Trail Project; and 2) authorize the City Manager to negotiate a donation of trail construction by the Ukiah Valley Trail Group.

Attachments:

1. Comments in Favor
2. Comments Opposed or Concerned
3. Lookout Peak Trails Draft ISMND9_9Clean
4. Staff Responses to Comments
5. Road Maintenance Plan
6. Draft Resolution Adopting the Lookout Peak CEQA ISMND

- 12.b. Proposition 218 Protest Hearing and Consideration of Adjustments to Sewer Service Rates by Resolution.

Recommended Action: Conduct the Proposition 218 protest hearing, and adopt a resolution adjusting sewer service rates, with the first increase effective October 1, 2025.

Attachments:

1. Ukiah_Sewer_Rate_Resolution_2025
2. City of Ukiah 2025 Sewer Financial Plan draft 7.10.25 (002)
3. City of Ukiah 2025 Sewer Rate Study Presentation, 7-16-25

- 12.c. Conduct a Public Hearing to Receive Public Comment; Discuss Final Grantee Performance Under State Community Development Block Grant 21-CDBG-NH-20004; Adopt Resolution Confirming Project Closeout and Reimbursement of Grant Expenses from the California Department of Housing and Community Development; and Approve any Corresponding Budget Amendments Required as Part of the Grant Closeout Process.

Recommended Action: 1) Receive report from Staff on final performance related to State Community Development Block Grant 21-CDBG-NH-20004; 2) conduct a public hearing to receive public comment; 3) adopt a Resolution acknowledging accomplishments, confirming activity completion, and confirming approval for receipt of grant reimbursement funds from the State;

and 4) approve any corresponding budget amendments required as part of the grant closeout process.

Attachments:

1. Resolution 2021-12 CDBG
2. StandardAgreement_21-CDBG-NH-20004
3. Code-Enforcement-Policies-and-Procedures
4. Code-Enforcement-Presentations
5. Resolution_2025-XX_Close

13. UNFINISHED BUSINESS

- 13.a. Continue Hearing to Resolve Bid Protests Received for Specification No. 25-04 for the Remodel of 501 South State Street, and Approve Final Award.

Recommended Action: Continue hearing to resolve the bid protest submitted by Cupples and Sons Construction Inc., reject the protest, accept the counterprotest from DMR Builders, waive the irregularity in DMR Builder's bid, and award the contract to the lowest responsible bidder, DMR Builders, in the amount of \$3,487,850 for Specification No. 25-04, Remodel of 501 South State Street.

Attachments:

1. Spec 25-04 Remodel of 501 South State Street
2. Bid Tabulation Spec 25-04 Remodel of 501 South State Street
3. Bid Protest- Remodel BofA
4. Bid Protest Response BofA
5. Cortlandt Roofing Ukiah Bank of America Proposal -
6. Memo re proposed decision
7. Written Decision 1 Denying Protest
8. Written Decision 2 Upholding Bid Protest
9. DMR Bid
10. Cupples Bid
11. BofA Specs Sections 5 & 7

14. NEW BUSINESS

- 14.a. Possible Introduction of Camping Ordinance Amendment by Title Only.

Recommended Action: Introduce by title only the Camping Ordinance Amendment.

Attachments:

1. Camping Ordinance Amendment Redline
2. Camping Ordinance Amendment Clean
3. Mendocino County Homeless Encampment Coordination Protocol

- 14.b. Introduction of an Ordinance by Title Only and Adoption of the Corresponding Resolution of the City of Ukiah Adopting the 2025 Edition of the California Fire Code, Part 9, With Amendments, as Well as the 2025 Edition of the California Wildland-Urban Interface Code, Part 7, Regulating and Governing the Safeguarding of Life and Property From Fire and Explosion, and Providing for the Issuance of Permits, and Repealing All Other Ordinances and Parts of Ordinances of the City of Ukiah Fire Prevention Code in Conflict Herewith.

Recommended Action: Introduce an Ordinance by title only adopting the 2025 California Fire Code and the 2025 Wildland-Urban Interface Code, and adopt a Resolution establishing the findings of fact, including additions or amendments, to address local conditions.

Attachments:

1. 2025 Fire Code Adoption Ordinance Red Line
2. 2025 Fire Code Adoption Ordinance Clean
3. Resolution 2025-X Ukiah CC

- 14.c. Receive Updates on City Council Committee and Ad Hoc Assignments, and, if Necessary, Consider Modifications to Assignments and/or the Creation/Elimination of Ad Hoc(s).
Recommended Action: Receive report(s). The Council will consider modifications to committee and ad hoc assignments along with the creation/elimination ad hoc(s).
Attachments:
1. 2025 City Council Special Assignments and Ad Hocs

15. CLOSED SESSION - CLOSED SESSION MAY BE HELD AT ANY TIME DURING THE MEETING

- 15.a. **Conference with Legal Counsel – Anticipated Litigation**
(Government Code Section 54956.9(d)(4))
Initiation of litigation (1 case)
- 15.b. **Conference with Legal Counsel – Existing Litigation**
(Government Code Section 54956.9(d)(1))
Name of case: Vichy Springs Resort v. City of Ukiah, Et Al; Case No. SCU-K-CVPT-2018-70200
- 15.c. **Conference with Legal Counsel – Existing Litigation**
(Government Code Section 54956.9(d)(1))
Name of case: Vichy Springs Resort, Inc v. City of Ukiah, et al.; Case No. 24-cv-07106-JSC
- 15.d. **Conference with Real Property Negotiators**
(Cal. Gov't Code Section 54956.8)
Property: APN Nos: 184-080-37;184-080-36; 184-090-01; 184-090-07; 184-090-06; 184-100-04
Negotiator: Sage Sangiacomo, City Manager
Negotiating Parties: Henry's Original
Under Negotiation: Price & Terms of Payment
- 15.e. **Conference with Real Property Negotiators**
(Cal. Gov't Code Section 54956.8)
Property: APN Nos: 170-030-05; 170-030-03; 170-010-05; 170-020-07; 170-020-11; 170-040-03; 170-020-08
Negotiator: Sage Sangiacomo, City Manager
Negotiating Parties: Project Ovis LLC
Under Negotiation: Price & Terms of Payment
- 15.f. **Threat to Public Services or Facilities**
Consultation with: Dan Buffalo, Director of Finance and Scott Shaver, Interim Information Technology Manager
- 15.g. **Conference with Labor Negotiator (54957.6)**
Agency Designated Representative: Sage Sangiacomo, City Manager
Employee Organizations: All bargaining units
Unrepresented Employee: Police Chief

16. ADJOURNMENT

Please be advised that the City needs to be notified 72 hours in advance of a meeting if any specific accommodations or interpreter services are needed in order for you to attend. The City complies with ADA requirements and will attempt to reasonably accommodate individuals with disabilities upon request. Materials related to an item on this Agenda submitted to the City Council after distribution of the agenda packet are available for public inspection at the front counter at the Ukiah Civic Center, 300 Seminary Avenue, Ukiah, CA 95482, during normal business

hours, Monday through Friday, 8:00 am to 5:00 pm. Any handouts or presentation materials from the public must be submitted to the clerk 48 hours in advance of the meeting; for handouts, please include 10 copies.

I hereby certify under penalty of perjury under the laws of the State of California that the foregoing agenda was posted on the bulletin board at the main entrance of the City of Ukiah City Hall, located at 300 Seminary Avenue, Ukiah, California, not less than 72 hours prior to the meeting set forth on this agenda.

Araceli Sandoval
Posted: 9/12/25



AGENDA SUMMARY REPORT

SUBJECT: Receive Presentation of Exceptional Employee Recognition Awards.

DEPARTMENT: Human Resources /
Risk Management

PREPARED BY: Tim Mitchell, H.R./Risk Manager Analyst

PRESENTER: Department Directors, City Manager, and Mayor.

ATTACHMENTS:

None

Summary: The Mayor will present selected employees with Exceptional Employee Recognition awards.

Background: The City of Ukiah prioritizes the retention and attraction of outstanding employees and recognizes their role in our goal of providing exceptional service. The Exceptional Employee Program recognizes (through a nomination process) and awards those employees or teams of employees who have truly gone above and beyond. Once each quarter, nominations are considered from the categories of field crews, public safety, and administration.

Discussion: The recipients of the Exceptional Employee program for the third quarter of 2025 are as follows:

Christian Ballestrazze, Police Officer, Police Department: Christian Ballestrazze was dispatched to Safeway for a report of shoplifting. Officer Ballestrazze obtained video footage of the incident and determined that two female subjects stole approximately \$600 worth of items and fled the area and likely drove to Covelo. The Mendocino County Sheriff's Office had stopped the vehicle based on a request from Officer Ballestrazze. 15 minutes prior to the end of Officer Ballestrazze's shift, he drove to HWY 162 which was approximately one hour away. The two subjects who stole the items were placed under arrest. Officer Ballestrazze transported the subjects to jail and returned all the stolen items to Safeway. Officer Ballestrazze's determination and willingness to complete an investigation for a simple shoplift call resulted in two felony arrests, drug charges, and the ability to return \$600 worth of stolen merchandise. The Safeway Store Manager was extremely grateful.

David Burton, Museum Director, Community Services Department: David Burton has been the Director of the Grace Hudson Museum for the last six years. During his tenure, he has guided the Museum on a path of ever-increasing professionalism and national recognition. He has cultivated a deepening relationship with Native American community members, most notably seen in the Gathering Time exhibition, the first ever exhibition curated by and featuring Native American Artists. Though not a job requirement, Mr. Burton has served on both the Visit Ukiah Board and the Greater Ukiah Business and Tourism Board. More importantly, he has promoted and expanded the statewide recognition of the Museum through his service on the California Association of Museums Board, serving on the executive committee, the bylaws committee, and chairing the governance committee. Mr. Burton works long hours, including weekends and evenings, in his pursuit of excellence.

MaryJo Reynolds, Senior Financial Services Specialist, and AJ Johnson, Financial Services Specialist I, Finance Department: This spring, the Accounts Payable (AP) team successfully led the transition from paper to paperless invoice processing—a major shift they embraced with persistence and a commitment to

improvement. Most recently, a retirement in Accounts Receivable (AR) created staffing gaps. Without hesitation, both AP staff stepped up to help: one split time between AP and AR to support the temporary hire, while the other took on additional work and even offered to postpone a planned vacation. Despite increased pressure, they remained positive and focused. Their flexibility, teamwork, and dedication have been critical to keeping operations running smoothly during a time of transition, and it has been truly appreciated.

Recommended Action: Receive a presentation of the Exceptional Employee Recognition Awards.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: No **GRANT:** No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: The City Manager's Office and Department Directors

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): N/A

Approved: 
Sage Sangiacomo, City Manager



AGENDA SUMMARY REPORT

SUBJECT: Council to Receive Presentation on the Ukiah Valley Golf Course 2025/2026 Capital Improvement Plan.

DEPARTMENT: City Manager /
Admin

PREPARED BY: Maya Simerson, Project & Grant Administrator

PRESENTER: Maya Simerson, Project and Grant Administrator
and Jake Burgess, Community Services
Supervisor

ATTACHMENTS:

1. Ukiah Golf Course CIP 2025 2026
2. UMGC completed photos FY25
3. UVGC CIP Power Point 2025 2026

Summary: Council will receive a presentation on the Ukiah Valley Golf Course 2025/2026 Capital Improvement Plan.

Background: The Ukiah Valley Golf Course is operated under a Lease Agreement between the City of Ukiah (City) and Tayman Park Golf Group, Inc. (TPGG). The Ukiah Mens Golf Club (UMGC) operates a cart barn under a Lease Agreement with the City. Under these two leases, TPGG and the UMGC are committed to making annual capital improvements to the course through a capital improvement plan (CIP) in cooperation with the City.

CIP funding is provided by TPGG and the UMGC through these lease agreements. **The City does not contribute financially to the CIP.**

The agreements between the City, and both Tayman Park Golf Group and the Ukiah Mens Golf Club, outline a protocol for prioritizing and funding capital improvements. The protocol calls for an Advisory Team with three representatives, from the UMGC, TPGG, and the City to compose and agree on a plan for the annual course improvements. This Advisory Team has met, discussed, and approved the final plan. The final plan is now reported out to the Council to assure continued transparency and public review of the operation of this community asset.

Discussion: The UVGC provides an outdoor recreational place for all ages and provides fundraising opportunities to our community through the numerous tournaments hosted on the property. This past year the golf course hosted over 40 tournaments supporting local non-profits. Additionally, TPGG has continued to provide food and beverage service to our community with the 'Slush by the Park' menu, an attraction for both golfers and non-golfers alike.

Aside from providing a safe recreational outlet for our community and visitors, it is important to remember that the Ukiah Valley Golf Course provides a level of protection and green space buffer to protect the city of Ukiah from fire threats from the western hills wildland interface. The golf course's large irrigated, green, and trimmed open space creates a fire protection zone buffer between the western hills and the adjacent western Ukiah residential neighborhoods. In this time of heightened fire safety awareness and preparation, the Ukiah Valley Golf Course stands out as a significant and perhaps unrecognized fire protection tool benefiting the residents

of Ukiah.

Once Phase 4 of the Recycled Water Project is completed in the Todd Grove Recreation Area, this second source of water will be important for reducing the impact the greenspaces make on our potable water use but also, and perhaps most importantly, the purple pipe water will offer a secondary water source to fight fires.

The attached plan (Attachment #1) outlines proposed CIP projects in three sections.

- A. Capital Improvement Projects Completed
- B. Projects Identified in Prior Years rolling over
- C. New Projects added

Within the plan, each project identifies the fiscal year in which the project was first listed as a priority and added to the plan project list. Completed projects will note the organization that funded and completed the project. Inclusion of a project in the plan does not mean that funding is currently available to complete the project.

The success of the golf course relies on all three of its partners, but the UMGC deserves to be recognized for their exceptional efforts. Highlights of the work they have accomplished this past year can be found in Attachment #2. The course also benefits from the support of the Women's Golf Club, and we are grateful for their contributions.

The partnership between the City, TPGG, and the UMGC is strong and productive, with all three parties working together towards the common goal of creating and maintaining the best municipal golf course possible for our community.

Thank you for receiving this report, as provided by the Advisory Team, of the Capital Improvement Plan.

Please refer to Attachment #3 to access the PowerPoint presentation that accompanies this report to Council.

Recommended Action: Receive a presentation on the Ukiah Valley Golf Course 2025/2026 Capital Improvement Plan.

BUDGET AMENDMENT REQUIRED: n/a

CURRENT BUDGET AMOUNT: n/a

PROPOSED BUDGET AMOUNT: n/a

FINANCING SOURCE: n/a

REVENUE: Yes / No GRANT: Yes / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: n/a

COORDINATED WITH: Frank Johnson, TPGG, Bernie Sopp, UMGC, Jake Burgess, SC Supervisor

STRATEGIC PLAN (SP): SP 1B - Provide services that support a high quality of life for all residents, including fostering diverse, inclusive, sustainable, and accessible neighborhoods.

CLIMATE INITIATIVES (CI): 7a – Expand sustainable water practices.

GENERAL PLAN ELEMENTS (GP): GP-A4- Public Facilities, Services, and Infrastructure Element

Approved: 
Sage Sangiacomo, City Manager

Ukiah Valley Golf Course

Capital Improvement Plan 2025/2026

Tayman Park Golf Group and Ukiah Men's Golf Club

Submitted by the CIP Advisory Team:
Frank Johnson, PGA Director of Golf
Bernie Sopp, Ukiah Men's Club President
Jake Burgess, CS Supervisor, City of Ukiah

July 1, 2025

Ukiah Valley Golf Course 599 Park Blvd Ukiah, California 95482
T 707.467.2832 F 707.433.7846 www.ukiahgolf.com

Golf Course Capital Improvement Plan (CIP)

The golf course is for the use and enjoyment of the public and all its patrons. In order that the public can be given the best possible golfing experience, the golf course must be open to constructive feedback. All CIP planning and decisions must be analyzed for their short and long term effect.

The Golf Professional operating the course, Tayman Park Golf Group (TPGG) and the Ukiah Men's Golf Club (UMGC) maintain separate bank accounts as required under their respective amended leases to fund projects for the Ukiah Valley Golf Course under the approved Capital Improvement Plan (CIP). The Ukiah Valley Golf Course's Capital Improvement Planning process is managed and controlled by an Advisory Team comprised of three representatives, one each from the Ukiah Men's Golf Club, the Golf Professional, and the City of Ukiah. The Advisory Team prepared Capital Improvement Plan that is submitted annually for review by the Ukiah City Council at a public City Council meeting.

The Capital Improvement Plan is not an operational plan of the golf course, and is limited to capital improvement planning only.

Part A. - Capital Improvement Completed in FY2024/2025:

UKIAH MEN'S GOLF CLUB PROJECTS:

The substantial number of Projects completed solely by the Ukiah Men's Golf Club in this past year were funded through net cart barn rents, as well as a significant number of projects that were funded by cash, time, and material contributions of various UMGC members in excess of what was required by their CIP commitment.

This years completed projects include;

- Installation of safety posts and chains for the bridge on #10
- Replacement of the bridge on #11 creek crossing
- Removal of dead trees on holes #16 & #17
- Planting of flower bulbs in strategic spots to enhance the beauty of the course

JOINT PROJECTS; UKIAH MEN'S GOLF CLUB/ TAYMAN PARK GOLF GROUP:

TAYMAN PARK GOLF GROUP PROJECTS:

It should be noted, that Tayman Park Golf Group completed the following projects, which were not required by their CIP commitment, using their own funds in excess of what was required.

Sand Fairways; COMPLETED AND ONGOING/Tayman Park Golf Group

Improved fairways are important to retain players. Sand application over time, improves conditions and playability. Other benefits include a reduction in earthworm castings, improved rooting, earlier spring green- up and reduction in water use. The primary reason fairway topdressing programs are implemented is to firm the surfaces, improved playability and minimize course closure following heavy and prolonged rains.

Sand Trap Reshaping; COMPLETED AND ONGOING/Tayman Park Golf Group

Tayman Park Golf Group's maintenance crew has taken over the reshaping of the edges and lips of the sand traps. Sand replacement will also be an ongoing project.

Fairway Seeding; COMPLETED AND ONGOING/Tayman Park Golf Group

Improvements will include a new drought tolerant grass, sand usage and wetting agents. The new grass will consist of 4 different grass types for deeper root growth and better playing surface. This blend has been proven to perform well in high heat and less water areas. The continued fairway resurfacing will show all players that the Ukiah Valley Golf Course is a viable recreation area worthy of their spending dollars. It's not enough in this difficult environment to just have a course, you must show the willingness to spend money and improve your product. Our fairways continue to improve in appearance and playability.

**Part B. - Projects Identified in Prior Years rolling over to FY 2025/2026:
UKIAH MENS GOLF CLUB PROJECTS:**

Tree Maintenance (FY20/21); Ukiah Men's Golf Club ONGOING

On-going tree trimming with emphasis on safety for all players. On-going tree pruning conforming to the list of trees that was approved in 2020. New trees may be added to the list if storm or drought damage is discovered. Dead trees will be removed from time to time. Many of the existing pine trees on the golf course have suffered during the drought and will need to be removed when they are dead so that they do not become a hazard. All work done under the guidance of the City of Ukiah's Tree Management Guidelines.

HOLE #2(FY21/22): reshaping and decreasing the size of the sand trap, over the years this sand trap has increased in size and needs to be reconfigured to its former size. Add turf where needed.

HOLE #4(FY21/22): Consider reducing the size of the northerly sand trap which has grown larger over the years.

HOLE #9(FY21/22): Remove the paved cart path adjacent to the green and replace it with turf blocks.

Directional Control Posts (FY21/22); Ukiah Men's Golf Club ONGOING

JOINT PROJECTS; UKIAH MENS GOLF CLUB/ TAYMAN PARK GOLF GROUP:

TAYMAN PARK GOLF GROUP PROJECTS:

Transition from Rye Grass Fairways to 3 Blend Fescue Grass; (FY21/22) Tayman Park Golf Group. With the continued importance of water conservation, it's important to find the right grasses to help reduce water usage. Fescue's when blended with other grasses have been known to stay healthy with less watering. ONGOING

Part C. – Newly identified Projects added to Plan:

UKIAH MENS GOLF CLUB PROJECTS:

Our plan for 2025-2026 is to continue with tree trimming in areas of the golf course and to start working on the sand traps. (FY 24/25)

PRACTICE AREA ADJACENT TO HOLE #1(FY23/24); Construction of a practice sand trap.

JOINT PROJECTS; UKIAH MENS GOLF CLUB/ TAYMAN PARK GOLF GROUP:

North Bridge on Back Nine (FY21/22); Tayman Park Golf Group & Ukiah Men's Golf Club
ONGOING

Inspect decking and replace wood as needed.

Repair Failed Storm Drain; The storm drain pipe on the front nine, which extends from above Green #3 down to the east side of Fairway #8, is failing in several places. Explore ideas with the city for either temporary or spot fixes until the City has funds to replace the entire storm drain. (FY21/22); Tayman Park Golf Group & Ukiah Men's Golf Club. Under review for FEMA funding from Winter Storm Damage in 2022.

Continued Tee Improvements; (FY21/22) Tayman Park Golf Group & Ukiah Men's Golf Club ONGOING Remodel of tee #6.

TAYMAN PARK GOLF GROUP PROJECTS:

Building repair and maintenance; (FY22/23); New entry doors, A/C units replaced, bathroom remodel and plumbing work. This work is needed to continue the upgrade of the pro shop. The pro shop was remodeled back in 2018/2019 and additional items are now in need of repair. Repair and replacement of refrigeration, soft serve machines and food equipment. ONGOING

Irrigation system repair (FY23/24); as the irrigation system ages, replacing targeted areas of the system to maintain current levels of water control, water savings and eliminate mainline damage is needed. Controllers, gate and electric valves, electrical wiring, sprinkler heads and pvc pipe will be replaced. ONGOING

Cart Path Replacement (FY23/24); Not all areas can be completed this year but areas of concern are being addressed. We are planning for work on holes #3 and #8.

Irrigation replacement Hole#5: New heads, valves and controller. (25/26)

Capital Improvement Summary

Items listed are planned projects. Funds may be limited and we will replace/repair the most important items first. Our goal will be to utilize our funds on projects to meet the highest priorities that will provide the best golf experience possible to the golfers.

The Advisory Team will continue to look not only at immediate goals but will consider our long term goals as well. The Advisory Team will continue to enable a good working

relationships between TPGG, the Men's and Women's Golf Clubs and the City.

Thank you for allowing the Advisory Team the opportunity to improve the Ukiah Valley Golf Course through this CIP plan.

City Staff would be pleased to arrange for City Council Members to tour the Golf Course and its facilities upon request.

ATTACHMENT #2

UVGC CIP Report Attachment #2; Ukiah Men's Golf Club

Completed Projects FY25

Planting flower bulbs in strategic spots to enhance the beauty of the course. (no pictures available at this time)

Continued tree trimming for fire hardening and removal of dead limbs and trees when necessary for safety.

Removal of dead tree on hole #16; before and after.



Removal of dead tree on hole # 17



Safety posts and chain installation on both sides of the approach to the new bridge on #10;



Replacement of the bridge on #11 creek crossing.



Major improvements on several holes:



Hole #15





Ukiah Valley Golf Course Capital Improvement Plan



**City Council
Meeting
of
September 17
2025**



The Ukiah Valley Golf Course is operated under a Lease Agreement between the City of Ukiah (City) and Tayman Park Golf Group, Inc. (TPGG).

The Ukiah Mens Golf Club (UMGC) operates a cart barn under a Lease Agreement with the City.

Both groups are committed to making annual capital improvements to the course under an annually approved capital improvement plan (CIP) in cooperation with the City.

CIP funding is provided by TPGG and the UMGC through these lease agreements and is reported to Council annually.

2025/2026 Capital Improvement Plan

The CIP is presented in three sections;

A. Capital Improvement
Projects Completed

B. Projects Identified in Prior
Years Rolling Over to the next
year

C. New Projects Added



Ukiah Men's Golf Club completed projects (CIP plan section A)

Replacement of the bridge on #11 creek crossing.



City of Ukiah

Safety posts and chain for the new bridge on #10.



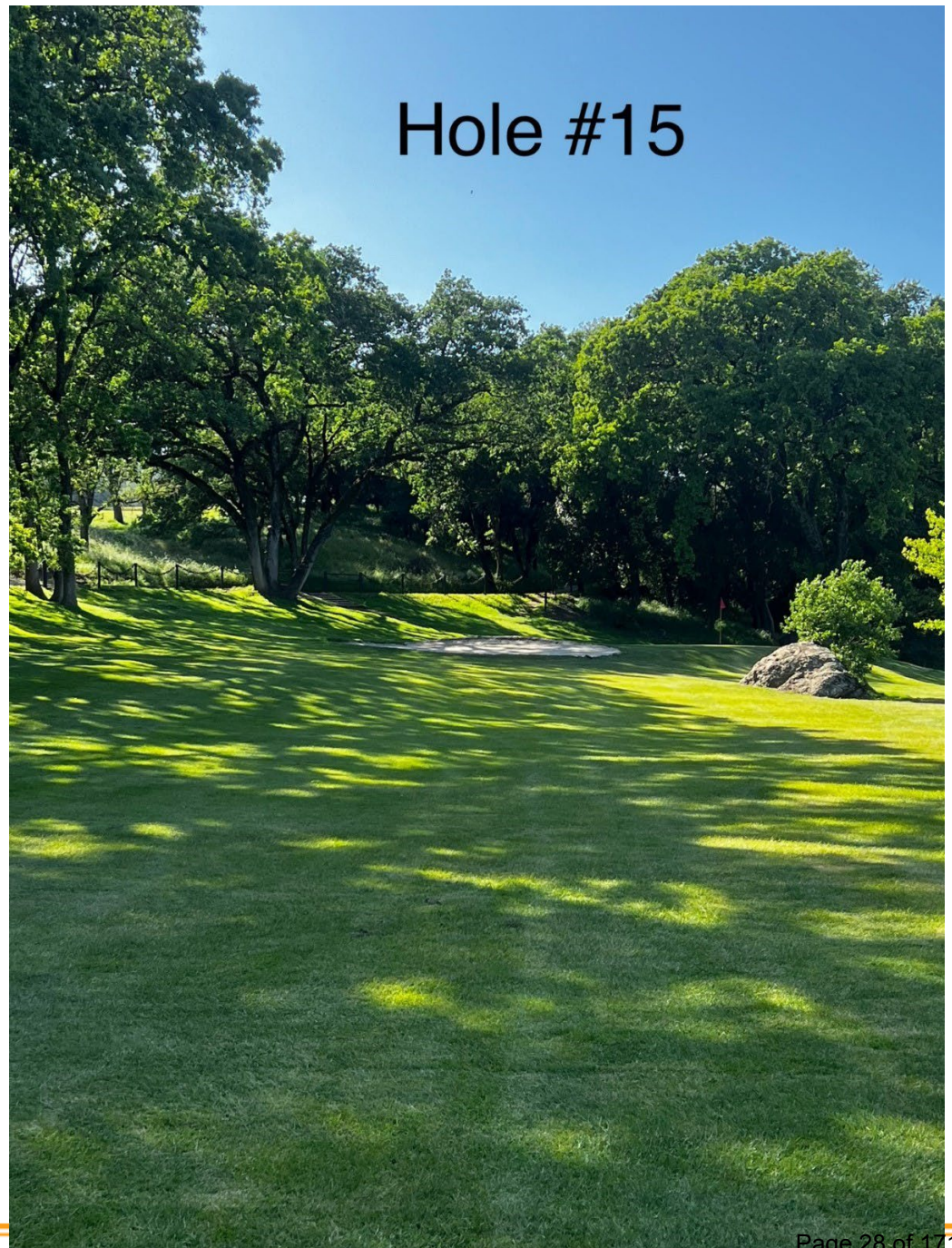
City of Ukiah

Continued tree trimming for fire hardening and removal of dead limbs and trees when necessary for fire protection and safety.



City of Ukiah

Hole #15



Hole #16

Major improvements on several holes; including 13, 15, and 16.

Upgraded drainage for better erosion control.



City of Ukiah

Completed Projects (CIP plan section A continued)

TAYMAN PARK GOLF GROUP PROJECTS:

It should be noted, that Tayman Park Golf Group completed many projects, which were not required by their CIP commitment, using their own funds in excess of what was required.



Sand Fairways for many benefits including a reduction in water use

Fairway Seeding; using a new drought tolerant grass, sand usage and wetting agents. This blend has been proven to perform well in high heat and less water areas.

CIP Projects- Section B

(Projects Identified in Prior Years Rolling Over to the next year)

Tree Maintenance (FY20/21); Ukiah Men's Golf Club ONGOING

On-going tree trimming with emphasis on safety for all players and fire protection. (All work done under the guidance of the City of Ukiah's Tree Management Guidelines.)

HOLE #2(FY21/22): reshaping and decreasing the size of the sand trap, over the years this sand trap has increased in size and needs to be reconfigured to its former size. Add turf where needed.

HOLE #4(FY21/22): Consider reducing the size of the northerly sand trap which has grown larger over the years.

HOLE #9(FY21/22): Remove the paved cart path adjacent to the green and replace it with turf blocks.

Directional Control Posts (FY21/22); Ukiah Men's Golf Club ONGOING

CIP Projects- Section C (New Projects Added)

Continued Tee Improvements: Remodel of tee #6.

Irrigation replacement Hole #5: New heads, valves and controller.



Ukiah Valley Golf Course

A Community Resource



The UVGC provides an outdoor recreational place for all ages and provides fundraising opportunities to our community through the numerous tournaments hosted on the property.

This past year the golf course hosted over **40 tournaments** supporting local non-profits.

TPGG provides food and beverage service to our community.

The 'Slush by the Park' menu has proven to be an attraction to golfers and non-golfers alike.

The clubhouse is available to rent and hosts many gatherings.



City of Ukiah

Fire Buffer Zone and Recycled Water

In addition to providing a safe recreational outlet the Ukiah Valley Golf Course provides a level of protection and firefighting space to protect the City of Ukiah from fire threats from the western hills. The golf course's large green space creates a fire protection zone, or buffer between the western hills and the adjacent western Ukiah residential neighborhoods.



Recycled Water- as part of the grant funded project the use of recycled water is getting close to the Todd Grove Recreation Area. Pipe for the distribution system is going in the ground and already installed through the golf course, providing recycled water to 2/3 of the course.

This second source of water is important for both reducing the impact the greenspaces make on our potable water use but also, and perhaps most importantly, the purple pipe water offers a secondary water source to fight fires. The UVFA Chief has evaluated locations for hydrants to offer an additional level of protection to our community.



Summary

Present to City Council FY2026 CIP plan.

Questions?

Ukiah Mens Golf Club:

Bernie Sopp, President

Tayman Park Golf Group:

Frank Johnson, Owner/Golf Pro



CITY OF UKIAH
CITY COUNCIL MINUTES
Regular Meeting
CIVIC CENTER COUNCIL CHAMBERS
300 Seminary Avenue, Ukiah, CA 95482
Virtual Meeting Link: <https://us06web.zoom.us/j/85166111856>

September 3, 2025
5:15 p.m.

1. ROLL CALL

Ukiah City Council met at a Regular Meeting on September 3, 2025, having been legally noticed on August 29, 2025. The meeting was held in person and virtually at the following link: <https://us06web.zoom.us/j/85166111856>. Mayor Crane called the meeting to order at 5:16 p.m. Roll was taken with the following **Councilmembers Present:** Mari Rodin, Juan V. Orozco, Susan Sher, and Douglas, F. Crane. **Councilmembers Absent by Prearrangement:** Heather Criss. **Staff Present:** Sage Sangiacomo, City Manager; David Rapport, City Attorney; and Araceli Sandoval, Deputy City Clerk.

MAYOR CRANE PRESIDING.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Mayor Crane.

MOMENT OF SILENCE

Mayor Crane read a statement and led a moment of silence to honor the recently departed Darren Jackson, who served on the City of Ukiah's Diversity and Equity Committee.

3. AB 2449 NOTIFICATIONS AND CONSIDERATIONS

No notifications were received.

4. PROCLAMATIONS/INTRODUCTIONS/PRESENTATIONS

a. Community Services Summer Wrap Up.

Presenters: Marianne Aranda, Senior Recreation Coordinator and Daniel Spence, Recreation Supervisor.

Presentation was received.

b. Proclamation of the Ukiah City Council Recognizing September as Hispanic Heritage Month in the City of Ukiah.

Presenter: Councilmember Orozco.

Public Comment: Jackie Orozco,

Proclamation was received by Martha Molina, Molina Taxes.

c. Presentation from Greater Ukiah Business and Tourism Alliance Regarding Activities and Events.

Presenters: Shannon Riley, Deputy City Manager and Katrina Kessen, Greater Ukiah Business and Tourism Alliance Executive Director.

Presentation was received.

5. PETITIONS AND COMMUNICATIONS

Deputy City Clerk, Araceli Sandoval, stated that all communications had been distributed.

6. APPROVAL OF MINUTES

a. Approval of the Minutes for the August 20, 2025, Special Meeting.

b. Approval of the Minutes for the August 20, 2025, Regular Meeting.

Motion/Second: Orozco/Sher to approve the Special and Regular Minutes of August 20, 2025, as submitted. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

7. RIGHT TO APPEAL DECISION

Mayor Crane read the right to appeal a decision.

8. CONSENT CALENDAR

a. Report of Disbursements for the Month of July 2025 – *Finance*.

b. Adoption of an Ordinance to Establish an Administrative Use Permit Process, Reorganize Performance Standards, and Clarify Related Zoning and Animal Keeping Provisions in the Ukiah City Code – *Community Development*.

ORDINANCE NO. 1257

ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH ADDING A NEW SECTION 9269 AND A NEW ARTICLE 23 TO DIVISION 9, CHAPTER 2 OF THE CITY CODE TO ESTABLISH PROCEDURES AND PERFORMANCE STANDARDS FOR THE ISSUANCE OF ADMINISTRATIVE USE PERMITS.

c. Adoption of an Ordinance Amending the City's Accessory Dwelling Unit and Junior Accessory Dwelling Unit Regulations to Ensure Compliance with State Law and the Findings of the California Department of Housing & Community Development – *Community Development*.

ORDINANCE NO. 1258

ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING VARIOUS SECTIONS OF THE UKIAH CITY CODE REGULATING ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS

d. Adoption of a Resolution (2025-43) Authorizing the City Manager to Execute Agreements with the California Department of Transportation for the City of Ukiah East Perkins Multimodal Transportation Plan; and Approve Corresponding Budget Amendments Once the Agreements have been Executed – *Community Development*.

e. Approve the Notice of Completion for the Thickening and Dewatering Improvements Project, Specification No. 23-02, and Direct the City Clerk to File the Notice of Completion with the County Recorder – *Water Resources*.

Motion/Second: Rodin/Sher to approve Consent Calendar Items 8a-8e, as submitted. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

9. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

No public comments were received.

10. COUNCIL REPORTS

No Council reports were received.

11. CITY MANAGER/CITY CLERK REPORTS

Presenters: Sage Sangiacomo, City Manager; and

- **Construction Update** – Tim Eriksen, Public Works Director / City Engineer.

12. PUBLIC HEARINGS (5:30 PM)

a. Consideration and Possible Adoption of a Resolution Amending the Fee Schedule of the Planning and Building Divisions of the Community Development Department to Eliminate Fee Discounts for Select Uses and Establish an Administrative Use Permit Fee.

Presenter: Craig Schlatter, Community Development Director.

PUBLIC HEARING OPENED AT 6:41 P.M.

No public comment was received.

PUBLIC HEARING CLOSED AT 6:42 P.M.

Motion/Second: Sher/Orozco to adopt a resolution (2025-44) amending the Fee Schedule for the Planning and Building Divisions of the Community Development Department. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

13. UNFINISHED BUSINESS

a. Consideration of the 2025 Sewer System Management Plan Update.

Presenter: Sean White, Water Resources Director.

No public comment was received.

Motion/Second: Orozco/Sher to approve Sewer System Management Plan 2025 Update. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

b. Possible Adoption of Urgency Ordinance Adopting FEMA's Model Floodplain Management Ordinance, Flood Insurance Study, and Flood Insurance Rate Maps.

Presenters: Darcy Vaughn, Assistant City Attorney and Tim Eriksen, Public Works Director/City Engineer.

No public comment was received.

RECESS 6:58 P.M. – 7:06 P.M.

Motion/Second: Orozco/Rodin to introduce and adopt an urgency ordinance by title only. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

Deputy City Clerk, Araceli Sandoval, read the ordinance title into the record.

Motion/Second: Sher/Rodin to introduce and adopt the urgency ordinance adopting FEMA's Model Floodplain Management Ordinance, Flood Insurance Study, and Flood Insurance Rate Maps. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

ORDINANCE NO. 1259

URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING VARIOUS SECTIONS OF THE UKIAH CITY CODE TO RE-ADOPT THE MOST RECENT CALIFORNIA BUILDING STANDARDS CODE PROVISIONS REGARDING FLOODPLAN MANAGEMENT; TO ADOPT FLOOD HAZARD MAPS; TO DESIGNATE A FLOODPLAIN ADMINISTRATOR; AND TO ADOPT ADDITIONAL FLOODPLAIN MANAGEMENT REGULATIONS.

c. Adopt Resolution Affirming that the Proclamation of a Local Emergency Due to Conditions Caused by Atmospheric Rivers Causing Damage to Public Infrastructure Remains in Effect.

Presenter: Darcy Vaughn, Assistant City Attorney.

No public comment was received.

Motion/Second: Crane/Rodin to adopt a resolution (2025-45) affirming that the declaration of a local emergency remains in effect. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

14. NEW BUSINESS

a. Resolve Bid Protests Received for Specification No. 25-04 for the Remodel of 501 South State Street, and Approve Final Award Recommendation.

Presenter: Myles Fisette, Purchasing Manager.

PUBLIC HEARING OPENED AT 7:19 P.M.

Public Comment: Casey Cupples, Cupples & Sons Construction Inc.

RECESS 7:33 P.M. – 8:20 P.M.

PUBLIC HEARING CLOSED AT 8:56 P.M.

Motion/Second: Crane/Sher to direct the City Attorney's Office and Staff to conduct further review and to continue this item to the September 17, 2025, City Council Regular Meeting. Motion **carried** by the following roll call votes: AYES: Rodin, Orozco, Sher, and Crane. NOES: None. ABSENT: Criss. ABSTAIN: None.

b. Receive Updates on City Council Committee and Ad Hoc Assignments and, if Necessary, Consider Modifications to Assignments and/or the Creation/Elimination of Ad hoc(s).

No reports were received.

THE CITY COUNCIL ADJOURNED TO CLOSED SESSION AT 9:10 P.M.

15. CLOSED SESSION

a. **Conference with Legal Counsel – Anticipated Litigation**

(Government Code Section 54956.9(d)(4))

Initiation of litigation (1 case)

b. **Conference with Legal Counsel – Existing Litigation**

(Government Code Section 54956.9(d)(1))

Name of case: Vichy Springs Resort v. City of Ukiah, Et Al; Case No. SCUk-CVPT-2018-70200

c. **Conference with Legal Counsel – Existing Litigation**

(Government Code Section 54956.9(d)(1))

Name of case: Vichy Springs Resort, Inc v. City of Ukiah, et al.; Case No. 24-cv-07106-JSC

d. **Conference with Real Property Negotiators**

(Cal. Gov't Code Section 54956.8)

Property: APN Nos: 184-080-37;184-080-36; 184-090-01; 184-090-07; 184-090-06; 184-100-04

Negotiator: Sage Sangiacomo, City Manager

Negotiating Parties: Henry's Original

Under Negotiation: Price & Terms of Payment

e. **Conference with Real Property Negotiators**

(Cal. Gov't Code Section 54956.8)

Property: APN Nos: 170-030-05; 170-030-03; 170-010-05; 170-020-07; 170-020-11; 170-040-03; 170-020-08

Negotiator: Sage Sangiacomo, City Manager

Negotiating Parties: Project Ovis LLC

Under Negotiation: Price & Terms of Payment

f. **Conference with Labor Negotiator (54957.6)**

Agency Designated Representative: Sage Sangiacomo, City Manager

Employee Organizations: All bargaining units

Unrepresented Employee: Police Chief

No action reported; direction provided to Staff.

16. **ADJOURNMENT**

There being no further business, the meeting adjourned at 10:13 p.m.

Araceli Sandoval, Deputy City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Approval of Budget Amendment in the Amount of \$126,000 for Cybersecurity with Convergent Computing (CCO).

DEPARTMENT: Information Services

PREPARED BY: James Brown, IT Network Specialist

PRESENTER: James Brown, Network Specialist, IT Department

ATTACHMENTS:

1. Contract No 1314-128
2. Contract No 1314-128-A1 - Amendment
3. Cybersecurity_Roadmap_Briefing_Summary

Summary: Council will consider approval of a budget amendment in the amount of \$126,000 for cybersecurity with Convergent Computing (CCO).

Background: On September 4, 2013, the City Council approved an as-needed services contract (Attachment 1) with Convergent Computing (CCO) to provide information technology support. Since then, CCO has consistently delivered reliable and effective services to the City.

Recognizing the increasing importance of protecting its digital infrastructure, the City engaged CCO to develop a Cybersecurity Roadmap. In March 2025, the City executed Amendment No. 1 to Contract No. 1314-128 (Attachment 2), which expanded the scope of work to include cybersecurity services. Convergent Computing in cooperation with the City's IT team have identified priority projects and long-term improvements consistent with industry best practices for municipalities of similar size.

Discussion: The current estimate for the initial implementation of cybersecurity priority efforts is in the range of \$84,000- \$126,000, with the final amount dependent on the actual time required to complete each stage. Future phases may be presented to Council for consideration as needed.

Staff requests that Council approve a budget amendment in the amount of \$126,000 to fund cybersecurity implementation with Convergent Computing (CCO). Cost estimates associated with each phase are included in Attachment 3. Funding for the budget amendment is coming from the IT fund reserves, which is set aside for such purposes.

Recommended Action: Approve a budget amendment in the amount of \$126,000 for cybersecurity with Convergent Computing (CCO).

BUDGET AMENDMENT REQUIRED: Yes

CURRENT BUDGET AMOUNT: 20913950.52100: \$0

PROPOSED BUDGET AMOUNT: 20913950.52100: \$126,000

FINANCING SOURCE: IT Reserves

REVENUE: No GRANT: No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: Contract 1314-128

COORDINATED WITH: Finance Department, IT Department

STRATEGIC PLAN (SP): Supports organizational excellence, technology modernization, security, and best practices.**SP 1C** - Encourage and support an environmentally sustainable and resilient community by embracing new technology, setting policy, and evaluating critical infrastructure.

CLIMATE INITIATIVES (CI):N/A

GENERAL PLAN ELEMENTS (GP): Government services, resiliency, and community trust.GP-A4 - Public Facilities, Services, and Infrastructure Element

Approved: 
Sage Sangiacomo, City Manager

Contract 1314128

AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES

This Agreement, made and entered into this 5th day of September, 2013 ("Effective Date"), by and between CITY OF UKIAH, CALIFORNIA, hereinafter referred to as "City" and Convergent Computing, a corporation organized and in good standing under the laws of the state of California, hereinafter referred to as "Consultant".

RECITALS

This Agreement is predicated on the following facts:

- a. City requires consulting services related to providing information technology services consisting of software, system, and/or network maintenance support on an on-call, as-needed basis.
- b. Consultant represents that it has the qualifications, skills, experience and properly licensed to provide these services, and is willing to provide them according to the terms of this Agreement.
- c. City and Consultant agree upon the Scope-of-Work and Work Schedule attached hereto as Attachment "A", describing contract provisions for the project and setting forth the completion dates for the various services to be provided pursuant to this Agreement.

TERMS OF AGREEMENT

1.0 DESCRIPTION OF PROJECT

- 1.01 The Project is described in detail in the attached Scope-of-Work (Attachment "A").

2.0 SCOPE OF SERVICES

- 2.01 As set forth in Attachment "A".
- 2.02 Additional Services. Additional services, if any, shall only proceed upon written agreement between City and Consultant. The written Agreement shall be in the form of an Amendment to this Agreement.

3.0 CONDUCT OF WORK

- 3.01 Term. The term of this agreement begins on the Effective Date and shall continue for an indefinite term and until terminated in accordance with paragraph 7.09.
- 3.02 Time of Completion. Consultant shall commence performance of services as required by the Scope-of-Work upon receipt of a Notice to Proceed from City. Consultant shall complete each task to the City's reasonable satisfaction, even if contract disputes arise or Consultant contends it is entitled to further compensation.

4.0 COMPENSATION FOR SERVICES

- 4.01 Basis for Compensation. For the performance of the professional services of this Agreement, Consultant shall be compensated on a time and expense basis. Labor charges shall be based upon hourly billing rates for the various classifications of personnel employed by Consultant to perform the Scope of Work as set forth in the attached Attachment B, which shall include all indirect costs and expenses of every kind or nature, except direct expenses. The direct expenses and the fees to be charged for same shall be as set forth in Attachment B. The specifics of the requested services, time frame, and costs will be established with each service requested by the City under the Scope of Work identified in Attachment "A".
- 4.02 Changes. Should changes in compensation be required because of changes to the Scope-of-Work of this Agreement, the parties shall agree in writing to any changes in compensation. "Changes to the Scope-of-Work" means different activities than those described in Attachment "A" and not additional time to complete those activities than the parties anticipated on the date they entered this Agreement.
- 4.03 Sub-contractor Payment. The use of sub-consultants or other services to perform a portion of the work of this Agreement shall be approved by City prior to commencement of work. The cost of sub-consultants shall be included within guaranteed not-to-exceed amount set forth in Section 4.1.
- 4.04 Terms of Payment. Payment to Consultant for services rendered in accordance with this contract shall be based upon submission of weekly invoices for the work satisfactorily performed prior to the date of the invoice less any amount already paid to Consultant, which amounts shall be due and payable thirty (30) days after receipt by City. The invoices shall provide a description of each item of work performed, the time expended to perform each task, the fees charged for that task, and the direct expenses incurred and billed for. Invoices shall be accompanied by documentation sufficient to enable City to determine progress made and to support the expenses claimed.

5.0 ASSURANCES OF CONSULTANT

- 5.01 Independent Contractor. Consultant is an independent contractor and is solely responsible for its acts or omissions. Consultant (including its agents, servants, and employees) is not the City's agent, employee, or representative for any purpose.

It is the express intention of the parties hereto that Consultant is an independent contractor and not an employee, joint venturer, or partner of City for any purpose whatsoever. City shall have no right to, and shall not control the manner or prescribe the method of accomplishing those services contracted to and performed by Consultant under this Agreement, and the general public and all governmental agencies regulating such activity shall be so informed.

Those provisions of this Agreement that reserve ultimate authority in City have been inserted solely to achieve compliance with federal and state laws, rules, regulations, and interpretations thereof. No such provisions and no other provisions of this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Consultant and City.

Consultant shall pay all estimated and actual federal and state income and self-employment taxes that are due the state and federal government and shall furnish and

pay worker's compensation insurance, unemployment insurance and any other benefits required by law for himself and his employees, if any. Consultant agrees to indemnify and hold City and its officers, agents and employees harmless from and against any claims or demands by federal, state or local government agencies for any such taxes or benefits due but not paid by Consultant, including the legal costs associated with defending against any audit, claim, demand or law suit.

Consultant warrants and represents that it is a properly licensed professional or professional organization with a substantial investment in its business and that it maintains its own offices and staff which it will use in performing under this Agreement.

- 5.02 Conflict of Interest. Consultant understands that its professional responsibility is solely to City. Consultant has no interest and will not acquire any direct or indirect interest that would conflict with its performance of the Agreement. Consultant shall not in the performance of this Agreement employ a person having such an interest. If the City Manager determines that the Consultant has a disclosure obligation under the City's local conflict of interest code, the Consultant shall file the required disclosure form with the City Clerk within 10 days of being notified of the City Manager's determination.

6.0 INDEMNIFICATION

- 6.01 Insurance Liability. Without limiting Consultant's obligations arising under Paragraph 6.2 Consultant shall not begin work under this Agreement until it procures and maintains for the full period of time allowed by law, surviving the termination of this Agreement insurance against claims for injuries to persons or damages to property, which may arise from or in connection with its performance under this Agreement.

A. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office ("ISO) Commercial General Liability Coverage Form No. CG 20 10 10 01 and Commercial General Liability Coverage – Completed Operations Form No. CG 20 37 10 01.
2. ISO Form No. CA 0001 (Ed. 1/87) covering Automobile Liability, Code 1 "any auto" or Code 8, 9 if no owned autos and endorsement CA 0025.
3. Worker's Compensation Insurance as required by the Labor Code of the State of California and Employers Liability Insurance.
4. Errors and Omissions liability insurance appropriate to the consultant's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

B. Minimum Limits of Insurance

Consultant shall maintain limits no less than:

1. General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage including operations, products and completed operations. If Commercial General Liability Insurance or other form with a general aggregate limit is used, the

general aggregate limit shall apply separately to the work performed under this Agreement, or the aggregate limit shall be twice the prescribed per occurrence limit.

2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Worker's Compensation and Employers Liability: Worker's compensation limits as required by the Labor Code of the State of California and Employers Liability limits of \$1,000,000 per accident.
4. Errors and Omissions liability: \$1,000,000 per occurrence.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects to the City, its officers, officials, employees and volunteers; or the Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

- a. The City, its officers, officials, employees and volunteers are to be covered as additional insureds as respects; liability arising out of activities performed by or on behalf of the Consultant, products and completed operations of the Consultant, premises owned, occupied or used by the Consultant, or automobiles owned, hired or borrowed by the Consultant for the full period of time allowed by law, surviving the termination of this Agreement. The coverage shall contain no special limitations on the scope-of-protection afforded to the City, its officers, officials, employees or volunteers.
- b. The Consultant's insurance coverage shall be primary insurance as respects to the City, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be in excess of the Consultant's insurance and shall not contribute with it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officers, officials, employees or volunteers.
- d. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Worker's Compensation and Employers Liability Coverage

The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, employees and volunteers for losses arising from Consultant's performance of the work, pursuant to this Agreement.

3. Professional Liability Coverage

If written on a claims-made basis, the retroactivity date shall be the effective date of this Agreement. The policy period shall extend from the Effective Date to one year after the termination of this Agreement.

4. All Coverages

Each Insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.

E. Acceptability of Insurers

Insurance is to be placed with admitted California insurers with an A.M. Best's rating of no less than A- for financial strength, AA for long-term credit rating and AMB-1 for short-term credit rating.

F. Verification of Coverage

Consultant shall furnish the City with Certificates of Insurance and with original Endorsements effecting coverage required by this Agreement. The Certificates and Endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates and Endorsements are to be on forms provided or approved by the City. Where by statute, the City's Workers' Compensation - related forms cannot be used, equivalent forms approved by the Insurance Commissioner are to be substituted. All Certificates and Endorsements are to be received and approved by the City before Consultant begins the work of this Agreement. The City reserves the right to require complete, certified copies of all required insurance policies, at any time. If Consultant fails to provide the coverages required herein, the City shall have the right, but not the obligation, to purchase any or all of them. In that event, the cost of insurance becomes part of the compensation due the contractor after notice to Consultant that City has paid the premium.

G. Subcontractors

Consultant shall include all subcontractors or sub-consultants as insured under its policies or shall furnish separate certificates and endorsements for each sub-contractor or sub-consultant. All coverage for sub-contractors or sub-consultants shall be subject to all insurance requirements set forth in this Paragraph 6.1.

6.02 Indemnification. Notwithstanding the foregoing insurance requirements, and in addition thereto, Consultant agrees, for the full period of time allowed by law, surviving the termination of this Agreement, to indemnify the City for any claim, cost or liability that

arises out of, or pertains to, or relates to any negligent act or omission or the willful misconduct of Consultant in the performance of services under this contract by Consultant, but this indemnity does not apply to liability for damages for death or bodily injury to persons, injury to property, or other loss, arising from the sole negligence or willful misconduct of the City.

"Indemnify," as used herein includes the expenses of defending against a claim and the payment of any settlement or judgment arising out of the claim. Defense costs include all costs associated with defending the claim, including, but not limited to, the fees of attorneys, investigators, consultants, experts and expert witnesses, and litigation expenses.

References in this paragraph to City or Consultant, include their officers, employees, agents, and subcontractors.

7.0 CONTRACT PROVISIONS

7.01 Ownership of Work. All documents furnished to Consultant by City and all documents or reports and supportive data prepared by Consultant under this Agreement are owned and become the property of the City upon their creation and shall be given to City immediately upon demand and at the completion of Consultant's services at no additional cost to City. Deliverables are identified in the Scope-of-Work, Attachment "A". All documents produced by Consultant shall be furnished to City in digital format and hardcopy. Consultant shall produce the digital format, using software and media approved by City.

7.02 Non-Disclosure of City data. In the course of performing IT consulting services to City, Consultant may have access to data maintained on the City's computer systems. While information in the City's system may be subject to disclosure under the California Public Records Act or other laws, there are numerous exemptions to public disclosure, including City data about individuals and businesses. For this reason, the City must have strict control over the disclosure of any information on its computer systems. To insure that Consultant will not disclose information it may access in the course of performing consulting services to the City ("City data"), Consultant agrees that it will not disclose City data and will only use any such data to perform its consulting services for City. Consultant represents, warrants, and covenants that it:

- A. Shall process, use, maintain and disclose City data only as necessary to perform its consulting services under this Agreement and only in accordance with this Agreement;
- B. Shall not disclose any City data to any third party (including to the subject of such information) or any employee or agent of Consultant ("Representative") who does not have a need the City data to perform Consultant's services under this Agreement;
- C. Shall implement and maintain an appropriate written information security program, the terms of which shall meet or exceed the requirements for financial institutions under state and federal laws, to (i) ensure the security and confidentiality of all information provided by City, including City data (collectively, the "information"), (ii) protect against any threats or hazards to the security or integrity of information, including unlawful destruction or

accidental loss, alteration and any other form of unlawful processing, and (iii) prevent unauthorized access to, use, or disclosure of the information;

- D. Shall immediately notify City in writing if it becomes aware of (i) any disclosure or use of any information by it or its Representatives in breach of this Section, (ii) any disclosure of any information to it or its Representatives where the purpose of such disclosure is not known, (iii) any request for disclosure or inquiry regarding the information from a third party, and (iv) any change in applicable law that is likely to have a substantial adverse effect on Vendor's ability to comply with this Article;
- E. Shall cooperate with City in the event of litigation or a regulatory inquiry concerning the information and shall abide by the advice of City with regard to the processing of such information;
- F. At City's direction at any time, and in any event upon any termination or expiration of the Agreement, shall immediately return to City any or all information and shall destroy all records of such information;
- G. Upon completion of any Task Order, shall return to City any or all applicable information which is not necessary for the performance of another pending Task Order or destroy all records of such information; and

City reserves the right to review Consultant's policies and procedures used to maintain the security and confidentiality of information, including auditing Consultant and its Representatives concerning such policies and procedures. The provisions of this Section, are in addition to, and shall not limit any other confidentiality obligations under the Agreement. Vendor also agrees that it shall cause its Representatives to act in accordance with this Section 7.2.

- 7.03 Governing Law. Consultant shall comply with the laws and regulations of the United States, the State of California, and all local governments having jurisdiction over this Agreement. The interpretation and enforcement of this Agreement shall be governed by California law and any action arising under or in connection with this Agreement must be filed in a Court of competent jurisdiction in Mendocino County.
- 7.04 Entire Agreement. This Agreement plus its Attachment(s) and executed Amendments set forth the entire understanding between the parties.
- 7.05 Severability. If any term of this Agreement is held invalid by a court of competent jurisdiction, the remainder of this Agreement shall remain in effect.
- 7.06 Modification. No modification of this Agreement is valid unless made with the agreement of both parties in writing.
- 7.07 Assignment. Consultant's services are considered unique and personal. Consultant shall not assign, transfer, or sub-contract its interest or obligation under all or any portion of this Agreement without City's prior written consent.
- 7.08 Waiver. No waiver of a breach of any covenant, term, or condition of this Agreement shall be a waiver of any other or subsequent breach of the same or any other covenant, term or condition or a waiver of the covenant, term or condition itself.

7.09 Termination. This Agreement may only be terminated by either party: 1) for breach of the Agreement; 2) because funds are no longer available to pay Consultant for services provided under this Agreement; 3) City has abandoned and does not wish to complete the project for which Consultant was retained; or 4) by either party without cause on thirty (30) days prior written notice to the other party. A party shall notify the other party of any alleged breach of the Agreement and of the action required to cure the breach. If the breaching party fails to cure the breach within the time specified in the notice, the contract shall be terminated as of that time. If terminated for lack of funds, abandonment of the project or without cause, the contract shall terminate as provided in the notice. City shall pay the Consultant only for services performed and expenses incurred as of the effective termination date. In such event, as a condition to payment, Consultant shall provide to City all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Consultant under this Agreement. Consultant shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder, subject to off-set for any direct or consequential damages City may incur as a result of Consultant's breach of contract.

8.0 Duplicate Originals. This Agreement may be executed in duplicate originals, each bearing the original signature of the parties. When so signed, each such document shall be admissible in administrative or judicial proceedings as proof of the terms of the Agreement between the parties.

8.01 NOTICES

Any notice given under this Agreement shall be in writing and deemed given when personally delivered or deposited in the mail (certified or registered) addressed to the parties as follows:

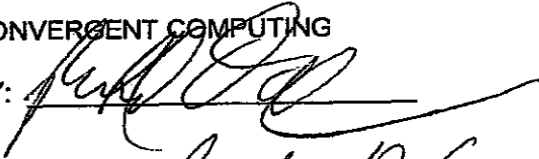
CITY OF UKIAH
ATTN: SAGE SANGIACOMO
300 SEMINARY AVENUE
UKIAH, CALIFORNIA 95482-5400

CONVERGENT COMPUTING
ATTN: RAND MORIMOTO
1450 MARIA LANE, SUITE 400
WALNUT CREEK, CA 94596

9.0 SIGNATURES

IN WITNESS WHEREOF, the parties have executed this Agreement the Effective Date:

CONVERGENT COMPUTING

BY: 

PRINT NAME: Richard Dorfman

10-7-13
Date

94-3018069
IRS IDN Number

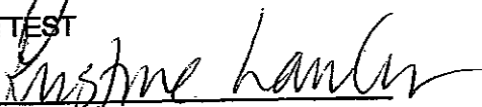
CITY OF UKIAH

BY: 

CITY MANAGER

10/8/13
Date

ATTEST


CITY CLERK

10/9/13
Date

ATTACHMENT "A" - SCOPE OF WORK

Consultant is to provide information technology services consisting of software, system, and/or network maintenance support on an as needed basis.

Consultant is to provide emergency assistance on a best effort basis to troubleshoot and resolve unexpected network, system, and software issues.

ATTACHMENT "B" – FEE SCHEDULE

- All work performed will be billable on a time and materials basis, at a hourly rate of \$225, during normal business hours between 8a and 5p, Monday thru Friday.
- In the event afterhours and/or weekend/holiday work is required, the premium hourly rate at 1.5x (or \$337.50) will be applied
- Should onsite travel be involved, travel and lodging expenses may be required. However, the arrangement discussed is to provide assistance via remote-access.

COU 1314-128-A1

CITY OF UKIAH
AMENDMENT NO. 1
TO
PROFESSIONAL SERVICES CONTRACT 1314128
BETWEEN
CONVERGENT COMPUTING and THE CITY OF UKIAH

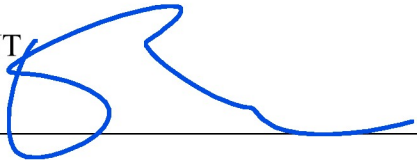
This Amendment No. 1, entered on March 26, 2025 revises the Agreement for Professional services dated September 5, 2013 between the City of Ukiah and Convergent Computing for consulting services relating to IT Services.

This Amendment No. 1 adds Cyber Security Services to the Scope of Work provided and revises the Fee Schedule to an hourly rate of \$250 per hour.

Except as expressly amended by this Amendment, all other terms remain unchanged and in full force and effect.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AMENDMENT ON THE EFFECTIVE DATE:

CONSULTANT

BY: DATE: March 27, 2025PRINT NAME: Rand Morimoto

CITY OF UKIAH

BY: DATE: 04/08/2025

SAGE SANGIACOMO, CITY MANAGER

ATTEST

BY: DATE: 04/08/2025BY: Kristine Lawler (Apr 8, 2025 16:24 PDT)
KRISTINE LAWLER, CITY CLERK

City of Ukiah – Cybersecurity Roadmap Partnership

Why this matters

• Increasing cybersecurity threats targeting municipalities • CCO assessment identified critical gaps and industry best practices • Consulting memo reinforced roadmap approach and long-term engagement • SharePoint protections and governance updates included in scope

Focus Areas

• Identity Security – Stronger account protections, MFA, privilege management • Device Security – Endpoint protection, encryption, mobile management • Application Security – Microsoft 365 safeguards, SharePoint & Teams security • Network Security – Firewall upgrades, Wi-Fi security, architecture resiliency • Data Security – Backup hardening, ransomware resilience, DLP implementation

Fiscal Impact (Priority Efforts)

Area	Cost Range
Identity	\$24k–\$36k
Device	\$24k–\$36k
Application	\$12k–\$18k
Network	\$12k–\$18k
Data	\$12k–\$18k
Total	\$84k–\$126k

Recommendation

Authorize partnership with CCO to begin implementing priority cybersecurity roadmap efforts, including SharePoint protections, with phased execution and budgeting for recommended future enhancements.



AGENDA SUMMARY REPORT

SUBJECT: Notification to Council of a Billing Error that Affected the Retention Amount on the Kirby Construction Company Contract for Specification No 24-04, Electric Service Center Tenant Improvements and Fire Damage Repair.

DEPARTMENT: Electric Utility

PREPARED BY: Diann Lucchetti, Administrative Secretary

PRESENTER: Cindy Sauers, Electric Utility Director

ATTACHMENTS:

None

Summary: Notify City Council of a billing error that affected the retention amount on the Kirby Construction Company contract.

Background: On July 16, 2025, Council approved the Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No 24-01 and final payment of the 5% retention to Kirby Construction Company. The 35-day waiting period for the retention ended on August 28, 2025.

Discussion: While processing the retention invoices, Staff discovered an error on Kirby's calculations which equated to a \$12,573.51 underpayment. Staff confirmed the discrepancy and is notifying Council of a revised retention amount of \$135,520.60.

Recommended Action: Approve notification from Staff and approve final payment of the 5% retention to Kirby Construction Company.

BUDGET AMENDMENT REQUIRED: No

CURRENT BUDGET AMOUNT: 80126100.80220.17023; \$3,000,000

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: Series 2022 Electric Revenue Bonds and Insurance Proceeds

REVENUE: No GRANT: No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: 2324-169

COORDINATED WITH: Cindy Sauers, Electric Utility Director

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): N/A

Approved: 
Sage Sangiacomo, City Manager



AGENDA SUMMARY REPORT

SUBJECT: Consideration of Adoption of Resolution Appointing Chantal Simonpietri to the Public Spaces Commission.

DEPARTMENT: City Clerk

PREPARED BY: Araceli Sandoval, Deputy City Clerk

PRESENTER: Kristine Lawler, City Clerk

ATTACHMENTS:

1. Chantal Simonpietri Application
2. Resolution 2014-48
3. Simonpietri Nomination - Orozco
4. Proposed Resolution

Summary: Council will consider adopting a resolution appointing Chantal Simonpietri to the Public Spaces Commission.

Background: The Public Spaces Commission (PSC) provides advice and recommendations to Council regarding 1) City-owned properties that are open to the public, free of charge, such as parks, paths, and public right-of-ways; 2) creeks within the city limits; 3) open spaces within and outside of the city limits that are undeveloped and conserved or in consideration of future conservation; 4) and the recreational uses of these spaces. On February 19, 2025, Council adopted an ordinance amending the number of members in the Public Spaces Commission from 7 members to 5 members; provided that a majority, i.e. three, of the five Commission members must reside within the City limits.

Discussion: The Public Spaces Commission (PSC) currently has two vacancies: one for an At Large, City or County Resident, and one for an At Large, City Resident. The City or County Resident position has been noticed since February 2025 due to a resignation, and the City Resident position has been noticed since September 9, 2025, also due to a resignation. The City Clerk's Office has received an application from Chantal Simonpietri (Attachment 1) that meets the residency requirements, with no other applications having been received.

Per Resolution 2014-48 (Attachment 2), the right to nominate a candidate shall rotate among the Councilmembers. Councilmember Orozco, being the next in line to make a nomination to the PSC, has submitted a nomination (Attachment 3) for Chantal Simonpietri's appointment.

Ms. Simonpietri is unable to attend the meeting due to a prior commitment; however, if Council has any questions, this item may be pulled from the agenda and continued to the next meeting.

Staff recommends Council adopt the resolution (Attachment 4) appointing Chantal Simonpietri to the At-large City Resident position on the Public Spaces Commission, term to expire on September 17, 2028.

Recommended Action: Adopt Resolution appointing Chantal Simonpietri to the Public Spaces Commission.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: No **GRANT:** No

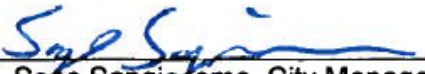
PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: N/A

STRATEGIC PLAN (SP): SP 3C - Instill diversity, equity, and inclusion as essential core elements of policymaking, accountability, and delivery of City services.

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved: 
Sage Sangiacomo, City Manager



Office of the City Clerk

300 Seminary Avenue
Ukiah, CA 95482

APPLICATION FOR PUBLIC SPACES COMMISSION

NAME:	Chantal	Simonpietri
	First	Last
STREET ADDRESS:	[REDACTED]	
CITY:	Ukiah	STATE: CA ZIP CODE: 95482
PHONE: Home	[REDACTED]	Work/Cell [REDACTED] Email: [REDACTED]

Please attach a resume or description outlining your educational background and/or experience, and complete all questions on this application (If there is not enough room in the field, please use an attached page. Incumbents that are applying for reappointment need not fill out the questionnaire.)

1. Why are you applying to serve on the City of Ukiah's Public Spaces Commission?

I've considered it in the past but had too limited bandwidth. As the issues I'm interested in being involved with persist, and I see there's still a vacancy in the Commission, I'm reaching out to apply and bring my education and experience into the mix.

2. What is your understanding of the purpose, role and responsibility of the Public Spaces Commission?

The Public Spaces Commission provides input to the City Council on matters related to the management, use, maintenance, planning, and decision making in regards to the City owned Public Spaces.

3. How do you believe your own skills, experience, expertise and perspectives will be beneficial to the work of the Public Spaces Commission?

I work professionally as an environmental consultant, with my private consulting firm Mainspring Consulting. I'm educated as a geologist, hydrologist, and environmental and water lawyer, with additional training in conflict resolution and collaborative governance. I've lived in the Ukiah area for 20 years and use the public spaces on a weekly basis.

4. What do you believe is the single most important public spaces issue facing our community? And why??

Adequate, modern, facilities to meet the needs of the community now and looking forward a few decades. The public spaces are minimal, with below standard services, and cater to the same general populace (families with children, playgrounds). There is limited to no access to nature or wildlands across the array of spaces. Also the unhoused situation creates a feeling of lack of safety and mess.

5. In your opinion what type or types of public spaces development or recreational and golf programs should the City encourage?

I support all spaces being multi-use and finding ways to use what we have for multiple purposes. I'd like more places with access to nature and wildlands, restored streamside riparian areas, offering a diversity of habitat. And, I'd like proper bathroom facilities at Oak Manor Park, as well as a set of publically available pickleball courts and associated facilities (drinking water, shade, tables, benches).

6. In your opinion what type or types of public spaces development or recreational and golf programs should the City discourage?

As I said above, I appreciate a diversity of sites and uses. The dominant use we have is grassy spaces with playgrounds and picnic facilities. Designing for a single use should be discouraged, ie. allow the golf course to be used for multiple purposes besides ball golf.

7. What kind of ideal community do you envision for Ukiah?

A community that is walkable, with easy access to nature, with park areas connected through the town traveling east to west and north to south, even pocket parks everywhere possible.

8. Are you interested in serving on any other Boards or Commissions of the City? If so, which one(s)?

Possibly.

9. Diversity, Equity, and Inclusion are priorities for the City of Ukiah. Tell us about your experience working with diverse groups and how you would work to create an environment that is welcoming, inclusive, and increasingly diverse?

I currently work with clients that are economically and culturally diverse, with many clients that not English speaking. The public spaces should meet the needs of the entire broad breadth of our community, including all economic, cultural, and age sectors.

10. Is there anything you would like to add?

Thanks for your consideration.

I declare under penalty of perjury under the laws of the State of California that I am a resident of the City of Ukiah, California, registered to vote in the City of Ukiah, and that all information stated in this application and all attached pages are true, correct and complete. I also acknowledge that if appointed, I will be subject to filing a Form 700 Statement of Economic Interest, and I have read and understand the City's Code of Ethics and Conduct.*

Signature of Applicant

9/5/25

Date

***Form 700** – Every elected official and public employee who makes or influences governmental decisions is required by State Law to submit a Statement of Economic Interest, also known as the Form 700. The Form 700 provides transparency and ensures accountability in two ways:

1. It provides necessary information to the public about an official's personal financial interests to ensure that officials are making decisions in the best interest of the public and not enhancing their personal finances.
2. It serves as a reminder to the public official of potential conflicts of interest so the official can abstain from making or participating in governmental decisions that are deemed conflicts of interest.

Mainspring Consulting is a female-owned and staffed, environmental regulatory compliance consulting company, based in Ukiah, CA. We offer a range of adaptive services tailored to fit each situation and need. Areas of expertise include water source, storage, and use optimization for arid regions, environmental permitting and ongoing compliance, land management for fire preparedness and post-fire restoration, environmental conflict resolution, collaborative governance, project management and professional team building, grant development and implementation, and general environmental compliance including the California Environmental Quality Act, riparian and appropriative water rights, CA Department of Fish and Wildlife permitting, and State and Regional Water Board permit program compliance.

RELEVANT PROFESSIONAL EXPERIENCE

- Niche expert on permitting and policy at the intersection of water and cannabis issues
- Project manager on 50+ simultaneous cannabis-related environmental permitting projects annually
- Author of 75+ Lake and Streambed Alteration Agreement notifications and related documents
- Water rights agent for 30+ domestic and cannabis-related riparian and appropriative rights
- Author and Project Manager of multiple watershed restoration planning and implementation grants

Environmental Policy Advisor, Mendocino Cannabis Alliance – 2021 to present. Policy advisor to cannabis business stakeholder trade organization with mission to serve and promote Mendocino County's world-renowned cannabis cultivators and businesses through sustainable economic development, education, and public policy initiatives.

Environmental Permitting and Compliance Consultant, Harvest Logic and Streamline Solutions, Ukiah, CA, 2017-2020 - Founding Partner of consultancy specializing in state and local cannabis licensing and state environmental agency permitting and compliance.

Program Director, Village Ecosystems, Ukiah, CA, 2016-2017 - Managed compliance consultation and services program, offering on-site inspections and consultations to aid commercial cannabis cultivators with shift to legitimate, permitted cultivation at the County and state level.

Paralegal, Law Office of Tanya Ridino, Ukiah, CA, 2009-2011 - Provided paralegal services to family law and dependency practice, including drafting legal memoranda, client communication, and agency coordination.

Education Director, Real Goods Solar Living Institute, Hopland, CA 2004-2006 – Director of education programs at sustainable living, permaculture, and renewable energy education and demonstration site.

Lobbyist and Independent Environmental Counsel, Vermont Natural Resources Council, Montpelier, VT, 2002-2004 - Advocated for environmental and sustainable development interests to state legislature.

Law Clerk, Vermont State Water Resources Board, Montpelier, VT, 2002-2004 - Authored state water board decisions, attended board meetings, researched relevant law and policy.

Researcher, National Center for Atmospheric Research, Environmental and Societal Impacts Group, Boulder, CO, 1998-1999 - Co-authored analysis of potential socioeconomic impacts of a category 5 hurricane making landfall in developed coastal area of United States.

Water Resources Division Intern, United States Geological Survey, Lakewood, CO, 1998 - Participated in National Water Quality Assessment of the Upper Colorado River Basin.

EDUCATION

- Juris Doctor, Environmental and Water Law focus, Vermont Law School, South Royalton, VT (2003)
- Bachelor of Arts in Geology, Western State College of Colorado, Gunnison, CO (1998)
- Graduate Certificate in Collaborative Governance, Portland State University, OR (2025)

RESOLUTION NO. 2014-48

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING PROCEDURE FOR FILLING VACANCIES ON CITY BOARDS AND COMMISSIONS

WHEREAS,

1. Ukiah City Code 1151 and 1161 provides that members of the Design Review Board and Planning Commission shall be appointed in accordance with a procedure established by resolution of the City Council; and
2. The City Council has determined that using a uniform procedure will insure fair and consistent treatment of candidates and Councilmembers; and
3. The City Council has determined to amend its procedures for appointing board members and commissioners.

NOW, THEREFORE, BE IT RESOLVED, that the Ukiah City Council hereby adopts the following amended procedure for filling vacancies on the City's boards and commissions:

- The City Council shall develop a pool of applicants for vacancies by posting a general advertisement once a year, preferably in June before the June 30th expirations, in a newspaper of general circulation in Ukiah, and by noticing available vacancies as they occur on the city's website, in the library, on popular social media sites (Facebook and Twitter), and in the glass cabinet located in front of the Civic Center subject to Government Code Section 54970-54974. Applications shall be received, reviewed for eligibility, and brought forward as they are submitted.
- If more applications have been received than position(s) available, the City Council will conduct interviews for the position.
- All applications received shall be kept on file in the City Clerk's office for a period of one (1) year.
- Incumbents seeking reappointment for an additional term only need to complete the contact portion of the application and not the questionnaire.
- City staff seeking appointment in their capacity as City staff and elected officials seeking appointment in their capacity as elected officials do not need to fill out an application.
- **Nominations:** Each Councilmember, including the Mayor, shall have the right to nominate a candidate from the available pool of applicants.
 - a. The right to place a name before the City Council for consideration shall rotate among the Councilmembers based on seniority with the most senior Councilmember going first.
 - b. The Council shall vote on nominations presented.
 - c. A councilmember's right to make a nomination shall rotate to the next most senior Councilmember, once that Councilmember's nomination is approved by a majority vote of the Councilmembers present, or the Councilmember agrees to pass the nomination to the next most senior Councilmember.
 - d. This process for rotating the right to nominate candidates among Councilmembers to fill vacancies shall be followed for each separate board or commission.

1. The City Clerk shall maintain a record of the last Councilmember to make a nomination for each board or commission.
2. When another vacancy must be filled on that board or commission, the next Councilmember in line to make a nomination for that board or commission shall make the first nomination to fill the vacancy.

PASSED AND ADOPTED this 17th day of December, 2014, by the following roll call vote:

AYES: Councilmembers Mulheren, Doble, Brown, Scalmanini, and Mayor Crane
NOES: None
ABSTAIN: None
ABSENT: None


Douglas F. Crane, Mayor

ATTEST:


Kristine Lawler, City Clerk

MEMORANDUM



Date: September 8, 2025
To: Araceli Sandoval, Deputy City Clerk
From: Juan Orozco, Councilmember
Subject: Nomination for Chantal Simonpietri

I nominate Chantal Simonpietri for the Public Spaces Commission as an At-large City Representative, to be considered at the September 17, 2015, Regular City Council meeting.

Signature 
Juan Orozco (Sep 8, 2025 17:42:42 PDT)

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH APPOINTING CHANTAL SIMONPIETRI TO THE PUBLIC SPACES COMMISSION**

WHEREAS, the Public Spaces Commission (PSC) provides advice and recommendations to Council regarding 1) City-owned properties that are open to the public, free of charge, such as parks, paths, and public right-of-ways; 2) creeks within the city limits; 3) open spaces within and outside of the city limits that are undeveloped and conserved or in consideration of future conservation; 4) and the recreational uses of these spaces; and

WHEREAS, the PSC currently has two vacancies: one for an At Large, City or County Resident, and one for an At Large, City Resident; and

WHEREAS, the City Clerk's office received an application from Chantal Simonpietri that meets the residency requirements, with no other applications having been received; and

WHEREAS, Councilmember Orozco, being the next in line to make a nomination to the PSC, has nominated Ms. Simonpietri for appointment.

NOW, THEREFORE, BE IT RESOLVED, that the Ukiah City Council approve the nomination, submitted per procedures outlined in Resolution 2014-48, and does hereby appoint the following person and term:

BOARD/ COMMISSION	NAME	POSITION	NOMINATED BY COUNCILMEMBER	TERM EXPIRATION
Public Spaces Commission	Chantal Simonpietri	At-large City Resident	Councilmember Orozco	September 17, 2028

PASSED AND ADOPTED this 17th day of September, 2025, by the following roll call vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Consideration of Additional Funding for the Proposed Ukiah Electric Vehicle Charging Stations Project, and Approve Corresponding Budget Amendment.

DEPARTMENT: Electric Utility

PREPARED BY: Cindy Sauers, Electric Utility Director

PRESENTER: Cindy Sauers, Electric Utility Director

ATTACHMENTS:

1. CEC-ChargePoint_REV Grant Participation Agreement_Ukiah_(7-30-2024)_Final
2. Contribution Cost Amendment

Summary: The City Council will consider additional funding for the Ukiah Electric Vehicle Charging Stations Project, and possibly approve corresponding budget amendment.

Background: In June 2022, the Ukiah City Council approved a resolution endorsing the declaration of a climate emergency and outlined actions to be taken to restore a safe climate. One action outlined in the resolution is the continued support and expansion of EV charging throughout Ukiah. ChargePoint, one of the leading companies providing charging stations across the United States, was the recipient of the California Energy Commission (CEC)'s REV grant and reached out to the Electric Utility to discuss the possibility of working together to install charging stations in Ukiah. The grant seeks to provide charging access in rural areas, especially those designated as disadvantaged or low-income by the Department of Housing and Community Development. Certain areas of Ukiah fall within the low-income definition provided and make Ukiah an ideal location to increase charging opportunities. The Utility worked with ChargePoint to identify areas that would best benefit the City's EV owners.

On September 4, 2024, Council approved an agreement (Attachment 1) with ChargePoint to use the grant funding and install three charging locations: City Parking Lot C (north of the Library), Low Gap Park, and Anton Stadium. The hub site, Lot C, will have four DC (Direct Current) fast charging ports and two level 2 ports, the two spoke locations will have six level 2 charging ports. The total cost of the project was estimated at \$1,410,294 in 2024, with \$714,746 being grant funding and the remaining \$695,548 matched by the Utility.

Discussion: ChargePoint solicited Requests for Proposals (RFPs) for the development of each site and engaged extensively with five vendors, including two local contractors. Throughout the process, they responded to numerous vendor questions and extended the bid deadline three times at the request of a local contractor. Ultimately, only one proposal was received, submitted by Lowe North Construction, a construction company that ChargePoint has worked extensively with in other locations. ChargePoint then entered into negotiations with the bidder to reduce costs as much as possible.

Despite these efforts, the final bid exceeded initial expectations. Working within the constraints of the grant, the company allocated the additional expenses accordingly. The project estimate increased by \$187,732, with \$114,777 covered by the grant and the remaining \$72,502 requiring a match from the Utility. See Attachment 2 for the Contribution Cost Amendment outlining the changes to the project costs. The Utility's match increased from \$695,548.15 to \$768,502.55 and the grant reimbursement increased from \$714,746.79 to \$829,524.64. Roughly 70% of the increase is a result of increased material and construction costs and the remaining 30% is due to California legislation requiring testing of EV charging equipment by the California

Division of Measurement Standards (CDMS).

For several years, the Utility has evaluated potential locations for EV charging stations and the associated development costs. One public charging station was successfully installed at the City's Lot A, on Oak Street; however, all additional projects have been cost-prohibitive due to the extensive site improvements required to meet ADA code requirements. The grant funding reduces the cost of the development by paying for the bulk of the site and utility improvements. The Utility's cost share includes the purchase of chargers, annual maintenance fees, required testing, and certain construction expenses that are ineligible for grant funding.

Originally, the Utility anticipated a 7-year payback on the cost of the two spoke sites, based on revenue trends from the existing chargers in Lot A. With the additional project costs, the revised payback period is now estimated at approximately 9 years. For the hub site, the payback period will depend on the new DC fast-charging rate currently under development. That rate is being designed with the installation cost in mind, ensuring that the hub site generates sufficient revenue to cover its expenses over time. While the exact payback period for the hub site cannot be confirmed until the rate is finalized, it is expected to be structured in a way that supports long-term cost recovery.

Staff is requesting Council approval to increase the funding allocated for this project to include the additional \$72,502 and maintain 10% contingency for the total project cost, and authorize the corresponding budget amendment.

Recommended Action: Approve additional funding for the Ukiah Electric Vehicle Charging Stations Project, and approve corresponding budget amendment, in the amount of \$72,502.

BUDGET AMENDMENT REQUIRED: Yes

CURRENT BUDGET AMOUNT: 80126100.80100.18423; \$750,000

PROPOSED BUDGET AMOUNT: 80126100.80100.18423; \$845,355

FINANCING SOURCE: 807 Cap and Trade Revenues

REVENUE: Yes / No GRANT: Yes / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.:

COORDINATED WITH:

STRATEGIC PLAN (SP): SP 2A - Continue the development and maintenance of a comprehensive Capital Improvement Plan that considers the climate impacts of those improvements.

CLIMATE INITIATIVES (CI): 2c – Encourage clean vehicles when active transportation is not feasible.

GENERAL PLAN ELEMENTS (GP): GP-A3 - Mobility Element

Approved: 
Sage Sangiacomo, City Manager

EV GRANT IMPLEMENTATION FRAMEWORK AGREEMENT

This EV Grant Implementation Framework Agreement (this “Agreement”) is entered into as of _____ (the “Effective Date”) by and between ChargePoint, Inc., a Delaware corporation (“ChargePoint”), with its principal place of business at 240 East Hacienda Avenue, Campbell, CA 95008 and The City of Ukiah, acting through its electric utility (“Operator”), with its principal place of business at 300 Seminary Avenue, Ukiah, CA 95482 (each of ChargePoint and Operator, individually a “Party” and collectively, the “Parties”).

WHEREAS, Operator is interested in engaging with ChargePoint for various opportunities in select electric vehicle charging markets.

WHEREAS, ChargePoint has developed the ChargePoint Network and other products for its Charging Stations and has participated in various state and federal incentive programs resulting in awarded State Grants.

WHEREAS, pursuant to the State Grants, ChargePoint has certain rights in respect of one or more Sites.

WHEREAS, Operator is the City of Ukiah electric utility which furnishes electricity within the City of Ukiah. Operator will furnish electricity to the charging stations developed under this Agreement with maintenance and repair thereof performed pursuant to the Assure Plan. **NOW, THEREFORE**, in consideration of the premises and the agreements contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, the Parties agree as follows:

1. **DEFINITIONS.** The following capitalized terms shall have the meanings ascribed herein.

“Affiliate” means an entity directly or indirectly controlling, controlled by, or under common control with the entity specified. “Control”, for purposes of this definition, means direct or indirect ownership or control of fifty percent (50%) or more of the voting interests of the subject entity.

“Applicable Programs” means any applicable State Grants and any statute, law, regulation or rule incorporated into and made a part of any State Grant.

“Assure Plan” means a subscription to ChargePoint’s Assure Warranty Program, as such may be updated, modified and amended from time to time, and the terms and conditions are found here: <https://www.chargepoint.com/en-gb/legal/support-services>.

“Charging Equipment” means all Charging Stations and any electrical and subsurface equipment, including switchgears, conduits, bollard, wheel stops, signage or similar materials installed for the operation of any Charging Station, as set forth on Exhibit D. Charging Equipment specifically excludes any materials or equipment owned, installed or maintained by any third party, such as a Site Host or local utility.

“ChargePoint Network” means the cloud-based SaaS network of Charging Stations hosted and managed by ChargePoint.

“Charging Stations(s)” means ChargePoint electric vehicle charging stations and the component parts thereof.

“Cloud Plan” means a subscription to ChargePoint’s Master Services and Subscription Agreement for the ChargePoint Network, as such may be updated, modified and amended from time to time.

“Commencement of Construction” means the start of material on-site work at a Site for the purpose of installation of Charging Stations.

“EV” means electric vehicle.

“Grant Implementation Costs” means all costs, fees or expenses necessary to comply with any rules, regulations, terms, conditions or obligations imposed by a State Grant or State Authority at each Site.

“Intellectual Property Rights” means, on a worldwide basis, any and all intellectual property, industrial or proprietary rights (by whatever name or term known or designated) and all intellectual property relating thereto arising under law, equity, contract, license or otherwise, whether or not filed, perfected, registered or recorded and whether now or later existing, filed, issued or acquired, including, without limitation: (a) works of authorship, copyrights, moral rights and mask-works; (b) trademarks, trade names, service marks and service names, corporate names, business names, brand names, trade dress, logos, mottos, Internet domain names and certification marks, and all goodwill associated with any of the foregoing items; (c) trade secrets under applicable law and other rights in know-how and confidential or proprietary information; (d) patents, inventions, designs, algorithms and other industrial property rights; (e) all tangible and/or intangible embodiments of any of the foregoing, in any form and in any media now know or hereafter devised; (f) all registrations, applications, renewals, reissues, re-examinations, extensions, continuations, continuations-in-part, provisionals, divisions or reissues thereof now or hereafter in force throughout the universe (including, without limitation, rights in any of the foregoing); and (g) any and all lawsuits, actions, proceeding and claims (whether past, present or future) arising from or related to any of the foregoing.

“Program Funds” means funds provided by State Grants.

“Site” means, individually and collectively, as the context may require, each location as set forth on **Exhibit A-1**.

“Site Host” means the real property owner or lessee of a Site if other than the Operator.

“State Authority” means any state or regulatory department, commission, institution, entity, service utility, board, agency or authority, each having jurisdiction over a State Grant.

“State Grants” means those EV infrastructure deployment grants, including all addendums, amendments, exhibits and attachments thereto, issued by an applicable State Authority to ChargePoint.

“Substantial Completion” means the completion of all permitted work pursuant to any applicable local municipality’s inspection process in connection with a Site.

2. STATE GRANT ADMINISTRATION.

2.1 State Grants. In connection with the development of the Sites, ChargePoint has received or may be eligible to receive, Program Funds from State Authorities pursuant to State Grants. State Grants applicable to each Site are set forth on **Exhibit A-1** and State Grants are referenced in **Exhibit A-2**. All of the terms, conditions and requirements of the State Grants are fully incorporated herein by reference and shall, in all cases with respect to the subject matter therein apply to the Operator equally as if Operator was a recipient under the State Grant, as applicable.

2.2 State Grants. Operator acknowledges and agrees that ChargePoint is the prime recipient of the State Grants and Program Funds from the State Authorities and that ChargePoint will oversee all administration of the State Grants. ChargePoint will be solely responsible for all State Grant administrative activities, including but not limited to (i) negotiating and executing any agreement and any required amendments to the State Grants with any State Authority, as applicable, (ii) being solely responsible for all communications with the applicable State Authority in respect of the State Grants (iii), overseeing State Grant implementation to ensure all applicable scopes of work are completed and conducted in compliance with the applicable State Grant terms and conditions, (iv) producing or collecting deliverables required by the State Grants and providing all such deliverables to the applicable State Authorities, (v) seeking reimbursement or refunds for any Program

Reimbursement Amounts and (vi) participating and facilitating audits as may be required from time to time by the State Authorities. Operator covenants and agrees to provide any and all information, documentation, or support as reasonably requested by ChargePoint which is within the possession of or reasonably accessible to Operator in connection with the administration of any State Grant during the term when any State Grant imposes any obligations on ChargePoint with respect to the Sites (the “Commitment Period”)

3. APPLICABLE PROGRAM COMPLIANCE.

3.1 Applicable Programs. Operator acknowledges and agrees that its ownership, control and operation of Charging Equipment at each Site is subject in all respects to the terms, conditions and requirements of each Applicable Program. Operator acknowledges and agrees it has received, reviewed and is familiar with all the terms, conditions and requirements of each State Grant and Operator shall own, control and operate any Charging Equipment at each Site in conformance with all obligations under such State Grants and shall not take any action in violation, breach or in contravention of any terms of the Applicable Programs.

3.2 Restrictions. Operator acknowledges and agrees that pursuant to the restrictions imposed on the Sites by the Applicable Programs, Operator may be limited or restricted from using the Charging Stations or Sites other than in full compliance with the Applicable Programs, including, but not limited to, restrictions that may relate to branding requirements; construction and Site Design requirements; public accessibility standards or applicable laws; Charging Stations performance requirements, including pricing fees or charges for the use of the Charging Equipment, EV standards or EV connector types; and any other requirement, deliverable or term as required by any State Authority or the Applicable Programs. Operator acknowledges and agrees that Operator shall be exclusively responsible for all Grant Implementation Costs necessary for it to comply with any rules, regulations, terms, conditions or obligations imposed by any Applicable Program or State Authority at each Site. Attached hereto as **Exhibit B** is a non-exclusive list of restrictions, covenants and obligations that may be imposed on Operator in connection with the operation of the Charging Equipment and use of the Sites pursuant to the Applicable Programs.

3.3 Cloud and Assure Plans. Operator covenants and agrees that it shall separately execute, purchase and maintain a Cloud Plan and Assure Plan for all Charging Stations maintained at any Sites during the applicable Commitment Period. Operator further covenants and agrees to maintain all Charging Stations at each Site on the ChargePoint Network during the applicable Commitment Period for each State Grant. Operator acknowledges and agrees any Cloud Plans or Assure Plans obtained and subject to this Section 3.3 may not be canceled or terminated for any reason, with or without cause.

3.4 Operations. In addition to any obligations imposed on Operator pursuant to the State Grants, Operator covenants and agrees to keep all Charging Stations installed at any Site in a manner and in locations that make each available for access and use by the general public twenty-four (24) hours per day, seven (7) days a week and in all respect in full compliance with each applicable State Grant.

3.5 Data Sharing. Operator acknowledges and agrees that, as a condition to the State Grants, ChargePoint may be obligated to share information about, or generated from, the Charging Stations, the Sites or maintained by ChargePoint on the ChargePoint Network related to the Charging Stations (the “Charging Information”) with the federal government or State Authorities as required or requested pursuant to the terms of the State Grants. Operator hereby acknowledges and agrees that ChargePoint is authorized to share, provide and transfer any and all Charging Information required by an Applicable Program or as requested by any federal government authority or State Authority. Operator further acknowledges and agrees that ChargePoint is not responsible for, nor has any authority with respect to, the privacy practices or use of the Charging Information by any of the federal government or any State Authority, including whether any such Charging Information may be made public. ChargePoint retains all Intellectual Property Rights to any Charging Information as set forth in any applicable Cloud Plan. Attached hereto as **Exhibit C** is a non-exclusive list of data elements that may be included in the Charging Information and shared with the federal government or State Authorities pursuant to the Applicable Programs as such may be amended or updated from time to time.

3.6 Insurance. Operator shall obtain and maintain in full force and effect all insurance coverages required to be maintained by ChargePoint under any of the State Grants during the Commitment Period as if Operator was a recipient of the State Grants. Each of the aforementioned insurance policies shall contain a provision providing a waiver of the insurer's right to subrogation. Each Party hereby waives all rights of subrogation against the other with respect to any insurance policies maintained pursuant to this Section 3.6.

3.7 Ownership. Operator covenants and agrees to own and maintain the Charging Equipment at each applicable Site for the entire Commitment Period. Operator covenants not to sell, remove, assign, or otherwise transfer the Charging Equipment to any third-party during the Commitment Period without prior written consent of (i) ChargePoint and (ii) each State Authority, as applicable. Pursuant to the provisions of this Agreement, the State Grants, and any other applicable agreement, if Operator attempts to remove, assign, sell or otherwise transfers the Charging Equipment to any third-party prior to the end of the Commitment Period in violation of the preceding sentence, in addition to any other rights or remedies in favor of ChargePoint hereunder, Operator acknowledged and agrees it shall be liable to ChargePoint for the remedies as set forth in Section 12.4.1.

4. TRANSFER OF CHARGING STATIONS; PAYMENT OBLIGATIONS; REIMBURSEMENT

4.1 Transfer, Shipment and Delivery. ChargePoint shall deliver the Charging Stations to each Site at the address identified on **Exhibit A-1** and Operator shall pay for the cost of all shipment, delivery and applicable taxes with respect to the Charging Stations. Ownership, title and risk of loss to the Charging Stations shall pass to Operator upon activation of the Charging Stations on the ChargePoint Network. ChargePoint shall promptly ensure that new equipment is promptly acquired to replace any equipment lost or damaged prior to activation, except to the extent arising from the negligence or willful misconduct of Operator. If Operator desires expedited shipment terms, Operator shall be responsible for all additional delivery charges.

4.2 Payment Schedule. Operator shall pay ChargePoint the Contribution Costs in the amounts and pursuant to the schedule provided on **Exhibit D**. “Contribution Costs” means the Equipment Installation Costs (as defined below), the costs of the Charging Stations, applicable the Cloud Plan subscriptions and Assure Plan subscription, and any other costs associated with the shipment, installation and operation of the Charging Equipment. All Contribution Costs, including, without limitation, any increase to such Contribution Costs as a result of approved Change Orders pursuant to Section 5.4, shall be due and payable as set forth on **Exhibit D** and in any event, net thirty (30) days from the date of invoice by ChargePoint.

4.3 Reimbursement; Timely Payment. Operator acknowledges and agrees that State Grants may reimburse the Program Reimbursement Amounts (as defined below) and that ChargePoint shall be eligible to retain all Program Reimbursement Amounts and Operator shall have no right or claim to any Program Reimbursement Amounts. Operator further acknowledges that its failure to pay ChargePoint, in accordance with this Section 4, shall constitute an “Event of Default” of this Agreement, provided however, ChargePoint may, at its sole option upon ten (10) calendar days’ prior written notice to Operator, cover a portion of the Operator’s Contribution Costs and Operator shall be fully liable to ChargePoint for such Contribution Costs, plus an additional 10% of such Contribution Costs in addition to any collection fees, including attorneys’ fees, which shall be due and payable net thirty (30) days from the date of invoice by ChargePoint.

5. INSTALLATION

5.1 Site Development Management. Operator hereby selects and appoints ChargePoint as Operator’s development manager for all purposes in connection with the installation of the Charging Equipment at each applicable Site (“Development Management”). ChargePoint will select, contract with and manage a general contractor with an A- General Engineering Contractor or B- General Building Contractor license in good standing from the Contractors State Licensing Board (“Installer”), who may use properly licensed specialty subcontractors to install the Charging Equipment at each applicable Site. The Installer shall perform and/or

hire vendors and subcontractors to perform (i) all installation and electrical make-ready of the Charging Equipment, (ii) Site preparation, trenching, repaving, and landscaping directly related to the installation of the Charging Equipment, including any and all permitting requirements (iii) installation of any signage, and (iv) any other construction, preparation or installation work necessary or related to any of the foregoing, (collectively “Equipment Installation”). The Equipment Installation is a Public Project under Labor Code Section 1720. The Installer shall also perform and/or hire vendors and subcontractors to perform Site Design, engineering and permitting services. Unless specifically agreed to in writing by ChargePoint in advance, only the Installer may perform Equipment Installation. ChargePoint shall enter into any agreements as necessary with the Installer in connection with the Equipment Installation, provided that, subject to Operator’s reasonable review (which shall not exceed five (5) business days), such contracts shall include, at minimum, commercially reasonable warranty, indemnification, and insurance obligations, as applicable. Upon Operator’s written request, ChargePoint shall provide a copy of the executed agreement with Installer. Operator acknowledges and agrees that all Equipment Installation shall be performed pursuant to and subject to the State Grant requirements and ChargePoint shall exclusively manage and direct the Installer so that the Equipment Installation is performed in accordance with the timing, requirements and conditions of the applicable State Grants. A non-exclusive list of ChargePoint responsibilities under this Agreement in connection with the Development Management is set forth on **Exhibit E**. Operator acknowledges and agrees that ChargePoint’s obligation with respect to the Development Management is to use commercially reasonable efforts to cause the Equipment Installation to be completed in accordance with the Site Design and within the time schedule set forth in the Agreement with the Installer, but that ChargePoint shall not be deemed to have given any guaranty or warranty that any of the foregoing can be accomplished and shall not be liable for the errors, omissions or breaches of contract by any other party providing goods or services in connection with the Equipment Installation, including the Installer. ChargePoint, however, shall promptly notify Operator when it reasonably anticipates that the Equipment Installation cannot be completed. Operator shall allow utility upgrades on site, including individual metering of the Charging Stations. Operator agrees to reasonably cooperate in the facilitation of the provision of electricity and any other utilities necessary to operate the Charging Equipment, including by granting (for property owned by Operator) or consenting to the granting of (for property leased by Operator) appropriate easements to local utility providers within 30 days of ChargePoint’s request. ChargePoint does not have any responsibility or liability for interruption, curtailment, failure, or defect in the supply or character of utilities furnished to facilities or equipment located in any Site.

5.2 Installation Costs. The State Grant shall provide a set amount intended to reimburse the eligible costs associated with the Charging Equipment, Site Design, and selected Equipment Installation costs (the “Equipment Installation Costs”) as set forth on **Exhibit D** (the “Program Reimbursement Amounts”). ChargePoint shall provide estimated Site Design costs and Equipment Installation Costs as set forth on **Exhibit D** as of the Effective Date, provided however, such estimated Site Design costs and Equipment Installation Costs may be subject to change as a result of final bids received by Installers and approved Change Orders in accordance with Section 5.4. Notwithstanding the estimated Contribution Costs as set forth on Exhibit D, Operator shall be responsible for all Charging Equipment, Site Design costs, Equipment Installation Costs and Grant Implementation Costs in excess of the Program Reimbursement Amounts, in accordance with Sections 4.2 and 4.3, and all such amounts shall be due and payable by Operator within thirty (30) days of demand thereof.

5.3 Site Design Review. ChargePoint may provide Operator with designs, drawings, plans, specifications, reports, bids, proposals, construction schedules and other information related to the development of applicable Sites (collectively, the “Site Designs”). To the extent Operator is requested or required to review or approve any Site Designs by ChargePoint, Operator shall provide such review or approval within a commercially reasonable time, which in no event shall be longer than ten (10) business days after request by ChargePoint. Failure by Operator to comment or approve any Site Designs in accordance with the preceding sentence shall be deemed approval of such Site Designs as submitted by ChargePoint. Further, Operator covenants and agrees to provide commercially reasonable assistance, and any and all information Operator may have or obtain in

connection with the Sites, for the purpose of the Site Designs or Equipment Installation and ChargePoint shall be entitled to rely upon the accuracy and completeness of any such information provided. ChargePoint shall be responsible for scheduling all Equipment Installation activities. Such Equipment Installation schedule shall be binding unless Operator provides at least twenty (20) business days' prior written notice of any need to reschedule. ChargePoint will use commercially reasonable efforts to provide at least two (2) business days' prior written notice of any need to reschedule such Equipment Installation. Operator and ChargePoint shall work together in good faith to enable timely Equipment Installation schedules and meet all applicable State Grant performance or installation requirements and associated deadlines. Operator acknowledges and agrees that the Site Design and Equipment Installation is subject to the terms of the State Grants and Operator shall be liable to maintain each Site in full conformance with the terms of the State Grants in addition to all applicable federal, state, and local electrical and building codes for construction, including applicable accessibility requirements.

5.4 Change Orders. After commencing Equipment Installation, the Installer may identify a need for additions, deletions, or revisions required for successful Equipment Installation. Such changes shall be provided as a written change order ("Change Order"), itemized and signed by Installer. If such Change Order increases or decreases the Equipment Installation Costs beyond the applicable Program Reimbursement Amount, ChargePoint shall submit such Change Order to Operator and if Operator does not reject such Change Order within five (5) business days thereof, such Change Order will be deemed approved by Operator. If Operator rejects a Change Order, such rejection shall indicate with specificity the reasons for rejection, provided however, if such Change Order is required in order to comply with any applicable State Grant requirement, such Change Order may not be rejected by Operator. ChargePoint and Operator agree to confer in good faith to review any rejected Change Order to resolve any bona fide dispute within ten (10) calendar days after such Change Order is rejected by Operator. Pursuant to Section 5.2, Operator shall pay for all approved, non-rejected or required Change Order costs in addition to previously agreed Equipment Installation Costs.

5.5 Site Access. Operator shall provide or secure for ChargePoint, the Installer and their respective representatives and subcontractors a right of entry and access at the Sites as needed by ChargePoint and the Installer and necessary in order for ChargePoint and the Installer to perform Equipment Installation and any related tasks under this Agreement. In the event that the Operator does not own or control an applicable Site, Operator shall obtain permission from the Site Host for a right of entry as needed by ChargePoint, the Installer, and their respective representatives and subcontractors to perform the work under this Agreement.

6. INTELLECTUAL PROPERTY. Notwithstanding anything to the contrary herein, as between ChargePoint and Operator, ChargePoint shall retain all ownership of all Intellectual Property Rights in the Charging Stations. Except for the rights expressly granted herein, nothing in this Agreement shall convey, license, or otherwise transfer any right, title, or interest in any Intellectual Property Rights or other proprietary rights held by ChargePoint or Operator. Each Party reserves all rights not specifically granted to the other Party under this Agreement, and no licenses or other rights to Intellectual Property Rights are granted by implication, estoppel or otherwise.

7. CONFIDENTIALITY.

7.1 Non-Disclosure. The Parties acknowledge that they will have access to certain non-public information and materials concerning each other's business and products that are confidential and of substantial value to the disclosing Party (the "Confidential Information"), which would be impaired if such Confidential Information was disclosed to third parties. The Parties agree that the terms and conditions of this Agreement are the Confidential Information of each Party. Each Party agrees that it will not use such Confidential Information of the other Party, except in performance of this Agreement or disclose such Confidential Information to third parties except as required by applicable law, including the California Public Records Act, and provided the receiving Party uses reasonable efforts to give the disclosing Party reasonable notice of such required disclosure. Each Party will also take every reasonable precaution to protect the Confidential

Information of the other Party. For purposes of the foregoing obligations, Confidential Information does not include information that (i) was rightfully known to the receiving Party prior to its receipt, (ii) is or becomes publicly available without breach of this Agreement or wrongful act of the receiving Party, (iii) is received by receiving Party without an obligation of confidentiality and without breach of this Agreement, or (iv) is developed independently by the receiving Party without using Confidential Information of the disclosing Party. The Parties acknowledge and agree that this Section 7 shall not apply to any information, including Charging Information, this Agreement or any Exhibit hereto, that ChargePoint is obligated to requested to provide to any third party, including any State Authorities, pursuant to the State Grants.

8. REPRESENTATONS AND WARRANTIES. Each Party hereby represents and warrants to the other that:

8.1 Each Party is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation and has all requisite power and authority to execute, deliver and perform its obligations under this Agreement.

8.2 The execution, delivery and performance by each Party of this Agreement have been duly authorized by all necessary corporate action, and do not and will not require any further consents or approvals which have not been obtained, or materially violate any provision of any applicable law or the State Grant.

8.3 There are no material actions or proceedings pending or, to each Party's knowledge, threatened before any court or agency or any material outstanding unsatisfied judgment that will have a material adverse effect on such Party's ability to perform its obligations hereunder.

8.4 Neither Party is insolvent, has not filed or had filed against it a petition in bankruptcy, has not made an assignment for the benefit of creditors or otherwise had a receiver or trustee appointed with respect to its properties or affairs and has not incurred any obligations or liabilities, contingent or otherwise, which would cause it to become insolvent.

8.5 This Agreement is the legal, valid and binding obligation of each Party, enforceable against such party in accordance with its terms and applicable law except as enforceability may be limited by bankruptcy, reorganization, insolvency, moratorium and other laws affecting creditors' rights in general and except to the extent that the availability of equitable remedies is subject to the discretion of the court before which any proceeding therefor may be brought.

9. INDEMNIFICATION.

9.1 Indemnification. Each Party and its Affiliates (the "Indemnifying Party") hereby agrees to indemnify, defend and hold harmless the other Party and its Affiliates and its and their respective employees, officers, directors, and agents (the "Indemnified Parties") from and against any and all third party claims, actions, proceedings, costs, liabilities, damages, losses and expenses (including, but not limited to, reasonable outside attorneys' fees and costs) (collectively, "Claims") suffered or incurred by such Indemnified Parties resulting from or arising out of (i) any breach of any representation or covenant contained in this Agreement by the Indemnifying Party, (ii) any act or omissions by an Indemnifying Party in connection with, relating to, or resulting from any violation or breach of the terms, conditions rules or regulations of any Applicable Program, (iii) any fines or penalties arising from a violation of applicable laws or any Applicable Program by the Indemnifying Party, (iv) grossly negligent or tortious acts, errors, or omissions by the Indemnifying Party, or (v) intentional acts or willful misconduct, in each case by or of the Indemnifying Party, excepting only such Claims to the extent caused by the willful misconduct or gross negligence of the Indemnified Party;

9.2 Indemnification Procedure. An Indemnified Party will promptly notify in writing the Indemnifying Party of the Claim, provided that a Indemnified Party's failure to promptly notify the Indemnifying Party shall not release, waive or otherwise affect the Indemnifying Party of its indemnification obligations hereunder,

except to the extent that such failure prevents the Indemnifying Party from defending the Claim. The Indemnifying Party, on behalf of the Indemnified Party, shall have the right to elect to assume control over the defense of the Claim with counsel reasonably acceptable to the Indemnified Party, provided that the costs and expenses incurred by the Indemnified Party in connection with such defense (including reasonable outside attorneys' fees, other professionals' and experts' fees and court or arbitration costs) shall be paid by the Indemnifying Party. In the event of a conflict of interest between the Indemnifying Party and the Indemnified Party as to the defense of any Claim for which indemnification is required hereunder, the Indemnified Party may engage counsel of its own choice to participate in the defense of such Claim (which counsel shall be reasonably satisfactory to the Indemnifying Party) at the expense of the Indemnifying Party. The Indemnifying Party shall not, without the Indemnified Party's prior written consent, settle a Claim if such settlement arises from or is part of any criminal action, suit or proceeding or contains a stipulation to or admission or acknowledgment of, any liability or wrongdoing (whether in contract, tort or otherwise) on the part of the Indemnified Party. Each such settlement shall include a full and unconditional release of the Indemnified Party. If an Indemnifying Party fails to promptly defend the Claim, the Indemnified Party shall have the right to defend the Claim at the Indemnifying Party's sole cost and expense.

10. EXCLUSION OF CONSEQUENTIAL AND RELATED DAMAGES; LIMITATION OF LIABILITY.

(A) REGARDLESS OF WHETHER ANY REMEDY SET FORTH HEREIN FAILS OF ITS ESSENTIAL PURPOSE OR OTHERWISE, IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY LOST REVENUE OR PROFIT, LOST OR DAMAGED DATA, BUSINESS INTERRUPTION, LOSS OF CAPITAL, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY OR WHETHER ARISING OUT OF THE USE OF OR INABILITY TO USE THE CHARGEPOINT NETWORK, ANY CHARGEPOINT SERVICES, ABILITY TO USE ANY SITE, THIS AGREEMENT, A STATE GRANT OR RECEIPT OF RIGHTS OR OTHERWISE OR BASED ON ANY EXPRESSED, IMPLIED OR CLAIMED WARRANTIES NOT SPECIFICALLY SET FORTH IN THIS AGREEMENT.

(B) THE PARTIES ACKNOWLEDGE AND AGREE THAT:

I. THE AGGREGATE TOTAL LIABILITY FOR CHARGEPOINT HEREUNDER, INCLUDING ANY INDEMNIFICATION OBLIGATIONS AND DEFENSE OF ANY AND ALL CLAIMS ON THE PART OF CHARGEPOINT, SHALL NOT EXCEED THE VALUE OF ALL AMOUNTS PAID (OR PAYABLE) TO CHARGEPOINT BY OPERATOR UNDER THIS AGREEMENT IN THE PREVIOUS TWELVE MONTHS FROM THE DATE THAT A CAUSE OF ACTION GIVING RISE TO SUCH LIABILITY ARISES, PROVIDED, HOWEVER, THAT THE FOREGOING LIMITATION OF LIABILITY SHALL NOT APPLY TO ANY LIABILITY OF CHARGEPOINT DUE TO ANY FRAUD, GROSS NEGLIGENCE, OR WILLFUL MISCONDUCT ON THE PART OF CHARGEPOINT

II. THE AGGREGATE TOTAL LIABILITY FOR OPERATOR HEREUNDER, INCLUDING INDEMNIFICATION OBLIGATIONS AND DEFENSE OF ANY AND ALL CLAIMS ON THE PART OF OPERATOR, SHALL NOT EXCEED THE CONTRIBUTION COST REQUIRED OF OPERATOR UNDER EXHIBIT D, PROVIDED THAT THE FOREGOING LIMITATION OF LIABILITY SHALL NOT APPLY TO ANY LIABILITY OF OPERATOR DUE TO (A) ANY FRAUD, GROSS NEGLIGENCE, OR WILLFUL MISCONDUCT ON THE PART OF OPERATOR, AND (B) ANY PROGRAM PENALTY (AS DEFINED IN SECTION 12.4.1).

11. DISCLAIMER.

EXCEPT FOR THOSE TASKS REQUIRED UNDER TASK 4 IN THE CALIFORNIA ENERGY COMMISSION GRANT #ARV-22-007 SCOPE OF WORK THAT ARE PERFORMED BY CHARGEPOINT UNDER THE ASSURE PLAN AND EXCLUDED FROM THE FOLLOWING DISCLAIMERS, CHARGEPOINT MAKES NO WARRANTY WITH RESPECT TO THE PERFORMANCE OF THE CHARGING STATIONS, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE. CHARGEPOINT EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT OF THIRD-PARTY RIGHTS BY THE CHARGING STATIONS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. CHARGEPOINT DOES NOT WARRANT UNINTERRUPTED OR ERROR FREE OPERATION OF CHARGING STATIONS.

ALL SERVICES PROVIDED HEREUNDER ARE ON AN “AS IS” AND “AS AVAILABLE” BASIS. NO OTHER CHARGEPOINT REPRESENTATION, WARRANTY, PROMISE OR GUARANTEE OF ANY KIND, EITHER EXPRESS OR IMPLIED, IS INCLUDED OR INTENDED BY THIS AGREEMENT OR IN ANY PROPOSAL, CONTRACT, REPORT, STATEMENT OF WORK OR OTHER DOCUMENT IN CONNECTION WITH THE SERVICES THAT IS PROVIDED BY CHARGEPOINT, AND CHARGEPOINT SPECIFICALLY DISCLAIMS ALL OTHER SUCH WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE OR USE AND COMPLIANCE WITH ANY FEDERAL, STATE, AND LOCAL ENVIRONMENTAL PROTECTION, POLLUTION, HEALTH AND SAFETY OR LAND USE LAWS, RULES, REGULATIONS, ORDINANCES, ORDERS, REQUIREMENTS OR COMMON LAW AND REGULATIONS PROMULGATED UNDER ANY OF THE FOREGOING.

12. TERM AND TERMINATION.

12.1 Term. This Agreement shall commence on the Effective Date and continue until the end of the last Commitment Period. Notwithstanding the foregoing however, in the event the State Grant applicable to a Site is cancelled, terminated, or the State Authority fails to approve any Site for inclusion or participation in any State Grant, all provisions in this Agreement related to administration of such State Grants as set forth in Section 2 and Section 3 for such Site shall immediately be cancelled and terminated with respect to such Site, *provided however*, that Operator shall remain obligated for all payments to ChargePoint upon request of any amounts due and owing under this Agreement with respect to such Site and Operator shall remain liable for payment in full of any such amounts notwithstanding anything to the contrary herein.

12.2 Termination for Breach. “Event of Default” shall mean any of the following: (i) monetary default under this Agreement by Operator, which default is not cured within 5 days after written notice by ChargePoint, (ii) non-monetary default under this Agreement by Operator, which default is not cured within 30 days after written notice by ChargePoint, and (iii) any breach of any provision of this Agreement by Operator which is a violation of applicable laws. Upon the occurrence of an Event of Default, then, in addition to any other applicable remedies hereunder, ChargePoint shall have the right upon notice to immediately terminate this Agreement upon written notice to Operator, without any further obligation or liability. Failure of ChargePoint to immediately terminate this Agreement upon the occurrence of an Event of Default shall not constitute a waiver of ChargePoint’s right to terminate. If Operator repeatedly breaches any of its obligations under this Agreement, whether or not (i) the effect thereof could reasonably be considered material or (ii) such repeated breaches were cured, then ChargePoint may, by giving notice to Operator, terminate this Agreement as of the termination date specified in such notice without regard to any applicable cure period.

12.3 Termination for Insolvency. At the option of the non-insolvent Party, this Agreement shall terminate immediately if the other Party: (a) admits in writing its insolvency or its inability to pay its debts generally as they become due; (b) files a petition or answer seeking reorganization or liquidation under any provision of any federal or state bankruptcy or insolvency laws; (c) makes an assignment for the benefit of creditors; (d) consents to the appointment of a receiver for all or any substantial part of its assets; (e) has a petition in

bankruptcy filed against it, and such petition is not dismissed within ninety (90) days after the filing thereof; (f) has an order, judgment or decree appointing a receiver for all or any substantial part of such Party's assets entered against it by a court of competent jurisdiction; or (g) has all or any substantial part of its assets become subject to the custody or control of a court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors and such custody or control is not terminated or stayed within sixty (60) days from the date of the court's assumption of such custody or control. The occurrence of any of the events described in the immediately preceding sentence shall also constitute a material breach of this Agreement.

12.4 Remedies.

12.4.1 In the event of any termination of this Agreement pursuant to Section 12.2 or 12.3, prior to the occurrence of the end of the last Commitment Period, in addition to any other remedies available to ChargePoint hereunder, including any remedies as set forth in Section 9, Operator shall be obligated to pay to ChargePoint an amount equal to the aggregate of the Program Reimbursement Amounts for each Site still subject to any Commitment Period (the "Program Penalty"). The Parties agree the Program Penalty is fair and reasonable, considering the damages that ChargePoint would sustain as a result of Operator's failure to adhere to the restrictions as set forth in Section 3, and the Program Penalty is agreed upon and fixed as liquidated damages, and not as a penalty, because of the difficulty of ascertaining the exact amount of damages that ChargePoint would sustain as the result of Operators breach of its obligations as set forth in Section 3. The application of any Program Penalty hereunder shall be assessed, determined and calculated on a Site-by-Site basis.

12.5 Survival. Those provisions dealing with Intellectual Property Rights, limitations of liability and disclaimers, governing law and those other provisions which by their nature or terms are intended to survive the termination of this Agreement will remain in full force and effect as between the Parties regardless of the termination of this Agreement. The termination of this Agreement will not relieve either Party of any liability under this Agreement that accrued before such termination.

13. GENERAL

13.1 Assignment. Neither Party may assign, delegate, or transfer this Agreement or any of its rights or duties hereunder, without the prior written consent of the other Party. Any attempted assignment or delegation in violation of this section shall be void. The provisions of this Agreement shall be binding upon and inure to the benefit of the Parties, their successors and permitted assigns. Notwithstanding the foregoing, either Party may assign its rights and duties hereunder in connection with a merger, acquisition, stock sale, or sale of all or substantially all of its assets (a "Change of Control"); *provided however*, the forgoing shall only apply to Operator in the event the third-party acquiring Operator in connection with any such Change of Control assumes, in writing, all the rights and obligations of Operator hereunder prior to the consummation of such Change of Control.

13.2 Counterparts. This Agreement may be executed in one or more counterparts, including by electronic signature or email delivery, each of which shall be deemed an original, but all of which, taken together, shall constitute but one and the samedocument.

13.3 Entire Agreement. This Agreement and the Exhibits constitute the entire agreement between the Parties regarding the subject matter hereof and supersedes and replaces any prior or contemporaneous agreements, understandings and negotiations regarding the same between the Parties and all past dealings or industry customs.

13.4 Force Majeure. "Force Majeure" means any act of God, fire, natural disaster, earthquake, accident, act of government, or an act that is beyond the reasonable control of either Party. Neither Party will be deemed in default of this Agreement to the extent that performance of its obligations or attempts to cure any breach

are delayed or prevented by reason of Force Majeure, provided that such Party gives the other Party written notice thereof promptly and, in any event, within thirty (30) days after discovery thereof and uses its best efforts continue to so perform or cure. In the event of Force Majeure, the time for performance or cure will be extended for a period equal to the duration of the Force Majeure.

13.5 **Governing Law.** This Agreement shall be governed by the laws of the State of California (other than its conflicts of law principles). The Parties hereby consent to the exclusive jurisdiction of and venue in the federal and/or state courts located in Sonoma County, California.

13.6 **Independent Contractors.** In performing their respective duties under this Agreement, each of the Parties will be operating as an independent contractor. Nothing contained herein will in any way constitute any association, partnership, or joint venture between the Parties, or be construed to evidence the intention of the Parties to establish any such relationship. Neither Party will have the power to bind the other Party or incur obligations on the other Party's behalf without the other Party's prior written consent.

13.7 **Notices.** Any required or permitted notices hereunder must be given in writing at the address of each Party set forth below, or to such other address as either Party may substitute by written notice to the other in the manner contemplated herein, by one of the following methods: hand delivery; registered, express, or certified mail, return receipt requested, postage prepaid; nationally-recognized private express courier; or electronic mail (e-mail) with confirmation of delivery (provided if sent by e-mail, such notice is also sent within one (1) Business day by one of the other methods set forth in this Section 13.7). Notices will be deemed given on the date received.

ChargePoint:

ChargePoint, Inc.
240 East Hacienda Ave.
Campbell, Ca. 95008-6918
Attn: General Counsel
Email: cplegal@chargepoint.com

Operator:

City of Ukiah, Electric Department
300 Seminary Ave.
Ukiah, CA. 954582
Attn: Sage Sangiacomo
Email: ssangiacomo@cityofukiah.com

13.8 **Severability.** If any term or provision of this Agreement is determined by a court of competent jurisdiction to be invalid or unenforceable, the remaining provisions of this Agreement shall remain in full force and effect.

13.9 **Modification and Waiver.** This Agreement may not be modified except by a written agreement signed by both ChargePoint and Operator. The failure of a Party to insist on strict performance of any provision of this Agreement does not constitute a waiver of, or estoppel against asserting, the right to require performance in the future. A waiver or estoppel given in any one instance does not constitute a waiver or estoppel with respect to a later obligation or breach.

13.10 **Headings.** The headings and captions are included for reference purposes only and do not affect the interpretation of the provisions hereof.

13.11 **Publicity.** Neither Party may make press releases or other public announcements relating to the subject matter of this Agreement without the prior written consent of the other Party.

13.12 **Drafting.** The Parties have participated jointly in the negotiation and drafting of this Agreement. If an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties, and no presumption or burden of proof shall arise favoring either Party by virtue of the authorship of any of the provisions of this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed as of the Effective Date by their duly authorized representatives.

CHARGEPOINT, INC.

THE CITY OF UKIAH

Signature: _____

Signature: _____

Name:

Name: Sage Sangiacomo

Title:

Title: City Manager

Date: _____

Date: _____



EXHIBIT A-1

State Grant	Site
California Energy Commission Rural Electric Vehicle Charging Grant #ARV-22-007 (“CEC REV Grant”)	Downtown Ukiah Parking Lot - 289 North Main Street, Ukiah, CA, 95482; APN: 002-192-01
CEC REV Grant	Anton Stadium - 558 Park Blvd, Ukiah, CA 95482
CEC REV Grant	Ukiah Skate Park - 1043 Low Gap Rd, Ukiah, CA 95482

EXHIBIT A-2

State Grants

Operator acknowledges and agrees it has received and reviewed the State Grant ARV-22-007 between ChargePoint, Inc. and California Energy Commission (“CEC”) made effective on 1/25/23 (“CEC REV Grant”).

EXHIBIT B

State Grant Specific Restrictions

B-1: State Grant Specific Restrictions for CEC REV Grant.

1. Commitment Period. Operator shall keep the Charging Equipment operational and connected to the ChargePoint Network, and make the Charging Equipment accessible to the public, clear of snow, and well-lit, twenty-four (24) hours a day for three hundred sixty-five (365) days a year, for a period of five (5) years commencing on the date the Charging Equipment is made available for charging.
2. Pricing Policy Operator acknowledges and agrees that the purpose of any fees charged by Operator for use of the Charging Equipment by drivers ("Charging Fees") is to make a reasonable rate of return on Operator's capital investment and operational expenses, including electricity costs. The Charging Fees shall be comparable to other public charging fees in the area near the applicable Site.

Publicity

1. Publicity. ChargePoint will collaborate with an outreach partner to host an event to educate the public about the new Charging Stations. If requested by ChargePoint, Operator shall allow one publicity event at a Site at a mutually-agreed upon date and time. ChargePoint may post social media announcements, blogs or images about the Charging Stations.
2. Publishing Charger Locations. Operator shall permit ChargePoint to display the Charging Equipment on its online map of publicly available charging locations. The location of the Charging Equipment may also be published on other online platforms such as Google Maps, Apple Maps, PlugShare and the U.S. Department of Energy's Alternative Fuels Data Center.

Weights and Measures Regulations

1. Charging Equipment Registration. Operator shall register Charging Equipment with the applicable county government within three (3) business days of Substantial Completion and ongoing as needed to meet the requirements of the California Business and Professional Code, Division 5 "Weights and Measures", Chapter 5.5, Article 2. Operator shall be responsible for any costs associated with such registration.

EXHIBIT C

Non-Exclusive List of Charging Information required by State Grants

C-1: Non-Exclusive List of Charging Information required by CEC REV Grant.

Data may be reported in aggregate or at the individual Site level, individual charging port level, individual charging session level, or other level of granularity.

- Site address
- Location type, such as street, parking lot, hotel, restaurant, or multi-unit housing
- Charging station identifier
- Charging port identifier
- Construction drawings
- Permits
- Final inspection cards
- As-built Drawings
- Utility interconnection information
- Easements
- Photographs of Site(s)
- Costs of Site acquisition, Charging Equipment acquisition and installation, distributed energy resource acquisition and installation, utility distribution and system upgrades, utility service
- Total cost per charger, the subsidy from the CEC per charger, federal subsidy per charger, utility subsidy per charger, and privately funded share per charger.
- Name and address of entities involved with installation, operation or maintenance of chargers; participation status of these entities in any state or local business opportunity certification programs
- Distributed energy resource installed capacity, in kW or kWh as appropriate, of asset by type (e.g., stationary battery, solar, etc.)
- Current and planned use of renewable energy at the facility
- Energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code Regulations.
- Data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.
- Other information created, shared or developed pursuant to the Installation of Charging Equipment
- Applicable price for charging, including but not limited to: electric utility tariff, electric vehicle service provider (EVSP) service contract, or public charger price.
- Number, type, date, and location of chargers installed

- Nameplate capacity of the installed equipment, in kW for chargers
- Number and type of outlets per charger
- Number of charging sessions
- Charging session start and end times
- Duration of charging session
- Duration of active charging
- Charging session error codes
- Energy dispensed (kWh)
- Peak or average power by port (kW)
- Pricing policies
- Payment method
- Driver fees collected
- Energy delivered back to grid or facility if a bidirectional charging use case (kWh)
- Normal operating hours and charging station port uptime, downtime, and explanations of variations
- Duration of each outage
- Maintenance and repair cost per charging station
- Types of vehicles using the charging equipment
- Connector types used
- Gallons of gasoline and/or diesel fuel displaced
- Greenhouse gas emissions reduced
- Quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Other data collected by ChargePoint's Network associated with usage of Charging Equipment

EXHIBIT D

Contribution Costs, Payment Schedule and Payment Terms

D-1: Contribution Costs, Payment Schedule and Payment Terms for CEC REV Grant.

Contribution Costs

Site Name:		Downtown Ukiah Parking Lot		
Site Address:		289 North Main Street, Ukiah, CA, 95482		
Cost Category	Itemized Costs	Quantity	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Charging Stations	EXPP-PL202X1BC-6A1S1-6A1S	1	\$46,900.00	\$0.00
Charging Stations	EXPP-PL202X1BC-6A1S1-2A3S1	1	\$44,500.00	\$0.00
Charging Stations	EXPP-PB1000-350A-PD	4	\$171,140.00	\$0.00
Charging Stations	EXPP-PM-40KW	20	\$100,000.00	\$100,000.00
Charging Stations	CP6021B-50A-L5.5	1	\$8,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$41,828.35	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-EXPP-5	4	\$27,000.00	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	2	\$4,320.00	\$0.00
Assure Plan	EXPP-PL2000-DUAL-ASSURE-5	2	\$19,900.00	\$0.00
Assure Plan	EXPP-BLOCK-ASSURE-5	4	\$116,000.00	\$0.00
Assure Plan	CP6000-ASSURE-5	1	\$1,700.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	1	\$1,400.00	\$0.00
Site Design	Site Design	1	\$0.00	\$17,000.00
Permits	Permits	1	\$2,500.00	\$0.00
Equipment Installation	Site Installation	1	\$0.00	\$289,720.60
Equipment Installation	Utility Interconnection	1	\$0.00	\$69,059.22
Equipment Installation	EXPP-PL2000-COMMISSIONING	2	\$1,700.00	\$0.00
Equipment Installation	EXPP-BLOCK-COMMISSIONING	4	\$6,800.00	\$0.00
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$595,625.35	\$475,779.82

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Site Name:	Anton Stadium
Site Address:	558 Park Blvd, Ukiah, CA 95482

Cost Category	Itemized Costs	Quantity	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Charging Stations	CP6021B-50A-L5.5	3	\$25,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$2,264.40	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	6	\$12,960.00	\$0.00
Assure Plan	CP6000-ASSURE-5	3	\$5,100.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	3	\$1,200.00	\$0.00
Site Design	Site Design	1	\$0.00	\$11,000.00
Permits	Permits	1	\$1,500.00	\$0.00
Equipment Installation	Site Installation	1	\$0.00	\$73,882.51
Equipment Installation	Utility Interconnection	1	\$0.00	\$41,756.51
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$49,961.40	\$126,639.02

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Site Name:		Ukiah Skate Park		
Site Address:		1043 Low Gap Rd, Ukiah, CA 95482		
Cost Category	Itemized Costs	Quantity	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Charging Stations	CP6021B-50A-L5.5	3	\$25,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$2,264.40	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	6	\$12,960.00	\$0.00
Assure Plan	CP6000-ASSURE-5	3	\$5,100.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	3	\$1,200.00	\$0.00
Site Design	Site Design	1	\$0.00	\$11,000.00
Permits	Permits	1	\$1,500.00	\$0.00
Equipment Installation	Site Installation	1	\$0.00	\$58,689.64

Equipment Installation	Utility Interconnection	1	\$0.00	\$42,638.31
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$49,961.40	\$112,327.95

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

	<u>Contribution Cost (\$)⁽²⁾</u>	<u>Program Reimbursement Amount (\$)⁽¹⁾</u>
Total for all Sites	\$695,548.15	\$714,746.79

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Payment Schedule and Terms

Cost Category	Invoice Date or Milestone	Payment Terms
Charging Stations	On an individual Site basis, 100% of Charging Station costs invoiced upon shipping.	Net 30 days from invoice
Cloud Plan	On an individual Site basis, 100% of Cloud Plan costs invoiced upon Substantial Completion.	Net 30 days from invoice
Assure Plan	On an individual Site basis, 100% of Assure Plan costs invoiced upon Substantial Completion.	Net 30 days from invoice
Miscellaneous	On an individual Site basis, 100% of Miscellaneous costs invoiced upon shipping	Net 30 days from invoice
Shipping	On an individual Site basis, 100% of Shipping costs invoiced upon shipping	Net 30 days from invoice
Site Design and Permits	Upon Effective Date, 100% of Site Design and Permit costs invoiced.	Net 30 days from invoice
Equipment Installation	On an individual Site basis, 80% of Equipment Installation Costs (including Site Installation, Utility Interconnection, Power Link Commissioning, Power Block Commissioning, and Station Activation) invoiced 45 days prior to Commencement of Construction. 20% of Equipment Installation Costs, plus/minus any change orders invoiced upon Substantial Completion.	Net 30 days from invoice

EXHIBIT E

List ChargePoint responsibilities for Development Management services

ChargePoint may perform one or more of the following activities in the role of Development Manager. ChargePoint may engage one or more qualified contractors to perform these tasks.

1. Utility Application

- a. Due Diligence: Determine whether the existing electrical service is sufficient, or a new electrical service is required, by comparing the charger Site layout and power needs with the facility electrical drawings and photos of electrical panels.
- b. New Service Support: If new or increased electrical service is required, engage the relevant utility to determine availability of electrical grid capacity, correct service voltage, potential lead times for utility design and new electrical service construction, estimated fees (if applicable), and contractor responsibilities.
- c. Utility Application: Assist the Operator in completing any utility application.

2. On-site Technical Assessment

- a. Site Due Diligence: Assessment of on-site electrical equipment including switchgear, utility service and point of interconnection.
- b. Map of Site Conditions: Draft a map of Site conditions including ADA and AHJ requirements, location of switchgear, utility service, interconnections, and transformers.
- c. Topographical map: Topographical heat map and slope readings of parking areas surrounding desired charging equipment locations where legally permissible.

3. Contractor Procurement

- a. Bid Package Development: Create standardized bid package including Construction Contract that contains provisions required by and requires the contractor to comply with prevailing wage requirements in Part 7 of the California Labor Code and implementing regulations, Site design requirements, equipment specifications and timelines. Invite qualified contractors to bid process.
- b. Award: Evaluate and compare bids from contractors.
- c. Pricing & Scope Negotiation: Negotiate pricing and scope for the final contract with the selected contractor ("Installer").
- d. Execute Installer Contract: Execute contract with the Installer, to include any relevant flow-down requirements from State Grants.

4. Design and Permitting

- a. Design: Prepare construction drawings, including electrical single-line diagram.
- b. Permitting: Confirm Installer secures necessary permits from AHJ.

5. Construction Management

- a. Project Coordination: Manage construction kick-off meeting; Regularly scheduled coordination meetings with contractor and Operator based on agreed-on cadence; Maintain running punch list of outstanding construction actions; Manage and track schedules; Manage issues which may impact the schedule or the budget; Track project costs; Analyze and evaluate Installer change orders
- b. Construction Management: Coordinate with Installer on procurement of long lead time equipment (switchgear, transformers, EVSE, etc.); Permitting Coordination with contractor; Virtual inspections with Installer/Operator-supplied images; On-site rough inspection visit before trench backfill and wiring, if needed; Manage logistics of ChargePoint Charging Station delivery; Coordinate with Installer to schedule utility upgrades and energization;

Project management installation and commissioning of ChargePoint charging stations;
Work with Installer to ensure final punch list is completed and project passes final
inspection by the AHJ; Coordination of close-out and transfer of Electric Vehicle Charging
Equipment ownership.

EXHIBIT A-1

State Grant	Site
California Energy Commission Rural Electric Vehicle Charging Grant #ARV-22-007 (“CEC REV Grant”)	Downtown Ukiah Parking Lot - 289 North Main Street, Ukiah, CA, 95482; APN: 002-192-01
CEC REV Grant	Anton Stadium - 558 Park Blvd, Ukiah, CA 95482
CEC REV Grant	Ukiah Skate Park - 1043 Low Gap Rd, Ukiah, CA 95482

EXHIBIT A-2

State Grants

Operator acknowledges and agrees it has received and reviewed the State Grant ARV-22-007 between ChargePoint, Inc. and California Energy Commission (“CEC”) made effective on 1/25/23 (“CEC REV Grant”).

EXHIBIT B

State Grant Specific Restrictions

B-1: State Grant Specific Restrictions for CEC REV Grant.

1. Commitment Period. Operator shall keep the Charging Equipment operational and connected to the ChargePoint Network, and make the Charging Equipment accessible to the public, clear of snow, and well-lit, twenty-four (24) hours a day for three hundred sixty-five (365) days a year, for a period of five (5) years commencing on the date the Charging Equipment is made available for charging.
2. Pricing Policy Operator acknowledges and agrees that the purpose of any fees charged by Operator for use of the Charging Equipment by drivers ("Charging Fees") is to make a reasonable rate of return on Operator's capital investment and operational expenses, including electricity costs. The Charging Fees shall be comparable to other public charging fees in the area near the applicable Site.

Publicity

1. Publicity. ChargePoint will collaborate with an outreach partner to host an event to educate the public about the new Charging Stations. If requested by ChargePoint, Operator shall allow one publicity event at a Site at a mutually-agreed upon date and time. ChargePoint may post social media announcements, blogs or images about the Charging Stations.
2. Publishing Charger Locations. Operator shall permit ChargePoint to display the Charging Equipment on its online map of publicly available charging locations. The location of the Charging Equipment may also be published on other online platforms such as Google Maps, Apple Maps, PlugShare and the U.S. Department of Energy's Alternative Fuels Data Center.

Weights and Measures Regulations

1. Charging Equipment Registration. Operator shall register Charging Equipment with the applicable county government within three (3) business days of Substantial Completion and ongoing as needed to meet the requirements of the California Business and Professional Code, Division 5 "Weights and Measures", Chapter 5.5, Article 2. Operator shall be responsible for any costs associated with such registration.

EXHIBIT C

Non-Exclusive List of Charging Information required by State Grants

C-1: Non-Exclusive List of Charging Information required by CEC REV Grant.

Data may be reported in aggregate or at the individual Site level, individual charging port level, individual charging session level, or other level of granularity.

- Site address
- Location type, such as street, parking lot, hotel, restaurant, or multi-unit housing
- Charging station identifier
- Charging port identifier
- Construction drawings
- Permits
- Final inspection cards
- As-built Drawings
- Utility interconnection information
- Easements
- Photographs of Site(s)
- Costs of Site acquisition, Charging Equipment acquisition and installation, distributed energy resource acquisition and installation, utility distribution and system upgrades, utility service
- Total cost per charger, the subsidy from the CEC per charger, federal subsidy per charger, utility subsidy per charger, and privately funded share per charger.
- Name and address of entities involved with installation, operation or maintenance of chargers; participation status of these entities in any state or local business opportunity certification programs
- Distributed energy resource installed capacity, in kW or kWh as appropriate, of asset by type (e.g., stationary battery, solar, etc.)
- Current and planned use of renewable energy at the facility
- Energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code Regulations.
- Data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.
- Other information created, shared or developed pursuant to the Installation of Charging Equipment
- Applicable price for charging, including but not limited to: electric utility tariff, electric vehicle service provider (EVSP) service contract, or public charger price.
- Number, type, date, and location of chargers installed
- Nameplate capacity of the installed equipment, in kW for chargers

- Number and type of outlets per charger
- Number of charging sessions
- Charging session start and end times
- Duration of charging session
- Duration of active charging
- Charging session error codes
- Energy dispensed (kWh)
- Peak or average power by port (kW)
- Pricing policies
- Payment method
- Driver fees collected
- Energy delivered back to grid or facility if a bidirectional charging use case (kWh)
- Normal operating hours and charging station port uptime, downtime, and explanations of variations
- Duration of each outage
- Maintenance and repair cost per charging station
- Types of vehicles using the charging equipment
- Connector types used
- Gallons of gasoline and/or diesel fuel displaced
- Greenhouse gas emissions reduced
- Quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Other data collected by ChargePoint's Network associated with usage of Charging Equipment

EXHIBIT D

Contribution Costs, Payment Schedule and Payment Terms

D-1: Contribution Costs, Payment Schedule and Payment Terms for CEC REV Grant.

Contribution Costs

Site Name:	Downtown Ukiah Parking Lot
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Site Address:		289 North Main Street, Ukiah, CA, 95482		
Cost Category	Itemized Costs	Quantity	Contribution Cost (\$) ⁽²⁾	Program Reimbursement Amount (\$) ⁽¹⁾
Charging Stations	EXPP-PL202X1BC-6A1S1-6A1S	1	\$46,900.00	\$0.00
Charging Stations	EXPP-PL202X1BC-6A1S1-2A3S1	1	\$44,500.00	\$0.00
Charging Stations	EXPP-PB1000-350A-PD	4	\$171,140.00	\$0.00
Charging Stations	EXPP-PM-40KW	20	\$100,000.00	\$100,000.00
Charging Stations	CP6021B-50A-L5.5	1	\$8,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$41,828.35	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-EXPP-5	4	\$27,000.00	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	2	\$4,320.00	\$0.00
Assure Plan	EXPP-PL2000-DUAL-ASSURE-5	2	\$19,900.00	\$0.00
Assure Plan	EXPP-BLOCK-ASSURE-5	4	\$116,000.00	\$0.00
Assure Plan	CP6000-ASSURE-5	1	\$1,700.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	1	\$1,400.00	\$0.00
Site Design	Site Design	1	\$0.00	\$8,000.00
Permits	Permits	1	\$7,500.00	\$0.00
Equipment Installation	Site Installation	1	\$22,954.40	\$289,720.60
Equipment Installation	Utility Interconnection	1	\$0.00	\$69,059.22
Equipment Installation	EXPP-PL2000-COMMISSIONING	2	\$1,700.00	\$0.00
Equipment Installation	EXPP-BLOCK-COMMISSIONING	4	\$6,800.00	\$0.00
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$623,579.75	\$466,779.82

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Site Name:	Anton Stadium
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Site Address:	558 Park Blvd, Ukiah, CA 95482			
Cost Category	Itemized Costs	Quantity	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Charging Stations	CP6021B-50A-L5.5	3	\$25,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$2,264.40	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	6	\$12,960.00	\$0.00
Assure Plan	CP6000-ASSURE-5	3	\$5,100.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	3	\$1,200.00	\$0.00
Site Design	Site Design	1	\$0.00	\$8,000.00
Permits	Permits	1	\$7,500.00	\$0.00
Equipment Installation	Site Installation	1	\$16,500.00	\$131,175.00
Equipment Installation	Utility Interconnection	1	\$0.00	\$41,756.51
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$72,461.40	\$180,931.51

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Site Name:	Ukiah Skate Park			
Site Address:	1043 Low Gap Rd, Ukiah, CA 95482			
Cost Category	Itemized Costs	Quantity	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Charging Stations	CP6021B-50A-L5.5	3	\$25,500.00	\$0.00
Charging Stations	Sales Tax on ChargePoint Hardware (8.88%) ⁽²⁾	N/A	\$2,264.40	\$0.00
Cloud Plan	CPCLD-ENTERPRISE-5	6	\$12,960.00	\$0.00
Assure Plan	CP6000-ASSURE-5	3	\$5,100.00	\$0.00
Miscellaneous	Signage	6	\$390.00	\$0.00
Shipping	Shipping	3	\$1,200.00	\$0.00
Site Design	Site Design	1	\$0.00	\$8,000.00
Permits	Permits	1	\$7,500.00	\$0.00
Equipment Installation	Site Installation	1	\$16,500.00	\$131,175.00

Equipment Installation	Utility Interconnection	1	\$0.00	\$42,638.31
Equipment Installation	CPSUPPORT-ACTIVE	3	\$1,047.00	\$0.00
Site Total	N/A	N/A	\$72,461.40	\$181,813.31

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

	Contribution Cost (\$)⁽²⁾	Program Reimbursement Amount (\$)⁽¹⁾
Total for all Sites	\$768,502.55	\$829,524.64

⁽¹⁾ Amounts are estimated and subject to repayment terms under the applicable State Grant.

⁽²⁾ Amounts are estimated and subject to change.

Payment Schedule and Terms

Cost Category	Invoice Date or Milestone	Payment Terms
Charging Stations	On an individual Site basis, 100% of Charging Station costs invoiced upon shipping.	Net 30 days from invoice
Cloud Plan	On an individual Site basis, 100% of Cloud Plan costs invoiced upon Substantial Completion.	Net 30 days from invoice
Assure Plan	On an individual Site basis, 100% of Assure Plan costs invoiced upon Substantial Completion.	Net 30 days from invoice
Miscellaneous	On an individual Site basis, 100% of Miscellaneous costs invoiced upon shipping	Net 30 days from invoice
Shipping	On an individual Site basis, 100% of Shipping costs invoiced upon shipping	Net 30 days from invoice
Site Design and Permits	Upon Effective Date, 100% of Site Design and Permit costs invoiced.	Net 30 days from invoice
Equipment Installation	On an individual Site basis, 80% of Equipment Installation Costs (including Site Installation, Utility Interconnection, Power Link Commissioning, Power Block Commissioning, and Station Activation) invoiced 45 days prior to Commencement of Construction. 20% of Equipment Installation Costs, plus/minus any change orders invoiced upon Substantial Completion.	Net 30 days from invoice

EXHIBIT E

List ChargePoint responsibilities for Development Management services

ChargePoint may perform one or more of the following activities in the role of Development Manager. ChargePoint may engage one or more qualified contractors to perform these tasks.

1. Utility Application

- a. Due Diligence: Determine whether the existing electrical service is sufficient, or a new electrical service is required, by comparing the charger Site layout and power needs with the facility electrical drawings and photos of electrical panels.
- b. New Service Support: If new or increased electrical service is required, engage the relevant utility to determine availability of electrical grid capacity, correct service voltage, potential lead times for utility design and new electrical service construction, estimated fees (if applicable), and contractor responsibilities.
- c. Utility Application: Assist the Operator in completing any utility application.

2. On-site Technical Assessment

- a. Site Due Diligence: Assessment of on-site electrical equipment including switchgear, utility service and point of interconnection.
- b. Map of Site Conditions: Draft a map of Site conditions including ADA and AHJ requirements, location of switchgear, utility service, interconnections, and transformers.
- c. Topographical map: Topographical heat map and slope readings of parking areas surrounding desired charging equipment locations where legally permissible.

3. Contractor Procurement

- a. Bid Package Development: Create standardized bid package including Construction Contract that contains provisions required by and requires the contractor to comply with prevailing wage requirements in Part 7 of the California Labor Code and implementing regulations, Site design requirements, equipment specifications and timelines. Invite qualified contractors to bid process.
- b. Award: Evaluate and compare bids from contractors.
- c. Pricing & Scope Negotiation: Negotiate pricing and scope for the final contract with the selected contractor (“Installer”).
- d. Execute Installer Contract: Execute contract with the Installer, to include any relevant flow-down requirements from State Grants.

4. Design and Permitting

- a. Design: Prepare construction drawings, including electrical single-line diagram.
- b. Permitting: Confirm Installer secures necessary permits from AHJ.

5. Construction Management

- a. Project Coordination: Manage construction kick-off meeting; Regularly scheduled coordination meetings with contractor and Operator based on agreed-on cadence; Maintain running punch list of outstanding construction actions; Manage and track schedules; Manage issues which may impact the schedule or the budget; Track project costs; Analyze and evaluate Installer change orders
- b. Construction Management: Coordinate with Installer on procurement of long lead time equipment (switchgear, transformers, EVSE, etc.); Permitting Coordination with contractor; Virtual inspections with Installer/Operator-supplied images; On-site rough inspection visit before trench backfill and wiring, if needed; Manage logistics of ChargePoint Charging Station delivery; Coordinate with Installer to schedule utility upgrades and energization; Project management installation and commissioning of ChargePoint charging stations;

Work with Installer to ensure final punch list is completed and project passes final inspection by the AHJ; Coordination of close-out and transfer of Electric Vehicle Charging Equipment ownership.



AGENDA SUMMARY REPORT

SUBJECT: Authorization for the City Manager to Negotiate and Execute an Amendment to the Contract for Medical Control Oversight with Dr. Brandon Begley, Extending the Contract to the End of the 25/26 Fiscal Year and an Increase in the Amount of \$51,600.

DEPARTMENT: Fire

PREPARED BY: Eric Singleton, Battalion Chief

PRESENTER: Doug Hutchison, Fire Chief

ATTACHMENTS:

1. Contract 2021-181 (1)tb

Summary: Council will consider authorizing the City Manager to negotiate and execute Amendment No. 3 to City of Ukiah Contract No. 2021-181, a Professional Services Agreement for Medical Direction Oversight with Dr. Brandon Begley, extending the contract to the end of the 25/26 Fiscal Year and increasing the compensation by \$51,600.

Background: All agencies in California that provide Advanced Life Support (ALS) services are required under Title 22 regulations to have a designated Medical Director for program oversight.

In 2021, the Ukiah Valley Fire Authority (UVFA) entered into a contract with Dr. Brandon Begley to provide these services, as approved by the Council (Attachment 1).

The contract with services commencing June 1, 2021, was subsequently amended for the FY 2024/25 term (Attachment #1), and now requires extension through FY 2025/26 while a new Request for Proposal (RFP) is developed to define the future scope of practice.

Discussion: In 2023, the Ukiah Valley Fire Authority implemented a new Continuous Quality Improvement (CQI) program to ensure the objective review of all Patient Care Reports (PCRs). Previously, these reviews were performed by on-duty team members as part of their assigned duties. However, increasing call volumes and task saturation from additional assigned duties led Staff to seek external support.

Dr. Begley, already under contract with UVFA for controlled substance authorization and limited on-call CQI oversight, now plays a more active role under the new program. As Medical Director, he reviews PCRs and engages directly with paramedics when issues arise.

Staff recommends extending the contract with Dr. Begley through the end of the 25/26 Fiscal Year to maintain continuity of review services and allow time to develop a new procurement for ongoing services that aligns with the current scope of duties. Funds will be made available through an internal budget transfer; therefore, a budget amendment is not needed.

Recommended Action: Authorize the City Manager to negotiate and execute an amendment to the contract for Medical Control Oversight with Dr. Brandon Begley, extending the contract to the end of the 25/26 Fiscal Year and increasing the contract by \$51,600.

BUDGET AMENDMENT REQUIRED: No (Internal budget transfer instead.)

CURRENT BUDGET AMOUNT: 71021100.52112 \$23,850; 71021150.52112 \$23,850

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: Ambulance Funds

REVENUE: No **GRANT:** No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: COU #2021-181

COORDINATED WITH: Myles Fisette, Purchasing Manager and Doug Hutchison, Fire Chief

STRATEGIC PLAN (SP):

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved:


Sage Sangiacomo, City Manager

AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES

This Agreement, made and entered into this 1st day of May 2021 ("Effective Date"), by and between CITY OF UKIAH, CALIFORNIA, hereinafter referred to as "City" and Dr. Brandon Begley, a sole proprietor [sole proprietorship, corporation, partnership, limited partnership, limited liability company, etc.] organized and in good standing under the laws of the state of California, hereinafter referred to as "Consultant".

RECITALS

This Agreement is predicated on the following facts:

- a. City requires consulting services related to Advanced Life Support Medical Direction.
- b. Consultant represents that it has the qualifications, skills, experience and properly licensed to provide these services, and is willing to provide them according to the terms of this Agreement.
- c. City and Consultant agree upon the Scope-of-Work and Work Schedule attached hereto as Attachment "A", describing contract provisions for the project and setting forth the completion dates for the various services to be provided pursuant to this Agreement.

TERMS OF AGREEMENT

1.0 DESCRIPTION OF PROJECT

- 1.1 The Project is described in detail in the attached Scope-of-Work (Attachment "A").

2.0 SCOPE OF SERVICES

- 2.1 As set forth in Attachment "A".
- 2.2 Additional Services. Additional services, if any, shall only proceed upon written agreement between City and Consultant. The written Agreement shall be in the form of an Amendment to this Agreement.

3.0 CONDUCT OF WORK

- 3.1 Time of Completion. Consultant shall commence performance of services as required by the Scope-of-Work upon receipt of a Notice to Proceed from City and shall complete such services beginning upon receipt of the Notice to Proceed. Consultant shall complete the work to the City's reasonable satisfaction, even if contract disputes arise or Consultant contends it is entitled to further compensation.

4.0 COMPENSATION FOR SERVICES

- 4.1 Basis for Compensation. For the performance of the professional services of this Agreement, Consultant shall be compensated on a time and expense basis not to exceed a guaranteed maximum dollar amount of \$10,000.00 per year. Consultant shall complete the Scope of Work for the not-to-exceed guaranteed maximum, even if actual time and expenses exceed that amount.

- 4.2 Changes. Should changes in compensation be required because of changes to the Scope-of-Work of this Agreement, the parties shall agree in writing to any changes in compensation. "Changes to the Scope-of-Work" means different activities than those described in Attachment "A" and not additional time to complete those activities than the parties anticipated on the date they entered this Agreement.
- 4.3 Sub-contractor Payment. The use of sub-consultants or other services to perform a portion of the work of this Agreement shall be approved by City prior to commencement of work. The cost of sub-consultants shall be included within guaranteed not-to-exceed amount set forth in Section 4.1.
- 4.4 Terms of Payment. Payment to Consultant for services rendered in accordance with this contract shall be based upon submission of monthly invoices for the work satisfactorily performed prior to the date of the invoice less any amount already paid to Consultant, which amounts shall be due and payable thirty (30) days after receipt by City. The invoices shall provide a description of each item of work performed, the time expended to perform each task, the fees charged for that task, and the direct expenses incurred and billed for. Invoices shall be accompanied by documentation sufficient to enable City to determine progress made and to support the expenses claimed.

5.0 ASSURANCES OF CONSULTANT

- 5.1 Independent Contractor. Consultant is an independent contractor and is solely responsible for its acts or omissions. Consultant (including its agents, servants, and employees) is not the City's agent, employee, or representative for any purpose.

It is the express intention of the parties hereto that Consultant is an independent contractor and not an employee, joint venturer, or partner of City for any purpose whatsoever. City shall have no right to, and shall not control the manner or prescribe the method of accomplishing those services contracted to and performed by Consultant under this Agreement, and the general public and all governmental agencies regulating such activity shall be so informed.

Those provisions of this Agreement that reserve ultimate authority in City have been inserted solely to achieve compliance with federal and state laws, rules, regulations, and interpretations thereof. No such provisions and no other provisions of this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Consultant and City.

Consultant shall pay all estimated and actual federal and state income and self-employment taxes that are due the state and federal government and shall furnish and pay worker's compensation insurance, unemployment insurance and any other benefits required by law for himself and his employees, if any. Consultant agrees to indemnify and hold City and its officers, agents and employees harmless from and against any claims or demands by federal, state or local government agencies for any such taxes or benefits due but not paid by Consultant, including the legal costs associated with defending against any audit, claim, demand or law suit.

Consultant warrants and represents that it is a properly licensed professional or professional organization with a substantial investment in its business and that it maintains its own offices and staff which it will use in performing under this Agreement.

- 5.2 Conflict of Interest. Consultant understands that its professional responsibility is solely to City. Consultant has no interest and will not acquire any direct or indirect interest that would conflict with its performance of the Agreement. Consultant shall not in the performance of this Agreement employ a person having such an interest. If the City Manager determines that the Consultant has a disclosure obligation under the City's local conflict of interest code, the Consultant shall file the required disclosure form with the City Clerk within 10 days of being notified of the City Manager's determination.

6.0 INDEMNIFICATION

- 6.1 Insurance Liability. Without limiting Consultant's obligations arising under Paragraph 6.2 Consultant shall not begin work under this Agreement until it procures and maintains for the full period of time allowed by law, surviving the termination of this Agreement insurance against claims for injuries to persons or damages to property, which may arise from or in connection with its performance under this Agreement.

A. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office ("ISO) Commercial General Liability Coverage Form No. CG 20 10 10 01 and Commercial General Liability Coverage – Completed Operations Form No. CG 20 37 10 01.
2. ISO Form No. CA 0001 (Ed. 1/87) covering Automobile Liability, Code 1 "any auto" or Code 8, 9 if no owned autos and endorsement CA 0025.
3. Worker's Compensation Insurance as required by the Labor Code of the State of California and Employers Liability Insurance.
4. Errors and Omissions liability insurance appropriate to the consultant's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

B. Minimum Limits of Insurance

Consultant shall maintain limits no less than:

1. General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage including operations, products and completed operations. If Commercial General Liability Insurance or other form with a general aggregate limit is used, the general aggregate limit shall apply separately to the work performed under this Agreement, or the aggregate limit shall be twice the prescribed per occurrence limit.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Worker's Compensation and Employers Liability: Worker's compensation limits as required by the Labor Code of the State of California and Employers Liability limits of \$1,000,000 per accident.

4. Errors and Omissions liability: \$1,000,000 per occurrence.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects to the City, its officers, officials, employees and volunteers; or the Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

- a. The City, its officers, officials, employees and volunteers are to be covered as additional insureds as respects; liability arising out of activities performed by or on behalf of the Consultant, products and completed operations of the Consultant, premises owned, occupied or used by the Consultant, or automobiles owned, hired or borrowed by the Consultant for the full period of time allowed by law, surviving the termination of this Agreement. The coverage shall contain no special limitations on the scope-of-protection afforded to the City, its officers, officials, employees or volunteers.
- b. The Consultant's insurance coverage shall be primary insurance as respects to the City, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be in excess of the Consultant's insurance and shall not contribute with it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officers, officials, employees or volunteers.
- d. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Worker's Compensation and Employers Liability Coverage

The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, employees and volunteers for losses arising from Consultant's performance of the work, pursuant to this Agreement.

3. Professional Liability Coverage

If written on a claims-made basis, the retroactivity date shall be the effective date of this Agreement. The policy period shall extend from 01 May 2021 to 01 May 2024.

4. All Coverages

Each Insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.

E. Acceptability of Insurers

Insurance is to be placed with admitted California insurers with an A.M. Best's rating of no less than A- for financial strength, AA for long-term credit rating and AMB-1 for short-term credit rating.

F. Verification of Coverage

Consultant shall furnish the City with Certificates of Insurance and with original Endorsements effecting coverage required by this Agreement. The Certificates and Endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates and Endorsements are to be on forms provided or approved by the City. Where by statute, the City's Workers' Compensation - related forms cannot be used, equivalent forms approved by the Insurance Commissioner are to be substituted. All Certificates and Endorsements are to be received and approved by the City before Consultant begins the work of this Agreement. The City reserves the right to require complete, certified copies of all required insurance policies, at any time. If Consultant fails to provide the coverages required herein, the City shall have the right, but not the obligation, to purchase any or all of them. In that event, the cost of insurance becomes part of the compensation due the contractor after notice to Consultant that City has paid the premium.

G. Subcontractors

Consultant shall include all subcontractors or sub-consultants as insured under its policies or shall furnish separate certificates and endorsements for each sub-contractor or sub-consultant. All coverage for sub-contractors or sub-consultants shall be subject to all insurance requirements set forth in this Paragraph 6.1.

- 6.2 Indemnification. Notwithstanding the foregoing insurance requirements, and in addition thereto, Consultant agrees, for the full period of time allowed by law, surviving the termination of this Agreement, to indemnify the City for any claim, cost or liability that arises out of, or pertains to, or relates to any negligent act or omission or the willful misconduct of Consultant in the performance of services under this contract by Consultant, but this indemnity does not apply to liability for damages for death or bodily injury to persons, injury to property, or other loss, arising from the sole negligence, willful misconduct or defects in design by the City, or arising from the active negligence of the City.

"Indemnify," as used herein includes the expenses of defending against a claim and the payment of any settlement or judgment arising out of the claim. Defense costs include all costs associated with defending the claim, including, but not limited to, the fees of attorneys, investigators, consultants, experts and expert witnesses, and litigation expenses.

References in this paragraph to City or Consultant, include their officers, employees, agents, and subcontractors.

7.0 CONTRACT PROVISIONS

- 7.1 **Ownership of Work.** All documents furnished to Consultant by City and all documents or reports and supportive data prepared by Consultant under this Agreement are owned and become the property of the City upon their creation and shall be given to City immediately upon demand and at the completion of Consultant's services at no additional cost to City. Deliverables are identified in the Scope-of-Work, Attachment "A". All documents produced by Consultant shall be furnished to City in digital format and hardcopy. Consultant shall produce the digital format, using software and media approved by City.
- 7.2 **Governing Law.** Consultant shall comply with the laws and regulations of the United States, the State of California, and all local governments having jurisdiction over this Agreement. The interpretation and enforcement of this Agreement shall be governed by California law and any action arising under or in connection with this Agreement must be filed in a Court of competent jurisdiction in Mendocino County.
- 7.3 **Entire Agreement.** This Agreement plus its Attachment(s) and executed Amendments set forth the entire understanding between the parties.
- 7.4 **Severability.** If any term of this Agreement is held invalid by a court of competent jurisdiction, the remainder of this Agreement shall remain in effect.
- 7.5 **Modification.** No modification of this Agreement is valid unless made with the agreement of both parties in writing.
- 7.6 **Assignment.** Consultant's services are considered unique and personal. Consultant shall not assign, transfer, or sub-contract its interest or obligation under all or any portion of this Agreement without City's prior written consent.
- 7.7 **Waiver.** No waiver of a breach of any covenant, term, or condition of this Agreement shall be a waiver of any other or subsequent breach of the same or any other covenant, term or condition or a waiver of the covenant, term or condition itself.
- 7.8 **Termination.** This Agreement may only be terminated by either party: 1) for breach of the Agreement; 2) because funds are no longer available to pay Consultant for services provided under this Agreement; or 3) City has abandoned and does not wish to complete the project for which Consultant was retained. A party shall notify the other party of any alleged breach of the Agreement and of the action required to cure the breach. If the breaching party fails to cure the breach within the time specified in the notice, the contract shall be terminated as of that time. If terminated for lack of funds or abandonment of the project, the contract shall terminate on the date notice of termination is given to Consultant. City shall pay the Consultant only for services performed and expenses incurred as of the effective termination date. In such event, as

a condition to payment, Consultant shall provide to City all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Consultant under this Agreement. Consultant shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder, subject to off-set for any direct or consequential damages City may incur as a result of Consultant's breach of contract.

7.9 Execution of Agreement. This Agreement may be executed in duplicate originals, each bearing the original signature of the parties. Alternatively, this Agreement may be executed and delivered by facsimile or other electronic transmission, and in more than one counterpart, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. When executed using either alternative, the executed agreement shall be deemed an original admissible as evidence in any administrative or judicial proceeding to prove the terms and content of this Agreement.

8.0 NOTICES

Any notice given under this Agreement shall be in writing and deemed given when personally delivered or deposited in the mail (certified or registered) addressed to the parties as follows:

UKIAH VALLEY FIRE AUTHORITY
1500 SOUTH STATE STREET
UKIAH, CALIFORNIA 95482-6709

DR. BRANDON BEGLEY
3370 DEERWOOD DRIVE
UKIAH, CA 95482

9.0 SIGNATURES

IN WITNESS WHEREOF, the parties have executed this Agreement the Effective Date:

CONSULTANT

BY: 

June, 28, 2021

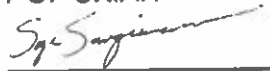
Date

PRINT NAME: Brandon Begley

547-89-4605

IRS IDN Number

CITY OF UKIAH

BY: 

Jun 18, 2021

Date

CITY MANAGER

ATTEST

Kristine Lawler

Kristine Lawler (Jun 18, 2021 13:03 PDT)

CITY CLERK

Jun 18, 2021

Date

Scope of Work and Essential Functions of Medical Director for the UVFA

The Medical Director is responsible for all aspects of patient care provided by the paramedics and EMTs of the Ukiah Valley Fire Authority. This responsibility is summed up in the American Board of Medical Specialties (ABEM) Core Content of Emergency Medicine goals: "to improve patient safety and enhance the quality of emergency medical care provided to patients in the pre hospital environment, and to facilitate the integration of pre hospital patient treatment into the continuum of patient care."

In consultation with the EMS Battalion Chief and the EMS Coordinator, will provide medical oversight and expertise to EMS Operations, including providing medical direction and information to operations personnel.

Provides medical oversight and expertise to continuous quality improvement (CQI) programs by reviewing and analyzing EMS effectiveness, system trends, and needs in the effort to ensure EMS system excellence; develops and assists in the formulation of policies and procedures; and participates in call reviews with firefighter/paramedics, and firefighter/EMTs; and assists in problem solving in field clinical decision making.

Collaborates with Educators in the development of training curricula based on medical research, new technology, regulatory changes and CQI findings. Provides direct EMS classroom and skills instruction and indirect education and briefings. Assists in the development of classes with EMS, medical, and health components.

Responsible for approving, monitoring, and ensuring regulatory compliance in any research activities and field trial studies.

Serves as a liaison with medical directors and administrators of the Coastal Valleys EMS Agency, Base Hospitals, regional trauma centers, emergency receiving hospitals, specialty receiving hospitals, paramedic training institutions, and professional medical groups; attends as needed EMS administrative and oversight committee meetings.

Assists EMS Coordinator/Designated Officer with decisions involving risk assessment, post exposure prophylaxis and treatment of occupational infectious disease exposures.

Acts as the physician of record for ordering of medical equipment and supplies. Works with the EMS Coordinator on the evaluation and selection of medical equipment. Responsible for controlled medication ordering, security, and disposal as per regulations.

Performs other duties of similar nature.

Fees to be paid: \$500.00 per month for services, plus \$4000.00 per year for required insurance.

CITY OF UKIAH
AMENDMENT NO. 1
TO
PROFESSIONAL SERVICES AGREEMENT
BETWEEN
DR. BRANDON BEGLEY and THE CITY OF UKIAH

This Amendment No. 1, entered on March 14, 2024 revises the Agreement for Professional services dated May 1, 2021 between the City of Ukiah and Dr. Brandon Begley for consulting services relating to Advanced Life Support Medical Direction.

This Amendment No. 1 adds an additional \$42,000 for year three of the agreement. This revises the total, not-to-exceed amount for all three years combined to \$72,000.

Except as expressly amended by this Amendment, all other terms remain unchanged and in full force and effect.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AMENDMENT ON THE EFFECTIVE DATE:

CONSULTANT

BY: 

DATE: 03/14/2024

PRINT NAME: Brandon Begley

CITY OF UKIAH

BY: 
 SAGE SANGIACOMO, CITY MANAGER

DATE: Mar 15, 2024

ATTEST

BY: 
 KRISTINE LAWLER, CITY CLERK

DATE: Mar 15, 2024



AGENDA SUMMARY REPORT

SUBJECT: Conduct a Public Hearing and Consideration of the Lookout Peak Trail Project Including the Adoption of a Resolution Adopting the California Environmental Quality Act (CEQA) Initial Study and Mitigated Negative Declaration (ISMND) Prepared for the Lookout Peak Trail Project; and Authorize the City Manager to Negotiate a Donation of Trail Construction by the Ukiah Valley Trail Group.

DEPARTMENT: Community Services

PREPARED BY: Neil Davis, Community Services Director

PRESENTER: Neil Davis, Community Services Director and
Katherine Schaeffers, Planning Manager

ATTACHMENTS:

1. Comments in Favor
2. Comments Opposed or Concerned
3. Lookout Peak Trails Draft ISMND9_9Clean
4. Staff Responses to Comments
5. Road Maintenance Plan
6. Draft Resolution Adopting the Lookout Peak CEQA ISMND
7. 12a Correspondence Received - Jeff Sheldon
8. 12a Correspondence Received - Kita Grinberg
9. 12a Correspondence Received - Daniel Harrington
10. 12a Correspondence Received - Bret Morton
11. 12a Correspondence Received - Jo Ann Henrie
12. 12a Correspondence Received - Joyce Cleland
13. Handout from Kille St. Pierre
14. 12a Lookout Peak Presentation

Summary: Council will consider adoption of a resolution adopting the California Environmental Quality Act (CEQA) Initial Study and Mitigated Negative Declaration (ISMND) prepared for the Lookout Peak Trail Project; and consider authorizing the City Manager to negotiate a donation of trail construction by the Ukiah Valley Trail Group.

Background: The City of Ukiah's 2040 general plan, in both the Public Facilities Element and Environment and Sustainability Element, speaks to the goals of ensuring residents have access "to recreational facilities and trails" and opportunities for "the enjoyment of scenic beauty and recreation." In pursuit of these goals and others, the City acquired over 700 acres of western hills property (Attachment B of the ISMND) now known as the Western Hills Watershed Protection Area (WHWPA). Subsequently, in February of 2024, the City adopted the WHWPA Management Plan, which under the Public Uses and Access section established objective 13a to provide public trails for passive use recreation.

Additionally, the Public Spaces Commission has consulted with staff and the public regarding the potential development of recreational access in the Western Hills Watershed Protection Area (WHWPA) for more than two years. These discussions have taken place during the development of a 'Baseline Assessment of the Area' (8/2/2023), the review and approval of the WHWPA Management Plan (2/7/2024), during the Community Forum on development of Ukiah as an Outdoor Recreation Hub (3/12/2024), and during the discussion of designating the WHWPA as a community forest (1/14/2025).

The City has a long and fruitful history of collaboration with the Ukiah Valley Trail Group (UVTG) (Attachment D of the ISMND). The UVTG designed, funded, constructed, and maintains both the City View Trail and Sol y Sombra Trail on City-owned property at Low Gap Park. The UVTG donated fifty thousand dollars to the City to help with the acquisition of a property in the WHWPA to provide a link to a public section of Doolin Canyon Rd to open the opportunity for public access to the area. In early 2024, the UVTG hired Jacobszoon & Associates Inc. to conduct a Biological Assessment of the WHWPA. Later in 2024, the City of Ukiah hired Jon Schubbe Consulting to map conceptual trail alignments for a trail system to be built in the WHWPA. In February 2025, Mr. Schubbe spent a week exploring the WHWPA. Using GIS, ARCGIS, and lidar maps, Mr. Schubbe then produced a detailed map (Attachment I of the ISMND) and Concept Plan (Attachment E of the ISMND) for the trail system.

In July 2025, Staff completed a draft Initial Study and Mitigated Negative Declaration (ISMND; available at <https://cityofukiah.com/lookout-peak-trails/>) and initiated the required California Environmental Quality Act (CEQA) noticing process. In addition to posting the ISMND on the state clearinghouse website, a Notice of Availability (NOA) for the project was released on July 11th providing the first thirty-day opportunity for comment on a draft ISMND for the Lookout Peak Trail Project. On August 11, Staff released a Notice of Intent (NOI) to provide an additional thirty days of public comment on the project.

Discussion: The Lookout Peak Trail project proposes building up to twenty-two miles of passive use trails in the 700+ acre WHWPA. The trails are designed for hiking, trail running, mountain biking, and nature appreciation. Integral to this project is the ongoing implementation of the WHWPA Road and Fire Break Maintenance Plan (Attachment G of the ISMND), which addresses essential maintenance activities for fire breaks and access roads within the WHWPA. A complete scope of work and project plan is presented in the ISMND.

Sixty-eight public comment letters were received during the public comment period. Fifty-nine (88%) of the comments were in support of the project (Attachment 1) and nine were opposed or expressed concerns and/or requested modifications (Attachment 2). Of the nine letters of opposition/concern, seven were from neighbors who share a property boundary with the WHWPA and six of those stated they are generally in favor of trails. The most common cause of concerns regarding the project included: fear of reduced availability of neighborhood parking (6) fear of attracting homelessness to the neighborhood (5), fear of increased risk of wildfire (4), fear of trespass (3), opposition to the second trailhead location (3), and one or two comments regarding the potential intrusion on neighbor privacy, increased liability, increased neighborhood traffic, increased crime, concern of erosion, the need for maintenance, signage, and the need for bathrooms. Notably, concerns regarding increased risk of wildfire, potential erosion, and the need for adequate maintenance were identified as significant environmental issues requiring specific attention within the environmental review.

Staff confirmed receipt of all comments, engaged in six phone conversations, and met with three neighbors who requested in-person meetings. In addition, Staff drafted responses to all negative comments and concerns (Attachment 4).

In response to public comment, staff are recommending minor changes to the scope of work and edits to the ISMND, which is attached as amended with the changes documented in this staff report (Attachment 3). The original ISMND and a redline version of the edited ISMND are available on the city's project page at <https://cityofukiah.com/lookout-peak-trails/>. These updates do not identify new significant environmental impacts or a substantial increase in the severity of previously identified impacts that would necessitate recirculation of this document under the California Environmental Quality Act (CEQA).

To address the concern regarding reduced neighborhood parking, the City proposes to paint parking space delineators along the east side of Helen Ave. These delineators are expected to increase the amount of parking space by reducing inefficient spacing between parked cars. To address the concern regarding loss of privacy and opposition to the second trailhead on Helen Ave., Staff have edited the scope of work to eliminate the second trailhead. With this modification, there will be a single trailhead on Doolin Canyon Road. Additionally, trail #103 will be eliminated and Ukiah Valley Trail Group trail designers have realigned trail #101

to enhance privacy for adjacent residences. With the new alignment, trail #101 is expected to be more than 150 feet away from, and fifty feet in elevation above, the neighboring houses. Furthermore, in direct response to concerns raised, particularly from the Ukiah Valley Fire Authority (UVFA), the ISMND was updated to fully incorporate the WHWPA Road and Fire Break Maintenance Plan (Attachment 5), and to formalize specific mitigation measures (PS-1 and PS-2) to ensure efficient emergency access and ongoing fire break maintenance. Complete responses to neighbor concerns regarding the project are addressed in Attachment 2 and Attachment 4. Additionally, the trail system will be built incrementally as funding becomes available. As the trails are built, City staff can monitor the impacts and consider additional measures as needed.

Again, sixty-six comments in support of the project were received, including letters from physicians, physical therapists, and educators. Supporters referenced the health, quality of life, and economic benefits of the trails. A number of commenters referenced the importance of healthy outlets for young people, including two coaches of high school mountain bike teams who lamented the lack of trails for their kids to use for training. A number of out-of-town commenters stated the trails will make them stop in Ukiah more often and they will likely stay for a meal or shopping.

Staff believe the Lookout Trail Project will provide enormous public benefit to the community and that impacts to the neighborhood can be mitigated through project revisions and a robust set of mitigation measures. These revisions include the elimination of the second trailhead on Helen Avenue, the realignment of trail #101 to enhance privacy for adjacent residences, and the proposed painting of parking space delineators on Helen Avenue to improve parking availability. The comprehensive mitigation measures, including Mitigation Measures PS-1 and PS-2, along with the full integration and analysis of the WHWPA Road and Fire Break Maintenance Plan, were specifically refined in direct response to public and agency comments, particularly from the Ukiah Valley Fire Authority (UVFA), to ensure all potential environmental impacts are reduced to a less-than-significant level. Staff recommend Council approve the attached resolution (Attachment 6) to adopt the ISMND and provide direction to the City Manager to negotiate the donation of trail construction services from the UVTG.

Recommended Action: 1) Adopt a resolution adopting the California Environmental Quality Act (CEQA) Initial Study and Mitigated Negative Declaration (ISMND) prepared for the Lookout Peak Trail Project; and 2) authorize the City Manager to negotiate a donation of trail construction by the Ukiah Valley Trail Group.

BUDGET AMENDMENT REQUIRED: No

CURRENT BUDGET AMOUNT: NA

PROPOSED BUDGET AMOUNT: NA

FINANCING SOURCE: NA

REVENUE: Yes / No **GRANT:** Yes / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: NA

COORDINATED WITH: Katherine Schaefer, Planning Manager.

STRATEGIC PLAN (SP): **SP 1A** - Build neighborhoods that provide access for all to a compatible balance of housing, employment, commercial, medical, education, and recreational resources; **SP 1B** - Provide services that support a high quality of life for all residents, including fostering diverse, inclusive, sustainable, and accessible neighborhoods; **SP 1C** - Encourage and support an environmentally sustainable and resilient community by embracing new technology, setting policy, and evaluating critical infrastructure.

CLIMATE INITIATIVES (CI): **4b** – Maintain wild lands.

GENERAL PLAN ELEMENTS (GP): **GP-A4** - Public Facilities, Services, and Infrastructure Element; **GP-A5** - Environment and Sustainability Element

Approved: 
Sage Sangiacomo, City Manager

Public Comment Letters in Support of Lookout Peak Trails

Rough

From: NahBrah <roughster3@gmail.com>
Sent on: Friday, August 29, 2025 6:50:17 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>; NahBrah <roughster3@gmail.com>
Subject: Support for Lookout Peak Trail System in Ukiah

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I would like to voice my support for the proposed trails on Lookout Peak in Ukiah. Please approve the CEQA document and give the UVTG the greenlight for building the trails. Although I do not live in Ukiah, my work and family often take me up through the town on my way north. My wife and I stop and often get gas / food, but having a trail system in Ukiah would make it more than just a drive through. It would make it a destination!

My family of 5 hike, trail run, mountain bike and generally love the outdoors. We also like to patronize local businesses where we recreate which means tourism dollars spent in Ukiah. I can also imagine this development would also improve the lives of your local residents as well!

As someone who is always looking to ride new trails or just hit destinations I don't get to ride often, I really hope the land managers, city, and residents can find common ground on improving recreation and tourism for Ukiah through this effort!

Best Regards,
 Aaron Rough

Sherf

From: Adam <adamsherf@gmail.com>
Sent on: Friday, August 29, 2025 3:22:30 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System. Yes, Please

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I am writing in support of the proposed Lookout Peak trail network. I am a mountain biker and these trails would be an enormous benefit to myself and many others in the area. There is a lack of places to mountain bike around Ukiah, and practically zero options IN Ukiah. Local trails provide countless benefits to health and happiness, but one of the biggest benefits would be a place for the Mendocino Composite MTB Team to practice. This is a mountain bike team for middle and high school students to race mountain bikes regionally through the NorCal NICA League. The team is growing every year, and there are several riders in Ukiah. I urge you to approve the CEQA document and give the UVTG the greenlight for building these trails.

Thank you,
 Adam Sherf
 1654 Crawford Dr.
 Willits, Ca 95490

White

From: Al White <alywhitey@gmail.com>
Sent on: Sunday, September 7, 2025 11:51:52 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I Support Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please approve the City of Ukiah's CEQA document for the Lookout Peak Trail System and give the go ahead to start building these trails. More people, more trails.
Alfred White
Ukiah

Wier

From: Alyssum <alyssumw@gmail.com>
Sent on: Thursday, August 28, 2025 8:15:36 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
CC: Neil Davis <neil@mendotrails.org>
Subject: Support for UVTG's Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To whom it may concern:

I am writing to express my strong support for the Lookout Peak Trail system. Please approve the CEQA document and give the UVTG the approval needed to build the trails.

I use the trails in and around Ukiah Valley many times per week and view our trail network as one of the most valuable assets in the community. Our existing trails are wonderful but they are not enough. We especially need trails shaded from the sun on the hottest days and trails on the western hills are more sheltered from the afternoon sun in the hottest months. Trails contribute to mental and physical health, they deepen our connection to nature, they provide fire-fighters with access to brush during wildfires in ways that can save entire neighborhoods from fire, they enhance tourism and attract residents here. The more trails we build (and the more public art we have) the better our reputation as a city will be.

Thank you,
Alyssum Wier
95482 Ukiah
(also ED of the Arts Council of Mendocino County)

Lutsky

From: Andrew Lutsky <andrewlutsky@gmail.com>
Sent on: Monday, September 8, 2025 1:18:39 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please approve the City of Ukiah's CEQA document for the Lookout Peak Trail System and give the go ahead to start building these trails.

We desperately need more trails in our area to provide residents with options for hiking and biking and access to the spectacular natural beauty of this region.

Thank you, City of Ukiah. Generations of residents will benefit from this project.

Andrew Lutsky
 Ukiah

Fashauer

From: Anne Fashauer <anne@annefashauer.com>
Sent on: Friday, August 29, 2025 10:40:35 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To whom it may concern:

I am writing in support of this project. The more trails the better, for hiking and biking, for getting people to move their bodies, to enjoy nature, to enjoy more of Mendocino County. It will bring more people to the area, which will benefit local businesses. Also, as a Realtor, I believe it will improve home values. I approve the CEQA document. While I live in Philo (21600 Philo Greenwood Road, Philo) and work in Boonville (see address below) I am in Ukiah at least once every two weeks for shopping and other errands. To be able to bring my bike along and get some exercise as well would be such a joy.

Thank you for your consideration.

Best regards,

Anne Fashauer

--

Anne Fashauer, Realtor
 Broker, North Country Real Estate
 DRE License No. 01841891
 14251 Highway 128
 P.O. Box 277
 Boonville, CA 95415
 707-895-3762 Office
 707-512-0705 Mobile
 888-502-3153 Fax
anne@annefashauer.com
www.mendocountry.com
www.north-country-real-estate.com
afashauer.rereader.com

IMPORTANT NOTICE: Never trust wiring instructions sent via email. Cyber criminals are hacking email accounts and sending emails with fake wiring instructions. These emails are convincing and sophisticated. Always independently confirm wiring instructions in person or via a telephone call to a trusted and verified phone number. Never wire money without double-checking that the wiring instructions are correct.

Eberhardt

From: Cara Eberhardt <c.s.eberhardt@gmail.com>
Sent on: Tuesday, August 26, 2025 3:31:40 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Letter of support for the UVTG's Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To the representatives of the city of Ukiah,

I am writing as a local physician and community member writing in strong support of the Ukiah Valley Trail Group's Lookout Peak Trail system. Please approve the CEQA document and give the UVTG approval for building the trails.

There is inadequate access to public space in our community, despite our vast natural surroundings. Public access trails improve health and wellbeing in communities, bring commerce and tourism, and overall are a net benefit to the people who live here.

Furthermore, my property is in the west hills of Ukiah and abuts the proposed trail system and I welcome the addition of a professionally built trail.

Sincerely,
Cara Eberhardt MD
3651 Low Gap Rd.
Ukiah, CA

Welch

From: Carolyn <cwelch04@comcast.net>
Sent on: Sunday, August 24, 2025 6:02:34 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I am writing in support of Ukiah Valley Trail Group's plan to build the Lookout Peak Trail System. Please approve the CEQA document. This trail system will be a great addition to trails here in the Ukiah Valley. I cannot wait to experience the beauty this trail will provide.

Sincerely,
Carolyn Welch
670 Tokay Avenue
Ukiah, CA

Sent from my iPhone

Johnston

From: Casey Johnston <canevitt@gmail.com>
Sent on: Sunday, September 7, 2025 7:56:16 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I support Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please approve the City of Ukiah's CEQA document for the Lookout Peak Trail System and give the go ahead to start building these trails.

I am a local pediatrician and mother and whole-heartedly support more trails in our community. Hiking, running and biking are affordable ways for children and families to get regular exercise. Many pediatric patients I care for cannot afford memberships to gyms or trips to the coast or mountains. Local and free opportunities for fitness and to enjoy the outdoors are crucial to health and wellness.

Furthermore, trails and outdoor activities play a HUGE role in recruiting physicians and medical providers, nurses, etc to our area. Many young recruits are looking for an area where they can safely raise their families in a place with lots to do.

Sincerely,
Casey Johnston, MD

Watt

From: Christopher Watt <christopherwatt@hotmail.com>
Sent on: Monday, September 8, 2025 10:50:21 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: [SUSPICIOUS MESSAGE] Strong Community Support for Lookout Peak Trails Project

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.
 This Message contains suspicious characteristics and has originated outside your organization.

Dear Katherine Schaefer,

As a longtime Ukiah resident and avid trail user, I am writing to express my enthusiastic support for the Lookout Peak Trails Project ahead of the September 17th City Council hearing. Having served on the City's Paths, Creeks, and Open Space Commission for six years—including four years as Chair—and having led the development of the Doolin Creek Restoration and Enhancement Plan, I have witnessed firsthand how thoughtfully designed trail systems can enhance both community health and environmental protection. My previous experience with the Orange County Department of Education and National Park Service has given me additional perspective on how outdoor recreational infrastructure serves educational and community development goals. The proposed 18-mile trail network represents exactly the kind of infrastructure investment our community needs to thrive. As a professional with nearly 30 years of experience in engineering geology and water quality, I'm particularly impressed by the project's comprehensive approach to drainage management, including back-sloping, out-sloping, rolling dips for sheet water drainage, and hardened crossings at seasonal waterways.

The health and recreational benefits for our community cannot be overstated. Currently, Ukiah residents have access to approximately 1.87 miles of trails per 1,000 residents—reasonable for a community of 16,600, but below optimal standards. Research from the American Journal of Public Health demonstrates that every dollar invested in trail infrastructure yields \$2.94 in direct medical cost savings, with residents living within one mile of new trails exercising an average of 45 minutes more per week. The Lincoln, Nebraska study found annual per capita medical benefits of \$564 from trail access. For Ukiah, this translates to potentially over \$9 million in annual health benefits once the trail system is established and utilized. As someone who regularly uses our existing trail systems, I know how valuable these spaces are for physical activity, mental health, and community connection. My experience leading hundreds of elementary school children on interpretive walks and outdoor education programs has shown me firsthand how trail access creates lifelong connections to nature and outdoor recreation.

From an economic development perspective, this project positions Ukiah to attract and retain the professionals we need for a healthy, diverse economy. Federal Reserve research shows that recreation-based micropolitan areas gained 21.6 residents per 1,000 between 2010-2016, while non-recreation communities lost 15.6 residents per 1,000 during the same period. Healthcare professionals consistently cite "greater access to outdoors" and quality-of-life amenities as key factors in rural practice location decisions, helping offset concerns about professional isolation. Similarly, higher education professionals increasingly prioritize work-life balance and community amenities when making career choices. The outdoor recreation economy contributes \$45+ billion to California's GDP—infrastructure investments like Lookout Peak position Ukiah to compete effectively for educated professionals who drive economic development. Having worked with municipalities throughout Northern California, I've seen how communities with robust trail systems consistently outperform their peers in professional recruitment and retention.

As both a former Planning Commissioner and someone with extensive experience in water quality and environmental protection, I particularly appreciate how this project demonstrates that recreation and environmental stewardship can be mutually reinforcing. The careful attention to seasonal drainage protection, native habitat preservation, and adherence to CEQA standards shows how recreational infrastructure can enhance rather than compromise environmental quality. The "Stacked Loop" design maximizing trail variety while minimizing environmental impact is exemplary planning. I strongly encourage the City Council to approve this transformative project that will serve our community for generations while setting a standard for environmentally responsible recreation development.

Sincerely,

Christopher J. Watt, CEG, CHG
 Ukiah Resident and Trail User
 Former Chair, Paths, Creeks, and Open Space Commission, City of Ukiah
 Former Planning Commissioner, City of Ukiah

References:

1. Wang, G., et al. (2005). "A cost-benefit analysis of physical activity using bike/pedestrian trails." *American Journal of Health Promotion*, 19(6), 394-401.
2. Federal Reserve Bank of Richmond. (2024). "Investing in the Great Outdoors." *Economic Focus*, Q1-Q2.
https://www.richmondfed.org/publications/research/econ_focus/2024/q1_q2_feature1
3. Rural Health Information Hub. "Recruitment and Retention for Rural Health Facilities Overview." <https://www.ruralhealthinfo.org/topics/rural-health-recruitment-retention>
4. Headwaters Economics. "The Outdoor Recreation Economy by State." <https://headwaterseconomics.org/economic-development/trends-performance/outdoor-recreation-economy-by-state/>
5. American Trails. "Health Benefits of Trails." <https://www.americantrails.org/resources/health-benefits-of-trails>
6. U.S. Census Bureau. "Ukiah, California Population Estimates." <https://www.census.gov/>
7. City of Ukiah. "Lookout Peak Trails Project Overview." <https://cityofukiah.com/lookout-peak-trails/>
8. City of Ukiah. "Doolin Creek Restoration and Enhancement Plan." (2022). <https://cityofukiah.com/wp-content/uploads/2022/05/Doolin-Creek-Enhancement-Plan.pdf>

Harrison

From: dale harrison <rxdale@gmail.com>
Sent on: Monday, September 8, 2025 9:27:12 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject:

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.



dale harrison <rxdale@gmail.com>
 to kschaefers

2:13 PM (8 minutes ago)

I know the City will be addressing the issue of the new Lookout Peak Trail proposal on September 17. I will be out of town that day and am not able to attend the meeting. I want to share my experience as a homeowner whose property adjoins a city trail. I am speaking from experience.

My property at 1171 Maple Avenue backs up to the City View Trail. I supported the construction of the City View Trail years back though that was not the perspective of some of my neighbors. They had valid concerns about trespassing, trash, misuse and parking. Some of those concerns have proven valid, some not. I spent a few thousand dollars on fencing to cut down on trespassing and trash, and I continue to love and use the City View Trail several times a week. The cost of the fencing and installation of the gate were a small price to pay. I love the trail and the opportunity for healthy recreation it provides.

The trail has not been without issues. I strongly urge the City to do two things before it approves the new trail project.

First and most crucial is to establish a plan to deal with the inevitable homeless issue and fire risk that will develop. From experience I know that fire-hardened trails and the acceptance of homelessness as a fact of life is inadequate. Low Gap Park is a county park on portions of land owned by the City of Ukiah and Mendocino County. Three years ago I discovered a homeless encampment in Low Gap where cooking fires had started grass fires and singed trees. The City denied responsibility for the county park and the County claimed the GPS coordinates showed the camp to be on City property. If no action had been taken to mitigate the problem would the City and County share responsibility for the ensuing fire that claimed my home? Fortunately a city employee took it upon himself to direct a volunteer cleanup of the attractive nuisance the park offered. If the City approves this project it must have a plan in place to deal with this issue. Once the plan is developed there must be a readily available point of contact so hikers and walkers can easily notify the city and keep the western hills safe from fire. Our local Firesafe Council can help us keep our homes safe but the City must assume responsibility for the western hills. Signage at the trailhead on who to contact with safety issues may help prevent those same issues.

Second, the City should work with homeowners to mitigate issues of parking and the security of their property. These issues are largely educational and may seem small but I assure you they are important to those near the trailhead who will bear the irritation of congestion and strangers in their neighborhood. Over time this will diminish but understanding and cooperation are important as the project moves forward.

I support the construction of the proposed trail. A healthy Ukiah benefits everyone. Communities that offer outdoor activity properly organized have the potential for improved health, increased property values and even increased tourism. Done properly, this project has the potential to benefit everyone.

Dale Harrison
 1171 Maple Ave
 Ukiah, CA 95482
 707.972.0610

Low

From: Daniel Low <lowdanielm@gmail.com>
Sent on: Friday, August 29, 2025 8:51:17 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: CEQA / Lookout Peak Trail System Support

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi there!

I am writing to express my support for the CEQA document that Ukiah Valley Trail Group has put together. As a Ukiah resident, living at 1291 Deerwood Drive, I believe the Lookout Peak Trail System will be a fantastic addition to our community. If completed, I personally would be accessing the trails for hiking and mountain biking on a weekly basis. Hiking trails increase the quality of life for our residents by allowing easy access to nature and a healthy activity that can be enjoyed at any age. Kids need things to do in our town and I believe this trail system will provide an easily accessible location for them to hike and ride locally. Currently, I am bringing my kids and their friends to Brooktrails in Willits multiple times per month to enjoy their trail system and I would love for something more local to be available. Thank you for taking the time to read my letter of support.

Kind regards,

Danny Low

Townsend

From: Dave Townsend <dave@santarosapt.com>
Sent on: Sunday, August 31, 2025 2:57:58 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Please support the Lookout Peak mountain bike trail project...

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I'm sending this email to urge your support of the Lookout Peak mountain bike trail project. It will be an amazing addition to the greater Ukiah area for recreation, health, wellness, and keeping our Kids, Teenagers, and adults engaged in meaningful healthy outdoor activity! Please give the green light for this awesome project.

Sincerely,
 Dave Townsend
 2035 Bent Tree Place
 Santa Rosa, CA 95404
 Sent from my iPhone
 Dave Townsend, MPT
 Santa Rosa Physical Therapy
 2255 Challenger Way ste 104
 Santa Rosa, CA. 95407
 707.545.1419
www.SantaRosaPT.com

Archer

From: Elizabeth Archer <elizabethrises@gmail.com>
Sent on: Monday, August 25, 2025 5:27:10 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I'm a YIMBY for the Lookout Peak trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello!

I'm writing in support of the proposed Lookout Peak trail. I am a westside Ukiah resident whose house has a beautiful view of the hills. I believe this land should be available to be appreciated and enjoyed, and from everything I've seen the proposed Lookout Peak trail is thoughtful and well-designed and will minimize impact on the closest neighbors.

Full disclosure: I'm not much of a hiker. I likely won't use this trail much. But my husband and daughter ARE hikers, not to mention many of our neighbors, and to have a trailhead they could walk to would be such a blessing.

Creating more trails is a net positive for humans (more non-motorized recreation! More to do in our community in general!) and for our community (people travel to use our trails and then they spend money here).

I know CEQA is complicated and annoying but I hope you see fit to approve this plan soon so Ukiah Valley Trails can get to work.

The NIMBYs are always the loudest voice in the room but usually in the minority. I appreciate that the City of Ukiah is able to see through the noise and make decisions based on objective facts to improve and strengthen our community and what it has to offer to those who live here and those who travel here. Thank you for all your hard work to keep improving our wonderful city.

Warmly,
Elizabeth Archer
465 Eastlick St, Ukiah

Reinelt

From: Eric Reinelt <ereinelt@gmail.com>
Sent on: Saturday, August 30, 2025 4:15:36 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support for Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I want to express my approval for the CEQA trail document which is out for review right now concerning the proposed expansion to the Lookout Peak Trail System. When we create a plan for using *and* caring for our land, we enjoy the land while reducing fire risk and improving public safety. The area where we live is beautiful - we should take opportunities to make it easier to enjoy for all residents and visitors!

I am a long-time resident of Mendocino County-- Ukiah for 7 years, currently at Ridgewood Ranch-- and improved trails in Ukiah would give me more reason to come to Ukiah for the day, increasing my patronage of local shops and restaurants. I could use the exercise too!

Sincerely,
Eric Reinelt

235 Seabiscuit Dr Apt H
Willits, CA 95490

Gibbs

From: George Gibbs <ggibbs@pacific.net>
Sent on: Sunday, August 24, 2025 5:17:32 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support for Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi,

I live in the city and these trails would be of great benefit for me and my family. We typically walk in the city, including Riverside Park, the Wastewater Treatment Plant and Low Gap 1-3 times per week. Access to open space is an important issue and we would typically support any new options for this. We could potentially walk to the trailhead from our house, though there are plenty of street parking spots on Helen Ave.

Please approve the CEQA document and allow Ukiah Valley Trail Group to start building the trails.

Best Regards,

George Gibbs
 833 MENDOCINO DR.
 Ukiah, CA 95462
 707-228-6142

Wermuth

From: Gina Wermuth <gwermuth@gmail.com>
Sent on: Monday, September 8, 2025 5:53:51 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I Support Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ukiah City Council,

I'm writing as a Ukiah citizen in strong support of proposed new open space trails for hikers and cyclists. We need more open spaces nearby that are accessible to residents for the benefit to their health and well being and the health of our city. Please approve the City of Ukiah's CEQA document for the Lookout Peak Trail System and give the go ahead to start building these trails.

Respectfully,
 Gina Wermuth
 819 Maple Ave, Ukiah

Gauthier

From: Grady Gauthier <gradygg@gmail.com>
Sent on: Friday, August 29, 2025 4:41:21 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support of Proposed UVTG Lookout Peak Trail System.

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi,

I live at 3250 Albion Ridge D Rd, Albion, CA and travel frequently throughout Mendocino county to ride local mtb trails. When I travel out of town to do so I also frequent travel with friends and we almost always stop at local restaurants and campgrounds or hotels in the area of such trails. I am writing to provide my support for the planned MTB trail network proposed by UVTG for the Lookout Peak Trail System. I urge you to approve the CEQA document and give the UVTG the greenlight for building the trails. I can see nothing but this benefitting Ukiah's economy as most mtb riders travel distances to ride trail systems and spend time and money in the towns they are located in. Free free to add me to any email list associated with the planning process on this or feel free to call/text 707-485-4458.

--Best, Grady G Gauthier

Dolan

From: Heath Dolan <heath@dolanfamilyfarms.com>
Sent on: Tuesday, September 2, 2025 8:00:24 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail system

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good Afternoon,
 My name is Heath Dolan, I am a Ukiah resident, we live on Highland Court.

I am writing today in support of the Lookout Peak Trail system. I believe that any outdoor recreation that we can create in our valley is good for tourism, the health of our families and our economy. Please approve the CEQA document and let's get moving on this project.

Thank you,

Heath Dolan

heath@dolanfamilyfarms.com

P.O. Box 818
 Healdsburg, CA 95448
 p 707.799.2852

PWS
 1450 Airport Blvd #120
 Santa Rosa, CA 95403

RED Custom Crush
 1430 Grove Street
 Healdsburg, CA 95448

"Find Your Balance"

Maddox

From: Heath Maddox <heathmaddox@gmail.com>
Sent on: Friday, August 29, 2025 5:14:18 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I support the Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi, I'm writing to express support for the proposed Lookout Peak Trail System in Ukiah. I understand it's currently in environmental review, so please add my comments to the public record. I live in Berkeley, but we have family in Willits and travel back and forth regularly. My son and I are avid mountain bikers and, aside from the great trails way out on the coast, we have been frustrated by the lack of public mountain bike trails in Mendocino County. Having more purpose-built, bike-specific trails would definitely induce us to stop in Ukiah on the way to Willits for a quick ride followed by lunch in town. And for locals, having trailheads that they can ride to would be invaluable.

Thanks very much,

Heath Maddox
 1565 Rose St, Berkeley, CA 94703

Bertolino Haley

From: Ian Bertolino-Haley <ianhaley707@gmail.com>
Sent on: Friday, August 29, 2025 5:47:11 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: UVTG

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi my name is Ian Bertolino-Haley and it has been brought to my attention that the city of ukiah is in need of a new mountain bike trail system, and that you are the person to contact about it. I think this is a wonderful idea. The CEQA document looks great, and the the UVTG has my full support on this. I live in brooktrails at 24941 goose ct, literally at the trailhead for multiple trails in the system that was introduced up here in the last couple of years. I love riding up here, it makes it incredibly simple to get exercise: just walk out the door and hop on my bike! It has been wonderful to see the growth in the community up here. I regularly see kids and family's riding around, and the trails are better maintained and looked after. I have met all manner of people on the trails, from locals rediscovering the sport, too out of towners on a weekend excursion. They have brought tourism to the Area, and new interest in a beautiful landscape that SHOULD be maintained. The same would happen in ukiah. Ukiah is surprisingly lacking in the mountain bike trail department, despite having many scenic areas, and quite a few public trails. This is a great spot for them as far as safety goes, as you can just ride thru town to get to them. And there is alot of parking in the area for out of towners, I can attest as my girl friend lives a few blocks from there. I would be very excited to see this project go through, and would love to even get involved with working on it. Hope this helps. Thank you for your time

Richards

From: Ian Richards <richards.ian.j@gmail.com>
Sent on: Monday, August 25, 2025 6:53:32 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout peak trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I'm writing to you today regarding the proposed trail system near lookout peak. I completely support more trails in and around ukiah valley. This community is in desperate need of more outdoor recreation. There is a serious lack of public land here and we should take every opportunity we can to acquire any and all property we can. The proposed trail system will be great for local trail users as well as bring in mountain bikers from neighboring counties which in turn will hopefully help boost our local economy.

Thank you,

Ian Richards

Barnes

From: Jacob Barnes <jbdesigns707@gmail.com>
Sent on: Friday, September 5, 2025 2:46:15 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout peak trail support!!

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

My wife and I live on Helen Ave (for 29 years) and we have been wanting hiking and biking trails here since day 1.. We would use these trails on a regular basis. Mountain biking is not permitted at Low Gap Park, so we have to drive to Lake Mendocino or further (Willits or the coast) to find decent trails.

We have volunteered with trail work with UVTG and WAC in Brooktrails and it is great to see all the different ages of people getting involved and enjoying the outdoors. I believe these new trails will fill a void in our community.

On a side note -We have had issues in the past with homeless camping up the hill from my house in the past, but (in my experience) the more we hiked and patrolled, the less we saw signs(tents, garbage, fire rings, etc). With more people using these trails, I think our west side hills will be safer, especially from fire.

Thanks approving the Lookout Peak Trail Project!

Sincerely,
 Jacob Barnes
 Get outside!!

Sent from my iPhone

Madden

From: jake madden <maddenjake@yahoo.com>
Sent on: Saturday, August 30, 2025 4:35:56 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Helen Ave trail project

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please approve the proposed trail project at the end of Helen Ave. While I live over on the coast I frequently visit Ukiah to do errands and would love to include some biking. I live in Caspar directly adjacent to the JDSF trail system and literally have a trail that connects to my property that allow the public to use so can attest that many of the concerns raised by the neighborhood are not a reality that I have experienced. The known health benefits of having more access to outdoor spaces far outweigh hypothetical crowding and trash concerns that aren't supported. Thanks for considering.

Jake Madden
 25170 Casparado Way
 Caspar CA

[Sent from Yahoo Mail for iPhone](#)

Amalong

From: Jared Amalong <amalong@gmail.com>
Sent on: Saturday, August 30, 2025 11:47:46 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support for the Lookout Peak Trail System - CEQA Approval

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Mr./Ms. Schaefer and the City of Ukiah Planning Department,

I am writing to express my enthusiastic support for the proposed Lookout Peak Trail System located above Helen Avenue. I strongly urge the City of Ukiah to approve the CEQA document and authorize the Ukiah Valley Trail Group (UVTG) to proceed with the construction of these trails.

While my primary residence is in Foresthill, CA, I frequently spend significant time in Mendocino County, as my partner lives and works in the area. As an avid mountain biker and hiker, I actively seek out quality recreational opportunities during my visits. The development of this purpose-built trail system is very exciting, and I fully intend to be a regular user of the Lookout Peak Trails.

High-quality trail systems significantly enhance the quality of life for both residents and visitors. They provide substantial physical and mental health benefits and also contribute positively to the local economy by attracting tourism.

I understand that some neighbors near the proposed trailhead have voiced opposition. While I respect their perspectives, I believe the concerns raised have been thoroughly addressed by the UVTG or are based on common misconceptions about trail usage. I would like to offer my perspective on these issues:

Fire Risk: Living in Foresthill, I am acutely aware of the dangers of wildfire. Therefore, I am impressed by UVTG's proactive collaboration with the Ukiah Valley Fire Authority (UVFA). The incorporation of "Fire Hardened Trails" into the design and the CEQA document is a responsible approach. This strategy ensures the project will facilitate essential fuel load reduction work, thereby *decreasing* the overall fire risk to the community.

Parking and Traffic: The concern regarding parking availability on Helen Avenue seems unfounded. The analysis shows 85 available on-street parking spaces. These are public spaces on a public street, and utilizing them to access a community amenity is an entirely appropriate use of public infrastructure.

Litter, Crime, and Homelessness: The fear that trails attract litter, crime, or transient populations is a frequent misunderstanding. As an experienced trail user, I know that the vast majority of the outdoor community respects the environment and adheres to "Leave No Trace" principles. Furthermore, the complex societal challenge of homelessness exists independently of trail development. We should not deny the community this valuable health and recreation resource due to unrelated issues.

The Lookout Peak Trail System represents a positive investment in the Ukiah Valley's future. Please approve the CEQA documentation and allow this excellent project to move forward.

Thank you for your time and consideration.

Sincerely,

Jared Amalong

4272 Secret House Place, Foresthill, CA 95631

Strnad

From: Jason Strnad <jstrnad@ehlokitty.org>
Sent on: Thursday, September 4, 2025 3:12:20 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails can't come soon enough for Ukiah

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Katherine and Ukiah City Council,

I am writing to express my support for the development and opening of the Lookout Peak Trail System in Ukiah's Western Hills. This project will bring substantial benefits to Ukiah residents and visitors alike. As an active volunteer with the Ukiah Valley Trail group, I look forward to building trails to suit hikers, cyclists, and more. This opportunity to attract visitors from around Mendocino County and beyond to use these trails and enjoy what our town has to offer should not be missed. Out of town visitors [contribute](#) valuable dollars to our economy and support local businesses.

The City already recognizes the health, economic, quality of life, and other benefits of building hiking, cycling, and equestrian trails. We already have multi-use trails around Lake Mendocino and above Mill Creek, as well as the excellent walking trails at Low Gap Park. The Lookout Peak trail system is an opportunity to expand on this commitment to outdoor recreation in Ukiah and attract users from all over California and beyond (as our neighbors in Santa Rosa, Eureka, and Fort Bragg already do). The economic and health benefits of trails are well documented in [West Virginia](#), [Colorado](#), and [Santa Cruz](#) (and [IMBA](#) has many more).

Like any city project, there are naysayers who want to shut down projects and block any change that affects them, but these mistaken and selfish arguments should not overshadow the council's determination that this project is good (indeed, Great!) for Ukiah and all of our residents. Actively used trails through this currently unused land will deter homeless encampments and undesirable land (mis-)use. Criminals don't want scrutiny and the hassle of hiding from daily/hourly visitors, and trail users don't tolerate trash and anti-social squatters. As an experienced trail builder, mushroom forager, and all-around forest enthusiast, I can share firsthand that the worst examples of litter and dumping in open spaces happen where people *DON'T* regularly go. Having an army of recreationists, as well as regular trail maintenance volunteers, out on this land (which the City already stewards) will reduce the problems stemming from undesirable/unauthorized usage. CalFire partners with trail organizations to build and manage multi-use and biking specific trails in their demonstration forests both here in Mendocino County and throughout California, which seems an unlikely partnership if the unfounded fears of "increased fire risk" you're sure to hear about were true.

In sum, this project is good for Ukiah and its residents. I and many UVTG volunteers have invested a lot into building and maintaining trails in Ukiah Valley, and I can't wait to start building and enjoying Lookout Peak Trails and sharing them with our community. Please help us make these plans a reality!

Regards,

Jason Strnad
 2220 Woodlake Dr
 Ukiah, CA 95482

Ghidella

From: das fret <littlehill321@yahoo.com>
Sent on: Friday, August 29, 2025 2:56:15 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: MTB trails in Ukiah

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi

Please approve the CEQA document and give the UVTG the greenlight for building the trails. Mountain bike trails are great for promoting healthy activities for the community. All ages utilize mtb trail systems and they help with tourism. Mtbtourism has become a very big thing over the last 10 years. Towns like Nevada city, Downieville, and bentonville AR thrive off the money mtbr's bring in. Even right here on the coast in Caspar people travel to the trail network in Jackson SF to ride.

Jeff Ghidella
 Brooktrails

Miller

From: jolee miller <jgirlintown@yahoo.com>
Sent on: Monday, September 1, 2025 9:32:48 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Look out peak trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,
I live at 1080 Helen Ave., below the new proposed trail system. I am excited to have access to trails in our neighborhood and are in full support of this project.
Thank you,
Jolee

Sent from my iPhone

Takeda

From: Jun Takeda <jun.c.takeda@gmail.com>
Sent on: Wednesday, August 27, 2025 12:02:41 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I am writing in support of the proposed Lookout Peak System, approval of the CEQA doc, and support for the Ukiah Valley Trails Group to design and build a trail system in the western Ukiah hills.

While concerns over fire risk are understandable, I believe that having a well maintained ridgetop trail not only improves access to areas, but also reduces vegetation on ridgetop areas creating a fire break that helps slow down fires. My property is adjacent to the proposed trail network and we were recently contacted by CALFIRE to perform fuelbreak maintenance on the top of that ridge. Having a trail at the ridge top allows for more access and ability for local trail groups to perform the tasks required to maintain that fuel break in the future without relying on CALFIRE staff to coordinate with dozens of landowners to help maintain a critical fuelbreak between the heavily vegetated areas outside of Ukiah and the populated city center.

Public land is an opportunity for people to enjoy nature, get exercise, and can create a higher quality of life for everyone. Please approve the CEQA document and help provide access to the one of the only areas in Ukiah that can feasibly support a safe trail network.

Sincerely,

Jun Takeda
3651 Low Gap Rd.

Dunscombe

From: Justin Dunscombe <jdunscombe@gmail.com>
Sent on: Tuesday, September 9, 2025 3:18:05 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Voicing my support for the Lookout Peak Trails project

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello Katherine,

Thank you for the opportunity to comment on the Lookout Peak Trail Project. Public trails are a vital community resource and I'm thrilled the city and the Ukiah Valley Trail Group are planning to greatly expand our trail system. I'm in favor of the project as currently proposed. My wife and I live in the western hills just outside existing city limits and are wholeheartedly in support of the continued improvement to public access to this wonderful area.

Thank you,
Justin Dunscombe

Cummings

From: Kelsey Cummings <kgc@microshaft.org>
Sent on: Monday, September 1, 2025 11:25:05 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I'm writing in strong support of the Ukiah Valley Trail Group's proposed Lookout Peak Trail system and to encourage your approval of the CEQA document so the project can move forward.

As a long-time parent and NICA coach, I've seen firsthand how access to mountain biking trails provides young people with rewarding physical activity, a healthy outlet, and a lasting connection to the natural world around them. This kind of access matters — it shapes healthier kids, families, and communities. Trail networks also support the local economy and can boost tourism. I have traveled all over Northern California to trail networks built by groups like UVTG - even if they aren't destinations themselves - I try to work in a ride followed by lunch at local restaurant along the way.

There's also a real public safety value. Properly built trail networks support can improve fire response. The recent fires in Santa Rosa made it clear that existing trail networks in Anadel State Park provided crucial fire break lines and gave foot crews access to otherwise difficult terrain.

Concerns about other risks are likewise mostly little more than the scare tactics of The NIMBY. Trails don't typically attract encampments, and the most common criminal behavior is usually people breaking leash laws.

Sincerely,
Kelsey Cummings
NICA NorCal MTB Coach
Resident of Santa Rosa

Smallman

----- Forwarded message -----

From: Kevin Smallman <k.smallman@me.com>
Date: Mon, Sep 8, 2025 at 11:55 AM
Subject: Fwd: Lookout Peak Trails- Letter of Support
To: Neil Davis <neil@mendotrails.org>

Hope this helps.

Kevin

Begin forwarded message:

From: Kevin Smallman <k.smallman@me.com>
Date: September 8, 2025 at 11:49:27 AM PDT
To: kschaeffers@cityofukiah.com
Subject: Lookout Peak Trails- Letter of Support

Dear City of Ukiah,

I am writing to express my strong support for the Lookout Peak Trail System and urge you to approve the CEQA document so the Ukiah Valley Trail Group can begin building. This project represents a rare and transformative opportunity for the community.

The Lookout Peak trails will provide residents and visitors with direct access to open space within walking distance of town. Trails like these promote healthy lifestyles, create safe spaces for families and children to enjoy the outdoors, and strengthen overall community well-being. True community wealth comes from shared spaces that bring people together, and this project will do exactly that.

In addition to health and quality-of-life benefits, trails support the local economy by attracting visitors and making Ukiah an even more desirable place to live, work, and raise families. As an avid mountain biker from San Leandro, I often travel to Willits and Mendocino for weekend rides with friends. It really doesn't take much- Willits recently added a handful of really fun trails in the Brooktrails greenbelt that were enough of a tipping point for me. With the Lookout Peak project, Ukiah has the same potential, with the added advantage of being so close to downtown. Folks like me are always looking to get away and decompress.

The proximity of these trails to the city is the "secret sauce." When people can physically connect with the land, they develop a more profound sense of connection and stewardship. That connection is what transforms a beautiful valley into a truly special community.

Thank you for supporting trails in Ukiah and for helping to move this important project forward.

Best,
Kevin Smallman

Eschleman

From: Kristen Eschleman <97460mina@gmail.com>
Sent on: Friday, August 29, 2025 4:58:03 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello, my name is Kristen Eschleman. I live in Willits and my older son has been attending school in Ukiah for the past 2 years. I am writing to encourage the CEQA document and give the UVTG the green light to build the trails.

I live in Brooktrails, a township of Willits. There are many mt. Biking and hiking trails close to my home and it has been wonderful. I use the trails often and my son and husband mt. bike on them. I rarely ever see trash. People who use the trails often pick up trash if it is ever an issue. Sometime when I hike the trails I bring a trash bag just for that purpose. I imagine that trails will bring conscious individuals who care about the space and who will help clean up the area if others are not as respectful.

We have hiked in Ukiah and tried to mt. bike a few times however there are few trails with signage and designed for mt. biking. If this trail is put in place we will for sure use it!! I imagine we would go there and a few times a month and probably have dinner a snack in Ukiah each time.

By having the trailhead close to neighbor hoods that trails will get used. I send my older son on the trails in Brooktrails because they are so close to our home. I can easily drop him off or he can ride to them himself. People who hike are respectful. Out of "towners" may like to hike and will visit trails if people have signed and clear trail heads. Hiking is a great thing for peoples emotions well being and the benefits it will bring to individuals will impact their day and be felt by those around them.

I grew up in a neighborhood in southern California where a bike trail started across the street. Nice people were always walking and biking. They would say hello and it brought a positive thing to the area. My mother loved the small talk. There was never trash on the trail.

I understand how fire danger is a concern of people these days. I think people have an idea that more people in the forest would increase the possibility of people starting a warming fire in the area or start a fire by carelessness of a cigarette butt. People who smoke and are homeless are going to find their ways to the forest whether there is a trail or not. They are looking for an isolated place they won't be bothered. Being on a trail system would be safer than just on a forested area because trail systems often have less fire fuel because they are maintained. The trails that are not maintained have much more fuel for fire.

I have seen homeless people in the forest but in willits they tend not to be on the trails as they are often bothered and seen. I find them the trail system in the areas that are not accessed by the trails. The homeless issue is growing and our goal should be to find them safe areas where they can sleep and be safe.

Thank you for working on this issue!! I hope that you can come to an agree ment so that the trail system can start soon.

Sincerely,
 Kristen Eschleman
 831-334-2300
 26255 Otter Drive
 Willits, CA, 95400

Huck

From: Lacey Huck <laceyhuck@outlook.com>
Sent on: Monday, August 25, 2025 7:09:32 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello, my name is Lacey Huck. I have lived in Mendocino county all of my life and in the Ukiah area for the last 15 years. I am a nurse at Adventist health in Ukiah and I'm raising a family here as well. I am in support of the proposed lookout peak trail system in ukiah. As I'm sure you're aware, there is not a lot of recreation in the Ukiah area for our children. For this reason, and some others, my husband and i have considered leaving the area because Ukiah does not have a lot to offer our family. It would be nice to see more trails, rock climbing, recreation centers for our children. I hope Ukiah can be a desirable place to raise families.

Lacey

Richards

From: Laurel <laurelrichards@gmail.com>
Sent on: Friday, August 29, 2025 3:32:38 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I am a resident of Redwood Valley and have been for over six years now. I am writing in support of the growth of our local trail systems, specifically the proposed Lookout Peak Trail. Our community desperately needs additional trails!

Thank you for your time.

Sincerely,

Laurel Richards

Pardun

From: Lyle Pardun <lylempardun@gmail.com>
Sent on: Sunday, September 7, 2025 5:24:27 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Helen Ave trail access, Ukiah

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I currently live in Willits, but was born in Ukiah 71 years ago. Access to trail heads is the only reason I was able to safely ride my MTB without the threat of a vehicle slamming into me. The threat is real. Please allow riders reasonable access. Thank you.

Winters

From: Margot Winters <maw@margotwinters.com>
Sent on: Wednesday, September 3, 2025 4:02:46 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Westside hills trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi Katherine,

I just heard about the plan for a new hiking and biking trail off of Helen Ave in Ukiah and think it's great. I live on the westside and would love an access to walking/ hiking in our hills. It's a bonus that I wouldn't need to drive to get to the trailhead.

Thank you for working on this. Anything that helps keep Ukiahans healthy is a positive.

Margot Winters
508 Jones St., Ukiah

Klein

From: Marigold Klein <marigoldklein@gmail.com>
Sent on: Sunday, September 7, 2025 5:47:08 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Katherine Schaefer
 Planning Manager
 Good Morning,
 As I was out walking this morning, I was thinking about the new trails planned for the Western Hills. I live on Mulberry St, and I was thinking how wonderful it will be to have trails that we can walk to. It always seems strange to get in the car and drive somewhere to go walking. North Ukiah has Low Gap Park within walking distance. South Ukiah needs a trail within walking distance too. Please give the go ahead to start building these trails.
 Wishing you joy,
 Marigold Klein

Trotter

From: marvin trotter <marvin.trotter@gmail.com>
Sent on: Thursday, August 28, 2025 9:34:03 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject:

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Look Out Peak trail ...would be a great addition to the trails in the Ukiah Valley.

We need more outdoor activities for children and families!

We have a beautiful Valley and need more trails. This adds to the value of living here....just like the Alex Rorabaugh center in south Ukiah. More activities for kids..to guard against obesity, diabetes and drugs.

Hikers are a clean sporting group..and add to the healthy community.

Support the Look Out Peak Trail !!!

Sincerely, M Trotter MD.

Koeninger

From: Max Koeninger <maxkoeninger@icloud.com>
Sent on: Sunday, August 24, 2025 12:01:11 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail approval

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To City of Ukiah CEQA approval processing Kschaefer: I would like to express strong support for the approval of the trail to Lookout Peak. For over 30 years I have hiked our City View Trail (and love the new upper loop), the Valley View Trail to the 4th waterfall bench, all the trails around Lake Mendocino and I rarely found trash (which many of us hikers pick up). In terms of the local neighbor concerns with parking, there is access to City View from the top of Maple Street that we regularly use. If there are no parking spaces left, some go to the main lot across from the high school, but a lot of us just walk or bike up to the top of Maple. Biking or walking to the Lookout Peak Trail access on Helen will be a breeze compared to accessing City View from the top of Maple. I can understand the initial local concern among neighbors who may not be experienced hikers, but to alleviate their concern, I would like to point out that the Redwood Lumber Company (formerly Masonite) grants access to literally thousands of bike riders and walkers from all over the world to use their road all the way to Highway 128. I biked that road almost every Saturday or Sunday we are home and the weather is good since 1990 and I have seen no trash, no homelessness and no vandalism. Need I add that the two Grasshopper races bring great tourist cash flow to Ukiah and raise our City's draw as a desirable place to live? The Ukiah Valley Adventist Hospital is a very generous donor to the Ukiah Valley Trail Group precisely because they view walking and hiking as an excellent way to promote healthy outdoor exercise. Max Koeninger, 1107 W Church Street.

Parker

From: Megan Parker <meganeparker@gmail.com>
Sent on: Monday, September 8, 2025 1:20:34 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: I support Lookout Peak trails!!

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi!

I 100% support the city creating a trail system in the newly acquired western hills area in the Doolan Creek watershed! One of the reasons I moved to Ukiah 11 years ago was because the city has easy access to public spaces, and expanding our existing trail system into the Lookout Peak area will not only draw more people to our area, but also increase home values and increase tourism! When I travel south to Sonoma and Marin Counties, it is hard to ignore how vital outdoor recreation is to the residents and businesses of those areas. I firmly believe an expanded trail system in the Lookout Peak area will only be a net positive for our own community.

For context, I am a clinical social worker working currently for Ukiah Unified School District. I have two children (ages 18 and 13) and I moved here in large part to live in a small community surrounded by nature.

Please feel free to contact me with any questions or concerns.

Warm regards,
Megan

PS The unused Nokomis tennis courts would make a great parking area! For both the trails and the soccer families!

Megan Parker, ASW, PPSC-SSW
(707) 367-7696
meganeparker@gmail.com
Pronouns: she/her/hers

Cannon

From: Michael Cannon <cannonpilates@gmail.com>
Sent on: Saturday, September 6, 2025 12:09:18 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

My name is Mike Cannon and I am a long time resident of Ukiah. I am writing this letter in support of the proposed Lookout Peak Trail System. There are many reasons that I think these trails will be a wonderful addition to the Ukiah Valley. There are the obvious, huge benefits such as health and quality of life. But additionally there are many more subtle benefits to this trail system.

One thing I have noticed while volunteering with the Ukiah Valley Trail Group is how much a trail system can help clean up an area. When the Trail Group was building the City View Trail and the Sol y Sombra trails in Low Gap Park we ran into a couple of former homeless sites. The mess was pretty disgusting. We hauled out many dozens of bags of trash of which I won't go into details. However, since these two trails were built I have never seen a homeless person on the trail. Homeless people do not want to take up residence near a busy trail. The trail users become a neighborhood watch for the area. They love their trails and are protective of them.

Currently in the Lookout Peak area there are homeless camps (I'm not sure if they are active or not) and former illegal cannabis grow sites. There are large piles of trash that will need to be cleaned up. It will take effort as there is quite a bit of trash. But, once finished with the trails in use homelessness will be discouraged.

When I have out of town friends visit me I often take them on our local trails. The feedback I get is unanimous with my friends all saying something to the effect of "what a beautiful place you live in!" In my showing my guests around town nothing gets the reaction of the trails. Trails are a magnet for people. People want to live near trails. Trails are a big selling point for a community. If we want to attract visitors, residents and businesses to the area trails are an inexpensive, environmentally sound attraction.

Trails do so much for the quality of life of the community for such a small expense. They are a huge "bang for the buck" especially when you have a proven nonprofit like the UVTG ready and willing build and maintain the trails. I'm so excited to see the Lookout Peak Trails become a reality.

Sincerely,
Mike Cannon

Sent from my iPad

Moreno

From: Mike Moreno <mikemoreno650@gmail.com>
Sent on: Thursday, September 4, 2025 12:10:07 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Please support the CEQA document

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

My name is Michael Moreno, I am an avid hiker and mountain bike rider. I also work in the City of Ukiah. I am writing to ask you to please support The Ukiah Valley Trails Group. Some of the benefits from this are an increase of tourism, a quality of life benefit that will bring people to the area as well as inviting those that are living in Ukiah and the area to want to stay and enjoy our beautiful trails.

Sincerely,

Michael Moreno

1654 Crawford Dr.
Willits, CA 95490

Mike V.

From: Mike V <mike.vidov@gmail.com>
Sent on: Friday, August 29, 2025 5:39:05 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good morning,

Just wanted to email in from Santa Rosa that I saw a post about potential trail systems in Ukiah. My buddies and I are always looking for close destination rides to break up riding our trails weekly. Currently we do not have very many options north of us. We tend to frequently visit San Rafael and Napa for some variety but it would be great to add Ukiah to the list.

Please approve the CEQA document and give the UVTG the greenlight for building the trails. I look forward to following the process and hopeful we can have more mountain bike specific trails built.

Thanks,
Mike
Santa Rosa, CA

Berna

From: myke berna <myke.berna@gmail.com>
Sent on: Tuesday, September 2, 2025 9:18:09 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To whom it May Concern-

I had heard information about possible trails being built in Ukiah for off road bicyclists and other outdoor users a few months back. Recently it was brought to my attention that it was moving along but folks were being asked to weigh in if they support or are against such activity.

I'm writing to you today to voice my utmost support for this endeavor! Public outdoor space is so important!

Background on who I am. No, I am not a resident of Ukiah. I'm fact I'm over the hill on the coast in Caspar. But, I am the Head Coach of the MendoComposite Youth Mountain Bike Team with 34 kids last year coming from Fort Bragg, Caspar, Mendocino, Willits and Ukiah. All Middle School and High School aged. We have multiple coaches in Fort Bragg, Willits and in Ukiah. Many of the kids, when they first start out, aren't that comfortable on some of the tougher trails and are unsure of themselves. To see their transformation after a few outings with our coaches and with their peers is nothing short of amazing. The kids become more confident in themselves and their skills, on and off their bikes. Truly has been a huge blessing for some of these kids to gain self confidence and to feel accomplished and with a sense of pride tackling something hard whether it be a technical part of the trail, a steep uphill, or learning the skills to fix their bikes when something breaks. Something always breaks!

I was a Race Director of a mountain bike race that was just held this last weekend here in Caspar. I was approached by four families from Ukiah that were there with parent(s) racing as well as kid(s) and when they learned we had this youth mountain bike team they were amazed and immediately were asking how to get involved. Great!

I mentioned to them that we generally hold our practice days on Saturdays on the Coast and our Inland coaches hold practices on Sundays. They asked where in Ukiah do they ride. Well, there's the rub. Other than the east side of Lk. Mendocino there aren't many options to hold our rides on so the majority of the inland practices happen in Willits/Brooktrails. In the wetter time of the year Lake Mendocino, being so much clay based, is impossible to ride in and nut leave ruts damaging the trail bed. We generally head to Brooktrails as they have a good amount of sand/grit/shale type soils that hold up to wet weather better. And from the looks of things, the base soils at Lookout Peak Trail System scope is very much nearly the same.

I hear it all the time from parents of how thankful they are that there are places so close to home to get kids outside and off their phones and engaging their bodies and minds. Ukiah deeply needs a place closer to town that kids can easily pedal out to and ride their bikes in the dirt.

I'm excited about the prospect of Ukiah having another place for kids to recreate in a healthy manner.

I hope that the City of Ukiah approves the CEQA document and work with Ukiah Valley Trail Group in building out a trail system. I would love to myself be able to visit Ukiah and ride the trails while doing errands in town as well.

Thank you for your time-

Myke Berna
Head Coach Mendo Composite Youth MTB Team
Caspar, CA 95420
(530)219-2788

Ukiah Valley Trail Group

September 2, 2025

City of Ukiah

300 Seminary Dr

Ukiah, CA 95482

RE: City of Ukiah Lookout Peak Trail Project

Attn: Katherine Schaefer,

Ms. Schaefer,

On behalf of the Ukiah Valley Trail Group Board of Directors I would like to express our strong support for the Lookout Peak Trail Project. We believe the CEQA document is a well written and thorough document. The scope of work and conceptual mapping will allow for the construction of a valuable trail system that will provide a wide variety of community health and prosperity benefits.

We have been proud and happy to partner with the City of Ukiah (COU) on the planning and construction of both City View Trail and Sol y Sombra Trail. We believe the work we have done to plan, construct, and maintain these trails on City of Ukiah property, as well as the trails at Lake Mendocino and Mill Creek Park speak to our understanding of this project.

We encourage you to approve the CEQA document and give the notice to proceed with construction of the trail system. Our partnership with the City of Ukiah dates back more than fifteen years and we expect to continue with this strong and collaborative partnership.

We paid over \$15,000 for the biological assessment that informs the Lookout Peak CEQA document and donated \$50,000 to help with the purchase of a critical connecting property to make this trail system possible. We have over \$100,000 earmarked for this project. With your approval, we can begin construction this fall and hope to be able to complete the first four mile "Gateway Loop" trail before next summer.

Additionally, we have applied for two grants that we hope will provide funding for the completion of the entire trail system. With or without the aforementioned grant, we are committed to continuing the fundraising necessary to complete the project.

The Ukiah Valley Trail Group has been building and maintaining trails since 2005 and we are proud of our track record of not only building but also maintaining our local trails. We have the equipment and personnel to take this project on and hope you will provide approval for us to begin construction as soon as possible.

Sincerely,

Mike Cannon

Board President info@mendotrails.org

www.mendotrails.org

707-972-9100

Lindstedt

From: Pam Lindstedt <plindstedt@gmail.com>
Sent on: Tuesday, September 2, 2025 5:21:01 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ms. Schaefer,

I have been involved in multi-use public land management projects for more than 30 years. I have reviewed the trail system proposal and the draft ISMND. As a hiker and mountain biker, I am excited by the opportunity for improved public land access in Ukiah. Although I live on the coast, I routinely visit Ukiah and will look forward to exploring a new trail system with my inland friends. As such, I request that you **approve the ISMND and go forward with building the trails.**

I have traveled extensively in the US and Canada specifically to enjoy mountain biking and hiking. The communities I have stayed in while traveling have all benefited from their trail systems. Benefits are not only evidenced by the amount of tourism and associated revenues, but also the health and happiness of the residents therein.

In addition, it has been my experience that well designed and managed trails and trail systems attract responsible users and reduce illegal activities (i.e., dumping, unapproved trail construction, homeless use, etc.).

Thank you for investing in the betterment of Ukiah and Mendocino County.

Sincerely,
Pam Lindstedt
Albion, CA

Elliot

From: Ronnie Elliott <ronniefix1977@gmail.com>
Sent on: Sunday, August 31, 2025 4:00:40 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject:

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please, please, please build those MTB trails in Ukiah! It would be so awesome for me my kids to have a place to ride, they love the bike park in Navato so much and are always asking me when we can have something here in town.

Apostol

From: Simon Apostol <simon.apostol@gmail.com>
Sent on: Monday, August 25, 2025 6:44:39 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good morning,

I am writing to support the adoption of the CEQA analysis for the planned Lookout Peak trail system. The disingenuous concerns of a few neighbors should not be a major consideration in the adoption of this badly needed expansion of outdoor access for our community. As a resident of the greater Ukiah area, despite our setting surrounded by natural beauty, I often have to travel far to hike, mountain bike, and otherwise recreate and enjoy the outdoors. Our region has so much potential as an outdoor recreation destination, but small-minded thinking and obstructionism must be set aside in order to realize that potential. The economic and community benefits of good trail systems, especially for communities within reach of major metro areas, is hard to overstate. For example, a study in 2014 of Oakridge, Oregon, estimated that mountain bikers spent between 2.3 million and 4.9 million dollars annually during overnight and day trips to the town (https://headwaterseconomics.org/wp-content/uploads/Trail_Study_104-OR-Mtn-Bike-Tourism-Oakridge.pdf). Even more important than tourism, however, is the benefit of trail access to locals, especially families with kids who badly need exposure to the outdoors. There is SO MUCH need for this project - easily evidenced by the crowds on our only existing local trail systems every weekend at Lake Mendocino and Low Gap Park. Again, please do not let a few neighbors harm our entire community by stalling or killing this project.

Thank you,

Simon Apostol
 3651 Low Gap Road.
 Ukiah, CA
 95481

Williams

From: skip williams <skipwms@yahoo.com>
Sent on: Tuesday, September 2, 2025 3:18:48 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support New trails in Ukiah

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good Morning :)
 I'm writing this letter in support of the CEQA document and give UVTG the green light to move forward in building the trails for the Lookout Peak Trail System. Hiking and bike trails have so many benefits, it's crazy not to go forward with this. My wife and I search out places to ride our bikes and to go hiking when we travel. Having this trail system would be amazing to have here at home. With activities declining for kids in the area this would be a big boost for them as well. Thank you for your consideration, we can't wait for this to happen.
 Skip Williams
 1430 Wildwood Rd., Ukiah Ca 95482

Prochter

From: Steven Prochter <prochter@gmail.com>
Date: Wed, Sep 3, 2025 at 6:40 PM
Subject: Comment on Lockout Peak Trails Draft ISMND
To: <kschaefer@cityofukiah.com>

Living in Redwood Valley, I am about half way between Ukiah and Willits. When considering traveling for shopping, dining, or recreation, I usually choose to travel to Ukiah, in no small part because of Ukiah's open public space, including Riverside Park, Low Gap Park and the Ukiah

Wastewater Treatment Plant (literally, for the birds!) I think the Lookout Peak Trails system will greatly expand and enhance Ukiah's public open spaces and strongly support this proposal.

Thank you,
Steven Prochter

Pletcher

From: Suzanne Pletcher <pletcherconsult@gmail.com>
Sent on: Tuesday, August 26, 2025 3:49:49 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Ukiah Valley Trails Group Letter of Support for Lookout Peak Trail

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I'm writing in support of the construction of a new westside Ukiah trail called Lookout Peak Trail.
This trail is needed: Residents in the southwestern Ukiah neighborhoods have no trails and must walk on streets. Low Gap Park trails are currently overloved and overused. The City needs to spread out foot traffic with new trails.

The more trails that the City can offer residents and visitors, the better: Trails offer access to nature, healthy lifestyles, tourism activities, healthy social activities, and an opportunity to learn about and appreciate our local flora and fauna.

As other communities have discovered, trails increase quality of life for all citizens and they support economic health of communities by providing an amenity that employers can use to attract talent. They also support tourism.

In my experience as a long-time hiker, the number of people hiking on trails deters bad behavior and homelessness.

Best wishes —Suzanne and Tim Pletcher

--
Suzanne Pletcher
pletcherconsult@gmail.com
(707) 489-1325

Scott

From: Tabitha Scott <tabitha@shanelvalleyacademy.com>
Sent on: Monday, September 8, 2025 10:33:13 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Fwd: I Support Lookout Peak Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please approve the City of Ukiah's CEQA document for the Lookout Peak Trail System and give the go ahead to start building these trails. I live in Hopland and would love to see more public access to hiking and trails around the Ukiah Valley.

--
Tabitha Scott
(she/her/hers)
Shanel Valley Academy
Social Emotional Counselor
PPSC, LCSW #83062

Powell

From: L. Virginia Powell <laurivpowell@gmail.com>
Sent on: Wednesday, September 3, 2025 6:00:46 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: New trails western hills

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ms Schaefer,

I hope you will consider the new trails proposed for the western hills of Ukiah. We live in one of the most beautiful places, and yet, we have so few trails that let us access this beauty. As a long-time user of our existing trails, I have been pleased to note that more Ukiah residents have been utilizing trails at Low Gap and Lake Mendocino. How wonderful it would be to add some more trails.

I hope that you will find a way to make this happen.

Virginia Powell
Ukiah

Van Sant

From: Will Van Sant <wvansant@gmail.com>
Sent on: Saturday, August 30, 2025 10:15:50 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: support for Lookout Peak

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi,

I am writing to express my support for the proposed Lookout Peak trail in the west hills of Ukiah. I am an avid mountain biker and it would be amazing to have this trail right at our doorstep. Outdoor recreation opportunities are essential for a healthy community. Thank you so much for approving the CEQA documents and giving UVTG the green light to build the trail.

Will Van Sant
4010 University Road
Hopland, CA 95409

Letters Opposed or with Concerns about Lookout Peak Trails

Aseltyne

From: Dennis Aseltyne <dpasseltyne@gmail.com>
Sent: Monday, August 11, 2025 2:50 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails Project Concerns

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good Afternoon MS Katherine Schaefer,

I have concerns about the planned Lookout Peak Project and the documents pertaining to **Section 17. Transportation** pages 44 and 45 sections A-B and C-D. For 36 years, I have lived on Helen Ave about 350 feet from the proposed trail gateway to the Lookout Peak Trail project site located on Doolan Canyon. I am an active member of the Western Hills FireWise Community Council (WHFWC) representing my neighbors that live on Helen and Doolan Canyon Road. The Western Hills FireWise Community Council is currently representing 2,200 homes located near the Western Hills.

The proposed project states that "Helen Avenue offers over 1,200 feet of on-street parking on both sides that can accommodate more than 100 cars and has additional parking on Washington Ave." Also stated in the Vehicle Miles Travelled (VMT) baseline Study (2020) "impacts would be less than significant." I feel these two claims may not be currently correct.

Why? Having raised a family of 5 children at 1248 Helen Ave, who attended Nokomis, Pomolita and Ukiah High School, I have been part of our communities on-going growing cycle. The 1200 block of Helen Ave has experienced the expansion of the HeadStart program on the corner of Washington Ave and the after school program at Nokomis has grown significantly. Nokomis this fall will have 63 UUSD employees. All three of these have staff, numerous volunteers and family visitors parking in our neighborhood.

Nokomis currently has 24 designated parking spaces for staff. The streets around these 3 programs accommodate well over 100 cars a day. If we consider peak seasonal demands for August, September and October, during soccer season, Helen Ave is overbooked for parking most of the time.

I am writing to you, Katherine, to identify a concern we live with and hope to find a solution. Many of my neighbors that can't find parking have resorted to putting up "No Parking" signs in front of their homes when they can't find parking or get out of their driveways. There are already significant concerns for limited public parking on Helen ave and adding more demand will need an agreed upon solution between the residents and the City of Ukiah.

I have been a vocal supporter of the Lookout Peak Trail Project at our monthly WHFWC meetings. My family, neighbors and I have hiked many trails on the Western Hills for the past 4 decades. They are a beautiful treasure for our grandchildren to enjoy. Please know that I fully support Neil Davis, Eva King and the City of Ukiah staff working on the Lookout Peak Trail project. While I can not predict the future for Helen Ave regarding the transportation concerns that I shared above, the message I want to convey to you is about my observations now. I am hopeful this project will work out to include further discussions for everyone involved in the Lookout Peak Trail Project.

Thank you for your attention to this matter and my concerns.
 I wish you all the best,

Dennis Aseltyne
 707-367-4976

Fetzer

From: Jeriko Estate Lodging & Events <events@jerikoestate.com>
Sent on: Monday, August 11, 2025 1:01:14 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
CC: Daniel Fetzer <dfetzer@jerikoestate.com>; stutsmanlookout@gmail.com; stuts161@gmail.com; kaitlennelson1995@yahoo.com; Kenzie Ford <kenzieford85@gmail.com>; Jennifer <jstuts6319@gmail.com>
Subject: Lookout Peak Trail Project

Follow up: Follow up

Start date: Thursday, August 14, 2025 12:00:00 AM

Due date: Thursday, August 14, 2025 12:00:00 AM

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Concerning the Lookout Peak Trail Project,

My name is Jennifer F. Fetzer, and I am representing my brother, Jerry S. Stutsman, and my father, Kenneth J. Stutsman, located on AP# 157-110-07 and 157-130-01. We believe the biggest concern about this trail is being ignored. The environmental impact reports only address the actual constructing of the trail, but do not address the future impacts of the trail. Ukiah is currently unable to control the homeless population and their encampments, their garbage piles, their feces and most concerning, their fires. These piles of garbage not only contain bottles which can cause fires, and cans and plastics that will kill wildlife animals, but are also an ugly display of litter that will end up all over the hills and wash into our runoff creeks and ultimately into our rivers. Their feces will also end up in the waterways. This trail will bring theft and other crimes to our doorsteps. It's bad enough to have to deal with drugged out people shouting profanities and showing their privates when in Ukiah. Perhaps figuring out how to handle the homeless situation in Ukiah should precede any thoughts of expanding their access any further. Ukiah has always been concerned about wildfires in the west hills, now you are creating a pathway for these fires to be started. We're not strangers to the fact that a fair amount of fires in the Ukiah Valley have been started by the homeless population. There will be, without a doubt, homeless encampments near the base of these trails. California has made it impossible to afford homeowners insurance in most areas of the west hills. Now you are planning to grossly increase the possibility of these hills and our homes burning. Though hiking trails are a nice idea, when are you planning to consider the impact of these trails on the residents located near the trails? They are the actual homeowners of this community. The residents in the city of Ukiah should be equally concerned, as a wildfire in the west hills could easily destroy the town of Ukiah itself. We stand strongly against the development of the Lookout Peak Trail Project at this time.

Kind regards,
 Jennifer Fetzer, Administrator of Estate for Jerry S. Stutsman
 Kenneth J. Stutsman

Gaskin

From: John Gaskin <gaskintutor@gmail.com>
Sent on: Monday, August 11, 2025 2:16:06 PM
To: Neil Davis <ndavis@cityofukiah.com>
CC: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trails

Follow up: Follow up
Start date: Thursday, August 14, 2025 12:00:00 AM
Due date: Thursday, August 14, 2025 12:00:00 AM

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi Neil,

I've been excited to see the progress of plans for the new trails in the Western Hills. I appreciate all the work and planning that have gone into this and know it is in good hands with the UVTG. I have some specific questions and thoughts which I will save for another time but wanted to put out a more "public" question.

Those of us who live along Helen Ave and Doolan Canyon have, as you know, mixed responses to this project. Being a trail lover, I am cautiously excited; many neighbors, who will be more impacted than I and may not consider it a plus to have trails near them, are more concerned. On behalf of our neighborhood group, I would like to put out to the City this question:

"The acquisition of the Western Hills and development of trails is a big win for the City of Ukiah. It is also a big win for hikers, bikers and all trail lovers. How can we make this a triple win? How can we make this also a win for those in the Helen Ave/Doolan Canyon area who currently live on quiet, dead-end streets but are now likely to be significantly impacted by the development of trails and access points in their neighborhood, even in some cases just outside their yards? In short, how can we change a win/win/lose into a triple win?"

Thanks for your consideration,
John Gaskin
900 Doolan Canyon Dr.
650 207-0191

Thanks, Neil, for the detailed response and the attached info, which I looked at as well. I completely agree with you that increased desirability and sale price are associated with proximity to open space, recreation and trails. I sincerely hope everyone involved will get to see that benefit, which would be a win for them.

My concern right now is more on the current process. While most of our neighbors are generally positive about the project, they feel more like it is being done to them as opposed to with them. I don't know what can be done or what would be helpful, but I do feel like offering something to mitigate the negative changes for the neighbors would go a long way towards their feelings about the project and would help them feel included.

Some possibilities could be:

- a) a crosswalk on Helen and a sidewalk up Doolan Canyon that clearly and safely guide people to the trailhead (currently people walk in the street there)
- b) signage and/or landscaping that encourage people to park on the school side of Helen (this would help in soccer season also!) and not along the narrow roads around the trailheads
- c) privacy fencing behind those that will have trails immediately behind their house

I realize these take money and coordination. However, having some ideas in hand at the upcoming public meeting would do a lot, I believe, to encourage our neighbors that they are being considered during this process. (Unfortunately, I will be working that evening and can't attend.)

Once again, thanks for considering and for all you and others are doing to make this happen. Great trails, very close to home! :)

John

On Aug 11, 2025, at 7:48 AM, Neil Davis <ndavis@cityofukiah.com> wrote:

Thanks for reaching out, John. I think the benefit to neighbors is increased property value. While I absolutely believe it is real, it can be a hard sell as it requires people to trust that it will play out as expected when in fact there is no absolute guarantee. Here is the rundown of neighborhood and community benefits below. I also attached a couple references.

Generally, trails can positively impact property values. Studies show that homes near trails and greenways often experience a price premium, typically ranging from 2% to 10%. This is often attributed to the perceived benefits of access to recreation, healthy living, and a more desirable neighborhood environment.

Here's a more detailed look:

Increased Property Value: Research indicates that trails can increase property values, with some studies showing a 2-5% premium for homes near trails, according to Headwaters Economics. In some cases, the premium can be as high as 15%.

Higher Sale Prices: Homes located near trails may also sell for more than comparable homes in different neighborhoods.

Enhanced Marketability: Trails can make homes easier to sell, with a significant percentage of homeowners and real estate agents believing that a trail would increase a home's saleability, according to American Trails.

Desirable Amenity: Trails are often seen as a desirable community amenity, contributing to a more attractive and vibrant neighborhood.

Reduced Crime: Studies have indicated that trails, when properly maintained and monitored, do not contribute to increased crime rates and may even have a neutral or positive effect on safety, according to American Trails.

Community Benefits: Trails can also bring economic development, tourism, and community building to an area.

Neil Davis

Harrison

From: dale harrison <rxdale@gmail.com>
Sent on: Monday, September 8, 2025 9:27:12 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject:

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.



dale harrison <rxdale@gmail.com>
 to kschaefer

2:13 PM (8 minutes ago)

I know the City will be addressing the issue of the new Lookout Peak Trail proposal on September 17. I will be out of town that day and am not able to attend the meeting. I want to share my experience as a homeowner whose property adjoins a city trail. I am speaking from experience.

My property at 1171 Maple Avenue backs up to the City View Trail. I supported the construction of the City View Trail years back though that was not the perspective of some of my neighbors. They had valid concerns about trespassing, trash, misuse and parking. Some of those concerns have proven valid, some not. I spent a few thousand dollars on fencing to cut down on trespassing and trash, and I continue to love and use the City View Trail several times a week. The cost of the fencing and installation of the gate were a small price to pay. I love the trail and the opportunity for healthy recreation it provides.

The trail has not been without issues. I strongly urge the City to do two things before it approves the new trail project.

First and most crucial is to establish a plan to deal with the inevitable homeless issue and fire risk that will develop. From experience I know that fire-hardened trails and the acceptance of homelessness as a fact of life is inadequate. Low Gap Park is a county park on portions of land owned by the City of Ukiah and Mendocino County. Three years ago I discovered a homeless encampment in Low Gap where cooking fires had started grass fires and singed trees. The City denied responsibility for the county park and the County claimed the GPS coordinates showed the camp to be on City property. If no action had been taken to mitigate the problem would the City and County share responsibility for the ensuing fire that claimed my home? Fortunately a city employee took it upon himself to direct a volunteer cleanup of the attractive nuisance the park offered. If the City approves this project it must have a plan in place to deal with this issue. Once the plan is developed there must be a readily available point of contact so hikers and walkers can easily notify the city and keep the western hills safe from fire. Our local Firesafe Council can help us keep our homes safe but the City must assume responsibility for the western hills. Signage at the trailhead on who to contact with safety issues may help prevent those same issues.

Second, the City should work with homeowners to mitigate issues of parking and the security of their property. These issues are largely educational and may seem small but I assure you they are important to those near the trailhead who will bear the irritation of congestion and strangers in their neighborhood. Over time this will diminish but understanding and cooperation are important as the project moves forward.

I support the construction of the proposed trail. A healthy Ukiah benefits everyone. Communities that offer outdoor activity properly organized have the potential for improved health, increased property values and even increased tourism. Done properly, this project has the potential to benefit everyone.

Dale Harrison
 1171 Maple Ave
 Ukiah, CA 95482
 707.972.0610

Jenkins

I am writing to provide my wholehearted support for the "Lookout Peaks Trail" project as outlined in the LPT ISMND. I and my wife Alese have resided in the greater Ukiah area for 45 years, where we raised two children. In other words, we're true "locals". We believe adding more opportunities for us and our Ukiah neighbors to experience nature, especially ones accessible by foot or bicycle, are essential for the public health and well being of folks living in the area.

We have hiked many miles of trails in state and national parks, as well as more developed areas, in this as well as other countries. We greatly appreciate the trails created and maintained by the Ukiah Valley Trails Group, especially those at Low Gap Park and Lake Mendocino, and consider them among the best anywhere. We're confident that this project will result in trails that are of the highest caliber, and we look forward to experiencing them. My only recommendation would be to add secure bicycle racks/ shelters at the trail heads so people can ride street bikes to the trail heads, and feel comfortable about locking them up while enjoying a beautiful hike in the hills. I didn't notice this inclusion in the narrative.

With such great outdoor recreation opportunities as these trails will provide, along with the aforementioned trails, Lake Mendocino, the Great Redwood Trail, our rivers and increased river

access, not to mention the downtown Ukiah face-lift and street improvements, we believe the Ukiah area is poised to become a well known and desired outdoor recreation area. We all know the economic benefits associated with such an outcome.

In conclusion, I want to encourage every effort be made to ensure that this protect come to fruition.

Respectfully, Dan Jenkins

Danielgrahamjenkins@gmail.com

Jennings

From: Kevin <ajkj@pacific.net>
Sent on: Sunday, August 10, 2025 5:37:45 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: New Trail Comments / Concerns

Follow up: Follow up
Start date: Thursday, August 14, 2025 12:00:00 AM
Due date: Thursday, August 14, 2025 12:00:00 AM

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Katherine,

My name is Kevin Jennings, retired Ukiah Fire / Ukiah Valley Fire Authority, with a total of 37 years of service to our community. My last 15 years I spent as the Division Chief / Fire Marshall. I have some comments and concerns regarding the proposed new trails for the western hills.

1. General trail construction should be a minimum of 6 feet in width, with no steps! This will allow access to the entire area via small "side by sides". Medical rescue and emergency response should be a critical component to this project. I speak from an actual experience with a rescue situation in the upper Low Gap Park trail. Our patient was located on the upper most trail with a severely sprained ankle. The trail was narrow and had steps built into it. It took three engine companies almost three hours to carry this patient out to the parking lot of the park. There were no areas capable of performing a short haul with a Cal Fire aircraft.
2. Having trails with a 6 foot width would also allow for maintenance and patrols of the area for unauthorized use (camping & transients). This has to be given serious thought!
3. It appears that access to this area will be from public spaces, or on street parking in a very packed residential area. A serious look through the areas in question can easily see that the residents already use up most of the available spaces. Prohibiting or the unintentional restriction of residential parking should be prohibited.
4. What is the plan for patrolling, policing and maintenance of the trails and areas impacted by such improvements.

I hope that the Ukiah Valley Fire Authority has been given an opportunity to present ideas on this development. As a board member for the Authority I have not seen or heard of any such opportunity. This may have been done on a different level that I or other boards members are unaware of. Thank you for your consideration with this letter comment and concern.

Kevin Jennings,
Retire Fire
Ukiah Valley Fire Authority Board Member
Resident of Ukiah, 317 Hillview Ave.

Sent from [Mail](#) for Windows

Keizer

From: Matthew Keizer <mkeizer@cityofukiah.com>
Sent on: Wednesday, August 13, 2025 6:29:24 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
CC: Justin Buckingham <jbuckingham@cityofukiah.com>
Subject: Re: Notice of Availability of a Draft Mitigated Negative Declaration for the Lookout Peak Trail Project
Attachments: image001.png (6.81 KB), image001.png (6.81 KB), image001.png (6.81 KB), Notice of Availability_Lookout Peak MND.pdf (515.25 KB)

Follow up: Follow up
Start date: Thursday, August 14, 2025 12:00:00 AM
Due date: Thursday, August 14, 2025 12:00:00 AM

Good morning Katherine,

I have listed a few COAs for the Western hills project. I have also copied BC Buckingham incase I missed anything worth noting on the COAs for fire life safety planning, and response.

UVFA C.O.A

1. No trails less than 5ft wide to allow UVFA UTV access to all areas. No steps in trails also to allow UTV access.
2. Dedicated road loops for access of fire apparatus. To be made to the standard of title 14 Forestry standards.
3. Staging area for fire apparatus to deploy from.
4. Dedicated LZ with wind instruments. Location TBD.
5. Dedicated water supply tanks for fire suppression efforts. Location TBD.
6. Clear trail markings, including mile markers, and over all trail maps posted.
7. Final trail map, signage, tanks, LZs, and location of all of the above conditions shall be approved by the UVFA Fire Code Official.

Matt Keizer, CBO, MCP, CFM
Chief Building Official
Chief Code Enforcement Officer
UVFA Fire Code Official

Email: mkeizer@cityofukiah.com
 300 Seminary Ave
 Ukiah, CA 95482
 Office 707-467-5786
 Desk 707-467-5718
 Fax 707-463-6204
 Inspection 707-463-6739
<http://www.cityofukiah.com/community-development/>
<http://www.cityofukiah.com/uvfa/>

Mordhorst

532 Doolan Canyon Drive
 Ukiah, CA
 707-318-8611

Katherine Schaefer
 300 Seminary Avenue
 Ukiah CA
 Dear Ms Schaefer

We live at 532 Doolan Canyon Drive and have several concerns regarding the Lookout Peak Trail Project. While we support the concept of hiking trails our concerns are how the proposed project will impact our property and safety. I have communicated these concerns to Neil, as well as Mari Rodin, in the past but it doesn't seem to have any impact on the design of this project.

We are the center house of the three homes that are just below the proposed trail heads. We have live at this property for over 35 years and have never desired nor needed a fence on the western edge of our property. Now it appears the trail will go just above the property line between us and the

city. We are not interested in having people looking down to our property, scoping it out for who knows what, or using it as ingress/egress for the trails as they see fit. We are also concerned about the potential for dogs to be running free from the trails. We will no longer feel safe in on our property.

The mitigated negative declaration document speaks to many things including wildlife, plants, trees etc. but doesn't address the negative impact on your adjoining neighbors!

The slope on the hill has long been a concern with rainwater runoff and erosion. All three properties have had issues with our retaining walls. Further disturbance on the hillside creating these trails could affect the current water flow patterns and exacerbate these issues. What assurance do we have that the construction will not cause damage to our property?

Plus our historic solitude will now be disrupted with chain saws, small motors, small dirt movers and more. What steps does the city plan to implement to assure that motorized vehicles will not be racing up and down these trails or that homeless individuals decide this would be a great place to set up camp? There was a previous incident of children playing with matches starting a fire on that hillside. I understand the city believes that this will help with fire prevention but it is also important to note that legal or illegal activities on the hillside could cause fires. I personally have cut the overly tall grass on the city side of our adjoining property line to have defensible space. What steps will you be taking to be sure the grasses below the trails and our property are kept cut? I find it interesting the fire marshall tells us to keep the grasses cut but the city doesn't do so on their property.

Our understanding is the trailheads will be on Helen Ave. and Doolan Canyon Drive. The entrance and egress to our property is a utility easement alleyway just behind the homes on Helen Ave. We currently have issues safely entering and exiting the alley. This is exacerbated when cars, particularly high profile vehicles, are parked along Doolan Canyon. The same is true turning onto Helen Avenue, especially during soccer season. Having people park along Helen Avenue and more particularly, Doolan Canyon Drive to walk up to the trailhead is not safe for either the pedestrians or the vehicle traffic. There are no sidewalks on Doolan Canyon and people will be walking around parked vehicles to get to the trailhead. Plus what is to prevent people from parking on private property or in the easement alley blocking our entrance and exit?

The city has 700 acres to design this project. Why do they need to put the access points and trails so close to our property line? It is very frustrating to think that after living here over 35 years that our peace, quiet, safety and hillside view may be compromised by this project. We respectfully request that you reconsider this design or insure us that our property and peace will be considered in this process including keep us informed as to meetings, timelines and next steps. Please be certain that the three most affected property owners are on your mailing list.

Sincerely

Bruce and Carol Mordhorst

Rogers

August 10, 2025

Katherine Schaefer
City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482

Subject: Initial Study and Mitigated Negative Declaration for the Lookout Peak Trails Project

Dear Ms. Schaefer,

We live at 345 San Jacinta Drive in close proximity to the proposed trails project. We have lived at this location for 22 years and a total of 43 years in Ukiah. We enjoy the natural beauty of the Ukiah Valley. We support the idea of hiking and we enjoy hiking around the Ukiah Valley.

Our parcel adjoins one of the privately-owned parcels that will have a public trail easement across the property. It appears that the trail easement will have to cross the private driveway that serves the property. We are concerned about hikers who may wander off the trail and/or use the driveway for access and trespass on our property (the driveway goes through our property). We ask the city to re-design the trails so that they are kept exclusively on public land to avoid problems and interactions with private property owners. (We are aware of two private lawsuits involving easements associated with the recent acquisition and development in the western hills.) Who would be responsible for damage caused by the public on the easements across private property? What if there is a disagreement about the damage or the cause? Public trails should stay on public lands.

In addition, we are very concerned about public safety issues and potential wildfire impacts from public access to the western hills. How will emergency responders get access to and evacuate someone who gets injured or has a medical emergency in the western hills? The proposed trails project is in a very high fire hazard severity zone. With an increased frequency of drought conditions and impacts from climate change, the probability of a major wildland fire increases in the western hills of Ukiah. We are concerned about people smoking or starting campfires that would pose a significant risk for starting a wildfire.

In summary, we ask the city to re-design the trails to be kept exclusively on public lands. We also want assurances that the city will maintain the trails in perpetuity.

Sincerely,

John and Delynne Rogers,

Co-Chair and Members of the Western Hills Firewise Community

St Pierre

Sent: Monday, August 11, 2025 3:00 PM

To: Katherine Schaefer <KSchaefer@cityofukiah.com>

Subject: Lookout peak trail comments

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

City of Ukiah
Planning Department
300 Seminary Avenue
Ukiah, CA 95482

Dear City of Ukiah Planning Department,
Re: Lookout Peak Trail Proposal

We are writing on behalf of Nui Rising Moon Trust LLC regarding the proposed Lookout Peak Trail. Our property borders the entire length of the proposed trail along its northern and eastern boundaries. While we do not oppose the creation of a public use area, we have significant concerns about the proposal and its impact on our private property.

The current proposal lacks details on measures to prevent trail users from wandering off the designated paths onto private property. Over the past 10 years, we have experienced numerous instances of trespassing on our land, and we are concerned that the proposed trail, particularly the observation areas on the far west end and the trail routes as shown, will exacerbate this issue by encouraging hikers and bikers to stray onto private properties.

Additionally, the proposal includes a map depicting a road that does not exist, which comes within a couple hundred feet of our residence. This raises further concerns about privacy and potential

disturbances. We also note that the proposed trail near Doolan Creek utilizes a firebreak to the south, which is likely to funnel trail users directly toward private property. We suggest rerouting this section of the trail away from the firebreak to minimize trespassing risks. Response: The map does depict an old road or fire break that has completely grown over and is depicted as traveling from City property to Rising Moon property. The City has no intention of regrading/opening this old route and is legally prohibited from doing road work on a neighbor's (your) property without permission. Trail 403 does come near this old road, but the trail is exclusively on City property. The old road in this area that still exists traverses from City property onto Rising Moon where there is a gate at the property boundary. A "No Trespassing Private Property" sign can be placed on the gate.

For the past 10 years, we have relied on the firebreak to access our eastern parcel, as it is the only viable access route. Given that our use of this firebreak predates the period required to establish an easement, we seek clarification on how the City will guarantee our continued, unobstructed access to this route. Response: The access to this location does not cross City property so we have no authority in opening, closing, or maintaining the road.

To address these concerns, we respectfully request the following:

1. A detailed plan outlining how the City will protect private property, including adequate signage and potential fencing to clearly delineate public and private land. There are no restrictions on Nui Rising Moon from placing no trespassing signs or placing fencing around their property. The City will place no trespassing signs at our discretion in locations that benefit the City. Objective 2 of the Western Hills Watershed Protection Area Management Plan requires that we limit the use of fencing to allow unimpeded travel of wildlife. We have no plans of attempting to fence off areas of our property.
2. Rerouting of the trail near Doolan Creek to avoid the southern firebreak. Our experience and observations of trail user behavior is that there will be no incentive for trail users to trespass in this direction. While we cannot guarantee it will never happen, the expected incidence rate does not merit rerouting the trail.
3. Greater transparency and information regarding the planning process, including opportunities for property owners to provide input. Public input for this has included the public input to the Ukiah General Plan (adopted 2022) which led to Goal ED-5.1 which directs staff to seek out "new outdoor recreation opportunities." In August of 2022 the City Council received a report on the contract for a trail concept plan and mapping in the Western Hills Watershed Protection Area. In March of 2024 the Public Spaces Commission held a community forum on the subject of the "Development of the Ukiah Valley as an Outdoor Recreation Hub" where members of the public specifically requested trails in this area. While not legally required, a Notice of Availability (NOA) of the Initial Study and Mitigated Negative Declaration was made available on July 11th to allow for an additional 30 days for the public to review and provide comment on the project. A Notice of Intent (NOI) was then released on August 8th for the mandated 30 day public review period which will close on September 8th. A letter was sent to all property owners within 300 feet of the project area for both the NOA and the NOI. The NOI and NOA were made available on the City's website and a notice

was placed in Ukiah Daily Journal. The public is invited to attend the Ukiah City Council Meeting on September 17th to provide comment.

4. Specific measures to deter trail users from entering private property, particularly near the western observation areas and southern trail sections. [See the response to #2.](#)

We appreciate the City's efforts to create public recreational opportunities and are open to working collaboratively to ensure our private property rights are respected. Please provide further clarification on the above points and consider our suggestions for trail adjustments and protective measures. We look forward to your response and to participating in a transparent planning process.

Sincerely,

Kylle St Pierre caretaker
Nui Rising Moon Trust LLC

Washburn

From: Fluid Acrylic Designs by Lisa Ann <fluidacrylicdesigns@gmail.com>
Sent on: Sunday, July 27, 2025 10:56:43 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout peak trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I want to comment on your proposal of one of the access points for the trails. You want to use my easement which was part of the Crane's sale to the City. Our family and two others paid \$20k to pave that easement years ago. You think that we want people to wander up our driveway, parking in my driveway, potential break in of my home and surrounding homes. You will bring our homes values down to NOTHING. The neighbors and I will absolutely fight you on this and are talking about hiring a lawyer to sue the City if you go forward with this. You will ruin all of our quality of life by making this the access point, create potential crime in our neighborhood, create less parking along Helen Ave. and we are not going to allow this to happen. Our neighborhood is quiet, peaceful, and a lot of the homes are homes to people who are retired.

I guarantee that you will see ALL OF US at the hearing, fighting you 100%. You never even bothered sending me ANYTHING about this, which makes me know that you were trying to hide it from us knowing it would 100% impact our lives here. My husband's family has owned this property for 50 years, and I am not about to let the City RUIN OUR PROPERTY VALUES NOR OUR LIVES!

I want you to tell me when the next meeting is so our neighborhood can show up all together to fight the City on this, since no one bothered notifying me in the first place!!!

I'm appalled that the city would even consider doing something so blatantly disrespectful of me, and my neighbors!

The smart thing to do would be to use Redwood Ave. as your access point, but then again, the City hasn't been smart about doing anything lately that benefits the people. Dave Hull granted you all that land, USE THAT LAND FOR THE ACCESS!!!!!!!!!!

A very ticked off property owner @ 1256 Helen Ave.

Lisa Washburn

From: Steve Email <stevesaddy@yahoo.com>
Sent on: Wednesday, September 3, 2025 2:42:23 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
CC: mdavis@cityofukiah.com
Subject: Look Out Peak

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

My name is Steven Washburn, I live at 1256 Helen Avenue.

All my neighbors received a notice I did not receive. My neighbors informed me my driveway, I have used since 1978, is now the cities "Trail Head" to "look out point".

When I moved here this driveway was a dirt gravel pitted washout. My family and my neighbors spent 20,000 dollars in the early 80's to make this a driveway and pave it. When Eric Crane sold this property the agreement was that my driveway would not be an access point for your park. It is one car width wide and specifically leads to my house.

At the end of Jacinta drive the city has already made a parking lot. Far away from neighbors and back yards and makes perfect sense for a "Look out". But the city would rather have people hike around my back yard, loiter in my driveway, and clutter up Doolan Canyon Drive a single lane road that's not wide enough for a central divider. When designing a park the designers need to make a parking lot on the parks property and not expect people to allow trespassing, blocking roads and creating a nuisance.

The city of Ukiah put a fence down the middle of the Nokomis schoolyard in front of my house. The city of Ukiah declared half of Nokomis school field is now a park. The city then bought the property behind my house and declared that this area is also a park, even though it is outside city limits. Plans are for my driveway to become the corridor. This is invasion of privacy, home devaluation and a set up to have homeless encampments in my backyard. In the 50 years I lived in Ukiah I have never been more threatened with crime, and yet it is the city that is now my biggest threat. Excluding me from notification for some reason.

The city sold the land they had in city limits known as Standley creek, which was a perfect park, I would leave my "look out point" to hike up Standley creek but it is now private property. The city sold city property to buy up property outside the city limits to make my back yard the park and my house the parking lot area. Why hike to waterfalls when you can stand in my backyard.

Knowing people will think my driveway is their parking lot is infuriating, especially since we have to work and worry about people being at my house all day, threatening my privacy and security. In 50 years we never had the public access to our front door. I will not tolerate people blocking my driveway or parking at my house.

Basically the city needs to create their own parking lot on their new land, like the one at the end of Jacinta, The one already built. You can not expect current parking to meet this demand. Nokomis school is now a park, one block from Observatory park. I now live one block away from 3 different parks with no parking, when I moved here there were none.

My property value is based on seclusion, why we live on the edge of town. You just destroyed our privacy by buying up property outside of Ukiah city limits and turning my driveway and my house into a "park". Park Infront, Park Behind and my very own driveway we built. I can not express how upsetting this is and will certainly call Eric Crane into court to prove this was not part of your agreement. You are destroying what we paid to have, Privacy.

Steven Washburn
9-3-2025

Public Comment – Lisa Washburn

Original Email From: fluidacrylicdesigns@gmail.com (Designs by Lisa Ann) To: kschaefers@cityofukiah.com (Katherine Schaefer); ndavis@cityofukiah.com (Neil Davis)

I need clarification as to whether your access points to lookout peak trails is my driveway or not. I live at 1256 Helen Ave. and my driveway is almost exactly 350ft. from Doolan Canyon. Hull does NOT own our portion of the hillside there, and I am NOT allowing strangers to just think they can come and go, trespassing onto my portion of the hillside.

Redwood Ave. should be the access point being that it was owned by Noguera and Hull.

We had too many homeless people camping up the hill from our house starting campfires, etc. and I have 3 dogs. I am not going to allow trespassing, so please clarify whether or not Redwood Ave. is access or my driveway because my neighbors have informed me that it's my driveway. WE OWN THAT PORTION OF HILLSIDE! And if I have to hire a lawyer to fight this nonsense then I will absolutely will do that to keep what little privacy I still have.

A VERY CONCERNED PROPERTY OWNER,

Lisa Washburn

Email Response

Good afternoon Ms. Washburn,

Thank you for reaching out and clearly expressing your concerns regarding access to the Lookout Peak Trails Project and your driveway at 1256 Helen Ave. We understand your desire for privacy and clarity on your property.

Based on our records, after the conveyance of the property that contains the road from the Crane family to the City of Ukiah, the City took ownership of the area containing the access road that passes 1256 Helen Avenue. In 1979, the Cranes granted a nonexclusive easement on this road for the benefit of 1256 Helen Avenue, and other similarly situated parcels, for ingress and egress only.

To clarify, the attached Quitclaim Deed, Document 2025-02655 (Attachment B in the Draft ISMND), signed by the City of Ukiah and D&J Investments LLC (including David J. Hull) on March 31, 2025, transferred certain property interests to the City of Ukiah. These property rights include the road, which passes adjacent to your parcel, continuing up into the hillside.

This road is detailed in "TRACT FIVE" within the deed, and notes a legal description, using metes and bounds (specific directions and distances), describing a path that extends from Lot 11, Yokayo Rancho, to Helen Avenue, and then explicitly refers to a "centerline of a road from Helen Avenue toward Doolan Canyon". The deed provides exact measurements for this road's winding path (South 86°52' West, 252.84 feet" and "South 38°52' West, 224.49 feet"), the beginning of which corresponds to your driveway's location (roughly 350 ft. from Doolan Canyon Rd.).

This Quitclaim Deed specifically preserves and upholds the pre-existing legal status of this road, including the easement that benefits your property, confirming the road's continued status as a shared access point rather than an exclusively private driveway.

Note that a public hearing for this project has not yet been scheduled. Once a date is set, a hearing notice will be mailed to all property owners located within 300 feet of the proposed project site. Comments on the project will also be encouraged at this time, both in writing and in-person/via Zoom during the public hearing.

Sincerely,

ISMND Response to Comment

Response to Public Comment on the Initial Study/Mitigated Negative Declaration (ISMND) for the Lookout Peak Trails Project

To clarify the legal status of the access point in question, the City refers to Quitclaim Deed, Document 2025-02655 (Attachment B in the Draft ISMND). This deed, signed by the City of Ukiah and D&I Investments LLC (including David J. Hull) on March 31, 2025, and recorded on April 1, 2025, formally transferred specific property interests to the City of Ukiah.

Central to understanding this access point is "TRACT FIVE" as detailed within Exhibit "A" of the deed. TRACT FIVE contains a precise legal description, utilizing metes and bounds (specific directions and distances). This description identifies a path beginning near Lot 11, Yokayo Rancho, extending to Helen Avenue, and then explicitly referring to a "centerline of a road from Helen Avenue toward Doolan Canyon". The deed provides exact measurements

for this road's winding path, such as "South 86°52' West, 252.84 feet" and further along "South 38°52' West, 224.49 feet". These detailed measurements correspond to the location previously described as the driveway at 1256 Helen Ave., approximately 350 feet from Doolan Canyon Road.

This Quitclaim Deed is given pursuant to Lot Line Adjustment File No. LLA25-000003 and is expressly intended to create no new parcel. This means the deed itself is not establishing a new public road or right-of-way where one did not previously exist. Instead, the deed states: "The Lot Line Adjustment shall not relinquish, remise, release or terminate any prior right, interest in rights-of-way, easements, or other rights which may be appurtenant to and/or and encumbrance to the subject property".

Therefore, the Quitclaim Deed specifically preserves and upholds any pre-existing legal status of this described "road from Helen Avenue toward Doolan Canyon" as a public right-of-way or an easement. This confirms its continued status as a shared access point, rather than an exclusively private driveway.

Wetzel Chinn

Jeanne Wetzel Chinn
395 San Jacinta Drive
Ukiah, CA 95482

August 1, 2025

Katherine Schaefer
Planning Manager
Community Development Department
300 Seminary Ave
Ukiah, CA 95482
Re: City of Ukiah IS/MND under CEQA –Lookout Peak Trail Project Public Comment

Dear Ms. Schaefer:

As a long-time resident in the Western Hills for over 30 years, I am concerned about the planned Lookout Peak Trail Project. There seems to be several missing and important factors for success of this project.

First, there is no designated parking for hikers causing concerns about impacts to homeowners in the area of South Helen and Doolan Canyon, especially during the outdoor sports season, which aligns with great hiking weather! Can you acquire an area for hiker parking?

Who will monitor and clean up the trash left behind by hikers and how often? And will toilets be installed for those in need of such?

There is further concern that it will create a nexus for homeless people to go further up into the hills and have campfires. Will smoking be prohibited on the trails? These activities will increase fire risk in this already highest fire risk zone.

Will there be areas in this Natural Woodland that will be off-limits to hikers, bikers, and vehicles to provide necessary seasonal safety, quiet, and space for nesting, fawning, and denning? There are many foxes, deer, birds, and other wildlife in the Western Hills, and it is imperative to protect them and their habitat, and not create such habitat fragmentation that we lose them.

I respectfully urge full consideration of my concerns, and additional protection measures as needed to provide safety for those of us living in the Western Hills. Thank you.

Best regards,

Jeanne Wetzel Chinn, M.S.
395 San Jacinta Drive, Ukiah

Questions Seeking Clarification

From: Katherine Schaefer <KSchaefer@cityofukiah.com>
Sent on: Wednesday, July 16, 2025 5:52:30 PM
To: Neil Davis <ndavis@cityofukiah.com>
Subject: FW: Voice Mail Message (Noguera)
Attachments: N_V6877dd67.05c.wav (514.74 KB), Final map after LLAs with new document numbers.pdf (183.56 KB), Notice of Availability_Lookout Peak MND.pdf (515.25 KB)

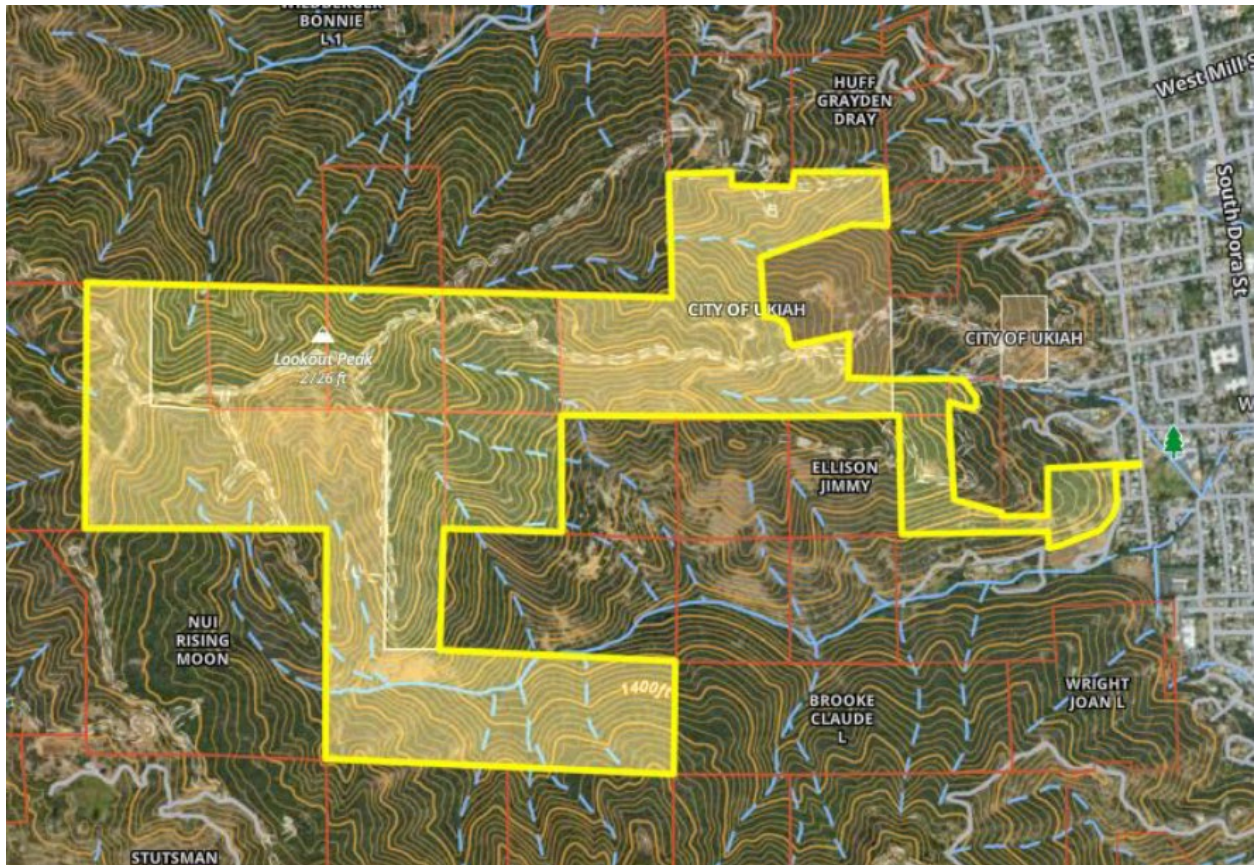
Good morning Neil,

Forwarding over to you a 10:11am voicemail message from Adonis Noguera, asking about the boundaries of the NOA map shown in yellow (NOA attached), and whether his property is included.

I have attached here the Final Map of the recent (recorded April 1, 2025) LLA for Redwood Avenue/Western Hills, showing the delineation of the Noguera parcels vs the project area (Parcel I on the map) for reference.

Adonis Nogeura
(707) 513-3562
620 Redwood Avenue

I believe his question may be the slight highlighting and labeling of “City of Ukiah” of 620 Redwood Avenue outside of the project area (yellow arrow below):



Thank you,

Katherine Schaefer

Planning Manager

Department of Community Development

300 Seminary Avenue, Ukiah, CA 95482

P: 707.463.6203

www.cityofukiah.com/community-development

-----Original Message-----

From: Katherine_Schaefer@CityofUkiah.com <Katherine_Schaefer@CityofUkiah.com>

Sent: Wednesday, July 16, 2025 11:12 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Voice Mail Message

This e-mail contains a voice message.

Double click on the attached file to listen.

<6203@CityofUkiah.com>

Meeting Memos

MEMORANDUM:

To: Katherine Schaefer

From: Neil Davis

Date: 8/18/25

Subject: Meeting with neighbors regarding the Lookout Peak Trail Project

At the request of Dennis Aseltyne, I met with him, his wife Gina, John Rogers, and Jim Xerogeanes to discuss the Lookout Peak Trail Project. We met at Mr. Aseltyne's home from 9AM until 10:40 AM. The primary areas of concern were 1) use of the access road next to Mr. Aseltyne's home for trail access, 2) parking on Helen Ave, and 3) the possibility of trespass opportunities created by the proposed section of trail that crosses a private road above Mr. Rogers' property.

Mr. Xerogeanes shared at the beginning of the conversation that he happened to be visiting Mr. Aseltyne and was curious about the project but that he does not live in the immediate area and was not coming to the conversation with any particular concerns, just curiosity.

Mr. Aseltyne stated he felt he was speaking on behalf of a number of neighbors. He said they are concerned that the use of the access road on the south side of his property is unnecessary and duplicative providing little additional benefit to users while exposing the property owners along the road to decreased privacy, and potential illegal activities. They are also concerned people will try to park along the access road and that there is not enough room for parking or turnaround of vehicles.

Regarding the subject of two trailheads including using the road alongside Mr. Aseltyne's residence, Mr. Rogers opined that the two trail heads are so close together it doesn't really spread the impact.

I told them we could provide signage and make the access road a "no parking zone" with signage that indicates it is only open to walkers and bicyclists. I also pointed out that not using this access point would increase the number of people who would use the other trailhead. Using two trailheads spreads people out as opposed to concentrating them thereby increasing the impact to the neighbors who are at the remaining trailhead. He said he didn't think the neighbors on Doolin Canyon Dr cared and that he would check with them and get back to me.

Regarding parking, Mr. Aseltyne suggested that there have been changes in use on Helen Ave. since the 2020 Traffic study that is quoted in the CEQA document. Specifically, there is

a new Head Start School on the Nokomis School site and additions to the Nokomis School supplanted off street parking for the teachers at the school. The number of teachers at Nokomis School may also have increased.

He felt that if the City added a sidewalk on the west side of the street it would help. Gina Aseltyn stated concerns regarding the drop off zone for the Head Start School and the danger of people making U turns at the T intersection of Helen and Washington. I told them that my perspective is there is adequate existing parking on Helen, while acknowledging there may be peak times when parking is limited. I informed them that City policy places the responsibility of sidewalks on property owners and that I already spoke with the Director of Public Works who was disinclined to make an exception. I told them I would speak with public works to see if there are options for improving the drop-off zone and if there are ways we can use paint to improve and organize parking along Helen Ave. I told them my recommendation will be to add signage around the trailheads and begin building trail. Should a parking problem arise as the trail system grows there are interventions that can be placed to address the problem.

Mr. Rogers stated his chief concern regarding the possibility of trail users diverting from the trail down the private road that crosses his and a neighbor's property. I told him we cannot relocate that trail as it is an easement and the trail allows for a loop trail as opposed to an out-and-back trail. I told him we will put up no trespassing signs and that he of course is free to place fences and gates around his property.

In addition to the concern regarding trespass, Mr. Rogers expressed concern about potential problems with the trail easement across private property. Interactions between the property owner and hikers/bikers and asked who would be responsible for fixing problems on private property and maintaining the trail in the easement.

Mr. Rogers suggested making the trails as an out-and-back, not a loop. Making a single trailhead on Doolan Canyon Road would eliminate many of the impacts on the properties near the Helen trailhead. It would also eliminate the need for a public easement on private property. I informed him the easement already exists but if the public supports an out-and-back trail rather than a loop the trail could be built in that way.

During the hour and forty-minute conversation there were also brief comments and concerns stated regarding homeless issues and the concern about fire and vandalism. The primary concerns were as stated above.

MEMORANDUM;

To: Katherine Schaefers
From: Neil Davis
Date: 8/22/2025
Subject: Phone call with Kita Grinberg

I spoke on the phone with Kita Grinberg regarding the Lookout Peak Trail Project. Ms. Grinberg stated that she is a hiker and is in support of the project but was concerned about privacy, the potential for drainage from the trails to come on to her property, and about parking. I explained we could route the trail in such as to help protect her privacy and that the trails will not alter how the hillside drains. She expressed satisfaction with these answers. I acknowledged that there is little room for parking or turnaround on the street but that we may be able to mitigate these concerns with signage or other parking control options. I told her I would speak with the Director of Public Works but made no promises of what we might do. She said she would write a comment letter providing her suggestions.

MEMORANDUM:

To: Katherine Schaefer
From: Neil Davis
Date: 8/19/2025
Subject: Meeting with Kevin Jennings and Matt Keizer

At the request of Kevin Jennings, I met with Mr. Jennings and Matt Keizer to discuss the Lookout Peak Trail Project. During an hour long meeting we discussed Mr. Jennings concerns regarding the public safety and the potential impact on Search and Rescue operations due to the addition of trails in the western hills. Mr. Jennings in particular suggested the trails should be 6-7 feet wide. I told him this does not meet the Ukiah Valley Trail Group Trail Design standards nor meet the preferences of trail users. We also discussed other options for facilitating emergency response in the area. I did not commit to any specific action other than continuing to work with the Ukiah Valley Fire Authority.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

DRAFT INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION FOR LOOKOUT PEAK TRAIL PROJECT



July 3, 2025
SCH No: XXXXXXXXXX

Prepared by:

City of Ukiah
Community Development Department
Planning Division
300 Seminary Avenue, Ukiah, CA 95482

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NOTICE REGARDING UPDATED ENVIRONMENTAL ANALYSIS AND PROJECT REVISIONS FOR THE LOOKOUT PEAK TRAIL PROJECT

This Initial Study/Mitigated Negative Declaration (ISMND), originally released on July 3, 2025, has been substantially updated following the public review period and in direct response to comments received from various stakeholders, particularly the Ukiah Valley Fire Authority (UVFA). These updates reflect a more comprehensive environmental analysis of the Project, now explicitly including the ongoing implementation of the Western Hills Watershed Protection Area (WHWPA) Road and Fire Break Maintenance Plan (**Attachment G**), and new Mitigation Measures PS-1 and PS-2, which were refined based on agency and public input.

Furthermore, the Project scope itself has been revised to directly address community concerns. These revisions include the elimination of the second proposed trailhead on Helen Avenue, the realignment of trail #101 to enhance privacy for adjacent residences, and the proposed painting of parking space delineators on Helen Avenue to improve parking availability. These project revisions and comprehensive mitigation measures serve to clarify, amplify, and further mitigate potential impacts, ensuring all potential environmental impacts are reduced to a less-than-significant level. Accordingly, these updates do not identify new significant environmental impacts or a substantial increase in the severity of previously identified impacts that would necessitate recirculation of this document under the California Environmental Quality Act (CEQA).

The full updated document is available for review at: <https://cityofukiah.com/lookout-peak-trails/>

I. PROJECT INFORMATION

Project Title:

Lookout Peak Trails

Lead Agency Address and Phone Number:

City of Ukiah
300 Seminary Avenue
Ukiah, California 95482
(707) 463-6200

Project Contact Person and Phone Number:

Neil Davis, Director
City of Ukiah Community Services Department
(707) 467-5764
ndavis@cityofukiah.com

CEQA Contact Person and Phone Number:

Katherine Schaefer
City of Ukiah Community Development Department
(707) 463-6203
KSchaefer@cityofukiah.com

Project Location: The trail would be located on a City-owned parcel located in the City on Ukiah's Western Hills Watershed Protection Area

General Plan Designation: Public (P)

Zoning District: Public Facilities (PF)

II. PROJECT DESCRIPTION

1. Project Location

The project is located in the City of Ukiah approximately 100 miles north of San Francisco. The approximately 760-acre project site is situated to the immediate west of the City of Ukiah in the City's Western Hills Watershed Protection Area (WHWPA). **Figure 1** below provides a location map for the WHWPA. Photographs of the existing site and conditions are included as **Attachment A**.

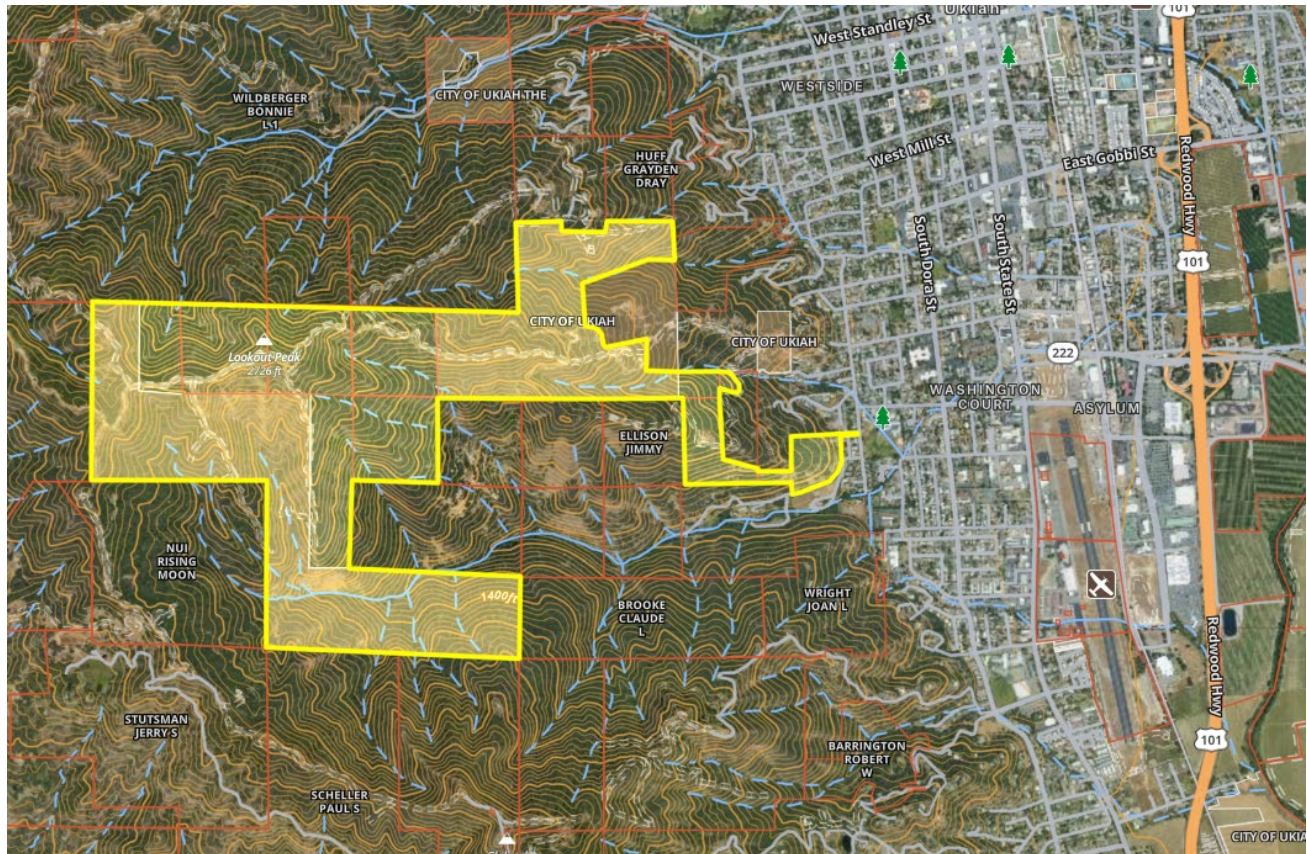


Figure 1, Project Location; City of Ukiah Western Hills Watershed Protection area in yellow.

2. Environmental Setting

The Project area is situated within the Coast Range geologic province. The North Coast Range is comprised of a geologic feature unique to California, the Franciscan Formation, which dictates the vegetative communities. The Franciscan Formation is comprised of serpentine, sandstone, and other sedimentary rocks. This area is characterized by a Mediterranean climate; the winters are cool and wet, and the summers are hot and dry. Annual average temperatures for this region range from about 30 to 100 degrees Fahrenheit.

The Project is located within the Ukiah Valley in central Mendocino County. The Ukiah Valley is located approximately 30 miles east and inland from the Pacific Ocean. It runs north-south for approximately

nine miles, with a maximum width of three miles, with elevations varying from approximately 600-feet above mean sea level up to approximately 3,000 feet in the hills surrounding the city, including the Western Hills. The Russian River enters the valley at the north end and runs south along the valley floor. The City of Ukiah is located along the Highway 101 corridor and near the east/west intersection of Highway 20, two hours north of the Golden Gate Bridge. Incorporated in 1876, Ukiah is the county seat and largest city in Mendocino County.

Vegetation communities in the area include mixed oak, isolated and sparse redwood and Douglas fir forest stands, chaparral, and manzanita. The project will create a trail system of approximately twenty-two miles. Trails will be predominantly under a substantial tree canopy cover or hidden by high chamise rendering it invisible from the valley floor. The project area includes ridge roads and a one acre area that was used as a cannabis grow site but is otherwise substantially native and undisturbed which will be restored as part of the project. The southern portion of the project area drains to the class I Doolin Creek, and the northern area drains to two un-named class III drainages.

3. Background

A series of three sequential Lot Line Adjustments were recorded over the last year, resulting in the current parcel configuration (**Figure 2**), approved by the City Engineer on January 24, 2025. **Attachment B** includes the Final Recorded Map and analogous Quitclaim Deed

An existing road, installed in the 1960's, climbs from the end of Redwood Ave directly up the spine of the ridge for two and a half miles to the western edge of the property. The road was improved in 2015-2017 and the lower section is now paved as it crosses private property for approximately three quarters of a mile. The City of Ukiah holds an access easement across this property for city staff and maintenance access. Approximately 300 yards up the private portion of Redwood Avenue, a half-mile-long spur road provides access to the south. A previous owner of this portion of the property cleared and levelled a one-acre area for cannabis cultivation. Remnants of the grow site remain including footings from a "grow house." The cannabis grow site will be cleaned and restored as part of the project. A variety of fire breaks and roads extend parallel and perpendicular to the main road adding 2.5 miles to the system for a total of five and a half miles of roads and firebreaks on the site.

Public access to the trail system will be from a single trailhead on Doolin Canyon Road.

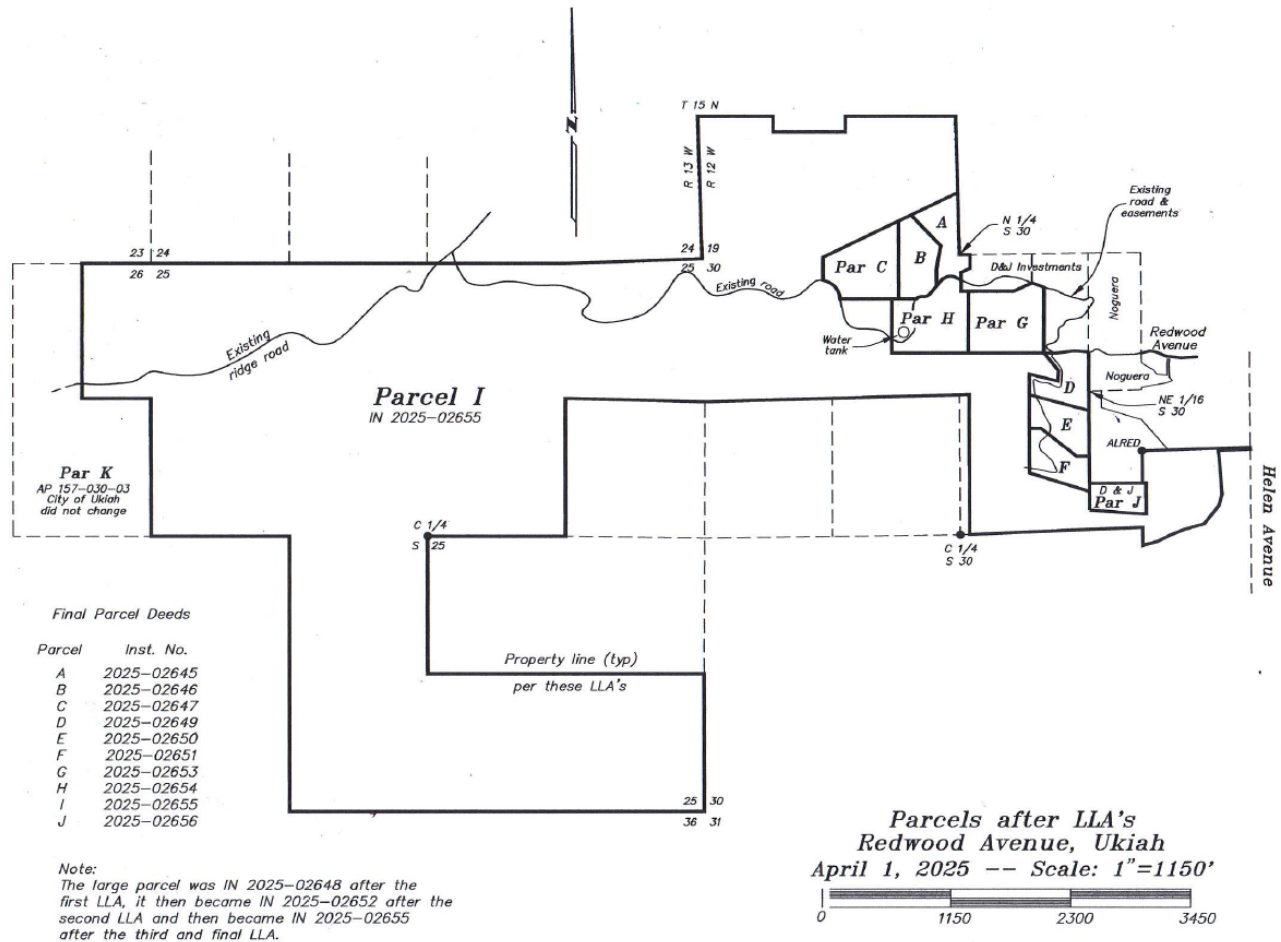


Figure 2, Lot Line Adjustment; File No. LLA25-000003 Parcel I (Inst. No. 2025-02655)

The use of the WHWPA is governed by the City's Western Hills Watershed Protection Area Management Plan (Adopted, 2023). Recreational non-motorized trails are an allowed use per the Plan.

The proposed trail routes and design (**Figure 2**) were established by *Rock Solid Trail Contracting* and Jon Schubbe Consulting. Additionally, the routes have been reviewed and approved by the Ukiah Valley Trail Group (UVTG), a volunteer non-profit organization dedicated to preserving, enhancing, and establishing trails in the Inland of Mendocino County. UVTG staff and volunteers have extensive experience in trail design, building, and maintenance and will build and maintain the trails.

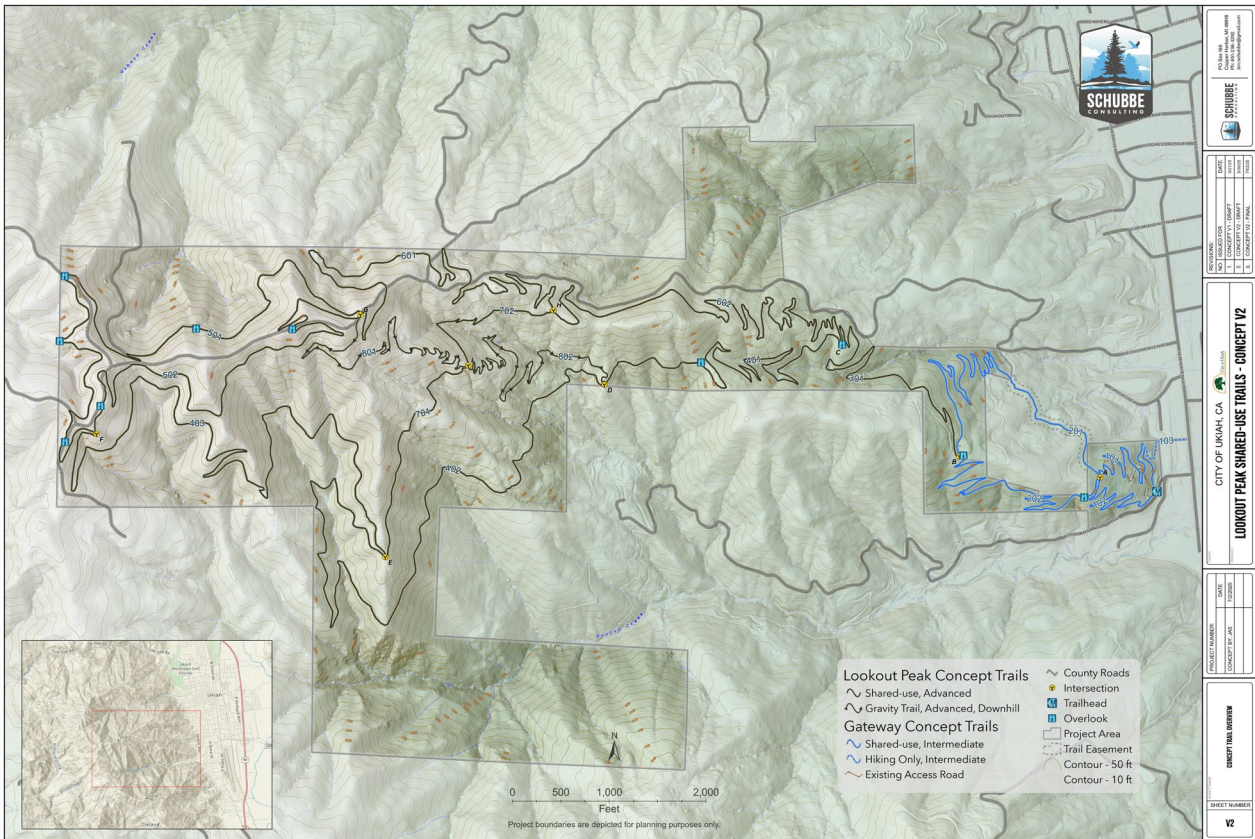


Figure 3, Concept Trail Plan (Attachment I)

4 Project Components

The Project proposes the development of a passive use public access trail system for hiking, mountain biking, and access to nature. GIS mapping of the trail system has been completed and is represented in Figure 2. The concept trail alignments were created by Jon Schubbe Consulting. The alignments were informed by onsite evaluations and scoping followed by computer assisted layout design. As a direct revision in response to public comment, the trail system will now be accessed exclusively from a single trailhead located at the bottom of Doolin Canyon Road, with the previously proposed second trailhead on Helen Avenue eliminated. Additionally, trail #103 has been eliminated from the plan, and Ukiah Valley Trail Group (UVTG) trail designers have realigned trail #101 to place the trail as high as possible above neighboring houses. With this new alignment, trail #101 is expected to be more than 150 feet away from, and fifty feet in elevation above, the nearest neighboring houses, significantly enhancing privacy for adjacent residences.

The trail system provides a “Stacked Loop” design allowing users a wide variety of options with up to 22 miles of trails. The system lays out approximately four miles of trail in the “Gateway” area and an additional eighteen miles of trails in the Lookout Peak area. The Gateway area will provide two small loops identified on the map as the 100 and 200 series segments that are expected to see the most use. A single out and back trail (segment 301) will connect the Gateway area (lower loops) to the upper loops of the Lookout Peak area (400 500, 600, 700, and 800 series segments). The 600 through 800 segments will create three loops with a mountain bike downhill-only trail bisecting two of the upper

loops (**Figure 3**). The top loop will circumnavigate the upper extent of the property and provide 360-degree views of three different watersheds. Additionally, the Lookout Peak area trails will provide multiple interfaces with existing truck roads providing additional options for users who care to experience the roads.

At the top of the Gateway area at the intersection of trail segments 201, 202, and 301 (Intersection B in Figure 2) there is a one-acre flat area that was created by a previous owner for a Cannabis grow site (**Figure 4**). The concrete footings and galvanized steel poles remain from a cannabis “grow house.” This project will remove these footings and any remaining detritus and restore the area with native plants. Restoration will be provided by Ukiah Valley Trail Group staff, volunteers, and or contractors with consultation from subject matter experts and informed by the City of Ukiah’s Native Plant Palette (**Attachment C**)



Figure 4, Remnants of Cannabis Grow Site

The trails will be built in accordance with the UVTG Design and Maintenance Standards (**Attachment D**) and the Lookout Peak Shared-Use Trails; Concept Plan Review (**Attachment E**). Trail construction will utilize a variety of power and hand tools. Concept trail alignments will be verified on the ground with the assistance of GIS mapping tools to finalize trail alignments and mark the path of construction.

Vegetation and detritus materials will be removed to establish the trail's path and contour. The trail is designed to minimize impacts on this natural vegetation, but the grading required to establish the 2 to 4-foot-wide trail at a relatively even grade will require the removal of groundcover and bushes along its entire length. The initial trail cutting and shaping will utilize a small excavator designed specifically for trail construction. Base cuts will be made to remove the uppermost organic layer and expose base soils while causing minimal disturbances to trailside banks. This method also allows for the construction of a combination of three percent out-slopes, rolling dips, grade reversals, and tapered shoulders that are designed to allow sheet water drainage patterns over the trail to reduce erosion and subsequent maintenance. Finishing and shaping of the trail will utilize a variety of power and hand tools such as power wheelbarrows, vibra-plates, jackhammers, and hand tools.

Trail grades will vary according to topography with average grades of 7 to 8 percent, for the majority of the trails, with some shorter trail sections in the steeper areas reaching approximately 12 percent. Trail stairs may be used in particularly steep sections. However, trail routes will ensure that the average grade for the entirety of the trail does not exceed the 10 percent threshold suggested in the UVTG standards. The proposed trail will run almost entirely beneath a substantial tree canopy cover of natural woodlands consisting mainly of native tree and understory species (see photos in **Attachment A**). In accordance with the UVTG Design and Maintenance Standards, the trail will be 2 to 4 feet wide, back sloped to create an angle of repose and built using a variety of best-practice methods including out sloping and rolling dips to allow sheet water drainage. The proposed trail alignments will not cross or approach Doolin Creek . All construction will follow the UVTG Design and Maintenance Standards intended to reduce erosion. Seasonal and class III drainages and swales will be hardened or spanned with small footbridges with footings outside of the bed and bank of the drainage.

After construction the UVTG will consult with the Ukiah Valley Fire Authority to assess trail segments that may be appropriate for "fire-hardening" (**Attachment F**). A Fire-Hardened Trail is a designated and managed corridor that combines both vegetation management and recreational trails. It is a corridor where the preservation and enhancement of the forest plays a significant role in forest restoration and fuels reduction work and is integrated with the creation of trails for recreational use. Fire hardened trails are similar to shaded fuel breaks and serve as multi-functional spaces that cater to both environmental conservation and community well-being. They are designed to provide a harmonious blend of nature and recreation, promoting a healthier lifestyle while preserving and enhancing the natural environment.

The proposed trail route and design was established by Rock Solid Construction, Jon Schubbe Consulting, and the UVTG. Trail alignments were selected to maintain consistent slope integrity and to keep disturbances to natural areas at minimal levels. Trimming of encroaching tree branches will be required along portions of the trail. Tree branch pruning, trimming, and root care activities will be limited to those branches and roots that would represent hazards to trail users or cause extensive detours and additional grading for the trail route. The trail crosses a few areas of dense, immature redwood and other trees of less than 6 feet diameter breast height (dbh). Thinning of these small, immature trees will be required to create a trail corridor. Clearing of these dense stands of immature trees will reduce fuel load while leaving many small trees on both sides of the trail for continued growth.

Safe access to the project area, both for trail construction as well as for the potential need for future Search and Rescue operations, will require the roads and fire breaks in the area to be adequately maintained. Road and fire break maintenance will be performed in accordance with the City of Ukiah's WHWPA Road and Firebreak Maintenance Plan (**Attachment G**)

Project funding is expected to come from donations, grants, and UVTG fundraising. Maintenance will be provided by the UVTG in collaboration with the City of Ukiah.

III. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

Purpose of the Initial Environmental Study: This Initial Study has been prepared consistent with CEQA Guidelines Section 15063, to determine if the Project, as proposed, would have a significant impact upon the environment.

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|---|--|
| ☐ Aesthetics | ☐ Agriculture & Forestry | ☒ Air Quality |
| ☒ Biological Resources | ☐ Cultural Resources | ☐ Energy |
| ☐ Geology / Soils | ☐ Greenhouse Gas Emissions | ☒ Hazards & Hazardous Materials |
| ☒ Hydrology/Water Quality | ☐ Land Use / Planning | ☐ Mineral Resources |
| ☐ Noise | ☐ Population / Housing | ☒ Public Services |
| ☐ Recreation | ☐ Transportation | ☐ Tribal Cultural Resources |
| ☐ Utilities/Service Systems | ☒ Wildfire | ☒ Mandatory Findings of Significance |

Summary of Findings: The Project proposes the development of up to 22 miles of narrow-gauge natural surface trail for hiking and mountain biking in the City of Ukiah's Western Hills Watershed Protection Area. Following the public review period for the Initial Study and in direct response to comments received, particularly from the Ukiah Valley Fire Authority (UVFA), the Project has been clarified to explicitly include the ongoing implementation of the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**). This Plan details essential maintenance activities such as vegetation clearing, road work, understory thinning, and dead tree removal for approximately five and a half miles of roads and fire breaks within the Western Hills Watershed Protection Area.

The proposed trail routes and design were established by Rock Solid Trail Construction, John Schubbe Consulting and the Ukiah Valley Trail Group (UVTG) and are designed to maintain consistent slope integrity and keep disturbances to natural areas at minimal levels, built in accordance with the UVTG Design and Maintenance Standards (**Attachment D**).

Without mitigation, the Project (including both trail construction and WHWPA maintenance activities) could potentially have significant negative impacts in the areas of Air Quality, Biological Resources, Hydrology/Water Quality, Hazards and Hazardous Materials, Public Services, and Wildfire. However, with the incorporation of identified mitigation measures, all potential impacts would be reduced to a less-than-significant level.

Environmental Impact Categories Summary:

Aesthetics: The Project, including the narrow trails and maintenance activities, will be predominantly under substantial tree canopy cover or hidden by high chamise, rendering it largely invisible from the valley floor. The trails themselves are part of the aesthetic experience trail users seek. As such, the project will have no significant impact on Aesthetics.

Agriculture & Forestry Resources: The Project site does not contain Unique Farmland, or Farmland of Statewide Importance, and is not subject to agricultural zoning or Williamson Act contracts. No forest land will be lost, and the Project does not involve changes that would result in the conversion of agricultural or forest land to non-agricultural or non-forest uses. No impact would occur.

Air Quality: Trail construction will utilize small excavators and power tools. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) includes maintenance activities that involve equipment such as hand crews, dozers, or masticators for vegetation clearing, and grading equipment for road work. These activities have the potential to generate dust and exhaust emissions. However, **Mitigation Measures AQ-1 and AQ-2** (regarding vegetation removal methods and diesel equipment permits, respectively) will be implemented to ensure that construction and ongoing maintenance activities adhere to air quality regulations, resulting in less than significant impacts with mitigation incorporated.

Biological Resources: Both trail construction and WHWPA Road and Fire Break Maintenance activities (**Attachment G**) have the potential to impact special-status wildlife and plant species, as well as sensitive natural communities. A Biological Assessment (**Attachment H**) identified 22 special-status wildlife species with moderate to high potential to occur and anecdotal reports of Redwood Lilies. However, **Mitigation Measures BIO-1 through BIO-7** (including worker awareness, nesting bird surveys, bat surveys, mammal den surveys, Monarch butterfly surveys, carbon loss replacement, and watercourse protections) will be strictly implemented. Notably, the WHWPA Maintenance Plan itself includes embedded mitigation measures such as conducting nesting bird surveys, avoiding work during Redwood Lily blooming periods, leaving a minimum of 6 "snags" per acre, and adhering to a 50-foot no-work buffer from Class III or higher flow streams. With these comprehensive measures, potential impacts on sensitive biological resources would be reduced to a less than significant level with mitigation incorporated.

Cultural Resources: Records searches and archaeological surveys found no historical or archaeologically significant sites within the project area. The site has a low potential for such resources due to topography. Construction activities will adhere to CEQA Guidelines Section 15064.5 (e-f) for accidental discoveries. All required tribal notifications have been fulfilled. Impacts are anticipated to be less than significant.

Energy: The project does not risk significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation nor does the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Geology / Soils: The Project site is within the Franciscan Complex, generally not known for significant fossil findings at shallow depths. Given the minimal ground disturbance for trail construction and adherence to best practices for road work in the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) to manage erosion, impacts to geology or soils would be less than significant.

Greenhouse Gas Emissions: The project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, nor does it conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Hazards & Hazardous Materials: The Project site is designated as having a "Very High" fire severity risk within a Local Responsibility Area. Temporary construction activities for the trail, as well as the operation of equipment for WHWPA maintenance (**Attachment G**), could introduce temporary ignition sources. However, **Mitigation Measure HAZ-1** requires fire-safe precautions for gasoline-powered equipment. No hazardous waste sites are present, and the project would not create a safety hazard

related to airport operations. With HAZ-1, impacts would be reduced to less than significant with mitigation incorporated.

Hydrology/Water Quality: The project area contains one Class I and various Class III watercourses. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) includes road work and vegetation clearing activities that could potentially affect water quality. However, the WHWPA Plan explicitly states that "No work will be done under this management plan within 50 feet of a class III or higher flow stream". All road work will be in accord with the *Handbook for Forest, Ranch, & Rural Roads (2015)*. **Mitigation Measure BIO-7** also requires standard erosion and sediment control measures for all earthwork near watercourses. These robust measures ensure impacts associated with erosion, siltation, drainage, and water quality would be less than significant with mitigation.

Land Use / Planning: The Project is consistent with the Ukiah 2040 General Plan and does not divide an established community or interfere with any land use plans. No impact would occur.

Mineral Resources: The project will have no impact on the availability of a known mineral resource.

Noise: Temporary noise and vibration will be generated during trail construction and WHWPA maintenance activities (**Attachment G**), which involve equipment such as small excavators, dozers, masticators, and chippers. However, due to the temporary, intermittent nature, adherence to City noise ordinances (7:00 a.m. to 7:00 p.m. work hours), and the distance to sensitive receptors, noise impacts would be less than significant.

Population / Housing: The Project would not affect the number of students served by local schools, nor would it increase new residents, thus not requiring expanded school facilities. No impact would occur.

Public Services: The Project, including the new trails, could lead to prolonged, difficult medical responses for injured trail users without mitigation. To address this, **Mitigation Measure PS-1** requires consultation with Ukiah Valley Fire Authority (UVFA) officials prior to construction to incorporate best approaches for search and rescue operations, including medical rescue life-flight landing zones and trail connectors for first responder access. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) further supports this by including maintenance of Medevac Landing Zones and ensuring roads are open for emergency access. Additionally, **Mitigation Measure PS-2** commits the City to develop and implement a Road and Fire Break maintenance schedule utilizing the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) to manage wildfire risk and maintain emergency access. This minimizes the use of City park staff for trail maintenance, as it will be predominantly handled by UVTG volunteers. With these measures, impacts on public services would be less than significant with mitigation incorporated.

Recreation: The Project will provide new recreational opportunities and is consistent with City goals for parks, recreational facilities, and trails. To address public feedback, the Project was revised to feature a single trailhead on Doolin Canyon Road, and parking on Helen Avenue will be optimized with delineators to ensure adequate availability for residents and trail users. No significant impact on recreation would occur.

Transportation: Emergency access would continue to be provided, and **Mitigation Measure PS-1**, supported by the explicit provisions in the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) for maintaining Medevac Landing Zones and assuring safe ingress/egress, ensures efficient emergency response for trail users and the overall WHWPA area. Project revisions, including the elimination of the second trailhead on Helen Avenue, further reduce potential traffic and safety concerns in residential areas. The Project would not create new safety hazards or result in inadequate emergency access. Impacts would be less than significant.

Tribal Cultural Resources: No tribal cultural resources have been identified, and all required tribal notifications have been fulfilled. Impacts are anticipated to be less than significant.

Utilities/Service Systems: The Project will not result in the construction or expansion of utilities, have insufficient water supplies, inadequate wastewater treatment capacity, or exceed solid waste infrastructure capacity. No impact would occur.

Wildfire: The Project site is in a "Very High" fire severity risk area. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) is an integral, proactive component of this Project, specifically designed to reduce inherent wildfire risks by implementing comprehensive fuel modification, road maintenance for emergency access, and maintaining shaded fuel breaks. **Mitigation Measure PS-2** formalizes the implementation of this maintenance schedule. Temporary construction fire risks are mitigated by **HAZ-1**. **Mitigation Measure PS-1** also enhances emergency response capabilities in this high-risk area. With these robust measures, the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and impacts would be less than significant with mitigation incorporated.

Mandatory Findings of Significance: As described throughout this Initial Study, all potential impacts, including those associated with WHWPA Road and Fire Break Maintenance activities, would be reduced to a less than significant level with mitigation incorporated. The Project does not have the potential to substantially degrade the quality of the environment, substantially reduce habitat, cause populations to drop below self-sustaining levels, threaten plant or animal communities, reduce the range of rare or endangered species, or eliminate important historical/prehistorical examples.

Cumulative Impacts: Cumulative impacts were considered in analyses of Air Quality, Biological Resources, Hydrology/Water Quality, Hazards and Hazardous Materials, Public Services, Noise, and Wildfire. The Proposed Project, including the WHWPA Road and Fire Break Maintenance activities, would have less than significant impacts on these resources with mitigation incorporated. Short-term construction and maintenance impacts would not significantly contribute to cumulative impacts

In summary, based upon the analysis contained within this Initial Study and Mitigated Negative Declaration, all potential impacts resulting from the Lookout Peak Trail Project and the WHWPA Road and Fire Break Maintenance Plan would be less than significant with the incorporation of identified mitigation measures.

IV. DETERMINATION

On the basis of the initial evaluation that follows:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures and project revisions have been identified that would reduce all impacts to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Katherine Schaefer

Signature

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V. EVALUATION OF ENVIRONMENTAL IMPACTS

The purpose of this Initial Study/Mitigated Negative Declaration (IS/MND) is to provide an analysis of the potential environmental consequences as a result of the proposed Project. The environmental evaluation relied on the following categories of impacts, noted as column headings in the IS checklist, in accordance with CEQA Guidelines Appendix G.

“Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.

Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.”

“Less Than Significant Impact” applies where the Project would not result in a significant effect (i.e., the Project impact would be less than significant without the need to incorporate mitigation).

“No Impact” applies where the Project would not result in any impact in the category or the category does not apply. This may be because the impact category does not apply to the proposed Project (for instance, the Project Site is not within a surface fault rupture hazard zone), or because of other project-specific factors.

1. Aesthetics

AESTHETICS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Significance Criteria: Aesthetic impacts would be significant if the Project resulted in the obstruction of any scenic vista open to the public, damage to significant scenic resources within a designated

State scenic highway, substantial degradation to the existing visual character or quality of the site and its surroundings from public views, or generate new sources of light or glare that would adversely affect day or nighttime views in the area, including that which would directly illuminate or reflect upon adjacent property or could be directly seen by motorists or persons residing, working or otherwise situated within sight of the Project.

Environmental Setting: As discussed in the City of Ukiah's 2040 General Plan, one of the most notable scenic resources in the City limits is the Western Hills. The surrounding hills frame the valley, creating an aesthetic resource for residents and visitors. Views of expansive undeveloped hillsides to the north, east and south, within the County jurisdiction, also surround the City. Many open space and scenic areas in Mendocino County are protected under easements managed by land trusts, none of which are located within the vicinity of the Proposed Project. Some surrounding hillsides are densely forested with evergreen trees, while others are relatively open in comparison, dominated by mature oak trees set amid scrub and grasslands. Some residential development is visible within the Western Hills from the valley floor. Water in the form of creeks, streams, and rivers is often a prominent feature in the landscape as well. Protecting the natural scenic features has been a priority for the City of Ukiah.

The Project site consists of an undeveloped parcel immediately west and uphill from Helen Avenue. Jacobszoon & Associates conducted a biological assessment and botanical survey of the area (**Attachment H**) and identified the area as classified under three MCV2 classification systems: (1) *Quercus wislizeni*-*Quercus chrysolepis* (shrub) Shrubland Alliance, (2) *Arctostaphylos* (canescens, manzanita, stanfordiana) Shrubland Alliance, and (3) *Pinus sabiniana* Woodland. These communities are considered non-sensitive and thus require no special protection. No sensitive biological communities were identified.

Three watercourses flow through the Study Area including Doolin Creek, a Class I watercourse, and two unnamed Class III watercourses. The Class I watercourse is classified by the United States Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) (Appendix D: Map 7, National Wetlands Inventory) as a Riverine System which includes all wetland and deepwater habitats contained within a channel. The Study Area has a 100-Year Flood Zone hazard rating of moderate according to the FEMA National Flood Hazard Layer (NFHL) (Appendix D: Map 8, NFHL 100-Year Flood Zone). No trails are planned to cross or provide views of Doolin Creek. Segments 301 and 401 will cross class III water courses providing trail users with a seasonal opportunity to view running water.

No special-status species were observed during the biological site assessment. The biological site visit and botanical survey was conducted during the blooming period for the species identified.

Discussion: (a & c) Less than significant impact. Scenic vistas are typically described as areas of natural beauty with features such as topography, watercourses, rock outcrops, and natural vegetation that contribute to the landscape's quality. The Western Hills are considered a scenic vista as viewed from the valley floor. Generally speaking, public views of the Western Hills are available from roadways, and adjacent residential areas within the valley floor. Conversely, expansive views of the valley are provided from vantage points within the Western Hills, particularly from trails such as will become available with the completion of this project.

Almost the entire trail system will be situated beneath the natural forest canopy (see photos in **Attachment A**) and would not be seen from public vantage points. The fairly narrow (2 to 3-foot) proposed trail has been designed to avoid substantial vegetation and tree removal. Although some

vegetation removal will be required, it would not result in a substantial impact to views of the Western Hills, as the trail would not be visible from public vantage points within the valley floor, and the trail would be similar in nature to the existing City View and Sol y Sombra Trails, as well as other trails in the surrounding area. Similarly, impacts associated with the period of trail construction would be considered temporary and minimal. Lastly, the trail would offer vantage points containing views of valuable aesthetic resources. For the aforementioned reasons, the Project would not result in a significant impact to scenic vistas, nor the visual character of the site or area.

(a) Impacts would be **less than significant**.

(b) **No impact.** According to the California Department of Transportation's (Caltrans) State Scenic Highway System Map, there are no designated state scenic highways within the vicinity of the Project. In addition, there are no highways identified as eligible for state designation. Therefore, the Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Lastly, the City's General Plan, the County General Plan does not designate any local scenic roads in the Project area; **no impact** to scenic resources within a designated scenic corridor would occur.

(c) **No Impact**

(d) **No impact.** Construction would take place during daylight hours and no lighting is proposed along the trail. **No impact** would occur.

Mitigation Measures: None

2. Agriculture and Forestry Resources

AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Significance Criteria: The Proposed Project would have a potentially significant impact on agricultural resources if it would convert prime farmland to a non-agricultural use, conflict with a Williamson Act contract, or disrupt a viable and locally important agricultural use. The Project would have a potentially significant impact on forestry resources if it would result in the loss, rezoning or conversion of forestland to a non-forest use.

Environmental Setting: Early agricultural efforts in the Ukiah Valley included the raising of livestock, and the growing of various grains, hay, alfalfa, and hops. When the Northwestern Pacific Railroad was completed in 1889; prunes, potatoes, pears, and hops could be grown and sent to San Francisco and other regional markets. Wine grapes were planted, and irrigation was practiced on a small scale. Through the 1950's, hops, pears, prunes and grapes were the most widely planted crops in the Ukiah Valley. After the railroad was completed, lumber mills sprang up in the Ukiah Valley and became the major industry in Mendocino County as trains took redwood logs and processed boards south to the San Francisco region. Today, much of the active agricultural land is located on the valley floor and lower elevations along the Russian River system. Only a limited percentage of the valley's agricultural lands are currently protected under Williamson Act Agricultural Preserve contracts. According to the County of Mendocino's Public GIS system, there are no Williamson Act contracts within the Project site.

There are no zoning districts within the City limits for Agriculture or Timber Preserve. While there is an overlay for agriculture in the Zoning Ordinance, it is not applied over any parcel within the City limits. There are a small number of City parcels which have current agricultural use, such as existing vineyards. However, they are ongoing non-conforming uses within non-agricultural zoning districts. According to the California Department of Conservation Farmland Mapping & Monitoring Program, California Important Farmland Finder, the majority of lands within the City of Ukiah are identified as "Urban Built-Up Land".

Discussion: (a-e) No Impact. According to the California Department of Conservation Farmland Mapping & Monitoring Program, California Important Farmland Finder, the Project site does not contain Unique Farmland, or Farmland of Statewide Importance. The site is zoned Public Facilities, consistent with the Ukiah 2040 General Plan's Public land use designation, which allows for natural resource areas as a typical use. There are no agricultural uses or Williamson Act contracts on-site or in the immediate vicinity. The Project would not convert Farmland, conflict with existing zoning for agriculture or forest land, and would not involve changes to the environment that would result in the conversion of agricultural resources to non-agriculture uses. No impact would occur.

Mitigation Measures: None

3. Air Quality

AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.				
Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☒	☐	☐

Significance Criteria: The Proposed Project would have a significant impact to air quality if it would conflict with an air quality plan, result in a cumulatively considerable net increase of criteria pollutant which the Mendocino County Air Quality Management District (MCAQMD) has designated as non-attainment, expose sensitive receptors to substantial concentrations of air pollutants, or result in

emissions that create objectionable odors or otherwise adversely affect a substantial number of people.

Environmental Setting: The Project is located within the North Coast Air Basin (NCAB), which includes Del Norte, Humboldt, Trinity, Mendocino, and northern Sonoma Counties, and is under the jurisdiction of the Mendocino County Air Quality Management District (MCAQMD). The area's climate is considered Mediterranean, with warm, dry summers and cooler, wet winters. Summer high temperatures average in the 90's with high temperatures on very warm days exceeding 105 degrees. Summer low temperatures range between 50-60 degrees. Winter high temperatures generally range in the 50's and 60's. The average annual temperature is 58 degrees. Winter cold-air inversions are common in the valley from November to February.

Prevailing winds are generally from the north. Prevailing strong summer winds come from the northwest; however, winds can come from the south and east under certain short-lived conditions. In early autumn, strong, dry offshore winds may occur for several days in a row, which may cause air pollution created in the Sacramento Valley, Santa Rosa Plain, or even San Francisco Bay Area to move into the Ukiah Valley.

The MCAQMD, which includes the City of Ukiah and surrounding areas, is designated as non-attainment for the State Standard for airborne particulate matter less than 10 microns in size (PM¹⁰). Particulate matter (PM) has significant documented health effects. The California Clean Air Act requires that any district that does not meet the PM¹⁰ standard make continuing progress to attain the standard at the earliest practicable date. The primary sources of PM¹⁰ are wood combustion emissions, fugitive dust from construction projects, automobile emissions and industry. Non-attainment of PM¹⁰ is most likely to occur during inversions in the winter. Regulation 1 of the MCAQMD contains regulations (known as "Rules") to regulate particulate matter; these Rules prohibit activities that would result in the injury, detriment, or annoyance of a considerable number of people, or which endanger the health and safety of the public.

The MCAQMD also provides the following significance thresholds for construction emissions:

1. 54 pounds per day of ROG (reactive organic gas)
2. 54 pounds per day of NO_x (oxides of nitrogen as nitrogen dioxide)
3. 82 pounds per day of PM¹⁰ (particulate matter less than 10 microns in size)
4. 54 pounds per day of PM^{2.5} (airborne particulate matter with a diameter of 2.5 microns or less)
5. Best Management Practices for Fugitive Dust – PM¹⁰ and PM^{2.5}

Discussion: (a-d) Less than significant with mitigation incorporated. Short-term construction-related air quality impacts from emissions and dust typically result from projects requiring significant grading or new construction, in addition to vehicle trips and operation of diesel equipment. The Lookout Peak Trail Project involves trail construction using small excavators and power tools. In addition, the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), which is being reviewed as part of this Project, includes ongoing maintenance activities such as "Clearing of encroaching vegetation with hand crews, dozers, or masticators," "Grading and shaping of the running surface of the road," "Understory Thinning/Brushing," "Piling, Burning," "Chipping/Hauling," and "Dead Tree Removal" [6, WHWPA Road And Fire Break Maintenance Plan.pdf, Proposed Activities, previous conversation]. These activities, which involve heavy equipment and vegetation disturbance, have the potential to generate particulate matter (dust) and exhaust emissions from various types of construction and maintenance equipment.

All such activities, whether for trail construction or ongoing WHWPA maintenance, will adhere to all applicable Mendocino County Air Quality Management District (MCAQMD) regulations, including Best Management Practices (BMPs) for fugitive dust and emissions, to reduce air quality impacts to a less than significant level. Specifically, **Mitigation Measure AQ-1** mandates vegetation removal methods that minimize air pollutants and prohibits burning without appropriate permits. This measure directly applies to the vegetation clearing, thinning, and piling/burning activities specified in the WHWPA Maintenance Plan. **Mitigation Measure AQ-2** requires off-road equipment with diesel engines (such as the dozers and masticators identified in **Attachment G**) to have valid Air Quality permits or state Portable Equipment Registration Program (PERP) Registrations, ensuring equipment meets emissions standards

The nearest sensitive receptors (residences on Helen Ave. and San Jacinto Ave, and Nokomis School approximately 1,000 feet east of the easternmost section of the proposed trail) are sufficiently distant from the majority of project activities. The limited, temporary nature of these activities, combined with strict adherence to Mitigation Measures AQ-1 and AQ-2, ensures that the Project is not anticipated to expose sensitive receptors to substantial pollutant concentrations. The Project would not exceed the construction thresholds established by the MCAQMD, and air quality impacts associated with short-term construction and ongoing WHWPA maintenance activities would be less than significant with mitigation. Once completed, the trail and its associated maintenance would not result in long-term air quality impacts.

Mitigation Measures:

AQ-1: Vegetation Removal. Vegetation removal methods shall include chopping larger materials on-site to be disbursed with materials largely in contact with the ground; burning of vegetation shall not be allowed without obtaining the appropriate burn permits.

AQ-2: Diesel Engines – Stationary and Portable Equipment and Mobile Vehicles:

- a. Off-road equipment with auxiliary diesel engines rated at 50 brake horsepower or greater, must have either a valid Air Quality permit, or a state Portable Equipment Registration Program (PERP) Registration.

4. Biological Resources

BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Significance Criteria: Project impacts upon biological resources would be significant if any of the following resulted: substantial direct or indirect effect on any species identified as a candidate, sensitive, or special status species in local/regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS) or any species protected under provisions of the Migratory Bird treaty Act (e.g. burrowing owls); substantial effect upon riparian habitat or other sensitive natural communities identified in local/regional plans, policies, or regulations or by the agencies listed above; substantial effect (e.g., fill, removal, hydrologic interruption) upon state or federally protected wetlands; substantially interfere with movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors; conflict with any local policies/ordinances that protect biological resources or conflict with a habitat conservation plan.

Environmental Setting: Regionally, the Project area (Ukiah Western Hills) has historically been used primarily for recreation, timber harvest, homesite development, and undeveloped open space/wildlife habitat. The hills rise steeply from the valley floor and are predominated by eastern facing slopes. A number of unclassified drainages create small sections of north-east and south-east facing slopes. The Project area is classified under three MCV2 classification systems: (1) Quercus wislizeni-Quercus chrysolepis (shrub) Shrubland Alliance, (2) Arctostaphylos (canescens, manzanita, stanfordiana) Shrubland Alliance, and (3) Pinus sabiniana Woodland.

A Biological Assessment was prepared for the Project by Jacobzsoon and Associates (August 21, 2024; **Attachment H**) and included a Biological (wildlife) Assessment and a Botanical Survey. The purpose of the assessment was to identify sensitive communities within the Study Area. The Biological Assessment is also designed to address the potential for cumulative impacts to biological resources that may occur as a result of the Project and to make recommendations to reduce or mitigate potential impacts. The Biological Assessment includes the analysis and comparison of existing habitat conditions within the Study Area with the documented range and habitat requirements of sensitive wildlife species described in the California Department of Fish and Wildlife's (CDFW's) California Wildlife Habitat Relationships System (CWHR) to determine if they would be directly or potentially impacted by the Proposed Project. As a part of the assessment field surveys were conducted on April 17th, April 18th, May 22nd, May 23rd, and July 18th.

Prior to conducting field surveys, available reference materials were reviewed, including the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey, the USFWS NWI, the Ukiah 7.5-minute USGS quadrangle topographic maps, and the most recent available aerial imagery. The 100-year flood zone was assessed using the Federal Emergency Management Agency's (FEMA) NFHL. The location of streams and watercourses within the project vicinity were reviewed using datasets from California Streams and the California Department of Forestry and Fire Protection (CAL FIRE). The potential for occurrences of rare, threatened, endangered or plant and animal species of concern within or near the Study Area were evaluated by reviewing the Ukiah, Orr Springs, and Elledge Peak, Laughlin Range, Redwood Valley, Potter Valley, Cow Mountain, Boonville, and Purdy's Gardens 7.5 minute quadrangles topographic maps, aerial photography, California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (online edition, v9.5), CDFW's Natural Diversity Database (CNDDB) Spotted Owl Data, CWHR, RareFind 5 and Quick Viewer Bios 6 processed and unprocessed data (online edition, v6.24.0604).

Discussion: (a) Less than significant impact with mitigation incorporated.

The Lookout Peak Trail Project, including the ongoing road and fire break maintenance activities outlined in the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), has the potential to affect biological resources. A Biological Assessment prepared by Jacobzsoon and Associates (**Attachment H**) identified 22 special-status wildlife species with a moderate or high potential to occur within the Study Area based on habitat features present. Activities such as vegetation clearing, understory thinning, and dead tree removal, as detailed in Attachment G, could potentially impact these species or their habitats.

To avoid or substantially lessen these potential impacts to a less-than-significant level, several mitigation measures from this ISMND will be implemented in conjunction with embedded measures within the WHWPA Maintenance Plan. **Mitigation Measure BIO-1** requires a Worker Awareness and Education Program for sensitive amphibians, mammals, insects, and plants. **Mitigation Measure BIO-2** mandates pre-construction nesting bird surveys prior to any vegetation removal or ground-disturbing activities during the nesting season (March 1 to August 31), ensuring active nests are not disturbed. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) explicitly complements this by requiring nesting bird surveys from April 1st to August 31st prior to any project activities. **Mitigation Measure BIO-3** requires pre-construction bat surveys if evidence of roosts is observed, and **BIO-4** similarly calls for pre-construction surveys for special-status mammal dens or burrows if observed. **Mitigation Measure BIO-5** addresses over-wintering Monarch butterflies, requiring surveys if observed. Furthermore, the WHWPA Maintenance Plan specifically addresses the protection of *Lilium rubescens* (Redwood Lily), a species identified in BIO-1, by prohibiting work during

its blooming period (May 15-June 30th) unless surveys confirm its absence or seed dispersal has occurred. The plan also commits that "Clearing of deadfall trees will ensure that a minimum of 6 "snags" per acre remain to provide habitat", which is an embedded mitigation for wildlife. The maintenance activities are also designed to thin "overgrown to an unhealthy degree" and "dense and unhealthy western forests", potentially leading to long-term benefits for ecosystem health while managing short-term disturbance. With these combined measures, the Project's potential impacts on sensitive species and their habitats would be less than significant.

(b) Less than significant impact with mitigation incorporated. Sensitive natural communities, as identified in the CNDDDB or observed, are afforded special protection. During the Biological Assessment, the habitat within the Study Area was classified under three MCV2 classification systems, which are considered non-sensitive and thus require no special protection. However, the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) includes ongoing activities such as vegetation clearing, understory thinning, and dead tree removal. To address potential carbon loss and ecological impacts from tree removal, **Mitigation Measure BIO-6** requires that any tree greater than 6 inches dbh removed during construction or maintenance shall be replaced at a ratio of 6 to 1 at the nearest available and appropriate site. This mitigation, applied to both trail construction and WHWPA maintenance activities, alongside the non-sensitive designation of the existing communities, ensures that impacts to natural communities remain less than significant.

(c) Less than significant impact with mitigation incorporated. Aquatic resources, communities, and habitats (e.g., watercourses) are considered sensitive communities and are afforded special protections. Three watercourses flow through the Study Area: Doolin Creek (Class I) and two unnamed Class III watercourses. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) explicitly addresses water quality protection. It states that "Objective 3 of the plan outlines the need to control erosion, protect water quality, and maintain facilities. This objective requires that road work be in accord with the Handbook for Forest, Ranch, & Rural Roads (2015)". Furthermore, the Maintenance Plan includes a critical embedded mitigation measure: "No work will be done under this management plan within 50 feet of a class III or higher flow stream". This 50-foot buffer significantly reduces the potential for direct impacts to watercourses from maintenance activities. Projected trail alignments do not cross or come near the Class I watercourse. For Class III watercourses, trail construction and any necessary maintenance activities will adhere to **Mitigation Measure BIO-7**, which requires standard methods of erosion and sediment control (e.g., straw, mulch, seeding, wattles, silt fencing) for all earthwork within or adjacent to (50 feet) any watercourse. Work will also be completed, if possible, while the channel is dry to reduce sediment load downstream. The commitment to adhere to the *Handbook for Forest, Ranch, & Rural Roads (2015)* further ensures best practices for water quality protection during road work activities. With these robust measures, impacts to aquatic resources and watercourses from both trail construction and WHWPA maintenance activities would be less than significant.

(d) Less than significant impact. There are no established native resident or migratory wildlife corridors, or native wildlife nursery sites within the Project area. As noted above, there are fish bearing streams on-site. Impacts would be **less than significant**.

(e-f) Less than significant impact. There are no adopted Habitat Conservation Plans for the City of Ukiah, nor the larger Ukiah Valley that are applicable to the Project. Impacts would be **less than significant**.

Mitigation Measures:

BIO – 1 Sensitive Amphibians, Mammals, Insects, and Plants. A Worker Awareness and Education Program (WAEP) will be conducted with trail crew leaders to provide information regarding sensitive species most likely to occur, even though they were not seen in the Biological or Botanical Surveys. This program will be conducted by a qualified professional and include red-bellied newt (*Taricha rivularis*), Sonoma tree vole (*Arborimus pomo*), North American porcupine (*Erethizon dorsatum*), western red bat (*Lasiurus blossevillei*), hoary bat (*Lasiurus cinereus*), and fisher [West Coast DPS] (*Pekania pennanti*), western bumble bee (*Bombus occidentalis*), and Redwood Lily (*Lilium rebescens*). Education shall include monitoring for evidence of bat roosts (i.e. bat guano, ammonia odor, grease stained cavities) around trees or structures. Should evidence of these species be noted, it will trigger additional surveys conducted by a qualified biologist for activities that may affect the noted species.

BIO-2: Nesting Birds. No special status avian species were noted in the project area. However, Federal and State law protects all native birds. Pre-construction surveys shall be conducted by a qualified biologist prior to any vegetation removal or ground disturbing activities occurring between March 1 and August 31 of any year. All active bird nests shall not be removed, relocated, or otherwise disturbed for any purpose until all fledglings have left the nest

BIO-3: Roosting Bats. If evidence of bat roosts are observed (i.e. bat guano, ammonia odor, grease stained cavities) around trees, cavities, or structures proposed for removal, pre-construction bat surveys should be conducted no more than 14 days prior to groundbreaking activities. If bat roosts are identified, buffer or mitigation measures should be established by a qualified biologist.

BIO-4. Mammal Dens or Burrows. If evidence of special-status mammal borrows or denning activity is observed, it is recommended that pre-construction surveys be conducted by a qualified biologist for activities that may affect den sites.

BIO-5: Over-Wintering Monarchs. Monarch Butterflies “Over-Winter” in groups between November 1st and January 31st. If monarchs are observed in this time frame monarch surveys should be conducted by a qualified biologist no more than 14 days prior to the commencement of tree/shrub removal.

BIO- 6: Carbon Loss. Any tree greater than 6 inches dbh removed during construction shall be replaced at a ratio of 6 to 1 at the nearest available and appropriate site as approved by a qualified professional.

BIO-7: Watercourses. The Project shall adhere to UVTG Design and Maintenance Standards for trail construction related to erosion, and all earthwork within or adjacent to (50 feet) any watercourse or other body of water shall adhere to standard methods of erosion and sediment control (placement of straw, mulch, seeding, straw wattles, silt fencing, etc.) and, if possible, work shall be completed while the channel is dry to reduce sediment load downstream. Additionally, if any structures are proposed for placement within the bed or bank to allow for the trail crossing, consultation with CDFW shall be required and all necessary permits shall be obtained.

5. Cultural Resources

CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Significance Criteria: The proposed Project would significantly impact cultural resources if the significance of a historical or archaeological resource were substantially changed, or if human remains were disturbed.

Under CEQA, cultural resources must be evaluated to determine their eligibility for listing in the California Register of Historic Resources (CRHR). If a cultural resource is determined ineligible for listing on the CRHR the resource is released from management responsibilities and a project can proceed without further cultural resource considerations.

As set forth in Section 5024.1(c) of the Public Resources Code for a cultural resource to be deemed “important” under CEQA and thus eligible for listing on the California Register of Historic Resources (CRHR), it must meet at least one of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of California History and cultural heritage; or
- 2) Is associated with the lives of persons important to our past; or
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic value; or
- 4) Has yielded or is likely to yield, information important to prehistory or history.

Archaeological resources are commonly evaluated with regard to Criteria 4 (research potential). Historic-era structures older than 50 years are most commonly evaluated in reference to Criteria 1 (important events), Criteria 2 (important persons) or Criteria 3 (architectural value). To be considered eligible under these criteria the property must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association.

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would “cause a substantial adverse change in the significance of an historical resource” are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

Public Resources Code Section 21083.2 also defines “unique archaeological resources” as “any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely

adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and show that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing "a unique paleontological resource or site." CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history," provides additional guidance.

Assembly Bill 52 (effective July 1, 2015) mandates that before preparing a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency must seek consultation with tribes associated with the project's location. Tribes must have previously submitted a written request to the lead agency to be consulted on projects within their geographic areas of interest. The Guidiville Rancheria of California is the only tribe that has made such a request. In compliance with AB 52, a notification was sent to the Guidiville Rancheria of California on June 17, 2025, offering the opportunity for consultation. No response has been received to date. Should a response or consultation request be received within the AB 52 response window, the environmental review will be updated accordingly.

Environmental Setting: The Ukiah Township lies in a valley of the Russian River, bounded on the north by Calpella Township, on the east by Lake County, on the south by Sanel Township, and on the west by Anderson Township. The City of Ukiah was first settled in 1856 by Samuel Lowry. Initially incorporated into Sonoma County, an independent Mendocino County government was established in 1859 with Ukiah as the chosen county seat. Logging, cattle, and agricultural ventures contributed to the early settlement and growth of Ukiah throughout the remainder of the 19th century and early 20th century. 1889 is the date recorded for the first arrival of the train to Ukiah, quickly resulting in increased settlement of the City and its environs. The City of Ukiah is within the territory of the Northern Pomo. Permanent villages were often established in areas with access to staple foods, often times along eco-tones (transitions between varying environments), with access to good water, and generally flat land

The late 19th century saw slow growth in the community, with a slight decline after the turn of the century. The 1906 earthquake damaged a number of Ukiah buildings, particularly in the commercial core, and considerable re-building and remodeling activity occurred after that time. The City appears to have prospered in the following years, through the early 1920's. The City contains a number of Colonial Revival and Craftsman style derivations, popular during this era, that reflect the community's prosperity. An Historical and Architectural Survey Update was last prepared for the City by P.S. Preservation Services in 1999. The survey identified 23 properties with historic importance within the City limits. City Ordinance No. 838 was passed by the City in 1983, requiring that prior to the demolition of any building over 50 years old, the approval of the City Council must be obtained. The ordinance is a positive preservation tool, allowing some review and public input opportunity regarding the potential loss of historically significant buildings.

Discussion: (a) No impact. No historical or archaeologically significant sites as defined in §15064.5 have been documented in the project area. On June 17, 2025, the City requested a records search at the Northwest Information Center (NWIC) located on the campus of Sonoma State University. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural, archaeological, and historical records and reports for an 18-county area that includes Mendocino County. The records search included a review of all study reports on file within the Western Hills Watershed Protection area. A review of historic registers and inventories indicates that no historical landmarks or points of interest are present in the Project area. Additionally, no National Register listed or eligible properties are located within the Project area. An Archaeological Survey Report (ASR), prepared by Alta Archaeological Consulting (Alta) in March 2021, covering a portion of the Project area, also found no cultural resources (report omitted for confidentiality). Therefore, the Project area would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.. **No impact.**

Discussion: (b) Less than significant impact. The NWIC records search and the Alta ASR also included a search of cultural resources included within the WHWPA. The NWIC records search indicated that two cultural resources studies had been completed on portions of the site, identifying no cultural resources within the Project area. The Alta ASR similarly found no on-site cultural resources.

As noted in the City’s General Plan Historic and Archeological Resources Element (1995), the Project site is not identified as an area of high cultural sensitivity; areas that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water. Because the Project has been designed with minimal ground disturbance and the site does not have a high potential for cultural resources to occur, less than significant impacts would occur as a result of the Project. Additionally, construction of the Project will be required to adhere to CEQA Guidelines Section 15064.5 (e-f) which specifically addresses what to do in the event that human remains or archeological resources are accidentally discovered.

As noted above, in accordance with AB 52, a notification was sent to the Guidiville Rancheria of California on June 17, 2025, offering the opportunity for consultation. No response has been received to date. Should a response or consultation request be received within the AB 52 response window, the environmental review will be updated accordingly. Therefore, impacts to cultural and archaeological resources are anticipated to be **less than significant**.

Mitigation Measures: None

6. Energy

ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒

ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Significance Criteria: The Proposed Project would significantly impact energy if construction or operation of the Project would result in wasteful, inefficient or unnecessary consumption of energy resources or if the Project would conflict with a state or local plan for renewable energy or energy efficiency.

Environmental Setting: Senate Bill 100 (SB 100, De León, Chapter 312, Statutes of 2018), the state's landmark policy requiring that renewable and zero-carbon energy resources supply 100 percent of electric retail sales to customers by 2045. The bill was signed into law in 2018 and calls for these resources to replace fossil fuels for generating electricity in the state. According to the California Air Resources Board (CARB), California has already made significant progress toward a clean energy future. Due to many efforts that promote renewable energy, energy efficiency and the storage technologies needed to retire fossil fuel resources, the state's electricity mix is already more than 60 percent carbon free. Approximately 36 percent of that comes from renewable sources, predominantly wind and solar. Specific to construction projects, CARB and the Environmental Protection Agency (EPA) standards regulate energy consumption through Green Building Standards to ensure construction does not result in wasteful, inefficient or unnecessary consumption of energy resources.

Discussion: (a-b) Less than significant impact. The Project involves both the construction of new trails and the ongoing maintenance activities outlined in the WHWPA Road and Fire Break Maintenance Plan (Attachment G). Both sets of activities will require the use of fossil fuels for various pieces of equipment. Trail construction will utilize small excavators and smaller power tools such as chainsaws, power wheelbarrows, vibro-plates, or jackhammers. The WHWPA Maintenance Plan specifies activities such as "Clearing of encroaching vegetation with hand crews, dozers, or masticators," "Grading and shaping of the running surface of the road," "Chipping/Hauling," and "Dead Tree Removal". These maintenance activities will involve equipment like dozers, masticators, and chippers, which consume fossil fuels

However, the fuel energy consumed during both trail construction and ongoing WHWPA maintenance activities would be temporary and intermittent, spread across the approximately five and a half miles of roads and fire breaks and 22 miles of trails. This consumption would not represent a significant, wasteful, inefficient, or unnecessary demand on energy resources. All equipment used for Project construction and WHWPA maintenance will be required to comply with the latest California Air Resources Board (CARB) and U.S. Environmental Protection Agency (EPA) engine emissions standards, which promote highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Once constructed, the trail itself would not consume any sources of energy, and the operational energy needs for the WHWPA maintenance are limited to the periodic fueling of equipment. With adherence to these aforementioned regulations and the nature of the activities, impacts from the Proposed Project related to energy consumption would be less than significant. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Mitigation Measures: None

7. Geology and Soils

GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Significance Criteria: The Proposed Project would result in a significant impact to geological or soil resources if it exposed people or structures to seismic risk; ruptured a known fault; produced strong seismic ground shaking, ground failure, liquefaction, landslides or substantial soil erosion; is located on expansive soil or unstable ground, or would create unstable ground; or destroyed a unique paleontological resource or geologic feature.

Environmental Setting: The Ukiah Valley is part of an active seismic region that contains the Mayacama Fault, which traverses the valley in a generally northwest-southeast direction east of the Project area. Based on California Geological Survey maps and the Background Report for the County of Mendocino General Plan Update (prepared by P.M.C., 2003), lands within the Western Hills are identified as being located on a somewhat unstable geologic formation but are not located within the Alquist Priolo Fault Zone, or in a landslide or liquefaction zone. In addition, according to the U.S. Geological Survey (USGS) Interactive Fault Map, there are no faults identified within the Project area.

The Project area is located at approximately 1,000-1,400 feet in elevation and is situated within the Coast Range geologic province. The North Coast Range is comprised of a geologic feature unique to California, the Franciscan Formation, which dictates the vegetative communities. The Franciscan Formation is comprised of serpentinite, sandstone, and other sedimentary rocks. The soils within the Project site are characterized as both Hopland, which consists of very deep, well drained soils formed in colluvium and residuum weathered from sandstone or shale on steep hills and slopes (50 to 75 percent), and Maymen soils that are shallow, somewhat excessively drained soils that formed in residuum weathered from shale, schist, greenstone, sandstone and conglomerate. These soils have a shallow depth to bedrock.

Discussion: (a, c & d) No Impact. As noted above, the Project site does not contain earthquake faults. The site does not contain expansive or unstable soils and is not susceptible to landslides, nor strong seismic ground shaking. Lastly, the Project has been designed with minimal ground disturbance. Impacts to geology and soils related to these issues would be **less than significant**.

(b) Less than significant impact. Development and use of the proposed trail, if not carefully performed, has the potential to cause erosion. Trail grades are typically 7-8 percent, with some switchback grades along the steeper sections of hillside with slopes of 12 percent for very short sections of the trail. The UVTG Design and Maintenance Standards (**Attachment D**) provide guidance for the construction of trails in the Ukiah Valley to reduce erosion. These standards include, but are not limited to, the following:

- Construction of trails that are three feet wide, or less if physical constraints are present, to reduce the disturbance footprint;
- Trails should be built with the contour of the topography ($\pm 10\%$) to allow for sheet flow drainage and minimize concentrated runoff;
- Average trail grade of less than 10%, with short sections over 10% and followed by a relatively flat section or grade reversal;
- Grade of the trail should not be greater than half the grade of the side slope the trail traverses to prevent erosion caused by water flowing down the trail rather than down the hillside;
- Maximum trail grades of less than 15% wherever possible to reduce the potential for erosion and user damage;
- Incorporation of grade reversals every 10 to 50 feet to provide areas for water to drain off trails;
- Outer edges of trails should be built and maintained to allow either a 3-5% outslope or frequent drainage lenses to create sheet flow; and
- Build in a backslope where the area uphill of the trail is sloped upward from the trail to prevent a waterfall effect that creates concentrated flow on the trail.

Trail construction is anticipated to take approximately two weeks and will be scheduled during optimal weather and soil moisture conditions in order to reduce the duration that soils are exposed to water-borne erosion.

For the above reasons, impacts to geology from the loss of topsoil or erosion would be **less than significant**.

(e) No impact. No septic tanks or other waste water disposal systems are proposed. **No impact.**

(f) Less than significant impact. The geology of the Western Hills area is of the Franciscan Complex that dates to the Jurassic Period, approximately 199.6 to 145.5 million years ago. The Franciscan complex consists of arkosic sandstone interbedded within shale. Arkose is a coarse and well sorted quartz with a fine-grained matrix. Additionally, the Franciscan Complex can include rocks such as chert, serpentinite, basalt, and greenstone. The Franciscan complex, widespread in coastal California, has produced only small collections of significant fossils. Additionally, construction of the trail would only disturb the first few feet of soil where fossils are generally not known to be found. Therefore, the Project would not destroy unique paleontological resources or site or unique geologic features. Impacts would be **less than significant**.

Mitigation Measures: None

8. Greenhouse Gas Emissions

GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Significance Criteria: The Project would have a significant effect on greenhouse gas emissions if it would generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment; or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Environmental Setting: Climate change is caused by greenhouse gases (GHGs) emitted into the atmosphere around the world from a variety of sources, including the combustion of fuel for energy and transportation, cement manufacturing, and refrigerant emissions. GHGs are those gases that have the ability to trap heat in the atmosphere, a process that is analogous to the way a greenhouse traps heat. GHGs may be emitted a result of human activities, as well as through natural processes. Increasing GHG concentrations in the atmosphere are leading to global climate change.

Carbon dioxide (CO₂) is the most important anthropogenic GHG because it comprises the majority of total GHG emissions emitted per year and it is very long-lived in the atmosphere. Typically, when evaluating GHG emissions they are expressed as carbon dioxide equivalents, or CO₂e, which is a

means of weighting the global warming potential (GWP) of the different gases relative to the global warming effect of CO₂, which has a GWP value of one. In the United States, CO₂ emissions account for about 85 percent of the CO₂e emissions, followed by methane at about eight percent, and nitrous oxide at about five percent.

The state of California has adopted various administrative initiatives and legislation relating to climate change, much of which set aggressive goals for GHG emissions reductions statewide. Although lead agencies must evaluate climate change and GHG emissions of projects subject to CEQA, the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or specific thresholds of significance and do not specify GHG reduction mitigation measures. No state agency has developed binding regulations for analyzing GHG emissions, determining their significance, or mitigating significant effects in CEQA documents. Thus, lead agencies exercise their discretion in determining how to analyze GHGs. Because there are no adopted GHG thresholds applicable to the Project, and because the Project is considered “small scale”, the below qualitative analysis is appropriate.

Discussion: (a-b) Less than significant impact. The Project, which includes both the construction of up to 22 miles of new trails and the ongoing maintenance activities detailed in the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), will generate greenhouse gas (GHG) emissions. These emissions will primarily result indirectly from the combustion of fossil fuels by construction equipment and maintenance vehicles. Equipment used for trail construction includes small excavators and power tools. WHWPA maintenance activities will involve equipment such as dozers, masticators, chippers, and other vehicles for tasks like vegetation clearing, road grading, chipping, and dead tree removal across approximately five and a half miles of roads and fire breaks.

The generation of GHG emissions from these activities will be temporary and intermittent. The Project does not involve significant grading or extensive new construction that would lead to a substantial, long-term increase in GHG emissions, nor does it induce population growth or extend infrastructure that would indirectly increase emissions. All construction and maintenance equipment will comply with applicable state and federal emissions standards (e.g., CARB and EPA standards), which help to reduce overall emissions.

Furthermore, the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), an integral part of this Project, includes vegetation management and forest thinning as primary objectives. These activities, by reducing hazardous deadfall and maintaining “shaded fuel breaks”, contribute to forest health and wildfire risk reduction. This proactive management can help prevent larger, catastrophic wildfires, which are significant sources of GHG emissions. While the Project involves some tree removal, **Mitigation Measure BIO-6** requires a 6-to-1 replacement ratio for any tree greater than 6 inches dbh removed, thereby addressing potential carbon loss. The project does not conflict with any adopted plan, policy, or regulation for the purpose of reducing GHG emissions, such as California's efforts toward 100 percent renewable and zero-carbon energy by 2045 (SB 100).

Considering the temporary and intermittent nature of emissions, adherence to regulatory standards, the lack of growth inducement, and the long-term wildfire risk reduction benefits, the Project's direct and indirect generation of GHG emissions would not have a significant impact on the environment. Therefore, impacts would be less than significant.

Mitigation Measures: None

9. Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐

Significance Criteria: The Project would result in significant hazards or hazardous materials impacts if it exposed people to hazardous materials or placed them into hazardous situations; if it released hazardous materials or emissions into the environment or within 0.25 miles of a school; if it is located on a listed hazardous materials site; if it would create a hazard due to its proximity to a public airport or private airstrip; if it would create excessive noise for people in the area; if it would interfere with an emergency response or evacuation plan; or if it would expose people or structures to significant risks due to wildland fire.

Environmental Setting: Mendocino County has adopted numerous plans related to hazard management and mitigation including, but not limited to: Community Wildfire Protection Plan, Hazardous Waste Management Plan, Operational Area Emergency Plan, etc. The most recent plan, the Mendocino County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) was adopted by the County in December, 2020. The MJHMP provides an explanation of prevalent hazards within the

County, identifies risks to vulnerable assets, both people and property, and provides a mitigation strategy to achieve the greatest risk reduction based upon available resources. The four cities within Mendocino County, including the City of Ukiah, participated in preparation of the MJHMP to individually assess hazards, explore hazard vulnerability, develop mitigation strategies, and create their own plan for each respective city (referred to as a “jurisdictional annex” to the MJHMP). The City of Ukiah adopted its jurisdictional annex chapter of the MJHMP on November 18, 2020. Hazards identified for the City of Ukiah include earthquakes, wildfire, dam failure, flood and pandemic. Table 1-13 of the City’s jurisdictional annex lists each hazard and mitigation action for City of Ukiah. Mitigation number ma-WF-UK-60 from the plan describes the need to implement a fuel modification program. The inclusion of Fire Hardened trails in the construction plan helps realize this goal.

The Ukiah Municipal Airport is located within the City of Ukiah jurisdictional limits. The Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP) was adopted by the Mendocino County Airport Land Use Commission on May 20, 2021 and adopted by the Ukiah City Council on June 16, 2021. The UKIALUCP identifies areas (known as “compatibility zones”) with potential hazards and impacts to persons using or working within the vicinity of the airport.

The site does not include any known hazardous waste sites, as mapped by the State Water Resources Control Board (SWRCB) or the California Department of Toxic Substances Control (DTSC) on the GeoTracker and EnviroStor databases, respectively, nor are there any listed sites within the vicinity of the site.

All lands within the City of Ukiah are within the jurisdiction of the Ukiah Valley Fire Authority. None of the lands within the City of Ukiah are located within a California Department of Forestry (CalFire) State Responsibility Area (SRA). However, some parcels within the western boundary of the City limits, including the Project site, are designated as “Very High” fire severity within the Local Responsibility Area (LRA).

Discussion: (a-b) Less than significant impact. Construction activities limited to the use of powered equipment, as needed, may include the routine transport, use, storage, and disposal of small quantities of common hazardous materials, such as gasoline, diesel fuel, hydraulic fluids, and oils. However, the types and quantities of materials to be used are not expected to pose a significant risk to the public and/or environment and would be managed in accordance with federal, state, and local regulations. Impacts would be **less than significant**.

(c) Less than significant impact. Ukiah High School and Pomolita Middle School are located more than one-half mile away from the proposed trail alignment and as noted above, the use of hazardous materials for construction would be in accordance with all applicable regulations; impacts would be **less than significant**.

(d) No impact. As previously noted, under Government Code Section 65962.5, both the State Water Resources Control Board and the California Department of Toxic Substances Control are required to maintain databases of sites known to have hazardous substances present in the environment. Both agencies maintain such databases on their websites, known as GeoTracker and EnviroStor. According to these databases, the Project site(s) do not contain any listed hazardous sites; **no impact** would occur.

(e) Less than significant impact. The Project parcel is located approximately 1.86 miles northwest of the Ukiah Municipal Airport within the Other Airport Environs (OAE) Compatibility Zone of the

UKIACLUP, which is identified as having a low risk level associated with airport operations. Occasional overflights may be intrusive to some outdoor activities but the OAE zone does not contain any regulations regarding intensity of use or other standards specific to airport safety concerns that would be applicable to the Project. According to Table 3A of the UKIALUCP, most land-use categories, including recreation facilities, parks and open land areas are considered normally compatible in the OAE compatibility zone. Based on this information, the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area. Impacts would be **less than significant**.

(f) Less than significant impact. There are no components of the Project that would impair or interfere with emergency response or evacuation. The proposed trail would be accessed from an existing park and parking lot. There are no components of the Project that would impair implementation of, or physically interfere with, the adopted MJHMP or other emergency response plan or evacuation plan. Impacts would be **less than significant**.

(g) Less than significant impact with mitigation incorporated. As previously noted, the Project site is designated as having a “Very High” fire severity within a Local Responsibility Area (LRA). However, the use of the Proposed trail would not substantially increase the risk of wildfire in the area. Temporary construction activities involving the occasional use of gasoline-powered tools and equipment could introduce new temporary sources of ignition that could increase fire risk. However, with implementation of Mitigation Measure HAZ-1, impacts would be reduced to less than significant. For the reasons stated, the Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. See Section V.20, Wildfire, for more information. Impacts would be **less than significant with mitigation incorporated**.

Mitigation Measures:

HAZ-1: Should portable gasoline-powered equipment be used on site, the following firesafe precautions shall be taken:

- a. Spark arresters are required on all portable gasoline-powered equipment.
- b. Equipment shall be maintained in good working condition, with exhaust systems and spark arresters in proper working order and free of carbon buildup.
- c. Fuel the equipment in a safe place where spills can be contained and a fire extinguisher is nearby. Use the recommended gas/oil mixture and do not top off. Use a funnel or spout for pouring. Wipe off any spills.
- d. Do not refuel running or hot equipment. Dispense fuel at least 10 feet from sources of ignition.
- e. Do not use equipment in areas of dry vegetation. Keep leaves and dry materials away from a hot muffler.
- f. No smoking or open flame allowed near gasoline-powered equipment.

10. Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☐	☐
i) result in a substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Significance Criteria: The Project would significantly impact hydrology and water quality if it violated water quality standards or waste discharge requirements or substantially degraded surface or groundwater quality; substantially decreased groundwater supplies or impeded sustainable groundwater management; altered drainage patterns in a manner that would cause substantial on- or off-site erosion, polluted runoff or excessive runoff that caused flooding; impeded or redirected flood flows; risked a release of pollutants due to inundation if in a flood hazard, tsunami or seiche zone; or conflicted with a water quality plan or sustainable groundwater management plan.

Environmental Setting: Average rainfall in Ukiah is slightly less than 35 inches. Most of the precipitation falls during the winter. Rainfall is often from brief, intense storms, which move in from the northwest. Virtually no rainfall occurs during the summer months.

The Project area includes the Russian River Hydrologic Unit, Upper Russian River Hydrologic Area, Ukiah Hydrologic Subarea. The Russian River is on the State Water Resources Control Board's

(SWRCB) 303(d) list of impaired water bodies for water temperature and sedimentation/siltation. Sediment impairments in tributaries led to listing the entire Russian River Watershed for sediment. Surface water supplies for the Ukiah Valley include the Eel River, from which water is diverted into the Russian River watershed through the Potter Valley Project, Lake Mendocino, and the Russian River. Groundwater is drawn from the Ukiah Valley groundwater basin. The Ukiah Valley groundwater basin is the northernmost basin in the Russian River water system and underlies an area of approximately 60 square miles. Water enters the groundwater system via percolation of surface waters and through the soil. The creeks and streams in the Ukiah Valley provide drainage channels for groundwater recharge, as well as domestic and agricultural water supply. The City of Ukiah 2020 Urban Water Management Plan (UWMP) was adopted by City Council on June 2, 2021. The UWMP considers several growth scenarios including an additional 2,500 and 5,000 new hookup scenarios and determined that there is capacity through the 2045 planning horizon to serve these growth projections.

Discussion: (a-b & e) No impact. No groundwater would be used for construction or operation of the trail. No new facilities are proposed. The Project would not require water to be discharged and groundwater would not be impacted by the Project. **No impact.**

(ci-iii) Less than significant impact with mitigation. The project area contains one Class I and a variety of III watercourses. The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), which will be implemented by the City as part of this Project, includes ongoing maintenance activities such as "Road Work" (clearing vegetation, grading, shaping road surfaces, and identifying repair needs) and "Understory Thinning/Brushing". These activities, if not properly managed, have the potential to cause erosion, alter drainage patterns, and impact water quality.

However, the WHWPA Maintenance Plan itself specifies that "No work will be done under this management plan within 50 feet of a class III or higher flow stream". This 50-foot no-work buffer serves as a primary protective measure for water quality during maintenance activities. For areas outside this buffer, and for trail construction near drainages, adherence to the UVTG Design and Maintenance Standards is required. Critically, the WHWPA Plan states that "road work be in accord with the Handbook for Forest, Ranch, & Rural Roads (2015)", a widely recognized best practice guide for minimizing hydrological impacts from forest roads. Furthermore, **Mitigation Measure BIO-7** from this ISMND requires that all earthwork within or adjacent to (50 feet) any watercourse or other body of water shall adhere to standard methods of erosion and sediment control (e.g., placement of straw, mulch, seeding, straw wattles, silt fencing). Work will be completed during the dry season when possible to reduce sediment load downstream. These combined practices ensure that activities under the WHWPA Maintenance Plan, as well as trail construction, minimize erosion and prevent substantial alterations to drainage patterns that could cause flooding or polluted runoff. The maintenance activities are specifically undertaken "to control erosion, protect water quality, and maintain facilities". Therefore, impacts associated with erosion, siltation, drainage, and water quality would be **less than significant with mitigation incorporated**.

(d) No impact. The Project is not located within a tsunami hazard zone, nor a flood zone, as identified by the Federal Emergency Management Agency. **No impact** would occur.

Mitigation Measures:

Implementation of **BIO-7**

11. Land Use and Planning

LAND USE AND PLANNING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Significance Criteria: The Project would significantly impact land use if it physically divided an established community or conflicted with a land use plan, policy or regulation intended to avoid or mitigate an environmental impact, such as the general plan or zoning code.

Environmental Setting: The City of Ukiah includes approximately 4.72 square miles. It serves as the County Seat of Mendocino County, as well as the county's commercial hub. Predominant land uses in the City include single-family residential, multi-family residential, and commercial uses ranging from local commercial to service commercial, as well manufacturing, industrial and public facilities.

The City of Ukiah is governed by the City's 2040 General Plan adopted on December 7, 2022. More specifically, zoning and land use are governed by the City's Zoning Ordinance, as outlined in Division 9, Chapter 2 of the Ukiah City Code. The purpose of the Ukiah Zoning Code is to promote the growth of the City in an orderly manner and to promote and protect the public health, safety, peace, comfort and general welfare. The larger Ukiah Valley is governed by the Ukiah Valley Area Plan (UVAP; 2011), which is a comprehensive and long range inter-jurisdictional planning document that represents the vision and foresight of the people who live and work in the Ukiah Valley. This plan governs land use and development on the unincorporated lands in the Ukiah Valley. Further, the Western Hills Watershed Protection Area Master Plan (adopted February 2024) guides the use of the project area and site.

Discussion: (a) Less than significant impact. Physical division of an existing community would typically be associated with construction of a new highway, railroad, park or other linear feature being constructed in a manner that would bifurcate an established neighborhood or community. Although the project would be near existing homes, it will not be in between homes. Future development may lead to the trail being between homes, but an existing easement across the effected parcel predates the homes being built so therefore the project would not result in the division of an established community. Impacts would be **less than significant**.

(b) Less than significant. The approximate 760 acre project site lies within the City owned Western Hills Watershed protection area with one short section of trail crossing a private property parcel via an existing trail easement. The Project site is zoned Public Facilities and carries a 2040 General Plan Land Use designation of Public Facility. Objective 13 of the Western Hills Watershed Protection Area Master Plan commits the City to "Provide Safe Public Access for Citizen Science, Education, Volunteer Management, and Recreation."

The proposed trail would not be detrimental to surrounding residences, nor would it prohibit the potential development of residences in the area. Accordingly, it was determined that in this case, the public hiking trail is an “allowed” use and does not require discretionary review. The project supports 2040 General Plan Goals in elements A1 Land Use, A4 Public Facilities, and A5 Environment and Sustainability.

LU-6.3 Open Space Access. The City shall encourage new hillside developments to provide public access (as appropriate) to adjacent greenways, open space corridors, trails, and parks if development is proposed adjacent to such facilities.

PFS-12 To provide parks, recreational facilities, and trails for residents and visitors.

PFS-12.1 Connected Park System. The City shall provide an interconnected park system that creates an urban greenbelt and links all trail systems within the City.

PFS-12.3 Equitable Access to Parks and Recreation Facilities . The City shall establish new parks and recreation facilities to ensure all residents have access within a one-mile radius of their place of residence regardless of socioeconomic status.

ENV-6.7 Public Open Space. The City shall work with Mendocino County and the Public Spaces Commission to identify and select appropriate locations along creek channels, hillsides, and ridgelines that would be appropriate for future acquisition and development as trails, pocket parks, wildlife preserves, or other public open space.

Based on the aforementioned, the Project is consistent with all applicable land use plans and regulations; the Project would not result in a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be **less than significant**.

Mitigation Measures: None

12. Mineral Resources

MINERAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Significance Criteria: Impacts to mineral resources would be considered significant if the proposed Project were to result in the loss of a known mineral resource that has value to the region and state or is otherwise locally important as designated on a local land use plan.

Environmental Setting: The most predominant of the minerals found in Mendocino County are aggregate resource minerals, primarily sand and gravel, found along many rivers and streams. The Ford Gravel Bars are located in Ukiah, along the Russian River.

Discussion: (a-b) No impact. There are no identified mineral resources within the Project area. No impact would occur.

Mitigation Measures: None

13. Noise

NOISE. Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	☐	☐	☒	☐

Significance Criteria: The Project would have a significant impact if it temporarily or permanently exceeded local noise standards in the vicinity of the Project, generated excessive ground borne noise or vibration; or would expose people residing or working in the area to excessive noise levels from public airports or private airstrips.

Environmental Setting: The Ukiah City Code does not contain thresholds for analyzing noise impacts from construction-related noise but guidance documents from the Federal Highway Administration and the Federal Highway Administration provide information on maximum noise and vibration levels associated with construction equipment and thresholds of significance for analyzing such impacts.

Although the Ukiah City Code does not contain thresholds of significance for analyzing construction-related noise, UCC §6054, *Construction of Buildings and Projects*, states that it shall be unlawful for any person within a residential zone, or within a radius of five hundred feet (500') therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist or any other construction type device (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in

such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Director of Public works.

The UCC's Noise Ordinance (Division 7, Chapter 1, Article 6) establishes ambient base noise level standards that apply to specific zoning districts within the City of Ukiah. These are specific to operation (not construction). "Ambient noise" is the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. For the purpose of the Noise Ordinance, ambient noise level is the level obtained when the noise level is averaged over a period of fifteen (15) minutes without inclusion of noise from isolated identifiable sources, at the location and time of day near that at which a comparison is to be made. Land uses exceeding these standards for long periods of time are considered to be significant.

Discussion: (a) Less than significant impact. Construction activities for the Lookout Peak Trail Project and ongoing maintenance activities under the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**) will generate temporary increases in ambient noise levels. Equipment used, as detailed in Attachment G, can include dozers, masticators, chippers, and chainsaws for vegetation clearing, road work, and dead tree removal. Maximum noise levels associated with such tools typically range from 73 to 89 decibels (dBA)

The nearest sensitive receptors are residences on Helen Avenue, Doolin Canyon Drive, and San Jacinta Drive, as well as Nokomis Elementary School. While these areas are sensitive to noise, over 80% of the total trail alignments and the majority of WHWPA maintenance activities will occur greater than a half-mile from the closest residence and the school. All construction and maintenance activities will occur between the hours of 7:00 a.m. and 7:00 p.m., in accordance with City of Ukiah Code (UCC) Section 6054, which restricts such activities within residential zones or within 500 feet thereof. Given the temporary, intermittent nature and geographic distribution of these activities, along with adherence to City noise ordinances, noise impacts associated with the Project would be **less than significant**.

(b) Less than significant impact. Project construction and WHWPA maintenance activities, particularly those involving equipment like vibratory rollers/compactors ("vibraplates"), dozers, or masticators, can generate ground-borne vibration. The Federal Transit Administration's *Transit Noise and Vibration Impact Assessment Manual* identifies 0.2 inches per second peak particle velocity (in/sec PPV) as the level for potential damage to non-engineered timber and masonry buildings. Although a vibratory roller/compactor might generate up to 0.210 in/sec PPV at 25 feet, the Project's nearest residence is approximately 1,200 feet away. Given this distance and the non-constant operation of such equipment along the trail alignments and road/fire break routes, the Project would not result in significant ground-borne vibration. Therefore, impacts would be **less than significant**.

(c) Less than significant impact. The Project parcel is located approximately 1.86 miles northwest of the Ukiah Municipal Airport within the Other Airport Environs (OAE) Compatibility Zone of the UKIACLUP, which is identified as having a low risk level associated with airport operations. Occasional overflights may be intrusive to some outdoor activities but the OAE zone does not contain any regulations regarding intensity of use or other standards specific to airport safety concerns that would be applicable to the Project. According to Table 3A of the UKIALUCP, most land-use categories, including recreation facilities, parks and open land areas are considered normally compatible in the OAE compatibility zone. Based on this information, the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area. Impacts would be **less than significant**.

Mitigation Measures: None

14. Population and Housing

POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Significance Criteria: The proposed Project would result in significant impacts to the local population or housing stock if it directly or indirectly induced substantial unplanned population growth or displaced a substantial number of people or housing such that the construction of replacement housing would be required.

Environmental Setting: The City of Ukiah comprises of approximately 4.72 square miles within Mendocino County. Overall, the City of Ukiah's population has increased moderately over the past nearly 30 years, with a more accelerated increase in the last four years. Projections from the California State University Chico Center for Economic Development- Mendocino County Economic/Demographic Profile show this trend continuing. As described in the City's Housing Element (2019) of the General Plan, the City's annual growth rate between 1990 and 2018 averaged approximately 0.3%. Between 2000 and 2010, the City added 545 residents, or 3.7%, to its population. According to the California Department of Finance, the population in the County of Mendocino was 59,985 in 2018 and 16,226 in the City of Ukiah. The newly released 2020 Census data identifies the City of Ukiah population as 16,607.

Discussion: (a-b) No Impact. The Project would not involve the construction of new homes or businesses, or the extension of roads that would induce population growth, nor would the Project displace any people or housing, as no residences are located on-site. **No impact.**

Mitigation Measures: None

15. Public Services

PUBLIC SERVICES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☒	☐	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Significance Criteria: The Project would result in a significant impact to public services if it resulted in a requirement for increased or expanded public service facilities or staffing, including fire or police protection, schools and parks.

Environmental Setting: Police protection services for the entire City limits is provided by the Ukiah Police Department, while the Mendocino County Sheriff's Department provides police services for areas outside of the City limits. Fire protection services in the City are provided by the Ukiah Valley Fire Authority. Educational facilities in the City are provided by the Ukiah Unified School District (UUSD) and County Office of Education. Additionally, there are several private and charter schools serving residents within the City of Ukiah. As mentioned below in Section 16, Recreation, of this Initial Study, there are 13 City parks, a municipal golf course, and a skate park managed by the City of Ukiah, as well as other recreational facilities in the area.

Discussion: (a) Less than significant impact. To further strengthen the environmental review, and in direct response to comments received during the public review period, particularly from the Ukiah Valley Fire Authority (UVFA), this ISMND has been updated to explicitly incorporate and analyze the ongoing maintenance activities outlined in the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**). Mitigation Measures PS-1 and PS-2, along with other applicable mitigation measures throughout this document, comprehensively address the environmental effects of these maintenance activities, ensuring all impacts remain less than significant.

City of Ukiah Police Department and Ukiah Valley Fire Authority will be responsible for emergency response in the Project area. Without mitigations the project could lead to prolonged, difficult medical responses for injured trail users. Mitigation measures will ensure collaboration between Ukiah Valley Fire Authority officials and trail designers to assure trail alignments and features support the most efficient possible rescue of injured trail users.

The Project would not affect the number of students served by local schools, nor would it increase the number of new residents to the area, which could require the construction of expanded school facilities.

The trail will be predominantly maintained by UVTG volunteers in order to minimize or avoid the use of City park staff.

As such, the Project would not result in result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. Impacts would be **less than significant**.

Mitigation Measures:

PS-1 – Prior to construction of new trail sections, trail designers and/or builders will consult with Ukiah Valley Fire Authority (UVFA) officials to identify and incorporate, as required, specific approaches to facilitate search and rescue operations, thereby ensuring efficient rescue and reducing response times to a less-than significant level. These approaches shall include, but not be limited to:

- a. Medical rescue life-flight landing zones.
- b. Trail connectors between trail sections and access roads to facilitate first responder access.

PS-2 – City of Ukiah will develop and implement a Road and Fire Break maintenance schedule utilizing the City's Road and Fire Break Maintenance Plan outlining City departments responsible for individual maintenance tasks.

16. Recreation

RECREATION.	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Significance Criteria: Impacts to recreation would be significant if the Project resulted in increased use of existing parks or recreational facilities to the extent that substantial deterioration was accelerated or if the Project involved the development or expansion of recreational facilities that would have an adverse effect on the physical environment.

Environmental Setting: The City of Ukiah manages several recreation facilities, including more than 13 City parks. In addition, there are approximately 30 miles of trails located throughout the Ukiah Valley, under City, County, and federal jurisdiction.

Discussion: (a-b) Less than significant impact. Opening the Western Hills Watershed Protection Area to the public for recreational trail use will involve the development of additional recreational facilities in the City of Ukiah. Both existing and new trail users will be attracted to the site. While many users will walk or bike to the site, some will drive creating additional traffic and reduced on street parking in the neighborhood. On the other hand, existing trail users are expected to divert some of their recreational time from other sites to this new trail system thereby offsetting the impact to this area by decreasing the impact on the other trail systems in surrounding neighborhoods.

The trailhead will be in a residential neighborhood off Helen Ave at the bottom of Doolin Canyon Drive. The neighborhood has no through traffic and reaches a dead end at the southern end of Helen Avenue. The limited number of homes in this isolated area results in very low baseline traffic volumes. Traffic impacts are discussed in section 17. "Transportation."

While the elimination of the proposed second trailhead on Helen Avenue in response to public comment reduces potential parking demand in that immediate vicinity, the remaining single trailhead on Doolin Canyon Road could still affect on-street parking for residents on Helen Avenue. To mitigate this concern, the City proposes to paint parking space delineators along the east side of Helen Avenue. These delineators are expected to increase the amount of available parking space by reducing inefficient spacing between parked cars, thereby optimizing the existing parking capacity. From the intersection at Washington Street to its terminus, Helen Avenue is over 1200 feet long with on-street parking on both sides of the street. This provides room for over 100 cars to be parked on existing on-street locations. On-street parking also extends further to the north on Helen Avenue and to the east on Washington Avenue providing additional parking. As a point of comparison, Low Gap Park is the closest available trailhead providing parking for trail users, skateboarders, tennis players, and other park users to the very popular park. The parking lot at Low Gap Park has room for about 50 cars and is rarely full. Similar to Low Gap Park, parking on Helen will serve multiple neighborhood activities including trail users, overflow parking for Nokomis Elementary School, families and sports teams using the fields at Nokomis Elementary School, and residential parking. The comparison with Low Gap Park, with half as many parking spots, suggests there is adequate on street parking for the new use in the area while acknowledging parking may be limited on weekends and during events at the Nokomis fields. However, equestrian use will not be permitted on the trails due to a lack of adequate parking and the increased expense of building and maintaining trails that will withstand the greater impact of horses and mules.

Impacts would be **less than significant**.

Mitigation Measures: None

17. Transportation

TRANSPORTATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b), Criteria for Analyzing Traffic Impacts?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Significance Criteria: Impacts to transportation and traffic would be significant if the Project conflicted with a local plan, ordinance or policy addressing transit, roadway, bicycle and pedestrian facilities; conflicted with CEQA Guidelines Sec. 15064.3(b), which contains criteria for analyzing transportation impacts; substantially increased hazards due to geometric design features; or resulted in inadequate emergency access.

Traditionally, transportation impacts had been evaluated by using Level of Service (LOS) analysis to measure the level of congestion on local roadways. However, on September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, initiating an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal to better measure the actual transportation-related environmental impacts of a given project. This change was formally adopted into CEQA Guidelines effective July 1, 2020. VMT measures the additional miles traveled by vehicles as a result of a project. If a project causes substantial increase in VMT, it may result in a significant environmental impact.

In 2018, the Governor's Office of Land Use and Climate Innovation (LCI), formerly the Office of Planning and Research (OPR), published the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, offering nonbinding guidance to assist lead agencies in implementing VMT-based analysis. This advisory also identifies certain low-VMT generating project types that can be presumed to have a less than significant impact and provides screening thresholds that may be used to avoid the need for detailed modeling.

On behalf of the Mendocino Council of Governments (MCOG), Fehr & Peers prepared the *SB 743 Vehicle Miles Traveled Regional Baseline Study* (May, 2020). This study provides localized data and recommended VMT thresholds, and incorporates applicable goals and policies from transportation plan including:

- Ukiah Bicycle and Pedestrian Master Plan (2015)
- City of Ukiah Safe Routes to School Plan (2014)
- Mendocino County Rail Trail Plan (2012)

- Ukiah Downtown Streetscape Improvement Plan (2009)
- City of Ukiah 2040 General Plan (Mobility Element)
- MCOG's Regional Transportation Plan (2017)
- Section 5, Circulation and Transportation, of the Ukiah Valley Area Plan (2011)

Although the 2040 General Plan was adopted after the Baseline Study, its policies are aligned with VMT reduction strategies.

CEQA allows the lead agency to choose the most appropriate method for evaluating VMT. If an existing tool or model is unavailable for the project's location, the lead agency may apply a qualitative analysis in accordance with the CEQA Guidelines and LCI's advisory.

Environmental Setting: The City of Ukiah generally lies west of U.S. 101 between the U.S. 101/North State Street interchange, and the U.S. 101 / South State Street interchange. Three major interchanges along U.S. 101, Talmage Road, Gobbi Street, and Perkins Street (from south to north), provide access to southern and central Ukiah. The City of Ukiah is developed in a typical grid pattern with streets generally oriented north to south and east to west. Bicycle lanes are located throughout the City and public transit is provided by the Mendocino Transit Authority (MTA).

The gateway to the Project site will be located on Doolin Canyon Road immediately off Helen Ave, a City-maintained two-lane road that is developed with on-street parking, and a pedestrian sidewalk on the east side of the road. The Nearest MTA bus stop is located approximately 600 yards away at the corner of Dora and Washinton Ave.

Discussion: (a-b) Less than significant impact. As outlined above, transportation impacts are considered significant if the project conflicts with applicable circulation plans or causes a substantial increase in VMT under CEQA Guidelines §15064.3(b).

The project proposes construction of a non-motorized, Class trail, consistent with local and regional transportation and land use plans. LCI's 2018 *Technical Advisory* identifies trails and bicycle/pedestrian facilities as project types that generally do not result in significant VMT increases. Similarly, the MCOG Baseline Study provides screening criteria (Section 3.3) for exempting projects that are located in low-VMT areas, are low VMT-generating by type (e.g. trails), generate minimal new trips, and are consistent with a jurisdiction's General Plan or other regional plans. This trail project meets those criteria. It will generate few or no new vehicle trips, supports active transportation, and is consistent with both the City of Ukiah 2040 General Plan and MCOG's Regional Transportation Plan. While the VMTscreening tool developed for MCPG by Fehr & Peers does not currently include the project location, CEQA allows for qualitative VMT analysis when modeling is infeasible. Given the project's limited scale, recreational nature, and consistency with transportation goals, impacts related to circulation and VMT would be **less than significant**.

(c-d) Less than significant impact. The proposed trails would be accessed from a single trailhead located at the bottom of Doolin Canyon Road, and would not introduce new road or roadway modifications. Emergency access would continue to be provided through existing facilities, and the Project does not propose any changes that would impair access or emergency response capabilities. No geometric design features such as sharp curves, new intersections, or incompatible land uses are proposed.

Furthermore, the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), which is an integral part of this Project, outlines "Road Work" activities including the clearing of encroaching vegetation and grading of road surfaces to "assure safe ingress and egress for routine maintenance, site monitoring, and emergency access" for the total of five and a half miles of roads and fire breaks within the WHWPA. The primary objectives of this Maintenance Plan are to "assure existing roads and fire breaks are open and available to emergency personnel and vehicles". The plan also explicitly includes the maintenance of Medevac Landing Zones in feasible locations to allow medevac helicopter landing.

These proactive measures are formalized through **Mitigation Measure PS-1 (Public Services)**, which requires that prior to construction of new trail sections, trail designers and/or builders will consult with Ukiah Valley Fire Authority (UVFA) officials to identify and incorporate, as required, specific approaches to facilitate search and rescue operations, thereby ensuring efficient rescue and reducing response times to a less-than-significant level. These approaches shall include, but not be limited to, medical rescue life-flight landing zones and trail connectors between trail sections and access roads to facilitate first responder access. This comprehensive commitment ensures that potential emergency access needs for the new trail system and the broader WHWPA are adequately addressed, supporting the finding that impacts related to emergency access would be less than significant. Therefore, the project would not create new safety hazards or result in inadequate emergency access. Impacts would be **less than significant**.

Mitigation Measures: Implementation of PS-1

18. Tribal Cultural Resources

TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Significance Criteria: An impact to tribal cultural resources would be significant if the Project were to substantially reduce the significance of a tribal cultural resource, a listed or eligible historic resource, or a resource considered significant by a California Native American tribe. Tribal cultural resources include "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to

a California Native American Tribe” that are eligible for inclusion in the California Register of Historical Resources (California Register) or included in a local register of historical resources. Lead agencies are required to “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Proposed Project.” The consultation process must be completed before a CEQA document can be certified.

Environmental Setting: As discussed in Section 5, Cultural Resources, areas that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water.

Tribes known to be present within the Ukiah area include (but are not limited to) the following:

- Coyote Valley Band of Pomo Indians
- Guidiville Indian Rancheria of Pomo Indians
- Hopland Band of Pomo Indians
- Pinoleville Pomo Nation
- Potter Valley Rancheria
- Redwood Valley Little River Band of Pomo Indians
- Scotts Valley Band of Pomo Indians
- Yokayo Tribe, not federally recognized

Discussion: (a-b) Less than significant impact. As described in Section 5, Cultural Resources, of this Initial Study, no cultural resources were identified within the Project area as a result of the records search, literature review, or archaeological field surveys. In addition, due to its topography, the site is considered to have a “low potential” for cultural, archeological, and historic resources. Because the Project has been designed with minimal ground disturbance and the site does not have a high potential for resources to occur, less than significant impacts would occur as a result of the Project. Regardless, construction of the Project will be required to adhere to CEQA Guidelines Section 15064.5 (e-f) which specifically addresses what to do in the event that human remains or archeological resources are accidentally discovered.

As noted above, in accordance with AB 52, a notification was sent to the Guidiville Rancheria of California on June 17, 2025, offering the opportunity for consultation. To date, no response has been received. Should a response or consultation request be received within the AB 52 response window, the environmental review will be updated accordingly. Therefore, impacts to cultural and archaeological resources are anticipated to be **less than significant**.

Mitigation Measures: None

19. Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Significance Criteria: Impacts to utility and service systems would be significant if the Project resulted in the construction or expansion of utilities that could cause significant environmental effects; have insufficient water supplies available to the Project during normal to extremely dry years; resulted in inadequate capacity of the wastewater treatment plant; generated solid waste exceeding the capacity of local infrastructure or impairing the achievement of solid waste reduction goals; or failed to comply with any management and reduction statutes or regulations related to solid waste.

Environmental Setting: The majority of City properties are served by City water, sewer, electricity and trash collection as summarized below.

Electric. The City of Ukiah's Electric Utility Department provides electric services to properties within the City limits, while Pacific Gas & Electric (PG&E) provides services to properties outside of the City.

Water. Water services in the City of Ukiah are provided by the Ukiah Valley Water Authority (UVWA), which is a Joint Powers Authority (JPA) formed between the City of Ukiah, Millview County Water District, Redwood Valley County Water District, Calpella County Water District, and Willow County Water District. The City of Ukiah 2020 Urban Water Management Plan (UWMP) was adopted by City Council on June 2, 2021. The UWMP considers several growth scenarios including an additional 2,500

and 5,000 hookup scenarios and determined that there is capacity through the 2045 planning horizon to serve these growth projections.

Sewer and Wastewater. The Ukiah Valley Sanitation District (UVSD) and the City of Ukiah provide public sewer services to customers within their boundaries under the purview of the State Water Quality Control Board. The City's sewage treatment plant and Waste Water Treatment Plant (WWTP), operational since 1958, serves the City of Ukiah and the Ukiah Valley Sanitation District, however the Project parcel is not located within the service area.

Solid Waste. The Ukiah landfill, outside City limits on Vichy Springs Road, stopped receiving municipal solid waste in 2001 and the City is working on capping the landfill. No new waste generated will be processed through the landfill. Solid waste generated in the Ukiah Valley is exported for disposal to the Potrero Hills Landfill in Solano County. The Valley's solid waste disposal system consists of a large volume transfer station, Ukiah Transfer Station, which receives waste for export.

Discussion: (a-e) No Impact. Users of the proposed trail would utilize existing infrastructure, including access roads, parking lots, water fountains and restrooms; no additional utilities are needed for the proposed trail. Any waste produced from construction activities would be disposed of at the Ukiah Transfer Station in accordance with all applicable local, state and federal regulations. **No impact** to utilities and service systems would occur.

Mitigation Measures: None

20. Wildfire

WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☒	☐	☐

Significance Criteria: Impacts to wildfire would be significant if the Project were located in or near a State Responsibility Area (SRA) or lands classified as very high fire hazard severity zones and

substantially impaired an emergency response plan; exposed Project occupants to wildfire pollutants or uncontrolled spread of wildfire due to site conditions such as slope and prevailing winds; require the installation or maintenance of infrastructure that could exacerbate fire risk; or expose people or structures to significant risks as a result of post-fire runoff, slope instability or drainage changes.

Environmental Setting: All lands within the City of Ukiah are within the jurisdiction of the Ukiah Valley Fire Authority. None of the lands within the City of Ukiah are located within a California Department of Forestry (CalFire) State Responsibility Area (SRA). However, some parcels within the western boundary of the City limits, including the Project site, are designated as "Very High" fire severity within the Local Responsibility Area (LRA).

As discussed in Section 9, Hazards and Hazardous Materials, the County's Emergency Operations Plan (EOP) and Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) address emergency operations, natural disasters (including wildfire), as well as mitigation strategies to reduce potential risks. The City of Ukiah adopted its "jurisdictional annex" chapter of the MJHMP on November 18, 2020. Hazards identified for the City of Ukiah include earthquakes, wildfire, dam failure, flood and pandemic. Table 1-13 of the City's jurisdictional annex lists each hazard and mitigation action for City of Ukiah.

Discussion: (a) Less than significant impact. The proposed trail would be accessed via existing streets. There are no components of the Project that would conflict with, or impair the adopted Mendocino County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), Emergency Operations Plan (EOP), or other adopted emergency response plan or emergency evaluation plan. To further ensure efficient emergency response for trail users and to enhance overall wildfire emergency access within the project area, the **WHWPA Road and Fire Break Maintenance Plan (Attachment G)** explicitly includes "Road Work" activities to "assure safe ingress and egress for routine maintenance, site monitoring, and emergency access" on the five and a half miles of roads and fire breaks. The primary objectives of this plan are to "assure existing roads and fire breaks are open and available to emergency personnel and vehicles". The plan also details the maintenance of Medevac Landing Zones in feasible locations, to be kept clear at specific dimensions (at least 75'x75', 100'x100' if possible) to allow helicopter landing for emergency medical transport

These measures are formalized through **Mitigation Measure PS-1 (Public Services)**, which requires pre-construction consultation with Ukiah Valley Fire Authority (UVFA) officials to identify and incorporate, as required, specific approaches such as medical rescue life-flight landing zones and trail connectors between trail sections and access roads. These measures are designed to facilitate search and rescue operations, thereby ensuring efficient rescue and reducing response times to a less-than-significant level. With the implementation of PS-1, supported by the specific provisions of the WHWPA Maintenance Plan, impacts related to emergency response plan impairment would be **less than significant**.

Discussion: (b & d) Less than significant with mitigation incorporated. The Project site is located within an area designated as having "Very High" fire severity risk within a Local Responsibility Area (LRA). The area is "steep with slopes ranging from 30-70 percent" and the "vegetation is overgrown in some locations and wildfire has been suppressed for decades," leading to "increasingly dense and unhealthy western forests". These conditions inherently exacerbate wildfire risks.

The WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), which will be implemented as part of this Project, is specifically designed as a proactive strategy to reduce these inherent wildfire risks and enhance safety for both trail users and emergency personnel within this high-risk area.

Mitigation Measure PS-2 (Public Services) commits the City of Ukiah to develop and implement a Road and Fire Break maintenance schedule utilizing the City's WHWPA Road and Fire Break Maintenance Plan. This plan outlines comprehensive fuel modification activities including "Clearing of encroaching vegetation with hand crews, dozers, or masticators," "Understory Thinning/Brushing," "Piling, Burning" (with permits), "Chipping/Hauling," and "Dead Tree Removal". These activities are explicitly aimed at ensuring "forest lands are thinned of hazardous deadfall," "shaded fuel breaks along roads are maintained," and the area is "safe for future anticipated public access". The plan also acknowledges that roads, while an asset for firefighting, can be a liability due to fuel loading, and maintenance is needed to "ensure safe access during a fire event". These actions directly reduce fuel loads and contribute to a healthier, more resilient forest, thereby mitigating wildfire risks and supporting the broader fuel modification program identified for the City in its MJHMP.

While temporary construction activities for the trail, involving the use of gasoline-powered tools and equipment, could introduce temporary sources of ignition that might increase fire risk, **Mitigation Measure HAZ-1 (Hazards and Hazardous Materials)** requires fire-safe precautions, including spark arresters on all portable gasoline-powered equipment and proper maintenance of equipment. Furthermore, after construction, the UVTG will consult with the Ukiah Valley Fire Authority to assess trail segments for "fire-hardening" (**Attachment F**), a strategy that combines vegetation management and recreational trails for fuels reduction and enhanced access. The active wildfire risk reduction efforts under the WHWPA Maintenance Plan, coupled with Mitigation Measure HAZ-1, ensure that the Project would not exacerbate wildfire risks or expose people or structures to significant risks from wildland fires, and impacts would be less than significant with mitigation incorporated. Impacts from post-fire runoff, slope instability, or drainage changes would also be mitigated by the ongoing maintenance and erosion control specified in the WHWPA Plan (Objective 3) and BIO-7.

(c) Less than significant with mitigation incorporated. The Project, through its integration with the WHWPA Road and Fire Break Maintenance Plan (**Attachment G**), does require the ongoing maintenance of existing infrastructure, specifically roads and fire breaks, within the Western Hills Watershed Protection Area. This is contrary to the prior discussion's statement that the Project would "not require the installation or maintenance of infrastructure... that would exacerbate fire risk" [Source: Lookout Peak Trails Draft ISMND9_9.pdf, p. 50]. However, the specific purpose of this required maintenance, as detailed in the WHWPA Plan, is explicitly to reduce, rather than exacerbate, fire risk. Activities such as clearing encroaching vegetation, grading roads for emergency access, and thinning hazardous deadfall are designed to create a "safe environment" and maintain "safe ingress and egress" for emergency personnel. **Mitigation Measure PS-2 (Public Services)** formalizes the City's commitment to implement a maintenance schedule for these vital fire breaks and access roads utilizing the WHWPA Plan [Source: Mitigation Measures, PS-2]. Therefore, the ongoing maintenance of this infrastructure, as governed and mitigated by PS-2 and explicitly guided by the objectives and activities of the WHWPA Maintenance Plan, serves to reduce fire risk and would not result in temporary or ongoing adverse impacts to the environment. Impacts would be **less than significant with mitigation incorporated**.

Mitigation Measures:

Implementation of **HAZ-1** and **PS-2**.

21. Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion: (a) Less than significant impact with mitigation incorporated. As described throughout the Initial Study, temporary ground disturbing activities associated with vegetation removal and trail construction could result in direct significant impacts to Air Quality, Biological Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Wildfire. However, mitigation measures identified within the aforementioned sections would reduce impacts to **less than significant with mitigation incorporated**.

(b) Less than significant impact with mitigation incorporated. Cumulative impacts are generally considered in analyses of Air Quality, Biological Resources, Cultural Resources, Noise, and Traffic. As discussed throughout the Initial Study, the Proposed Project would have less than significant impacts on these resources with implementation of mitigation measures described herein. Short-term construction impacts associated with the Project would not significantly contribute to cumulative impacts in the area as there are no known past projects nor current projects within the vicinity of the site. Based on the findings and conclusions contained in the Initial Study, cumulative impacts related to the Proposed Project would be **less than significant with mitigation incorporated**.

(c) Less than significant impact with mitigation incorporated. Based on the findings and conclusions contained in the Initial Study, the Proposed Project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly. Impacts would be **less than significant with mitigation incorporated**.

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VII. MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Monitoring and Documentation Sheet

Potential Impact	Mitigation Measures	Implementation Responsibility	Monitoring Responsibility	Timing	Date Implemented
Air Quality					
AQ-1: Vegetation Removal.	Vegetation removal methods shall include chopping larger materials on-site to be disbursed with materials largely in contact with the ground; burning of vegetation shall not be allowed without obtaining the appropriate burn permits.	Contractor	COU	TC	
AQ-2: Diesel Engines – Stationary and Portable Equipment and Mobile Vehicles:	Off-road equipment with auxiliary diesel engines rated at 50 brake horsepower or greater, must have either a valid Air Quality permit, or a state Portable Equipment Registration Program (PERP) Registration.	Contractor	COU	TC	
Biology					
BIO-1: Sensitive Species	A Worker Awareness and Education Program (WAEP) will be conducted with trail crew leaders	COU	COU	PC	
BIO-2: Nesting Birds.	Pre-construction surveys shall be conducted by a qualified biologist prior to any vegetation removal or ground disturbing activities occurring between March 1 and August 31 of any year	Contractor	COU	PC	
BIO-3: Roosting Bats.	If evidence of bat roosts are observed pre-construction bat surveys should be conducted no more than 14 days prior to groundbreaking activities.	Contractor	COU	PC	
BIO-4: Mammal Dens or Burrows.	If evidence of special-status mammal borrows or denning activity is observed, it is recommended that pre-construction surveys be conducted by a qualified biologist for activities that may affect den sites	Contractor	COU	PC	
BIO-5: Over-Wintering Monarchs.	Monarch Butterflies “Over-Winter” in groups between November 1st and January 31st. If monarchs are observed in this time frame monarch surveys should be conducted by a qualified biologist no more than 14 days prior to the commencement of tree/shrub removal.	Contractor	COU	PC	

BIO- 6: Carbon Loss.	Any tree greater than 6 inches dbh removed during construction shall be replaced at a ratio of 6 to 1 at the nearest available and appropriate site as approved by a qualified professional.	Contractor	COU	BC	
BIO-7: Watercourses	The Project shall adhere to UVTG Design and Maintenance Standards	Contractor	COU	TC	
Hazards and Hazardous Materials					
HAZ-1	Should portable gasoline-powered equipment be used on site firesafe precautions a-f shall be taken	Contractor	COU	TC	
Hydrology and Water Quality					
BIO-7	The Project shall adhere to UVTG Design and Maintenance Standards	Contractor	COU	TC	
Public Services					
PS-1	PS-1 – Prior to construction of new trail sections, trail designers and/or builders will consult with Ukiah Valley Fire Authority (UVFA) officials to identify and incorporate, as required, specific approaches to facilitate search and rescue operations, thereby ensuring efficient rescue and reducing response times to a less-than significant level. These approaches shall include, but not be limited to: a. Medical rescue life-flight landing zones. b. Trail connectors between trail sections and access roads to facilitate first responder access.	Contractor, COU	COU	TC	
PS-2	City of Ukiah will develop and implement a Road and Fire Break maintenance schedule utilizing the City's Road and Fire Break Maintenance Plan outlining City departments responsible for individual maintenance tasks.	COU	COU	TC	
Wildfire					
HAZ-1	Should portable gasoline-powered equipment be used on site firesafe precautions a-f shall be taken	Contractor	COU	TC	

*Mitigation measures are abbreviated for this documentation sheet. Implementation and monitoring must comply with all aspects of the measure as outlined in the ISMND.

* COU = City of Ukiah

* TC = Throughout Construction

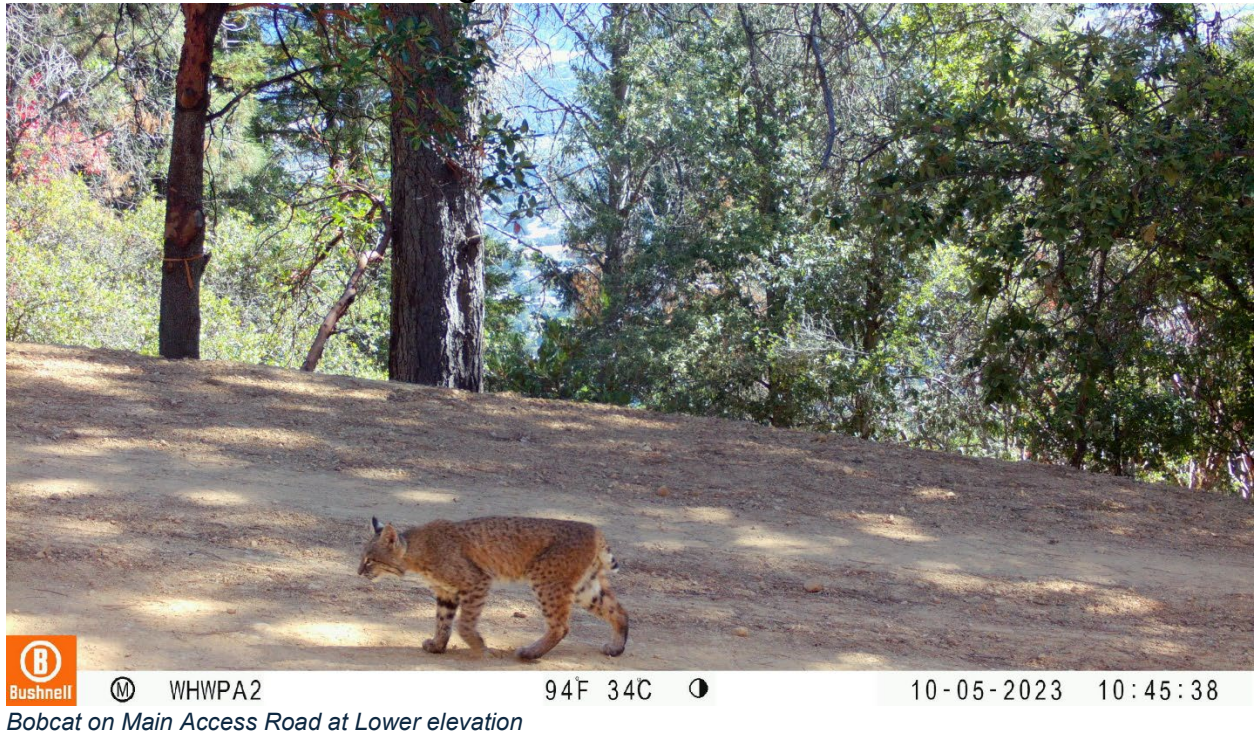
* PC = Prior to Construction

* BC = Before Completion

VIII. ATTACHMENTS

- A. Existing Conditions Photographs
- B. Final Recorded Map and Deed (LLA25-000003)
- C. City of Ukiah Native Plant Palette
- D. Ukiah Valley Trail Group Philosophy and Design and Maintenance Standards
- E. Lookout Peak Shared-Use Trails: Concept Plan Review
- F. Fire- Hardened Trails (Vegetation Management Corridors)
- G. WHWPA Road and Fire Break Maintenance Plan
- H. Biological Assessment Report
- I. Concept Trail Map

Attachment A – Existing Conditions Photos





View to East on Foggy Day



View to West



Redwood Ave Ridge Road



Fire Break Off Main Road



View of Ukiah from Project Site



*View of
Fire Break Along Main Road Near Lookout Peak*

WHWPA
14 Sep 2022, 09:39:40

Examples of Similar Trails in Similar Environments



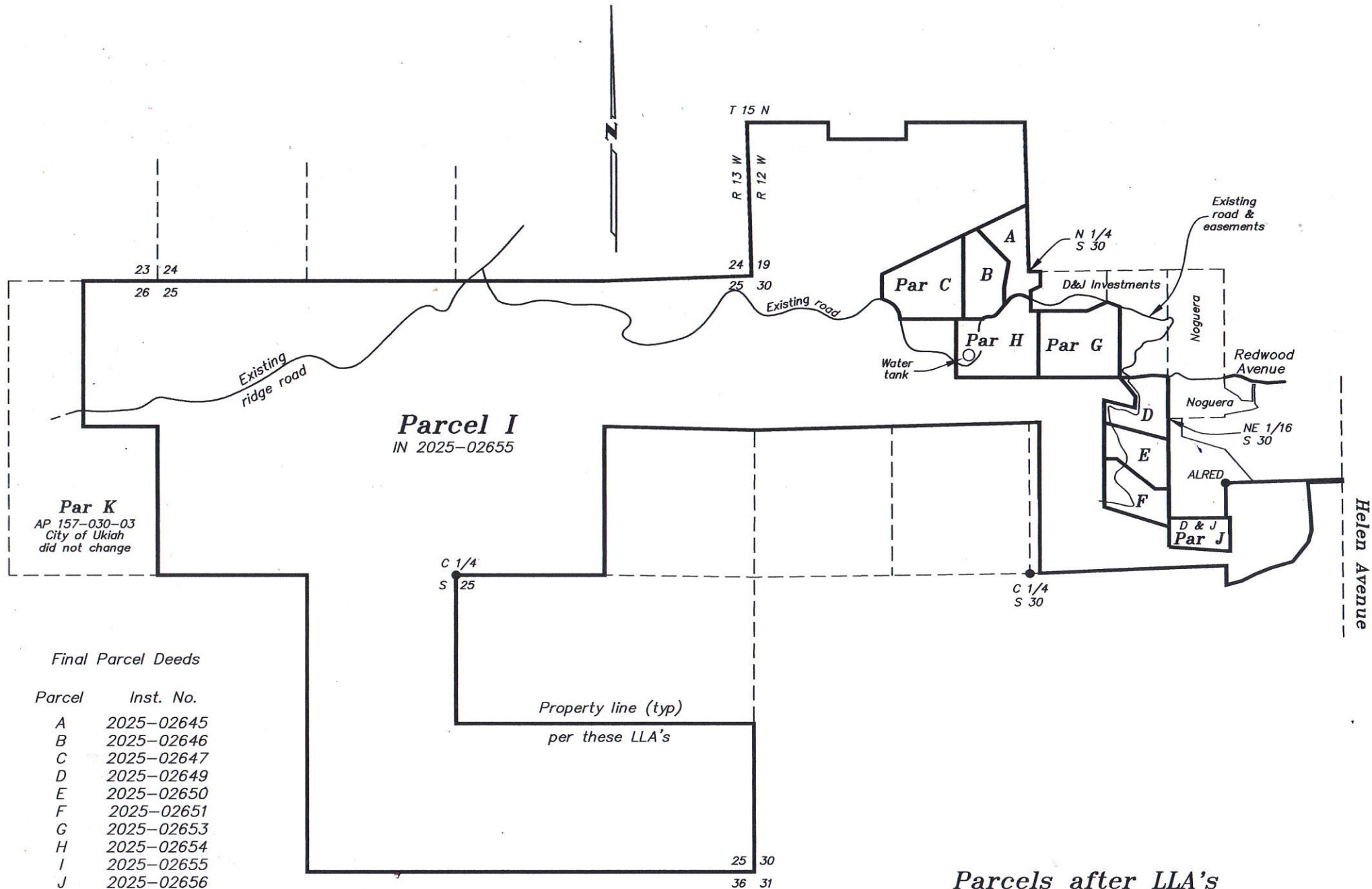
Sol y Sombra Trail ~1 mile to north in Mixed woodland



Sol y Sombra Trail ~1 mile to north in Redwoods



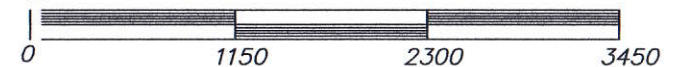
Sol y Sombra Trail ~1 mile to north in chaparral



Note:

The large parcel was IN 2025-02648 after the first LLA, it then became IN 2025-02652 after the second LLA and then became IN 2025-02655 after the third and final LLA.

**Parcels after LLA's
Redwood Avenue, Ukiah
April 1, 2025 -- Scale: 1"=1150'**



**WHEN RECORDED RETURN
AND MAIL TAX STATEMENTS TO**City of Ukiah, City Clerk
300 Seminary Avenue
Ukiah, Ca 95482The undersigned Grantor declares that the
Document Transfer Tax is \$ 0, value less than \$100
Pursuant to RT 11922 / 27383**QUITCLAIM DEED**

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

City of Ukiah, a Municipal Corporation and D&J Investments, LLC, a California limited liability company

hereby REMISE, RELEASE, AND FOREVER QUITCLAIM to:

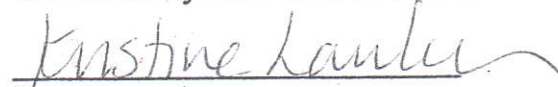
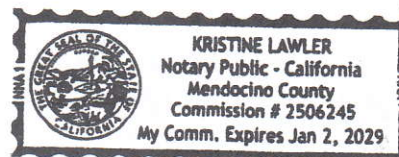
City of Ukiah, a Municipal Corporation

The following described real property in the City of Ukiah, County of Mendocino, State of California

SEE ATTACHED Exhibit "A" (Parcel 3 City LLA File No. LLA25-000003) and Exhibit "B" (Plot Map)

This deed is given pursuant to the City of Ukiah Lot Line Adjustment File No. LLA25-000003 and is intended
to create no new parcel.
City of Ukiah
Sage Sangiacomo, City Manager
D&J Investments, LLC
David J. HullA notary public or other officer completing this certificate verifies only the identity of the individual who signed the
document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.STATE OF CALIFORNIA
COUNTY OF MENDOCINOOn 3/31/25, before me, Kristine Lawler, Notary Public,personally appeared Sage Sangiacomo, who proved to me on the
basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and
acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on
the instrument, the persons or the entity upon behalf of which the persons acted, executed the instrument.I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal


Signature

**WHEN RECORDED RETURN
AND MAIL TAX STATEMENTS TO**

City of Ukiah, City Clerk
300 Seminary Avenue
Ukiah, Ca 95482

The undersigned Grantor declares that the
Document Transfer Tax is \$ 0, value less than \$100
Pursuant to RT 11922 / 27383

QUITCLAIM DEED

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

City of Ukiah, a Municipal Corporation and D&J Investments, LLC, a California limited liability company

hereby REMISE, RELEASE, AND FOREVER QUITCLAIM to:

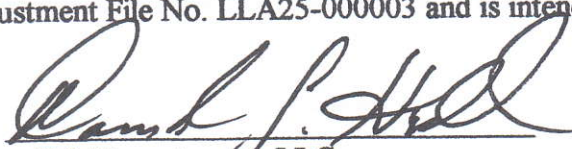
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City of Ukiah
Sage Sangiacomo, City Manager


D&J Investments, LLC
David J. Hull

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF MENDOCINO

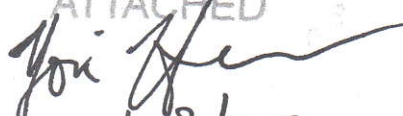
On _____, before me, _____,

personally appeared _____, who proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument, the persons or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal

Signature

CALIFORNIA
ACKNOWLEDGEMENT
ATTACHED


3/23/25

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Sonoma)

On March 28th, 2025 before me, YORI HERRERA-GONZALEZ (Notary Public)
(insert name and title of the officer)

personally appeared David J. Hull,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)



EXHIBIT "A"

(Parcel 3 City LLA File No. LLA25-000003)

Any and all lands and any and all interest thereto lying within the following described real property:

All that certain property situated in the City of Ukiah, County of Mendocino, State of California, more particularly described as follows:

TRACT ONE:

A portion of the southwest quarter of the northeast quarter of Section 30, Township 15 North, Range 12 West, Mount Diablo Meridian described as follows:

COMMENCING at the center quarter corner of said Section 30 as shown on the Record of Survey maps recorded in Map Case 2, Drawer 27, Page 1, and Map Case 2, Drawer 16, Page 30, Mendocino County Records; thence North 87°39'28" East, 87.71 feet to the **POINT OF BEGINNING**; thence continuing North 87°39'28" East, 1150.96 feet; thence North 00°21'25" West, 1324.57 feet; thence South 88°25'18" West, 1142.19 feet; thence South 00°00'00" East, 1340.12 feet to the Point of Beginning.

TRACT TWO:

The south half of the southwest quarter of Section 19, Township 15 North, Range 12 West, Mount Diablo Meridian.

EXCEPTING therefrom the following:

BEGINNING at the southwest corner of Parcel 3 as shown on the final subdivision map of Subdivision 98-37, recorded April 29, 2002 in Maps, Drawer 69, Pages 59-61, Mendocino County Records; thence South 00°00'35" East, 150.00 feet; thence North 89°59'25" East, 690.00 feet; thence North 00°00'35" West, 150.00 feet to the north line of the south half of the southwest quarter of said Section 19; thence along said line South 89°59'25" West, 60.00 feet to the southeast corner of said Parcel 3; thence along the south line of said Parcel 3 South 89°59'25" West, 630.00 feet to the Point of Beginning.

TRACT THREE:

The east half of the northeast quarter of the northeast quarter of Section 26, Lots 1, 2, 3, 4, 5, 6, 7 and 8 of Section 25, the northwest quarter of the northeast quarter of Section 25, the northeast quarter of the northeast quarter of Section 25, and the southwest quarter of the northeast quarter of Section 25, all in Township 15 North, Range 13 West, Mount Diablo Meridian.

Lot 7 of Section 30, the northeast quarter of the northwest quarter of Section 30, and the northwest quarter of the northeast quarter of Section 30, all in Township 15 North, Range 12 West, Mount Diablo Meridian as shown on the the Record of Survey maps recorded in Map Case 2, Drawer 27, Page 1, and Map Case 2, Drawer 16, Page 30, Mendocino County Records;

EXCEPTING THEREFROM said TRACTS ONE, TWO and THREE the following:

EXCEPTION #1: (Inst No 2021-10029 = AP 003-190-13)

COMMENCING at the northeast 1/16th corner of said Section 30, shown as note 1 on the Record of Survey map recorded in Map Case 2, Drawer 27, Page 1, Mendocino County Records; thence along the east line of the northwest quarter of the northeast quarter of said Section 30, North 00°21'25" West, 375.83 feet to the center of a private road as shown on said Record of Survey map and being the **POINT OF BEGINNING**; thence leaving said east line and following along the centerline of said road North 85°26'00" West, 109.50 feet; thence along a curve to the left with a radius of 275.00 feet, a central angle of 11°04'30" and an arc length of 53.16 feet; thence South 83°29'30" West, 143.44 feet; thence leaving said road North 90°00'00" West, 122.06 feet; thence North 00°00'00" East, 627.57 feet to the center of said private road at the easterly terminus of the course (N69°18'00"W 235.59'); thence along the centerline of said private road North 69°18'00" West, 123.00 feet; thence leaving said road, North 00°00'00" East, 278.55 feet to the north line of said northwest quarter of the northeast quarter of said Section 30; thence along said north line

North 89°11'29" East, 536.00 feet to the northeast corner of said quarter quarter; thence along the east line of said quarter quarter South 00°21'25" East, 948.74 feet to the Point of Beginning.

EXCEPTION #2: (Inst No 2021-15566 = AP 003-190-15)

COMMENCING at the northeast 1/16th corner of said Section 30, shown as note 1 on the Record of Survey map recorded in Map Case 2, Drawer 27, Page 1, Mendocino County Records; thence along the east line of the northwest quarter of the northeast quarter of said Section 30, North 00°21'25" West, 375.83 feet to the center of a private road as shown on said Record of Survey map; thence leaving said east line and following along the centerline of said road North 85°26'00" West, 109.50 feet; thence along a curve to the left with a radius of 275.00 feet, a central angle of 11°04'30" and an arc length of 53.16 feet; thence South 83°29'30" West, 143.44 feet; thence leaving said road North 90°00'00" West, 122.06 feet; thence North 00°00'00" East, 627.57 feet to the center of said private road at the easterly terminus of the course (N69°18'00"W 235.59'); thence along the centerline of said private road North 69°18'00" West, 123.00 feet to the **POINT OF BEGINNING**; thence leaving said road, North 00°00'00" East, 278.55 feet to the north line of said northwest quarter of the northeast quarter of said Section 30; thence along said north line, South 89°11'29" West, 590.00 feet; thence leaving said north line, South 00°00'00" East, 130.00 feet; thence South 65°00'00" West, 95.00 feet; thence South 00°00'00" East, 180.00 feet; thence North 90°00'00" East, 500.00 feet; thence North 65°34'56" East, 193.33 feet to the Point of Beginning.

EXCEPTION #3:

BEGINNING at the most northwest corner of the above described Exception #2, being on the north line of said northwest quarter of the northeast quarter of said Section 30; thence leaving said north line, South 00°00'00" East, 130.00 feet; thence South 65°00'00" West, 95.00 feet; thence South 00°00'00" East, 70.32 feet to the centerline of an existing road; thence along said centerline, North 65°34'19" West, 56.24 feet; thence along a curve to the left with a radius of 120.00 feet, a central angle of 74°31'35" and an arc length of 156.09 feet; thence South 39°54'06" West, 160.58 feet; thence along a curve to the right with a radius of 80.00 feet, a central angle of 55°34'10" and an arc length of 77.59 feet; thence along a curve to the left with a radius of 80.00 feet, a central angle of 47°33'36" and an arc length of 66.41 feet; thence leaving said road North 90°00'00" West, 732.07 feet to the centerline of same road; thence along the centerline of said same road, North 05°30'48" West, 11.49 feet; thence along a curve to the left with a radius of 180.00 feet, a central angle of 63°23'00" and an arc length of 199.12 feet; thence North 68°53'48" West, 46.56 feet; thence leaving said road, North 00°00'00" East, 220.00 feet; thence North 64°23'10" East, 1442 feet, more or less, to a point on the east line of the south half of the southwest quarter of Section 19, Township 15 North, Range 12 West, Mount Diablo Meridian, mentioned above in Tract Two; thence Southerly along said east line, 602 feet, more or less, to the north quarter corner of said Section 30 as shown on the Record of Survey maps recorded in Map Case 2, Drawer 27, Page 1, and Map Case 2, Drawer 16, Page 30, Mendocino County Records; thence along the north line of said Section 30, North 89°11'29" East, 103.33 feet to the Point of Beginning.

EXCEPTION #4:

BEGINNING at the northeast 1/16th corner of said Section 30, shown as note 1 on the Record of Survey map recorded in Map Case 2, Drawer 27, Page 1, Mendocino County Records; thence along the east line of the northwest quarter of the northeast quarter of said Section 30, North 00°21'25" West, 375.83 feet to the center of a private road as shown on said Record of Survey map; thence leaving said east line and following along said road North 85°26'00" West, 109.50 feet; thence along a curve to the left with a radius of 275.00 feet, a central angle of 11°04'30" and an arc length of 53.16 feet; thence South 83°29'30" West, 143.44 feet; thence leaving said road North 90°00'00" West, 122.06 feet; thence South 39°00'00" East, 220.00 feet; thence South 03°00'00" West, 100.00 feet; thence North 76°00'00" West, 280.00 feet; thence South 00°00'00" East, 950.00 feet; thence South 72°56'21" East, 600.00 feet to a point on the east line of the southwest quarter of the northeast quarter of said Section 30; thence along said east line, North 00°21'25" West, 961.77 feet to the Point of Beginning.

EXCEPTION #5:

COMMENCING at the northeast 1/16th corner of said Section 30, shown as note 1 on the Record of Survey map recorded in Map Case 2, Drawer 27, Page 1, Mendocino County Records; thence along the east line of the northwest quarter of the northeast quarter of said Section 30, North 00°21'25" West, 375.83 feet to the center of a private road as shown on said Record of Survey map and being the southeast corner of the D & J Investments property described in Instrument Number 2021-10029, Mendocino County Records; thence along the boundary of said property and leaving said east line and following along said road North 85°26'00" West, 109.50 feet; thence along a curve to the left with a radius of 275.00 feet, a central angle of 11°04'30" and an arc length of 53.16 feet; thence South 83°29'30" West, 143.44 feet; thence leaving said road North 90°00'00" West, 122.06 feet to the **POINT OF BEGINNING**; thence North 00°00'00" East, 627.57 feet to the center of said private road at the easterly terminus of the course (N69°18'00"W 235.59'); thence along the center of said private road North 69°18'00" West, 123.00 feet to the southeast corner of the D & J Investments property described in Instrument Number 2021-15566, Mendocino County Records; thence along the south and east lines of said property and leaving said road, South 65°34'56" West, 193.33 feet; thence South 90°00'00" West, 500.00 feet; thence North 00°00'00" East, 109.68 feet to the centerline of an existing road; thence leaving said D & J property line, along said centerline, North 65°34'19" West, 56.24 feet; thence along a curve to the left with a radius of 120.00 feet, a central angle of 74°31'35" and an arc length of 156.09 feet; thence South 39°54'06" West, 160.58 feet; thence along a curve to the right with a radius of 80.00 feet, a central angle of 55°34'10" and an arc length of 77.59 feet; thence along a curve to the left with a radius of 80.00 feet, a central angle of 47°33'36" and an arc length of 66.41 feet; thence leaving said road, North 90°00'00" West, 233.85 feet; thence South 00°00'00" East, 520.00 feet; thence North 90°00'00" East, 1451.10 feet to the Point of Beginning.

EXCEPTION #6:

Excepting therefrom all the coal and other minerals in the lands so entered and patented, together with the right to prospect for, mine and remove the same pursuant to the provisions and limitations of the Act of December 29, 1916 (39 Stat., 862) as reserved by the United States of America in the Patents recorded March 15, 1945 in Book 182 of Official Records, Page 212, and November 10, 1949 in Book 258 of Official Records, Page 273, Mendocino County Records.

TRACT FOUR:

A portion of Lot 2 of Section 30, Township 15 North, Range 12 West, Mount Diablo Meridian, more particularly described as follows:

COMMENCING at a 1/2" iron pipe plugged L.S. 3089 and being the northwesterly corner of Lot 2 of said Section 30 as shown on the Record of Survey map recorded in Map Case 2, Drawer 16, Page 30, Mendocino County Records; thence along the west line of said Lot 2, South 00°10'50" East, 884.00 feet to the northwest corner of the D & J Investments property described in Instrument Number 2022-12534, Mendocino County Records; thence continuing South 00°10'50" East, along the west line of said property, 256.72 feet to the **POINT OF BEGINNING**; thence continuing along said west line, South 00°10'50" East, 185.00 feet to a 1/2" iron pipe plugged L.S. 3089 being the southwesterly corner of said Lot 2; thence North 87°51'37" East, 504.77 feet to a 1/2" iron pipe plugged L.S. 3089 being the southeasterly corner of said Lot 2; thence along the east line of said Lot 2, North 00°13'08" West, 130.00 feet to a point from which the point of beginning bears North 85°54'05" West; thence leaving said east line, North 85°54'05" West, 505.80 feet to the Point of Beginning.

TRACT FIVE:

BEGINNING at a post marked A.L.R.E.D. on the westerly line of Lot 77, Yokayo Rancho, 22.90 chains North 00°30' West from the southwest corner of Lot 27 of George Luce's Subdivision of said Lot 77; thence North 88°00' East, 1034.68 feet, more or less, to the west line of Helen Avenue; thence South 04°50' East along the west line of Helen Avenue, 372.22 feet to the centerline of a road from Helen Avenue toward Doolan Canyon; thence along the center of said road, South 86°52' West, 252.84 feet; thence South 44°51' West, 54.22 feet; thence South 16°04' West, 140.28 feet; thence South

38°52' West, 224.49 feet; thence South 73°52' West, 189.48 feet; thence South 68°31' West, 153.60 feet; thence South 63°02' West, 140.51 feet; thence South 75°16' West, 141.54 feet to the intersection of said centerline of said road with said westerly line of said Lot 77; thence along said westerly line, North 00°30' West, 905.32 feet, more or less, to the Point of Beginning.

EXCEPTING THEREFROM TRACT FIVE the following:

EXCEPTION A:

BEGINNING at the northeast corner of the D & J Investments property described in Instrument Number 2022-12534, Mendocino County Records, said point lying on the west line of TRACT FIVE; thence along the east line of said D & J Investments property and also being the west line of TRACT FIVE, South 00°13'08" East, 294.79 feet; thence leaving said line North 89°46'52" East, 35.00 feet; thence North 00°13'08" West, 294.79 feet; thence South 89°46'52" West, 35.00 feet to the Point of Beginning.

EXCEPTION B:

That portion conveyed by Mae Bell Stern to J.H. Penner, et ux, by deed dated March 16, 1946, recorded March 18, 1946 in Volume 194 of Official Records, Page 472, Mendocino County Records.

EXCEPTION C:

That portion conveyed by Mae Bell Gillespie, formerly Mae Bell Stern to E.A. Dunsing, et ux, by deed dated November 2, 1949, recorded November 16, 1949 in Volume 258 of Official Records, Page 299, Mendocino County Records.

Total AP's = 157-050-03 & 13 & 14 & 15 & 16 & 18, 157-030-02, 157-070-05x, 001-040-83x, 003-190-11x & 17 & 19x, 157-060-02 & 03, 003-260-01x, 003-500-14x

This deed is given pursuant to City of Ukiah Lot Line Adjustment File LLA25-000003 and is intended to create no new parcel.

The Lot Line Adjustment shall not relinquish, remise, release or terminate any prior right, interest in rights-of-way, easements, or other rights which may be appurtenant to and/or and encumbrance to the subject property.

This real property description has been prepared by me or under my direction in conformance with the Professional Land Surveyor's Act.

Ron W. Franz
Ron W. Franz L.S. 7173

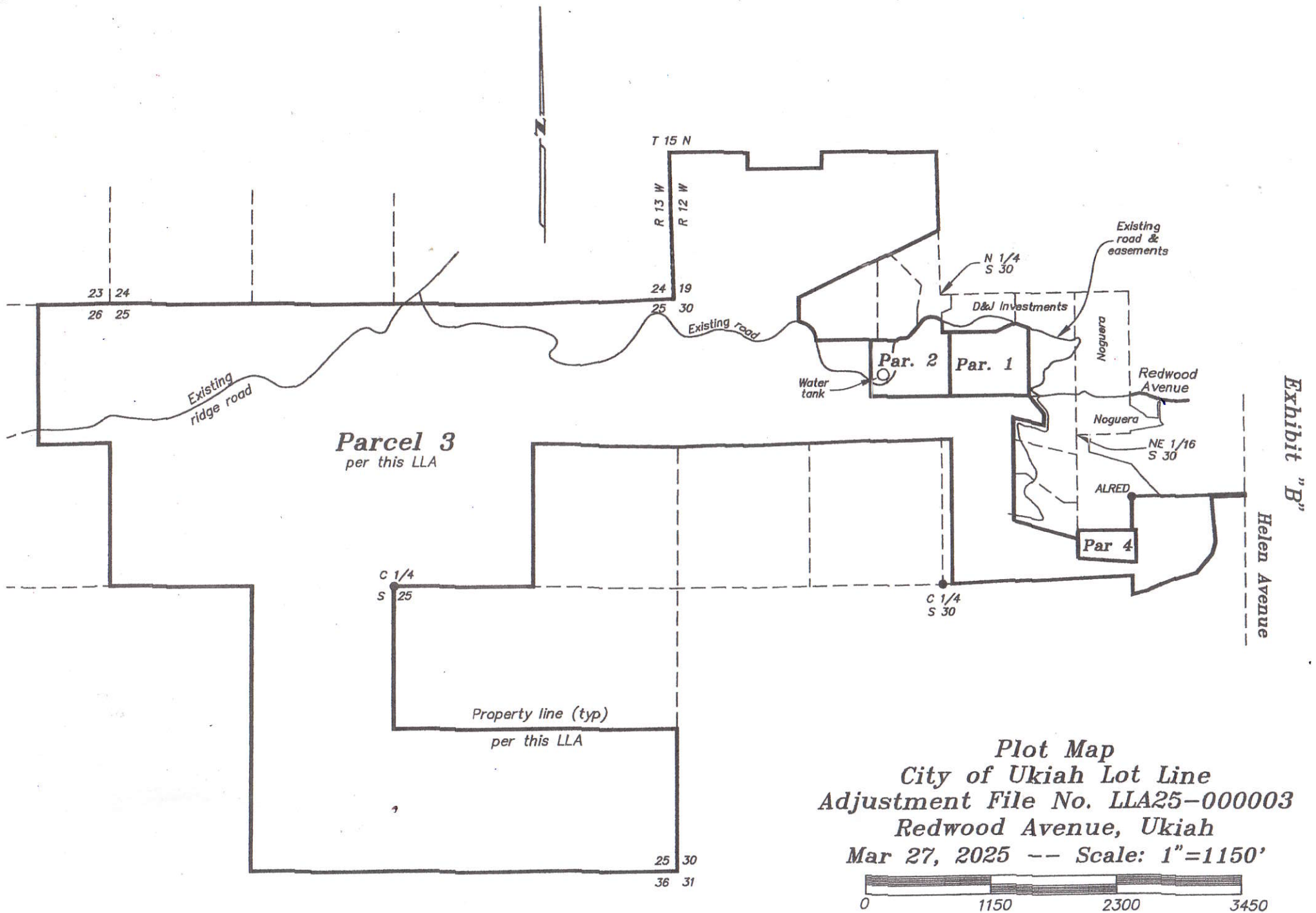
3-27-25
Dated



The above legal description creates a lot line adjustment pursuant to the City of Ukiah Lot Line Adjustment File No. LLA25-00003 which has been approved by the City of Ukiah in accordance with Section 66412(d) of the Subdivision Map Act and is intended to create no new parcel.

APPROVED:

City Engineer, Tim E. Eriksen



Certificate of Acceptance

This is to certify that the interest in real property conveyed by the Quitclaim Deed dated 3-31-25 from City of Ukiah and D & J Investments, LLC, to the City of Ukiah, general law municipal corporation is hereby accepted by order of the undersigned officer on behalf of the City Council pursuant to authority conferred by resolution of the City Council adopted on February 1, 1961, and the Grantee consents to recordation thereof by its duly authorized officer.

This document is presented for recordation by the City of Ukiah pursuant to Section 27281 of the Government Code.

By: Sage Sangiacomo
Sage Sangiacomo, City Manager

Date: 3-31-25

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of Sacramento }

On March 31, 2025, before me, Kristine Lawler, Notary Public, personally appeared Sage Sangiacomo who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

SIGNATURE

Kristine Lawler

PLACE NOTARY SEAL ABOVE

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: Certificate of Acceptance.

Document Date: March 31, 2025

Symbol	Botanical Name	Common Name	Height	Spread	exp	color	bloom time	Riparian	Pocket Park	Trailside	Swale
Trees											
BLM	Acer macrophyllum	Big Leaf Maple	5m- 15m	5m - 15m	sun / par sha	pink	apr- may	x	x		
eld	Acer negundo	Box Elder	10m-15m	5m-12m	shade	pink	feb-mar	x			
Buc	Aesculus californica	CA Buckeye	3m-5m	5m-12m	sun / par sha	white	may-jul	x	x	x	x
Ald	Alnus rhombifolia	White Alder	10m- 30m	5m-10m	sun	NA	sep-nov	x			
Cot	Populus fremontii	Western Cottonwo	10m-20m	8m-10m	shade	NA	NA	x			
VO	Quercus lobata (garryana)	Valley Oak	10m -25m	10m-15m	sun/ par sha	rusty	apr-may			x	
LO	Quercus parvula var shrevei	Shreve Interior Live	5m-16m	5m-15m	sun/ par sha	Yellow	spring			x	
Wil	Salix lasiandra	Willow	1m- 3m	1m-3m	sun	yellow	may-apr	x			
Bay	Umbellularia californica	CA Bay Laurel	2m-16m	1m-8m	par shade	NA	mar-may	x	x		
Grasses/Sedges/Rushes											
SBS	Carex barbarae	Santa Babara sedge	0.5m- 0.1m	0.5m-3.0m	sun to shade	na		x			x
FS	Carex praegracilis	Slender Field sedge	0.1m- 0.5m	0.1m-1.0m	sun / par sha	na					x
OG	Danthonia californica	Ca Oat Grass	0.05m- 0.1m	0.5m-1.0m	sun / par sha	na				x	
CR	Juncus effusus	Common soft Rush	0.3m-1.0m	0.3m-0.5m	sun / par sha	na					x
BR	Juncus patens	Blue Rush	0.5m- 0.1m	0.5m-1.0m	sun to shade	na		x			x
DG	Muhlenbergia rigens	Deer grass	1m-1.5m	1m - 1.5m	sun	na				x	
NG	Stipa pulchra	Purple needle grass	0.7m-1.2m	0.1m - 0.5m	sun	na				x	
Shrubs											
CB	Baccharis pilularis	Coyote bush	1.0m-3.0m	1.0m-4.0m	Sun	white	Oct-Jan			x	
SpB	Calycanthus occidentalis	Spice bush	1.0m-3.0m	1.0m-5.0m	sun / par sha	red	apr-aug	x	x	x	
cea	Ceanothus sp.	Ceanothus	2.0m-3.0m	2.5m-3.0m	sun	white-blue			x	x	
red	Cercis occidentalis	Redbud	1.0m-5.0m	1.0m-5.0m	sun	violet	feb-apr		x	x	x
MM	Cercocarpus betuloides	Mountain Mahogar	1.0m-5.0m	1.0m-2.0m	full sun	white	mar-may			x	
CoB	Frangula californica	Coffeeberry	2.0m-3.0m	2.0m-3.0m	Sun		Apr-May		x	x	
toy	Heteromeles arbutifolia	Toyon	2.0m-6.0	2.0m-3.0m	full sun	white	jun-aug		x	x	
man	Manzanita sp.	manzanita			Sun	pink			x	x	
HR	Rhamnus ilicifolia	Hollyleaf redberry	1.0m-4.0m	1.0m-3.0m	Par shade	NA	Apr-May		x	x	

SkB	Rhus trilobata	Skunk Bush	1.0m-1.0m	1.0m-3.0m	sun / par sh	yellow	mar-may	x			x
Symbol	Botanical Name	Common Name	Height	Spread	exp	color	bloom time	Riparian	Pocket Park	Trailside	Swale
Shrubs (Continued)											
SB	Symphoricarpos albus var lae	Snow Berry	2.0m-4.0m	4.0m-6.0m	sun to shade	pink	may-jul	x		x	
Vines											
PC	Clematis lasiantha	Pipestem clematis	2.0m-5.0m	0.5m-1.0m	sun / par sh	creamy	mar-aug	x	x	x	
HS	Lonicera hispidula	Honey Suckle	1.0m-6.0m	0.1m-0.3m	sun to shade	pink	apr-jul			x	
WG	Vitis californica	Wild Grape	1.0m-3.0m	0.5m-3.0m	full sun		may-jun	x		x	
Perennials/Bulbs/Annuals											
MW	Asclepias sp.	Milk Weed	0.5m-1.0m	0.2m-0.3m	sun	white	jun-sep		x	x	
CF	Epilobium canum	California fuschia			sun	Red	june-sept	x			
OS	Eriophyllum lanatum	Oregon sunshine			sun / par sh	Yellow	apr-aug	x		x	
CP	Eschscholzia californica	CA Poppies			sun	orange	feb- sep			x	
Gum	Grindelia sp.	Gumweed			sun	Yellow	aug-sept			x	
Lup	Lupinus sp.	Lupine			sun	blue	apr-jul			x	
MF	Mimulus aurantiacus	Monkey Flower			sun / par sh	yellow	mar-aug			x	
SM	Mimulus cardinalis	Scarlet monkey flower			sun / par sh	Red	may-aug	x	x		x
Trees	34 (15 Gallon)	16 (5 Gallon)	12 (1 Gallon)								
Grasses	4000 (2" Plugs)										
Shrubs (1 Gallon)	500 (1 Gallon)										
Vines	50 (1 Gallon)										
Wildflower Seeds	6 lbs										

Attachment D - Ukiah Valley Trail Group Design and Maintenance Standards

UVTG Design and Maintenance Standards (2024)

Trail Philosophy:Central to the Ukiah Valley Trail Group's approach to trails is the recognition that our world is one of finite resources and, since demand for these resources is increasing steadily; insightful management is of utmost concern. The Inland Mendocino County Trail system must be designed to utilize resources in ways that benefit all non-motorized users. This entails providing adequate accommodation and accessibility, rather than focusing on individual user groups. The increased sharing of resources sometimes creates friction between the diverse user groups vying for more trail space. This Trail Philosophy acknowledges that a certain amount of friction is inevitable and therefore focuses on planned communication to minimize the differences and optimize the benefits derived from these precious resources.

Plans for optimal use of trail resources must be in concert with the objective of natural and cultural resource protection. Any decisions on resource use affect not only local residents and visitors, but our natural and cultural habitat as well. If we make responsible decisions concerning preservation of our resources, we will succeed in our custodial duties to the environment while at the same time providing enjoyment for current and future generations. Through well designed, constructed, and maintained trails we will accomplish optimal public access while accommodating resource conservation.

Providing the public with increased access to trails and greenways is not enough; we must also strive to promote the abundant benefits that derive from them. Trail benefits include recreation, transportation, energy conservation, environment and habitat protection, fire suppression, improved physical and mental health, and local economic benefits. Informing the public of the significant benefits expands public awareness of the advantages that trails and greenways offer to the individual and the community. Gaining public support thereby encourages policy makers to support trails and greenways and to increase funding to better manage the trail system.

Improving relationships and interaction between government entities and the private sector will be necessary for the effective development of a well planned and managed trail and greenway system. Open communication between all levels of government and interested parties enhances the finding of common objectives by making individuals and groups part of the solution. Linking communities and trail advocates in trail planning minimizes land use conflicts and allows for optimal resource use. Joint planning emphasizes the development of interconnected trails in natural settings and a united effort creates a stronger voice for advancing trail proposals.

The general goals that define a quality trail system include:

1-Adequate mileage

- Moderate strong bike or horse riders ride 15-20 miles in a day
- Endurance riders will ride 100 miles in a day
- There are approximately 30 miles of trail in the Ukiah Valley

Lake Mendocino currently has approximately 16 miles of trail and is near to maximum capacity. Small increases are necessary but can be mitigated with road closures and road to trail conversions. Employing a “stacked loop” design can maximize the trail experience within the capacity.

2- Connectivity

- A single recreation area is unlikely to meet all the community's needs.
- Trails that connect the various areas are therefore necessary.
- Connectivity allows trails to fulfill a transportation role.
- Lake Mendocino Trails do not currently connect with any other trail systems.
- Priority should be given to approving trails that link trail areas.

3- Variety of environments

- An example of each of the area's micro-ecosystems should be included, such as Riparian, oak woodland, mixed hardwoods etc.
- Trails should include sunny areas, which will be more desirable in the winter, and shady areas for summer use.

4- Variety of trail experiences

- Different trail users appreciate different trail characteristics.
- Equestrians generally prefer wider trails.
- Mountain bikers generally prefer lots of rolling ups and downs with lots of turns and features.
- Runners tend to prefer gentle grades.
 - Advanced users desire more “technical” or challenging trail - narrower with a rougher, more uneven tread.
- A quality trail system will provide a variety of trail experiences. A small trail system should focus first on trails that meet the needs of the majority of users.

5- Easy Access/Options

- Users need to be able to get from home to trail quickly and start their experience.
- The first trail from the trailhead should be an easy trail, wide and smooth - suitable for all users.
- As users delve further into the system, the trails should increase in difficulty.
- “Stacked loops” of trails allow users to return by a different route while providing a variety of options.

6- Signage / Mapping

- All trails should be named and signed.
- All trailheads should have an information kiosk.
- Maps should be readily available for all trails.

7- Sustainability & Maintenance

- Trails need to be well maintained.
- Trails designed to sustainable standards require much less maintenance.

UVTG Design and Maintenance Standards

Definitions

Reroute/Realignment – a trail maintenance project that starts and ends on a single existing trail and abandons the trail between those points will be termed a reroute or realignment.

Trail - A trail is specifically designed, designated, developed, and maintained as a recreational corridor for the exclusive use of non-motorized vehicles. It is typically not more than 4 feet wide, unpaved and generally requires users to travel single file.

Use Trail - A Use Trail is a trail that has been created without a planning process and or approval by the repeated historic exploration of users.

Multi-Use Trail - A multi use trail is a trail that is open to non-motorized users including hikers, runners, equestrians, and bicyclists. All trails in the Lake Mendocino property will be multi use unless compelling reasons are presented to necessitate partial closure. (Such as the Shakota trail which is currently closed to equestrians.)

Road - Any transportation corridor designed for motor vehicle use and open to motor vehicle use. Although roads may be necessary for maintenance, further road building should be avoided and road closures should be pursued where possible. A road may be used for recreation but is not a trail.

Fire Break -Although trails act as small firebreaks and have been known to stop fires and can be used as locations to start backfires, a firebreak is not a trail.

Trail Maintenance and Repair ² - Maintenance and repair of existing trail is performed to return the trail or trail segment to the standards or conditions to which it was originally designed and built, or to improve it to comply with more current design standards to achieve sustainability. The act of maintenance and repair includes but is not limited to:

- Removal of debris and vegetation from the trail corridor, clearing encroaching brush and grasses, removing rock slides, etc.- Maintenance of trail tread such as filling ruts and entrenchments; reshaping trail bed, repairing trail surface and washouts; installing rip rap; constructing retaining wall or cribbing
- Erosion control and drainage, replacing or installing necessary drainage structures, water bars, culverts; realigning sections of trail to deter erosion or avoid boggy/marshy areas.

- Repair or replacement of existing trail structures and features.
- Upgrades and short reroutes to improve sustainability and decrease maintenance needs.

Feature – Bermed corners, exaggerated rolling dips, jumps, and mountain bike skill development

stations are collectively referred to as “features.”

Trail tread and slope characteristics

1. Trail Width:

Trail beds shall be built and maintained with a goal of being a minimum of 24 inches wide. Thirty six inches is generally the widest maintainable width for a “backcountry” style trail. . Topographical, vegetation, or resource constraints may require sections that are less than three feet.

Rationale: Allows users to pass by each other safely.

2. Rolling “Contour” Trails:

Trails shall be built with the contour of the topography (plus or minus 10%) utilizing side-slopes and avoiding flat areas as much as feasible.

Rationale: Building trail along fall lines or in flat areas creates erosion. “Contour” trails allow water to sheet off the trail and flow downhill.

Keeping trails on hillsides keeps them out of flatter, wetter areas. Trails built in wet areas are not sustainable. Users tend to walk along edge of trails, creating trail widening. Wet areas are more prone to soil compaction and displacement.

“Contour trails create changing view sheds that add to the enjoyment of the trail.

3. Average trail grade less than or equal to 10%:

The average slope of the trail will *ideally* be less than 7% but should all be less than or equal to 10%, some slopes will be greater and some less. Side slope, soil type and natural obstacles will determine the grades for each individual section of trail. Sections that are over 10% should be short and followed by a relatively flat section or grade reversal.

Rationale: Most soil types can withstand up to 10% grades.

Minimizes user-caused erosion.

Allows for possible reroutes at a steeper grade if there is a future problem such as a slide.

Accommodates undulations/grade reversals.

Feels comfortable to most trail users.

Grade reversals after steep sections allow the user to recover from the increased effort.

4. Sustainable trail alignment - Trail grade does not exceed “half-rule”:

The grade of the trail should not be greater than half the grade of the sideslope that the trail traverses.

Rationale: Prevents erosion caused by water flowing down the trail rather than flowing down the hillside.

Guides individual trail planning segments to fit the topography.

5. Maximum trail grades should be less than 15%:

Rationale: Although this rule might occasionally need to be broken, at least for short segments of trail, most of the existing trails in the Ukiah Valley are sustainable up to a grade of 15%. Higher grades, especially in areas exposed to weather, have suffered more erosion and damage from users.

6. Incorporation of grade reversals:

Trails should incorporate frequent grade reversals every 10 to 50 feet, depending on soil type and topography.

Rationale: Grade reversals provide areas for water to drain off of trails. As trails age, the shape of the trail bed tends to become concave, leading to the trapping of water. Grade reversals divide the trail into short, individual watersheds.

7. Build in outslope:

Outer edges of trails shall be built and maintained so that they create an approximate 3-5% slope from the inner edge of the trail.

Rationale: Allows water to sheet off of trail, decreasing erosion.

8. Build in backslope:

Depending on soil stability and composition, the area uphill of the trail shall be sloped extending upward from the trail.

Rationale: Prevents a waterfall effect from water coming down the hill and dropping onto the trail tread.

9. Incorporate Features:

Some trails may be designed to include features including bermed corners, exaggerated rolling dips, jumps, and mountain bike skill development stations.

Rationale: Including trail features is highly desired by Mountain Bike Riders and is necessary to promote tourism.

10. Harden areas subject to erosion:

Some trails will erode regardless of best practice design and construction. When trail use and conditions lead to the formation of “troughs” or require frequent trail tread repair, adding base rock or concrete pavers may be required.

Rationale: When necessary, hardening of trails will decrease sedimentation and maintenance costs.

11. Water Crossings:

Water crossings should be avoided when possible. Trails shall be designed, built, and maintained to minimize sedimentation in streams. Bridges shall be the ideal with puncheons, culverts or “hardening” being considered should resource limitations, infrequent water flow, or low use combine to make a bridge impractical. Prioritization of water crossings should be considered with high use crossings receiving first resources.

Rationale: Minimize impacts to the stream channel and environment.
Create a safe and sustainable passages for trail users.
Work within limits of resource availability and predicted impacts.

12. Tree Cutting/Care:

Prudent efforts to avoid cutting trees should be made in routing the trail. Greater care should be extended with older and/or slow growing trees and shrubs. Dirt excavated from the trail bed should be distributed and not allowed to mass at the base of trees. All efforts should be made to avoid

cutting roots greater than 4" in diameter. Generally, a trail should not be located on the downhill slope within 2 feet of the base of oaks greater than 2 feet in diameter.

Rationale: Minimize disruption to the vegetation along trail.
Protect the health of vegetation along trail

13. Pruning

Pruning vegetation is an essential and regular part of trail maintenance, especially in brushy chaparral areas. Equestrian trails should have 10' vertical clearance while hiking/biking trails can be maintained with 7' clearance. Greater than four foot horizontal clearance should be avoided as it creates unnecessary disruption and decreases the aesthetic of the trail experience.

Attempts should be made to ensure that pruned branches are distributed in a natural manner with the cut ends away from the trail. Pruning should be done sensitively so that the trail appears natural. Prune to the collar of any branch stem for the health of the shrub and a more natural looking result. At the base of any branch there is a wide section that contains a plant's natural healing agents. Any pruning performed away from this collar will expose the plant to a greater risk of infection. A cut at the collar will naturally heal. For large branches over 2" in diameter, cut from the bottom, then cut down from the top. This prevents tearing of the bark, reducing infection.

Rationale: Maintain safe sight lines along trail.
Protect the health of the vegetation.
Maintain a naturally aesthetic setting.

14. References:

The following references will be used as resources to establish best practices and resolve questions not covered in the above. Additional references will be added upon availability.

Birchard, William & Proudman, Robert 2000 *Appalachian Trail: Design, Construction, and Maintenance*. 2nd Edition Appalachian Trail Conference Harper's Ferry WV

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Weaver W., Weppner E., Hagans, D; *Handbook for Forest, Ranch, & Rural Roads* (2015). Mendocino County Resource Conservation District

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Lookout Peak Shared-Use Trails: Concept Plan Review

Prepared on behalf of The City of Ukiah, CA
September 3, 2025



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Purpose

This document describes a conceptual, native-tread, soft-surface singletrack network near Ukiah, California, in Mendocino County. Its purpose is to establish a baseline plan to guide trail design and construction. It outlines the landscape's challenges and opportunities for trail development and identifies the next steps needed to move the project successfully from concept through design and into construction.

This document is not intended to serve as a comprehensive technical or legal environmental review as required by the California Environmental Quality Act (CEQA) or other state regulations.

Introduction & Overview

The City of Ukiah, California ("the City"), in collaboration with the Ukiah Valley Trail Group (UVTG), is leading the development of approximately 20.62 miles of shared-use and bike-optimized singletrack trails within an 800+ acre area of mountainous terrain owned and managed by the City, west of Doolan Canyon Drive. Collectively, these trails are referred to as the Lookout Peak Shared-Use Trails.

The Lookout Peak Shared-Use Trails are designed to serve residents, visitors, and recreational events. Natural-surface singletrack will accommodate walkers, hikers, trail runners, and mountain bikers. With nearly 2,000 feet of vertical relief and steep hillsides, the project area is best suited for intermediate and advanced trails. While the landscape could accommodate expert-level routes, no expert trails are included in the plan at the time of publication. Trails will primarily feature native tread, constructed from onsite materials and designed to blend into the natural environment.

The trail system is divided into two distinct concept zones:

Gateway Zone – Situated at the lower elevations of the project area, the Gateway Zone is organized into a stacked loop configuration consisting of upper and lower loops totaling approximately 3.71 miles. This zone includes two trailheads: the Doolan Canyon Drive Primary Trailhead and the Helen Avenue Staircase Trailhead. Trails in the Gateway Zone are envisioned to be of intermediate difficulty and provide primary access to the larger system. The configuration will allow users to make a shorter loop, catering to those who may not have the time or ability to take on an adventure into the Lookout Peak Zone

Lookout Peak Zone – Occupying the higher-elevation portion of the project area, the Lookout Peak Zone contains the majority of the planned trails, totaling approximately 16.91 miles. Trails here are primarily of advanced difficulty and are configured in an all-mountain, traverse style. This design allows riders to ascend to the Lookout Peak ridgeline, complete a loop around the

summit zone, and descend back to the Gateway Zone on a different route. A mid-mountain traverse trail is also planned, offering users the ability to create shorter loops or more varied routes. Additionally, adventurous riders will have the option to descend on a gravity trail dedicated to cyclists.

Together, the Gateway and Lookout Peak zones form a cohesive trail system that provides diverse opportunities for outdoor recreation while showcasing the rugged terrain, scenic vistas and natural character of the West Hills.

Site Visit Summary

Jon Schubbe of Schubbe Consulting conducted a site visit to the project area on January 27–30, 2025. The survey relied primarily on pedestrian reconnaissance of the greater project area, supplemented by windshield reconnaissance using a side-by-side (SxS) and a medium pickup truck to cover the road and fire break network.

During the visit, positive and negative control points were documented using GPS and photography:

- **Positive control points** included suitable stream or drainage crossing locations, scenic overlooks, unique forest stands, unique geology and areas appropriate for berm placement.
- **Negative control points** included impassable or excessively steep terrain (particularly near crossings), dense vegetation zones, areas of erosion associated with historic fire break construction and grow sites.

Findings from this site visit provide the baseline field data used to inform the shared-use trail concept alignments, technical assessments of the project area, and design considerations presented in this report.

Project Area Description

The Project Area is located in the “West Hills,” which form the western slopes of Ukiah Valley. Its boundaries form an irregular, multi-sided polygon that generally encompasses the Lookout Peak Summit, a prominent ridgeline descending from the summit toward Redwood Drive, and a portion of the Doolan Creek headwaters. Vertical relief ranges from approximately 740 feet at the Doolan Canyon Drive Trailhead to 2,700 feet at the summit.

The Lookout Peak Summit zone consists of an alpine parkland-type landscape, where multiple summits occur as subtle rises along the ridgeline. The ridgeline itself is relatively flat and is traversed by a single-lane fire road, with slopes dropping steeply to either side. The main fire

road follows the summit ridgeline and provides access to several dead-end spur roads that extend along prominent ridgelines descending to the south and north of the summit zone.

Below the summit, the landscape is characterized by steep slopes shaped by radial and dendritic ravines, valleys, and canyons. Slopes reflect the mountainous character of the terrain and often range between 45% and 65%. Slopes exceeding 65% are common. Zones between 10% and 45% are present but do not occupy significant portions of the Project Area, while slopes of less than 10% are largely absent, occurring only in “passes” or where fire roads flatten at grade transitions.

Exposed rock is relatively uncommon but was observed along ridgelines and on the southeast-facing slopes below the summit. These areas of exposed rock are generally associated with slopes greater than 65%.

The Project Area includes the headwaters of Doolan Creek, located south of Lookout Peak Summit. The southern portion of the Project Area also encompasses a segment of the Doolan Creek channel itself, along with adjacent hillsides and canyon walls. A prominent, unnamed ephemeral stream and valley are present in the northern portion of the Project Area. The Project Area further includes a small portion of the Gibson Creek Watershed, which drains the north side of Lookout Peak.

Exposed & Difficult Terrain

A zone of particularly steep slopes and steep exposed rock is present in the southern portion of the project area, along Doolan Creek. Due to the challenging terrain, and abundance of more suitable terrain elsewhere (uphill) in the project area, this area is not considered for trails at this time.

Additional scouting may identify viable routes to access this scenic and rugged zone in the future.

Boulders & Rocks

Native boulders and rock outcrops are primarily confined to stream channels and areas of concentrated flow. Where present, most material falls within size classes that can be managed by hand crews or with a mini-excavator. Outside of these channels, surface rock and large boulders are relatively uncommon and are not expected to pose significant challenges during trail design or construction.

Design and Construction Ramifications Related to Terrain & Rocks

Many areas of the project area fall between 45% and 65% side slopes with some zones exceeding 65%. Foot travel becomes difficult due to the extreme steepness of slopes. Construction is also typically more challenging due to this exposure to elevation.

Rocky terrain, large boulders, scree fields or bedrock is not anticipated to reduce the efficiency of design or construction.

Soils

The predominant soil classes within the Lookout Peak Shared-Use Trail Project Area are the Hopland-Wohly loams (Map Unit 151) and the Maymen-Etsel-Snook complex (Map Unit 160). According to the USDA Web Soil Survey (USDA WSS), these soils occur on steep mountainous slopes ranging from 30 to 75 percent, which reflects onsite observations. Hopland and Wohly loams are moderately deep, well-drained soils formed in sedimentary rock, while the Maymen, Etsel, and Snook soils are shallow to moderately deep, well-drained soils derived from metamorphic parent material. Together, these two map units account for a significant portion of the Project Area.

Other soil map units present across the Project Area include the Witherell-Hopland-Ashokawna complex, Hopland loam (50–75% slopes), Yorkville-Yorktree-Ashokawna complex, and Cummiskey gravelly loam. These soils are also mapped on steep slopes and are characterized by loamy or gravelly surface horizons over shallow or moderately deep subsoils. Other minor soil types are likely present, at low acreages, within the project area.

Design and Construction Ramifications Related to Soil

Soils within the Project Area are primarily loams and gravelly loams on steep slopes. Loam-textured soils, such as those in the Hopland-Wohly and Hopland units, typically compact well during trail construction to provide a stable tread surface when properly drained. Gravelly loams, such as the Cummiskey and Ashokawna complexes, also compact adequately, though their coarse fragments may cause them to break down more quickly. In these areas, capping or armoring may be incorporated into design to ensure a sustainable and user-friendly trail surface.

In contrast, soils within the Maymen-Etsel-Snook complex are shallow and rocky, with limited fine material available to bind the tread. These soils have lower compaction potential and fine particles may get stripped from the soil matrix, particularly on steeper grades. Trail design in these units should anticipate the need to moderate grade, and incorporate frequent grade reversals and drainage features to minimize soil displacement.

To allow for soil texture to be considered during field design and construction, the extent of different soil textures should be mapped and included on field maps for reference during trail flagging.

Overall, compaction potential across the Project Area is moderate to high in loam-dominated units and low to moderate in shallow, rocky complexes. To achieve a durable tread and reduce long-term erosion and maintenance, trail construction will require full-bench excavation, tread outsloping, mechanical compaction, and careful drainage design. Complexes may require capping if loss/movement of fine cohesive particles becomes a serious challenge.

Vegetation

Vegetation and Natural Communities

The project area supports a mix of oak woodlands, chaparral, manzanita thickets, and scattered stands of gray pine and redwood. Most of the site remains in a native and relatively undisturbed condition, with vegetation reflecting both the ridgeline parkland setting and the dissected canyons below.

Field surveys conducted in 2024 identified several vegetation types using state and federal classification systems. According to the Holland system, the site falls primarily within *Valley and Foothill Grassland* and *Chamise Chaparral*. CALVEG mapping refines this further, identifying *Interior Live Oak Alliance* and *Lower Montane Mixed Chaparral Alliance* as dominant. Manual of California Vegetation (MCV2) classifications observed on site include:

- **Oak Chaparral (*Quercus wislizeni* – *Quercus chrysolepis* Shrubland Alliance):** Dense shrub communities dominated by interior and canyon live oak, often intermixed with chamise, ceanothus, and manzanita.
- **Manzanita Chaparral (*Arctostaphylos* Shrubland Alliance):** Mid- to upper-slope chaparral dominated by hoary, common, and Stanford manzanita, sometimes forming extensive old-growth thickets.
- **Gray Pine Woodland (*Pinus sabiniana* Woodland Alliance):** Open pine woodland with scattered oaks and buckeye, generally on shallow, rocky soils. Shrubs are common or infrequent.

Additional features include mixed oak stands and small, sparse redwood groves occurring in cooler or more sheltered microsites.

Aspect strongly influences vegetation patterns across the site. South-facing slopes are typically dominated by shrubby species such as chamise and manzanita, reflecting hotter, drier conditions. In contrast, east- and north-facing slopes support closed-canopy woodlands of oak, pine, and occasional redwood, where cooler and moister conditions favor taller tree growth.

Overall, the vegetation provides substantial canopy cover across much of the project area, with many trail segments passing beneath oak and pine woodland or screened by tall chamise and manzanita. Ridge roads are the primary existing clearings, while the remainder of the landscape retains its native character.

No sensitive natural communities, as defined by the California Department of Fish and Wildlife, were documented within the study area.

Invasive Species

Invasive or exotic plant species are mostly limited to Eurasian grasses associated with grasslands and pasturelands. Other invasive species were not found to be widespread. Invasive species are not anticipated to affect design.

To prevent introducing new invasive species and their seeds to the site, contractors should wash all equipment prior to mobilizing onsite.

Thorn Bushes

Thickets of *Ceanthus* spp were encountered along the Summit Ridgeline, growing in disused fire roads and in overgrown fire breaks.

Poison Oak

Poison Oak was not observed to be abundant in the project area, but is likely present as dispersed individuals, especially in shrub thickets.

Windfall and Hazard Trees

Extensive areas of windfall or with large/expansive log piles were not observed during scouting. It is very likely some small areas of windfall or small log piles will be encountered during design, but overall, zones with abundant fallen or down timber are not anticipated to significantly impact productivity.

Design Ramifications Related to Vegetation

The vegetation communities present in the project area will directly affect how trail alignments can be identified, flagged, and refined during the design phase.

- **Chaparral, Chamise, and Manzanita Stands (Impenetrable Vegetation)**

These shrub-dominated communities often form nearly solid thickets that are extremely difficult to traverse. In such areas, it may not be feasible to flag alignments directly through vegetation. Instead, control points must be flagged at accessible locations such as ridgelines, drainages, crossings, or other significant features that define trail direction. Designers may need to rely on topographic mapping, drone images and/or aerial interpretation rather than continuous on-the-ground flagging.

- **Closed-Canopy Forest (Oak, Pine, Redwood)**

In woodland and mixed forest communities, the understory is typical of low to moderate density, allowing designers to move more freely across the landscape. These conditions permit more detailed flagging of the trail alignment and provide moderate sight lines, which are important for evaluating user experience and controlling grades. Trail layout in

these communities is constrained more by scattered mature trees than by dense chaparral.

Existing Infrastructure

A network of fire roads and fire breaks is present within the Project Area. Most notably, a primary fire road extends uphill from Redwood Avenue to reach the summit and continues westward beyond the project boundary. A second access road extends from San Jacinta Drive to the old grow site.

The main trailhead for the project will be accessed from Doolan Canyon Drive, which forms part of the southeastern/eastern project boundary.

Several dead-end spur roads extend from the primary fire road, generally following ridgelines. Where ridgelines were too steep to accommodate a road, fire breaks have been constructed by bulldozer.

Built infrastructure within the Project Area is limited to a single cell phone tower located mid-mountain.

Barbed Wire Fence

Barbed wire fence was observed along the project boundary in some locations, but fencelines were not observed within the project area.

Grow-Sites

Many areas within and adjacent to the project area have been used as unregulated cannabis grow sites. At least one known, historic grow site is located in the Gateway Zone, in the general vicinity of Intersection G. Efforts to clean up and restore the known site are in progress. Other unknown sites may exist within the project area. Debris and leftover infrastructure from this grow site, (or any other) is not expected to significantly hamper design or construction, but designers and builders may encounter trash and debris associated with this historic land use. Trash and debris typically includes, plastic piping, plastic sheeting, metal greenhouse hoops, plastic grow pots, soils and fertilizer bottles/bags.

Designers should flag any large debris or trash fields encountered while completing flagging, for further evaluation & consideration.

Utilities and Buried Infrastructure

A repeater station for a cellular network exists along the main fire break, at approximately 2,000' of elevation. No known restrictions or setbacks are affiliated with this facility and it is not serviced by underground utility lines.

Design and Construction Ramifications Related to Existing Infrastructure

The existing roadway and fire break infrastructure will be valuable during both design and construction. The entire ridge line fire road is accessible to 4x4 vehicles, which will help improve efficiency of design, since long distances will not have to be walked to access the trail alignment.

Trail System Description

The Lookout Peak Shared-Use Trails are organized into two primary zones totaling approximately 20.62 miles: the Gateway Zone at lower elevations and the Lookout Peak Zone at higher elevations. Each zone contains multiple trail segments intended to provide a range of user experiences.

Gateway Zone (~3.7 miles)

Lower Loop – Segments 101 & 102 (~1.1 miles)

Originates at the Doolan Canyon Drive Primary Trailhead. This loop provides the main access into the system by connecting the trailhead with Intersection A. The alignment follows moderate slopes, weaving through mixed oak woodland.

- **Challenges**
 - Locating suitable berm sites.
 - Managing proximity to private property boundaries.
 - Maintaining sustainable grades on short, steeper pitches, especially near trailhead.
- **Opportunities**
 - Shaded corridors beneath tree canopy.
 - Convenient neighborhood connections to the trailhead via Doolan Canyon Drive.

Upper Loop – Segments 201 & 202 (~2.4 miles)

Extends from the Lower Loop and climbs into steeper terrain to form a stacked loop network, by connecting Intersections A and B. The route traverses mixed oak and pine woodlands, with some open-canopy areas on south-facing slopes.

- **Challenges**
 - Constrained corridor near property boundaries.
 - Steep hillsides above Intersection A, especially along Segment 202.

- Dense shrub zones in south-facing oak forests.
- **Opportunities**
 - Varied trail character across woodland and open-slope environments.
 - Scenic overlook and gathering space at the former grow site.

Helen Avenue Staircase Connector – Segment 103 (~0.13 miles)

Provides secondary access to Segment 101 from Helen Avenue via an existing public alley right-of-way.

- **Challenges**
 - Proximity to adjacent residences.
 - Steep terrain requiring stair construction for a sustainable alignment.
- **Opportunities**
 - Enhanced walkable access from nearby neighborhoods.
 - Dedicated hiker/walker connection.

Lookout Peak Zone (Approx. 16.9 miles)

Connector Trail – Segment 301 (~0.8 miles)

Main two-way connection between Intersection B in the Gateway Zone and Intersection C in the Lookout Peak Zone.

- **Challenges**
 - Property boundary constraints.
 - Grade management while reaching stream crossings.
 - Dense, nearly impenetrable chamise on south-facing slopes.
- **Opportunities**
 - Multiple suitable stream crossing sites.
 - Scenic views near Intersection C.

South Ascent/Descent Trails – Segments 401, 402 & 403 (~5.65 miles)

Connect Intersection C (1,250' el.) and Intersection F (2,700' el.) via Intersections D and E, forming the southern link between the base of the Lookout Peak Zone and the Summit Loop.

- **Challenges**

- Berm siting on steep slopes.
- Dense understory and shrubby vegetation.
- **Opportunities**
 - Natural topography that supports grade reversals.
 - Scenic overlooks.

Summit Loop – Segments 501 & 502 (~3.5 miles)

Circles the Lookout Peak ridgeline, connecting Intersections F and G. Terrain includes oak woodland on west/north slopes and chaparral/chamise on south/east slopes.

- **Challenges**
 - Limited vegetation cues to aid grading on exposed slopes.
 - Wind exposure.
 - Limited shade on south-facing aspects.
- **Opportunities**
 - 360-degree views.
 - A signature destination loop at the summit.

North Ascent/Descent Trails – Segments 601 & 602 (~3.6 miles)

Connect Intersection G (2,600' el.) and Intersection C (1,250' el.) via Intersection H, forming the northern link between the Summit Loop and lower elevations.

- **Challenges**
 - Constrained corridor between the northern project area boundary, main access road and ridgeline.
 - Berm siting on steep slopes.
 - Grade management near Intersection G.
- **Opportunities**
 - Long, sustained climbs.
 - Panoramic views.

Mid-Mountain Traverse – Segments 701 & 702 (~1.1 miles)

Contours across the slope below the summit, connecting Intersection E with Intersection H via Intersection I.

- **Challenges**
 - Thick shrubby vegetation limiting corridor access.
- **Opportunities**
 - Appealing closed-canopy forest corridors.
 - Multiple loop and route linkage options for users that help disperse use and provide for engaging experiences.

Gravity Trail (Bike-Only Descent) – Segments 801 & 802 (~2.1 miles)

Bike optimized descent trail linking Intersection G (2,600' el.) and the Summit Zone with Intersection D (1,770' el.) via Intersection I.

- **Challenges**
 - Dense chamise and manzanita clearing.
 - Berm and switchberm sitting on steep slopes.
 - Grade management near Intersection G.
- **Opportunities**
 - Flow-oriented design with speed control and safety features.
 - A signature gravity experience for advanced riders.

Next Steps Toward Implementation

To advance the Lookout Peak Shared-Use Trails from concept to shovel-ready, the following technical tasks are required:

Field Flagging/Design

- Complete detailed, on-site field flagging of trail alignments.
- Verify grades, drainage crossings, and control points such as intersections & berms under on-site conditions.
- Identify appropriate build techniques
- Adjust concept alignments as needed to consider unforeseen circumstances and optimize flow.
- Prepare Design Overview Figure & Detailed Design Figures to aid with bidding and construction.

Novel Design Techniques

In areas of dense chaparral and manzanita, continuous flagging of the trail corridor may not be feasible. In such cases, control points should be flagged at ridgelines, crossing

locations, and where feasible at proposed berm locations. This ensures that viable crossings can be selected and that grades can be managed by measuring distance and elevation change between control points.

Where continuous flag lines cannot be established, high-resolution, spatially controlled drone imagery should be used as a supplemental reference for construction contractors. This approach increases the risk of unforeseen conditions during construction; however, given the general absence of extensive boulder fields or rock outcrops in the project area, such issues are not anticipated to be significant.

Engineering Drawings

- Prepare typical plan and profile drawings for all trail building techniques prescribed during flagging.
- Include typical design details for crossings, drainage structures, retaining features, and specialized trail elements (berms, switchberms, gravity trail features).
- Include basic schematic drawings depicting intersection configuration.

Design Manual

- Develop a project-specific design and construction manual to accompany guide contractors and volunteer crews.
- Document construction standards, specifications for native tread, compaction, drainage, and vegetation management.

Bid Package (If Required)

- If construction will be publicly bid, prepare a bid package including drawings, specifications, and a basis of payment document.
- Provide pay item descriptions and quantities to support contractor pricing and payment applications.

Construction Estimate

Construction Estimate by Segment

Segment	Miles	Premium	Low (\$)	Med (\$)	High (\$)
Lower Loop: 101–102	1.10	+25%	55,000	68,750	82,500

Upper Loop: 201–202	2.40	+25%	120,000	150,000	180,000
Helen Stairs 103 (<i>*includes stairs</i>)	0.13	—	24,000	36,000	48,000
Connector: 301	0.80	0%	32,000	40,000	48,000
South Ascent/Decent 401–403	5.65	0%	226,000	282,500	339,000
Summit Loop 501–502	3.50	0%	140,000	175,000	210,000
North Ascent/Decent 601–602	3.60	+25%	180,000	225,000	270,000
Mid Traverse 701–702	1.10	0%	44,000	55,000	66,000
Gravity Trail 801–802	2.10	+50%	126,000	157,500	189,000
Mileage reconciliation (0.24 mi)	0.24	0%	9,600	12,000	14,400
Subtotal – Trail Construction (~20.62 mi)	—	—	956,600	1,201,750	1,446,900

Supporting Elements

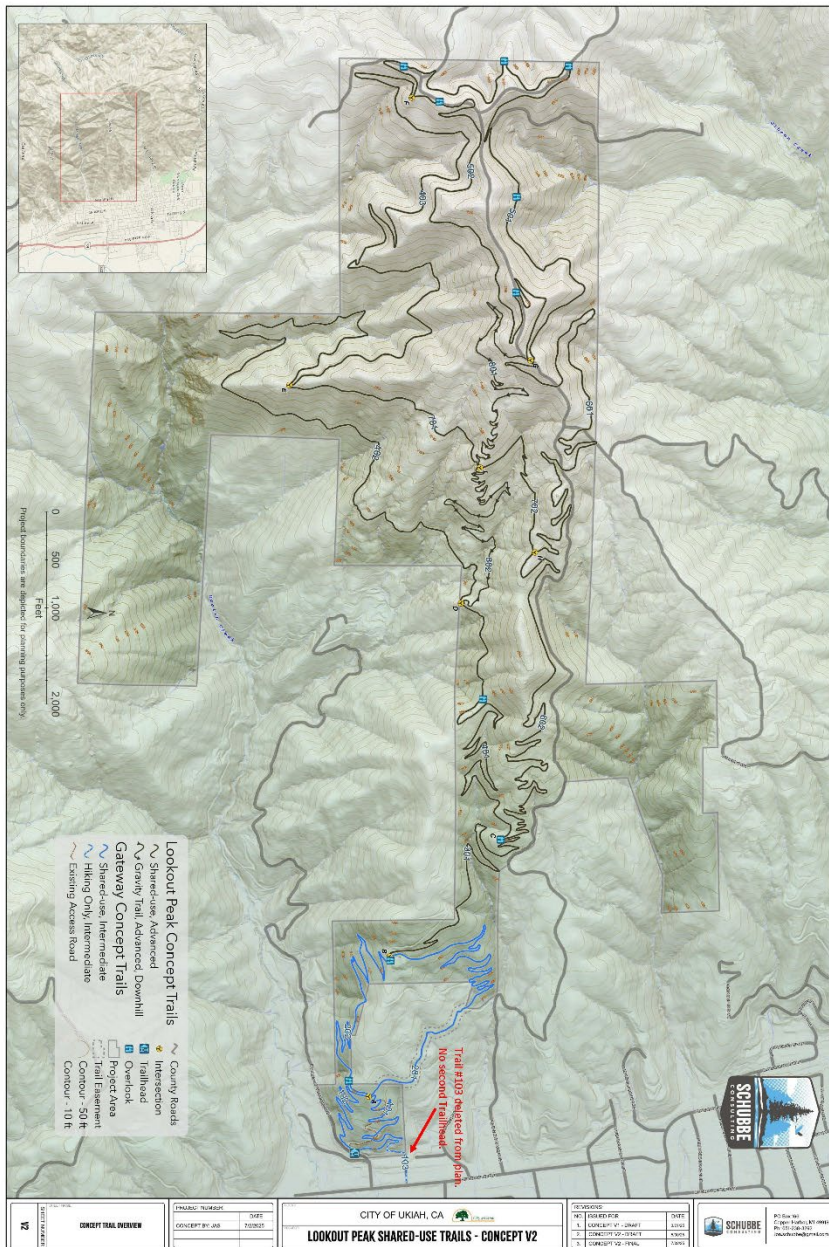
Item	Basis	Low (\$)	Med (\$)	High (\$)
Design & Engineering	8% / 9% / 10% of construction subtotal	76,528	108,158	144,690
Wayfinding & Signage	\$2k / \$3k / \$4k per mile × 20.62 mi	41,240	61,860	82,480

Total Estimated Cost

- **Low:** 956,600 + 41,240 + 76,528 = **\$1,075,000** (rounded)
- **Med:** 1,201,750 + 61,860 + 108,158 = **\$1,372,000** (rounded)

- **High:** $1,446,900 + 82,480 + 144,690 = \$1,675,000$ (rounded)

Appendix A - Concept Map



Attachment F – Fire Hardened Trails

Fire- Hardened Trails (Vegetation Management Corridors)

The following proposal is a cross discipline collaborative concept proposal from Sierra Buttes Trail Stewardship in partnership with: US Forest Service Pacific Southwest Region 5, Plumas, Tahoe, Lassen and Humboldt-Toiyabe National Forest. Nevada, Sierra, Plumas, Lassen and Butte Counties as well as the cities of Loyalton and Portola.

Report was prepared by:

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Proposal

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Background

During the Dixie Fire and North Complex Fire of 2020, trails were used as firelines for fire crew access, fire containment, anchor points, and strategic firing operations.

The USDA Forest Service's longstanding history of managing for multiple uses is embodied by the 1960 Multiple Use Sustained Yield Act, which recognizes public benefit in managing multiple and often overlapping or congruent resources, including forest health, recreation, water, and wildlife habitat. Concerning twenty-first century trends of interacting landscape scale disturbances threaten these resource values through climate exacerbated drought, landscape level tree mortality, and increasing scale and proportion of high severity wildfire. Across the Plumas National Forest, over 16% of forests have been converted to non-forest types within the



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past 5 years. These alarming rates impact not only forest cover across watersheds and landscapes, but have cascading adverse impacts on recreation, water, and wildlife habitat. Considering these challenges have interconnected adverse effects across resource values, perhaps solutions should also be synergistic in nature across resource disciplines.

This Fire-Hardened Trails concept proposal represents a measured attempt to harness the interconnectivity of resources and benefits and has the potential to amplify these ideas across local, regional, and statewide trail-users and clientele. Traditional knowledge provides awareness and context of how important culture and social use of forest ecosystems are to forest stewardship, and this proposal tries to honor these concepts in a contemporary culture of recreation and trail-user groups.

The Sierra Buttes Trail Stewardship Connected Communities Project is a landscape-level project that connects rural communities throughout the Northern Sierra and provides local and regional recreation opportunities for forest use. This proposed trail system is much more than a route for recreation enthusiasts. These trails provide access and transportation through the forest that can be used to augment or enhance opportunities for forest stewardship, fuel and fire management, and improve or conserve wildlife habitat.

Primarily, these trails play a significant role in shaping the user's experience and impacting the culture and ecosystems of the forest. Yet, because of a century of fire suppression, many of these forests have deviated significantly from their natural fire patterns and the variability they once exhibited. In essence, by offering recreation opportunities without addressing restoration or management needs and without providing interpretation, we inadvertently present forest conditions to the public that are neither natural nor beneficial. Therefore, combining recreation and restoration serves as a medium to provide interpretation, education, and foster a contemporary culture of connectedness with public forests underscoring the imperative for forest restoration and responsible stewardship

Purpose and Need

Increasing scale and proportion of high-severity wildfire is a well-documented trend across the Sierra Nevada Mountain range (Miller and Safford 2012), and the Northern Sierra, in particular, has exhibited concerning trends wherein high-severity fire of past fires, drives future high severity fire (Coppoletta et al. 2016). Moving forward in the 21st century, recent research (Bernal et. al. 2022) indicates that future climate will support far more open and less dense forests, and resilient forest conditions may be far more open with 80-90 percent fewer trees (North et al 2022). Forest and fire ecologists and managers recommend that taking a "pyro silviculture" approach to management actions requires consideration and incorporation of wildfire as an anticipated disturbance and suggests that management actions that build in mechanical treatments to augment anchor points, ecosystem assets, and revenue considerations in project planning (North et al. 2022). These concepts and strategies can help promote forest resilience to disturbances, thereby enhancing the resilience of linked resource values like recreation opportunities, watershed health, and wildlife habitat.

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The Connected Communities Project provides approximately 551 miles of trail. This project not only represents recreation opportunities in the Northern Sierra, but contributes to accomplish stewardship by increasing vegetation management acres, increasing safe access/egress, and providing fuels management corridors. Incorporating fire, fuel and vegetation management planning into trail plans provides critical safe access for fire crews, fuel containment corridors and fire management opportunities, as well as provides public interpretation and education on the importance of managing forest ecosystems.

Combining trail development with trailside forest stewardship promotes shared stewardship for the resilience of forest ecosystems, recreation and natural resource-based economies. Outdoor recreation and resource related jobs are essential economic drivers of rural forested communities. Implementation of the design criteria contained in this report will create more resilient communities, sustainable recreation, and contribute to long-term, improved overall forest health.

Disturbances like high-severity wildfire and drought-driven tree mortality events create widespread impacts to forest ecosystems AND recreation opportunities dependent on these ecosystems. Over the past decade, hundreds of miles of recreation trails have been impacted by high-severity wildfire and tree mortality. These events compromise ecosystem values, visual quality objectives, access, and visitor safety. Standing dead trees within the trail prism serve as hazards to trail user groups. For example, the Cold Stream Trail in the Plumas National Forest was impacted by the 2001 Stream Fire, 2007 Antelope Complex and Moonlight Fires; the areas that burned with higher-severity fire created conditions where standing snags and impenetrable shrub recolonization years after the fire compromised safety and access to trail users. As a result, portions of this trail have seen decreased use and in some sections become impassable for users.

Restoration of the forests surrounding trails during their development provides an opportunity to strategically plan and implement forest and trail stewardship tactics that can both mitigate the potential for adverse effects in a pre-disturbance context and provide for nimble and flexible post-disturbance restoration assessment and response. Moreover, these trail systems with managed vegetation corridors can enhance fuels management and restoration activities by providing access and operational infrastructure for prescribed fire operations and wildfire incident management containment operations. (Moghaddas and Craggs 2007); For example, the 2021 Fly Fire (managed as part of the 2021 Dixie Fire Incident) was largely contained from spreading into the community of Quincy, due to backfiring operations that were facilitated by pre-fire fuel treatment infrastructure, which had been implemented a decade prior to the fire. These types of treatments, which facilitate access, mechanical and prescribed fire treatments, are critical infrastructure used for wildfire containment tactics in large wildfire incident management. Trail-side vegetation management corridors can be interchangeably defined as Fire-Hardened trails.

Fire-Hardened Trail Concept Proposal

A Fire-Hardened Trail is a designated and managed corridor that combines both vegetation management and recreational trails. It is a planned corridor where the preservation and

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enhancement of the forest plays a significant role in forest restoration and fuels reduction work, and is integrated with the creation of trails for recreational use.

Fire-Hardened Trails serve as multi-functional spaces that cater to both environmental conservation and community well-being. They are designed to provide a harmonious blend of nature and recreation, promoting a healthier lifestyle while preserving and enhancing the natural environment.

Much like a Shaded Fuel Break, The Fire-Hardened Trail prescription utilizes forest management techniques to create a resilient forest that supports healthy ecosystems, recreational benefits and wildfire resiliency. The community and forest benefits of a Fire-Hardened Trail can be accomplished by creating fuel conditions that pose low wildfire risk to communities while fostering a pattern of forest fuels that slow wildfire spread and intensity when wildfire encounters the trail corridors. The Prescription is a concept consistent with the goals and aims to implement actions identified in California's Joint Strategy for Sustainable Outdoor Recreation and Wildfire Resilience. Specifically, these desired conditions would implement Goal #1 of the Strategy: Integrate Forest Health and Sustainable Outdoor Recreation. Additionally, Fire-Hardened Corridors embrace the essence of Shared Stewardship by considering 'using all available tools for active management.' (California Wildlife and Forest Resilience Task Force , 2022).

During the Dixie Fire and North Complex Fire, trails were used as firelines for containment, anchor points, and strategic firing operations. Removing fuels along trail corridors allows for the protection of the investment in the trail systems, accounts for wildfire prevention from trail users, and provides strategically placed and tactically feasible trails for wildland fire operations.

The Fire-Hardened Trail prescription for vegetation management corridors can be accomplished through generally accepted fuels reduction practices and non-commercial thinning (i.e., mechanical thinning, mechanical piling, mastication, towed and tracked chipping, hand cutting, hand piling, pruning, pile burning and underburning). The site specific Prescription for a Fire-Hardened Trail will be created in partnership with the local land managers, applicable fire control agencies and the Natural Resources Conservation Service, Conservation Practice Specification Fuel Break – Forestland (Code 383).

Below is a sample Fire-Hardened Trail prescription that would maximize the 100-foot trail corridor as a fuel break that is conducive for trails as fireline. The prescriptions described for the Reduced Ignition Zone will be included within the Limited Spread Zone.

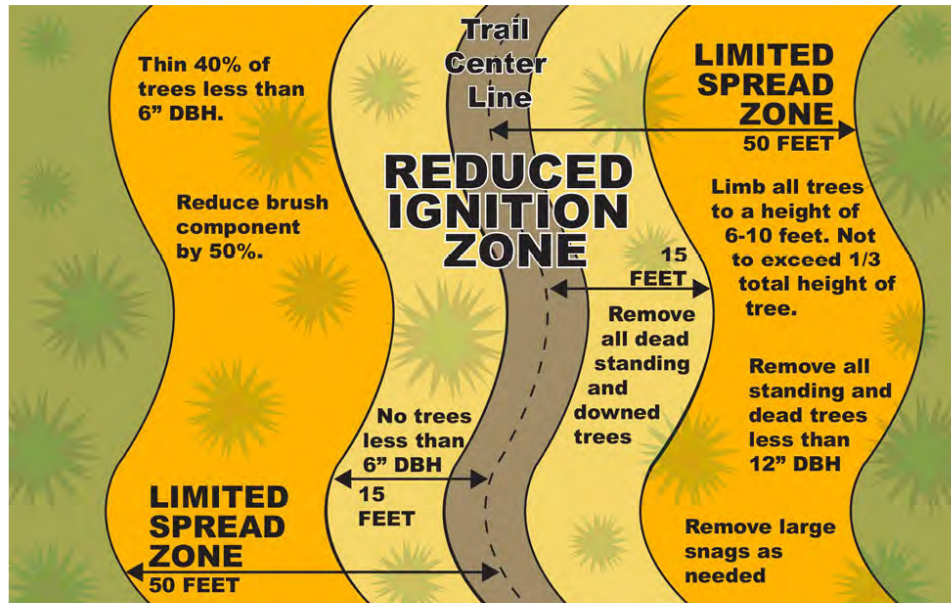
Reduced Ignition Zone - Within 15 feet of both sides of centerline of the trail:

- Remove all trees less than 6 inch DBH.

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- Remove all dead standing or downed trees and brush.

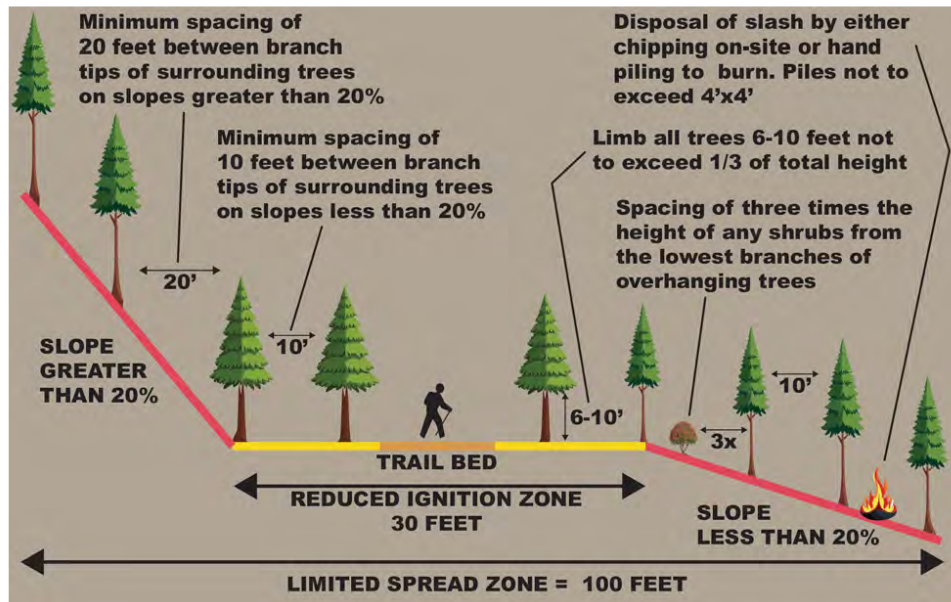


Limited Spread Zone - Within 50 feet of both sides of the centerline of the trail:

- Thin 40 percent of trees less than 6 inch DBH and reduce brush components by 50 percent.
- Remove all dead standing trees less than 12\" DBH.
- Leave trees will have a minimum spacing of 10 feet between branch tips of surrounding trees on slopes less than 20% and will have 20 feet of spacing on slopes greater than 20%.
- Limb all trees to a height of 6-10 feet, not to exceed $\frac{1}{3}$ the total height of the tree.
- Keep at least three times the height of any shrubs between the shrubs and the lowest branches of overhanging trees.
- Disposal of slash will be accomplished either through chipping on site or hand piling not to exceed 4x4 piles to be burned by the US Forest Service.

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Implementation of the Fire-Hardened Trail prescription on all 551 miles of Connected Communities Identified Routes would result in 6,679 acres of healthy forest with only 267 acres of permanent infrastructure. The proposed trail prescription would be slightly modified from the trailhead in order to discourage ATV traffic.

Proposed Desired Conditions for Trailside Forest & Vegetation Restoration

The overall desired condition for the project area is to have a resilient forest that supports healthy ecosystems, recreational benefits, and wildfire resiliency. This can be accomplished by restoring forest structure to improve forest health, and creating fuel conditions that pose low wildfire risk to communities while fostering a pattern of forest fuels that slow wildfire spread and intensity when wildfire encounters the trail corridors.

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Removing fuels along trail corridors improves resistance to disturbances and contributes to resiliency of the overall trail system, reduces the opportunity and likelihood of accidental wildfire ignition by trail users, and increases options for ingress and egress during fires. Treated trail corridors allow wildlife access to fragmented habitat while providing for increased sightlines and escape routes from threats. Strategically placed and tactically feasible trail corridors with fuels reduction can be a critical component during wildland fires, prescribed fire operations, and overall forest health.



Wildfire and drought resilience can be improved through commonly used fuels reduction activities and forest density reduction. Both of these concepts are important to long term resiliency of trail systems. While surface and ladder fuels are the primary drivers of wildfire behavior, canopy fuels contribute to annual surface fuel accumulation and dense forest conditions can drive competition and low tree vigor, contributing to tree mortality in extended drought conditions. Treatments such as mechanical thinning, mechanical piling, mastication, towed and tracked chipping, hand cutting, hand piling, lop and scatter, pruning, pile burning, and underburning can be used to modify forest structure and reduce surface, ladder and canopy fuels to improve forest resistance to disturbances like wildfire, and promote forest resilience to compounding disturbances like extended drought, insect-driven tree mortality, and subsequent high-severity wildfire (Stephens et al 2022).

Fire-Hardened Trail prescriptions would be created in partnership with stakeholders and USDA Forest Service National Forest units (i.e. the Tahoe, Plumas and Lassen National Forests) to meet forest restoration and stewardship goals, while also meeting fuel treatment standards such as those detailed in the SNFPA 2004 ROD and/or the [Natural Resources Conservation Service \(NRCS\) Conservation Practice Specifications for fuel breaks \(Code 383\)](#).

Fire- Hardened Trails (Vegetation Management Corridors)

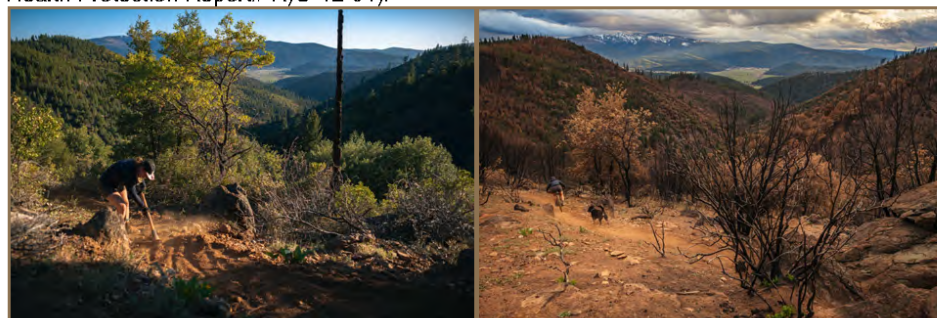
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Proposed Design Criteria

Design criteria would be developed for pre-wildfire environments and post-fire environments, respectively, to address the unique variables in each environment. Post-fire environments present unique challenges for trail safety and maintenance due to the dynamic nature of post-fire environments. Within the first decade, standing snags deteriorate and fall either in part or in entirety. Dead tops or limbs pose an equally fatal hazard considering potential fall distances. The accumulation of this dead material contributes to surface fuel accumulations. Concurrently, shrub germination and growth can rapidly colonize sites, creating access barriers as well as impacts to trail view sheds, depth of penetration, and plant species diversity. In combination, the accumulation of dead woody fuels and live shrub fuels contribute to the development of fuel profiles, which can facilitate future high-severity fire (Coppoletta et al 2016).

Across environments, design criteria for trail specifications, drainage, erosion control, vehicle and equipment travel, maintenance, and repair would conform to trail specifications. Best management practices would be employed to reduce and mitigate potential for negative effects to hydrology, wildlife, botanical, or heritage resources. With regards to forest vegetation management, hazard tree guidelines would conform to the [Region 5 Forest Health Protection Hazard Tree Guidelines for Forest Service Facilities and Roads](#) (USDA Forest Service Forest Health Protection Report# R/O-12-01).



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Point Protect Specific Trail Alignments for Projects In or Near the Wildland Urban Interface, and Areas of Ecological and Cultural Importance

Partnered education programming and information transparency amongst participating agencies to create a map for a unified understanding of individual agency/organization objectives, known hazards, areas of cultural or biological concerns, and potential for escape routes, safety zones, and landing zones in the event of an emergency.

When applicable:

- Trails to be built parallel and in close proximity of existing man made (i.e. roads) and natural (i.e. ridges) features that can also be used as fire control lines.
- Design trails in conjunction with predicted localized weather conditions that exist during critical fire season (i.e. more emphasis on fuels reductions with wider trail corridors in areas of Wildland Urban Interface that have predicted seasonal wind events).
- Trails built in conjunction with timber stand objectives to slow the rate of spread and provide firefighters time for suppression.
- Trails aligned to allow for easy implementation of backfiring and holding operations during fire emergencies.
- Create connector trails and cutoffs to allow easy egress for firefighters while working in the wildland urban interface.
- Trails to be used as control lines for prescribed burning.
- Consider a top down approach to trail design in conjunction with prescribed burn plans.

Design Criteria specific to Unburned Forests

1. Retain all live conifer trees greater than or equal to 20" diameter at breast height (dbh). Retain all live hardwood trees greater than or equal to 8" diameter dbh. Live trees greater than these limits would only be removed/mitigated if they qualify as a hazard under the Region 5 FHP Hazard tree guidelines.
2. In general, focus tree removal to reduce suppressed understory trees and ladder fuels less than 12 inches DBH 15 feet from both sides of the centerline of the trail
3. Limb all trees to a height of 6-10 feet, not to exceed $\frac{1}{4}$ of the total height of the tree.
4. Thin trees less than 10 inches DBH to 20-35 foot spacing from equal or larger size residual live trees. Clumping of trees and increasing spacing can be used to promote heterogeneity and diversity in forest structure.
5. Reduce shrub component to no more than 20-percent cover 50 feet from both sides of the centerline of the trail. Remove all brush and shrubs within 15 feet of trail centerline. Pile burn or chip cut material.
6. Pile and burn or chip slash or biomass debris. Treat up to 80% of the 10 and 100 hour naturally occurring ground fuels within 50 feet from both sides of the centerline of the trail.
7. Fall and remove or stably place hazard trees that have the potential to fall on or across the trail.
8. Where safe and feasible, integrate the treated trail network for use as fire lines on future prescribed fires.

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9. Use a combination of future thinning, pruning, cutting, chipping, pile burning, and underburning to maintain corridor resiliency over time.
10. Allow for managing jurisdiction to modify prescription on case by case basis to respond to user issues related to trail use.

Design Criteria Specific to Post-Fire Environments

In High severity environments

1. Retain all live conifer trees greater than or equal to 16" diameter at breast height (dbh). Retain all live hardwood trees greater than or equal to 6" diameter dbh. Live trees greater than these limits would only be removed/mitigated if they qualify as a hazard under the Region 5 FHP Hazard tree guidelines.
2. In general, focus on the removal of dead trees that pose a hazard to the trail or could contribute to undesirable fuel loads/ fuel profile over time. Any dead, dying, or fire injured tree of sufficient probability of mortality and located in distance and arrangement making it capable of striking the trail system should be removed.
3. Dead trees less than 14" diameter could be felled and piled for burning. Dead trees greater than 14" dbh could be felled and limbed, with activity slash piled for burning.
4. Fire-injured trees that have crown scorch that equates to a probability of mortality of 50% or greater (respective to species and diameter per USFS Hood and Cluck Guidelines) could be removed to manage the development of future hazard trees or fuel profiles.
5. Consider shrub removal and management through manual, mechanical, or chemical (herbicide) means. Reduce shrub component to no more than 20 percent cover 50 feet from both sides of the centerline of the trail. Remove all brush and shrubs within 15 feet of the trail centerline. Pile burn or chip cut material.
6. Pile and burn or chip slash or biomass debris. Treat up to 80% of the 10 and 100 hour naturally occurring ground fuels within 50 feet from both sides of the centerline of the trail.
7. Consider trailside planting of conifers in a clustered or micro-sited arrangement to mimic a wild forest aesthetic. Tree stocking could be lower density ranging from 50-75 trees per acre.
8. Consider managing competing shrub vegetation around planted trees with manual or herbicide methods retaining no more than 20 percent shrub cover to promote tree growth and understory plant diversity.

Consider thinning or pruning and re-sprouting hardwoods to expedite the development of larger stems and individuals.

Public Benefits

Fire-Hardened Trails can play a crucial role in addressing wildfire recovery and forest resilience in California, aligning with the goals of the California Wildfire and Forest Resilience Action Plan and the Sierra Nevada Conservancy (SNC) Watershed Improvement Program. Fire Hardened Trails with the inclusion of recreational trails can offer several public benefits, including both natural resource benefits, recreational advantages and economic stability. Here are some of the key benefits:

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1. Fuel Breaks and Firebreaks: Vegetation management corridors can serve as strategically placed fuel breaks and firebreaks. By reducing the density of vegetation in these areas, they can reduce the continuity of flammable vegetation, slow the spread of wildfires, prevent catastrophic wildfires, and provide firefighters with safer access to control and contain fires. This will also support defensible space to protect homes and strengthen community resilience.

2. Wildlife Habitat Preservation: Well-designed vegetation management corridors can provide essential habitat for wildlife by maintaining or restoring native plant species. The presence of such corridors can help support biodiversity by creating connected habitats and migration routes for animals. This will also help habitats remain or recover more quickly from wildfire, improve long term resilience of ecosystems and species.

3. Ecosystem Health and Biodiversity: Properly managed corridors can promote forest health by removing diseased, dead, or overgrown vegetation. This reduces competition for resources among trees and supports the growth of healthier, more resilient forests. Maintained corridors will also support diverse native vegetation that will enhance biodiversity and ecosystem resilience from disturbances, including wildfires.

4. Improved Air and Water Quality: Vegetation within these corridors can act as natural filters, improving air quality by absorbing pollutants and filtering dust particles. They can also help to maintain water quality by reducing runoff and filtering contaminants before they reach bodies of water.

5. Erosion Control: The roots of vegetation help stabilize soil, preventing erosion and reducing the risk of landslides, particularly in hilly or sloped areas. This contributes to the preservation of natural landscapes and infrastructure.

6. Climate Change Mitigation: Vegetation in these corridors can absorb carbon dioxide (CO₂) through photosynthesis, thereby helping to mitigate climate change by sequestering carbon. Additionally, shading from trees can reduce urban heat island effects, helping to mitigate local temperature increases.

7. Recreational Opportunities: Including recreational trails within these corridors provides the public with opportunities for outdoor activities such as hiking, biking, jogging, bird-watching and more. These activities promote physical fitness, mental well-being, and a connection to nature.

8. Economic Benefits: Access to recreational trails can boost local economies through increased tourism and visitor spending on accommodations, food, and outdoor equipment. Well-maintained trails can also enhance property values in nearby areas.

9. Educational and Cultural Value: These corridors can serve as educational resources by providing opportunities for nature-based learning and environmental education programs. Additionally, they may have cultural significance for indigenous communities and can help promote cultural awareness and preservation.

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10. Community Engagement: Involving local communities in the creation and maintenance of vegetation management corridors fosters a sense of ownership and responsibility. Communities can be educated about the importance of wildfire resilience and engaged in activities like controlled burns or invasive species removal. They can also bring communities together by serving as gathering parts for community engagements and events.

11. Health and Security: Access to green spaces and recreational trails has been linked to reduced stress, improved mental health, and overall well-being. These areas can provide places for relaxation and stress relief. These open spaces also contribute to a sense of safety and security.

12. Visual Resources: Well-maintained vegetation corridors and recreational trails can enhance the visual appeal of an area, making it more attractive to residents and visitors alike.

Attachment G

SCOPE OF WORK

Western Hills Watershed Protection Area Road and Fire Break Maintenance Plan

Project Background and Statement of Need

The Western Hills Watershed Protection Area (WHWPA) extends from the valley floor at 760 feet to its highest point at Lookout Peak at 2,726 feet in elevation. Overall, the WHWPA is steep with slopes ranging from 30-70 percent. The vegetation is overgrown in some locations and wildfire has been suppressed for decades. Looking to the west from the highest ridge, views of Pine Mountain and the headwaters of Robinson Creek can be seen. Looking to the east provides views of Lake Mendocino, the Ukiah Valley, and the mountain tops of Sanhedrin, Hull, Snow, Red, and Konocti Mountains. Two forks of Doolin Creek flow east out of the central and southern parts of the WHWPA. The headwaters of Gibson Creek lie in the northwesternmost corner of the WHWPA and an unnamed creek in the northeastern parcel of the WHWPA flows east toward Hillcrest Avenue.

The WHWPA Management Plan (2024) identifies road and forest management needs but provides no “Scope of Work” specifics. Objective 3 of the plan outlines the need to control erosion, protect water quality, and maintain facilities. This objective requires that road work be in accord with the *Handbook for Forest, Ranch, & Rural Roads* (2015). Objective 11 of the plan identifies the need for routine vegetation control to maintain safe ingress and egress and create a safe environment for current and future property uses. Decades of fire suppression have led to increasingly dense and unhealthy western forests.

Redwood Avenue extends past a locked gate crossing approximately a quarter mile of private property before heading up hill and due east along the main ridge line at the center of the WHWPA. A number of secondary roads and old fire breaks combine for a total of five and a half miles of roads and fire breaks that require maintenance.

These roads are an asset to firefighting as well as a liability, due to fire risks associated with road use. The community of Ukiah as well as outlying rural communities to the north, south and east, benefit from fire suppression opportunities provided along the ridgeline; however maintenance of these roads and fire breaks is needed to ensure safe access during a fire event, due to fuel loading as well as the present condition of the running surface of the road. Facilities including public schools, parks, and county offices are concentrated at the east end of the boundary of the WHWPA. These make the roads and fire breaks of the WHWPA a key resource in defense of these assets. Additionally, Nokomis Elementary would be a potentially useful staging area for suppression resources, further enhancing the strategic value of this ridge system.

Maintenance Project Goals

The primary objectives of this WHWPA maintenance plan are to assure existing roads and fire breaks are open and available to emergency personnel and vehicles, forest lands are thinned of hazardous deadfall, shaded fuel breaks along roads are maintained, and the area is safe for future anticipated public access.

The project area includes oak and mixed hardwood forests that have overgrown to an unhealthy degree. Clusters of knobcone pines have died from old age and create a hazard.

Project Area and Measures to Avoid Adverse Impacts

- Project activities will be limited to the ~760 acres of the Western Hills Watershed Protection Area.
- No work will be done under this management plan within 50 feet of a class III or higher flow stream.
- No work will be done during the blooming period of *Lilium rubescens* (Redwood Lily) and until after it has naturally dispersed seed (May 15-June 30th) unless a survey has been performed and no Lilys are present.
- From April 1st to August 31st nesting bird surveys will be conducted prior to any project activities.
- Clearing of deadfall trees will ensure that a minimum of 6 “snags” per acre remain to provide habitat.

Proposed Activities

- 1) *Road Work*: Clearing of encroaching vegetation with hand crews, dozers, or masticators will assure safe ingress and egress for routine maintenance, site monitoring, and emergency access. Grading and shaping of the running surface of the road will be required to keep the roads open and available for emergency access and to manage erosion. The City Engineer or designated staff may identify additional necessary repair needs, such as deep ruts, failing fill, or inadequate drainage features. Road work be in accord with the *Handbook for Forest, Ranch, & Rural Roads* (2015).
- 2) *Hand Crew - Understory Thinning/Brushing To Promote Healthy Growth*: Manual thinning of understory bush and ladder fuels will be conducted by hand crews. Lop and scatter and piling material in the unit will process most of the biomass. Some material, where feasible, will be staged on a landing where it will be processed by grinder or left for later burning. This activity can be conducted year-round.

SCOPE OF WORK

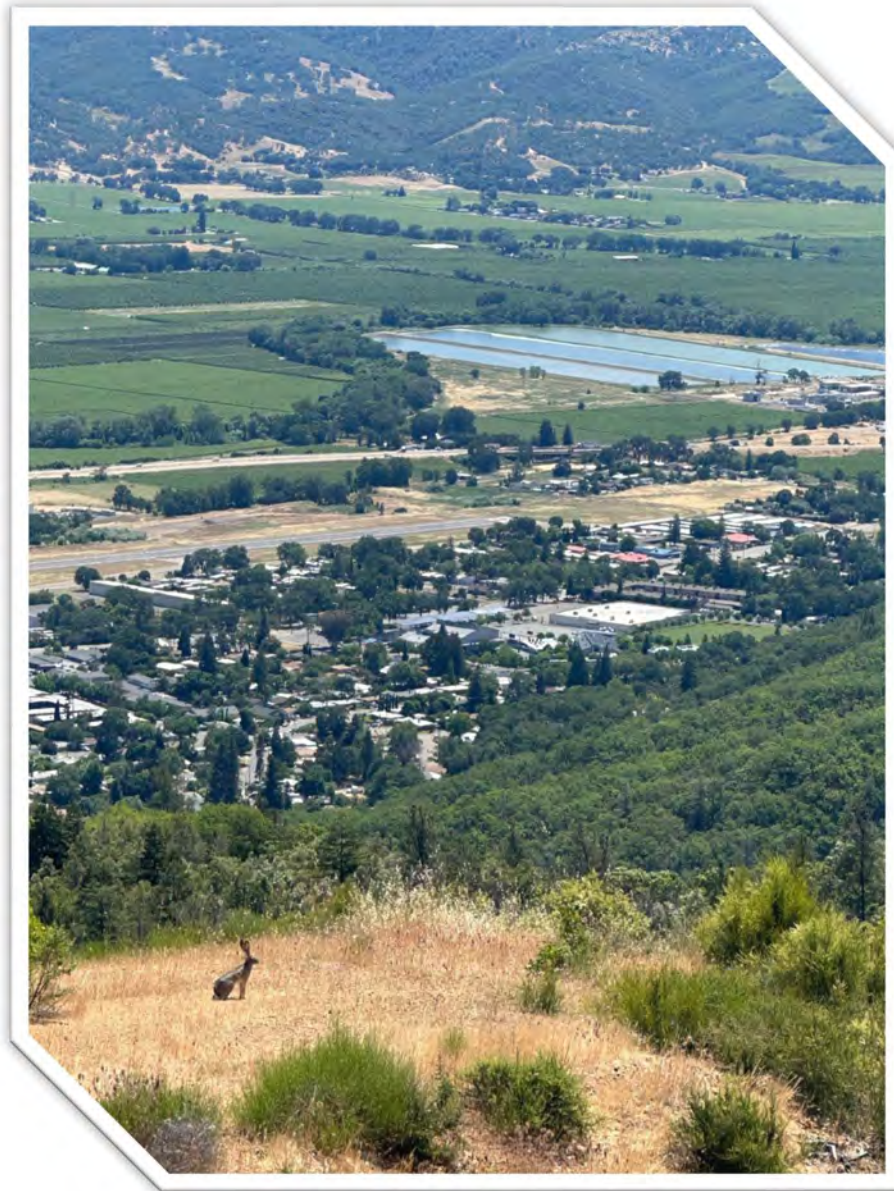
Western Hills Watershed Protection Area Road and Fire Break Maintenance Plan

- 3) *Piling, Burning*: Where feasible, understory fuels including brush, small trees, and invasive species removed in manual thinning units will be piled in-unit and burned during wetter months (September through March).
- 4) *Chipping/Hauling*: When feasible slash will be staged at landings and will be processed by a grinder and spread on the site or at other City owned locations.
- 5) *Dead Tree Removal*: Clusters of dead trees (primarily knobcone pines) will be felled to improve safety of the area and ensure roads remain unblocked. A cluster of trees is a grouping of three or more trees wherein one falling tree may hit another dead tree. Dead trees that risk falling and blocking an access road or fuel break may also be felled. Felled trees will be limbed up with slash treated as in sections 2-4 above.
- 6) *Vegetation Management Plan Development*: City staff will begin the process of developing and submitting a Vegetation Management Plan for the WHWPA to cover more intensive fuel reduction strategies such as controlled burns and mastication.
- 7) *Maintenance of Medevac Landing Zones*: In feasible locations, flat areas that have already been cleared of brush for historic reasons will be maintained as flat (less than 10 degrees), firm, and clear for at least 75'x75' (100' x 100' if possible), to allow medevac helicopter landing.



JACOBSZOOM & ASSOCIATES, INC.

natural resource planning & management



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Biological Assessment Report

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Section 1.0: Project Description

Jacobszoon & Associates, Inc. has performed a Biological Assessment (BA) and Botanical Survey (BS) for Ukiah Valley Trails- Doolin Ridge Trail Expansion in Ukiah, CA, 95482, (Appendix D: Map 1, Vicinity, Map 2, Study Area-Imagery, & Map 3, Study Area-Topographic) for a trail expansion project. The purpose of this study was to identify any special-status plants and special-status animal habitats within the Study Area to determine if they would be directly or potentially impacted by the project. The Study Area referred to in this report is contained within multiple parcels, comprising approximately 833 acres.

1.1 Summary of Findings

The BA and BS were conducted on April 17th, April 18th, May 22nd, May 23rd and July 18th, 2024, by Jacobszoon and Associates, Inc.'s Biologists Nicolas Morat, Jessenya Rivas, Jamie Beckett, and Airica Gallaspy. During the assessment, the habitat was classified under three (3) MCV2 classification systems: (1) *Quercus wislizeni*-*Quercus chrysolepis* (shrub) Shrubland Alliance, (2) *Avena* ssp.- *Bromus* ssp. Herbaceous Semi-Natural Alliance, and (3) *Pinus sabiniana* Woodland Alliance (Appendix D: Map 9, MCV2 Habitat Classifications). These communities are considered non-sensitive and thus require no special protection. No (0) sensitive biological communities were identified.

Three (3) watercourses flow through the Study Area including Doolin Creek, a Class I watercourse, and two unnamed Class III watercourses. All three (3) watercourses are classified by the United States Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) (Appendix D: Map 7, National Watershed Inventory) as a Riverine System which includes all wetland and deepwater habitats contained within a channel. The Study Area has a 100-Year Flood Zone hazard rating of moderate according to the FEMA National Flood Hazard Layer (NFHL) (Appendix D: Map 8, NFHL 100-Year Flood Zone).

The BA and BS were conducted during the blooming period for all special-status species listed with a moderate or high potential to be present in the Study Area. No (0) special status plants or wildlife were observed within the Study Area.

Section 2.0: Regulations and Descriptions

2.1 Regulatory Setting

The project shall comply with Federal, State, and local regulations designed to protect sensitive natural resources. The following natural resources are protected under one or more of several Federal and/or State regulations and should be considered when designing and/or implementing the project within the Study Area:

Streams, Lakes, and Riparian Habitat: protected under the California Fish and Game Code (CFGF), administered by the California Department of Fish and Wildlife (CDFW):

- Includes creeks and rivers (bodies where water flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life), and vegetation adjacent to and associated with (riparian habitat).

Waters of the State: protected under the State Water Resources Control Board (SWRCB).

Waters of the U.S.: protected under the Clean Water Act (CWA), administered by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps):

- Includes wetlands, streams, rivers, and other aquatic habitats meeting the guidance issued by the Corps.

2.2 Natural Communities and Sensitive Natural Communities

Sensitive Natural Communities: protected under the California Fish and Game Code, administered by CDFW (CDFW 2024):

- Includes terrestrial vegetation or plant communities that are ranked by NatureServe and considered “threatened” or “endangered” by CDFW, lists of such are included in *List of Vegetation Alliances and Associations* (CDFW 2024).

2.3 Special-Status Species

Special-status Plant and Wildlife Species including Critical Habitat: protected under one or more of the Federal Endangered Species Act (ESA), California Endangered Species Act (CESA), California Environmental Quality Act (CEQA), administered by the U.S. Fish and Wildlife Service (USFWS), and/or CDFW:

- Includes plants listed under the ESA and/or CESA, or those plants ranked by the California Native Plant Society (CNPS) as Rank 1, 2, 3 and 4.
- Includes wildlife listed under the ESA and/or CESA, and wildlife listed by CDFW as Species of Special Concern, Fully Protected Species, and/or Special status including Invertebrates, Birds of Conservation Concern listed by USFWS, Species of Concern listed by National Marine Fisheries Service (NMFS), Western Bat Working Group (WBWG).

Section 3.0: Field Survey Methodology

3.1 Assessment Methods

The BA is designed to assess the potential for the presence of sensitive wildlife species and to determine whether habitat for sensitive plant species and plant communities may or may not be present within the Study Area. This includes the analysis and comparison of existing habitat conditions within the Study Area and the documented range and habitat requirements of sensitive plant and wildlife species described in CDFW’s California Wildlife Habitat Relationships System (CWHR).

Field surveys (biological and botanical) were conducted by Jacobszoon and Associates, Inc. to identify and delineate potential sensitive habitats within the Study Area. The Study Area was assessed to document: (1) the on-site plant communities, (2) existing conditions and their ability to provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive biological communities (e.g., wetlands, vernal pools) are present.

Plant species observed during the site assessment were recorded and are listed in Appendix B. Plants listed in Appendix B were identified using *The Jepson Manual: Vascular Plants of California* 2nd

Edition (Baldwin et al. 2012) to the taxonomic level necessary to determine rarity. The names provided in this biological assessment report follow *The Jepson Flora Project* (JFP April 2024). The BA and BS were conducted during the blooming period for all special-status species listed with a moderate or high potential to be present in the Study Area. No (0) special status plants were observed within the Study Area.

3.2 Database and Resource Assessments

Prior to conducting field surveys, available reference materials were reviewed, including the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Web Soil Survey*, the USFWS NWI, the Ukiah 7.5-minute USGS quadrangle topographic maps, and the most recent available aerial imagery. The 100-year flood zone was assessed using the Federal Emergency Management Agency's (FEMA) NFHL. The location of streams and watercourses within the project vicinity were reviewed using datasets from California Streams and the California Department of Forestry and Fire Protection (CAL FIRE).

The potential for occurrences of rare, threatened, endangered or plant and animal species of concern within or near the Study Area were evaluated by reviewing the Ukiah, Orr Springs, and Elledge Peak, Laughlin Range, Redwood Valley, Potter Valley, Cow Mountain, Boonville, and Purdys Gardens 7.5 minute quadrangles topographic maps, aerial photography, California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (online edition, v9.5), CDFW's Natural Diversity Database (CNDDDB) Spotted Owl Data, CWHR, RareFind 5 and Quick Viewer Bios 6 processed and unprocessed data (online edition, v6.24.0604).

The CNPS database produces a list of sensitive plants potentially occurring at a site based on various site characteristics: location of the Study Area with regard to the geographic range of sensitive plant species, location(s) of known populations of sensitive plant species as mapped in the CNDDDB, soils of the Study Area, elevation, presence/absence of special habitat features (vernal pools, serpentine/volcanic soils, etc.) and plant communities existing within the Study Area. While use of the CNPS inventory does not eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of the suitability of a site as habitat for sensitive plant species. The CNDDDB consists of mapped overlays of all known populations of sensitive plants and wildlife. The database is continuously updated with new sensitive species population data.

Potential occurrence of special-status plants and wildlife in the Study Area was determined by identifying special-status species that could occur within the vicinity of the Study Area or in similar communities through a literature and database search (Appendix A).

A list of target plant and animal species with potential to occur in the Study Area was generated, which guided subsequent field surveys. During the site visit, existing habitat conditions were evaluated and used to assess the potential for presence of special-status species. The potential for each special-status species to occur in the Study Area was then evaluated according to the following criteria:

No Potential: Habitat on and adjacent to the Study Area is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Study Area is unsuitable or of very poor quality. The species is not likely to be found on-site.

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Study Area is suitable. The species has a moderate probability of being found on-site.

High Potential: All the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Study Area is highly suitable. The species has a high probability of being found on-site.

Present: Species are observed on the site or have been recorded (i.e. CNDDDB) on-site recently.

Existing vegetative communities were reviewed using CDFW's Vegetation Classification and Mapping Program (VegCAMP) data for the potential existence and location of sensitive biological communities and related vegetation. Where VegCAMP data was not available, existing vegetative communities were reviewed using USDA Forest Service Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) data.

CWHR Predicted Habitat Suitability is a dataset accessed through CNDDDB Biogeographic Information and Observation System (BIOS) Commercial/ Spotted Owl Viewer that represents areas of suitable habitat within an animal species ranges based on the CWHR. Habitat suitability ranks of Low (less than 0.34), Medium (0.34-0.66), and High (greater than 0.66) suitability are based on the mean expert opinion suitability value for each habitat type for breeding, foraging, and cover (CDFW 2024). Examination of the CWHR dataset was applied when: 1) the data is available for the species of concern, and 2) when there is a moderate to high potential for an animal to occur on or within 100 feet of the Study Area.

As with all models, these maps are not perfect, and do not predict the occurrence of an organism, it just examines whether the areas being examined in the biological assessment are habitats which *may* support a species of special concern. This information not only informs the landowner of what may occur on their property, but also assists the biologist when conducting a survey.

3.3 Special-status Species

Special-status plants (native, vascular and non-vascular) and wildlife assessed are of limited abundance in California, with known occurrence or distribution in Mendocino County, and were derived from the following lists:

- Federal listed or threatened or endangered plants or species of concern (FT, FE, FSC)
- California State listed or rare, threatened or endangered plants or species of concern (SR, ST, SE, SP, SSC)
- Board of Forestry Sensitive (BFS)
- California Department of Fish and Wildlife (CDFW) Status wildlife: Fully Protected, Species of Special Concern and Watch List (FP, SSC, WL)
- California Native Plant Society Rare Plant Rank (CRPR) list 1A species (plants presumed extirpated in California, and either rare or extinct elsewhere)

- California Native Plant Society Rare Plant Rank (CRPR) list 1B species (plants rare, threatened or endangered in California and elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2A species (plants presumed extirpated in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2B species (plants rare, threatened, or endangered in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 3 (plants which more information is needed- a review list)
- California Native Plant Society Rare Plant Rank (CRPR) list 4 (plants of limited distribution- a watch list)

Rare, threatened, and endangered plants are not necessarily limited to those species which have been “listed” by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is “**endangered**” when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is “**threatened**” when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is “**rare**” when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its habitat continues to deteriorate.

Site visits were conducted by Nicolas Morat, Jessenya Rivas, Jamie Beckett, and Airica Gallaspy of Jacobszoon and Associates, Inc. on April 17th, April 18th, May 22nd, May 23rd and July 18th, 2024, for a total of forty-seven (47) survey hours to evaluate potentially suitable habitat characteristics for special-status plant and animal species within the Study Area. If a special-status species is observed during the site visit, its presence will be recorded and discussed. All plant and wildlife species observed were recorded and are included in Appendix B.

3.4 Critical Habitat

Critical habitat is a term defined by the Endangered Species Act (ESA) as the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection. Critical habitat may also include areas that were not occupied by the species at the time of listing but are essential to its conservation.

3.5 Natural Communities

Natural communities present within the Study Area were classified based on existing plant community descriptions described by Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), USDA Forest Service Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) system, and the Manual of California Vegetation Online Edition (MCV2 Alliances, CNPS 2024). The currently accepted vegetation classification system for the state that is standardly used by CDFW, CNPS, and other state and federal agencies, organizations, and consultants for survey and planning purposes is the *Manual of California Vegetation* (MCV; Sawyer, Keeler-Wolf, and Evens 2009).

Unlike Holland, this vegetation classification system is based on the standard National Vegetation Classification System (NVCS) and includes alliances (a floristically defined vegetation unit identified by its dominant and/or characteristic species) and associations (the finer level of classification beneath alliance). Although the CNDDDB still maintains records of some of the old Holland vegetation types, these types are no longer the accepted standard, and the CDFW Vegetation Classification and Mapping Program (VegCAMP) has published more recent vegetation lists for the state based on a standardized vegetation classification system that is currently being developed for California and which is consistent with the MCV classification system. Global and state rarity rankings have been assigned for various types on the recent VegCAMP lists.

3.5.1 Non-sensitive Biological Communities

CEQA and other state, federal, and local laws, regulations, and ordinances do not provide special protection for non-sensitive natural communities. Some of these communities may provide suitable habitat for some special-status plant or wildlife species, and are described in section 5.1, if present within the Study Area.

3.5.2 Sensitive Biological Communities

Sensitive biological communities include those that are listed in CNDDDB as well as MCV2 alliances or associations with state ranks of S1-S3. Aquatic resources (e.g., watercourses, ponds, wetlands, vernal pools, etc.) are also considered sensitive biological communities and are afforded special protections under CEQA and other Federal, State, and local laws, regulations, and ordinances. Sources for assessing sensitive terrestrial or aquatic natural communities include *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *List of Vegetation Alliances* (CDFW, 2024), *A Manual of California Vegetation* (CNPS 2024), California Streams, USFWS National Wetlands Inventory (NWI), and National Flood Hazard Layer (NFHL). CDFW considers any MCV2 alliance or association with a state rank of S1-S3 a sensitive natural community. Global and state rankings are defined below.

Global Ranking:

- G1-Critically Imperiled: At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2-Imperiled: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3-Vulnerable: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4-Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5-Secure: Common; widespread and abundant.

State Ranking:

- S1-Critically Imperiled: Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
- S2-Imperiled: Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
- S3-Vulnerable: Vulnerable in the state due to a restricted range, relatively few populations

(often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

- S4-Apparently Secure: Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
- S5-Secure: Common, widespread, and abundant in the state.

3.5.3 Wetlands

The US Army Corps of Engineers (USACE) methods utilize three parameters (indicators) to determine wetland boundaries: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils.

- **Hydrology:** The area is inundated either permanently or periodically at mean water depths: 6.6 ft, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.
- **Soils:** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions.
- **Plants:** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), can grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.

The USACE developed a classification system for plant species known to occur in wetlands. The plant species are categorized based on the frequency that they have been observed in wetlands. Species classified as obligate (OBL), Facultative Wetland (FACW), and Facultative (FAC) are considered hydrophytic. If more than 50 percent of the plant species in each area are hydrophytic, the area meets the wetland vegetation criterion and is presumed to be a jurisdictional wetland under the CCA.

Plant Indicator Status Categories (as per USACE)		
Indicator Category	Indicator Symbol	Definition
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1 percent) in non-wetlands. Examples: <i>Spartina alterniflora</i> , <i>Taxodium distichum</i> .
Facultative Wetland Plants	FACW	Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in non-wetlands. Examples: <i>Fraxinus pennsylvanica</i> , <i>Cornus stolonifera</i> .
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability 33 percent to 67 percent) of occurring in both wetlands and non-wetlands. Examples: <i>Gleditsia triacanthos</i> , <i>Smilax rotundifolia</i> .
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1 percent to <33 percent) in wetlands but occur more often (estimated probability >67 percent to 99 percent) in non-wetlands. Examples: <i>Quercus rubra</i> , <i>Potentilla arguta</i> .
Obligate Upland Plants	UPL	Plants that occur rarely (estimated probability <1 percent) in wetlands but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions. Examples: <i>Pinus echinata</i> , <i>Bromus mollis</i> .

3.5.4 Streams, Rivers and Anadromous Fish Habitat

Watercourses and other waterbodies were classified using guidance from the *California Forest Practice Rules 2024* (FPR). Streams and rivers were evaluated for their potential to support anadromous fish by reviewing the CNDDDB' intrinsic potential layers for fish species. Also, general observations of a stream's bed substrate, bank stability, run-riffle-pool complexes, riparian quality, and upstream and downstream barriers were noted during a site visit.

Section 4.0: Study Area Setting

4.1 Climate and Hydrology

The project site is located near Ukiah, CA within Section 30, Township 15N, Range 12W, MDBM, in the Ukiah USGS 7.5-minute quadrangle, (Appendix D: Map 1, Vicinity, Map 2, Study Area-Imagery, & Map 3, Study Area-Topographic). The Study Area is located within the Williams Creek Watershed (HUC 12 180101045201). The average annual precipitation is 35-60 inches, the average annual air temperature is 54-59 degrees F, elevation is 1,560-1,680 feet, and the average frost-free period is 150 to 250 days.

4.2 Topography and Soils

The Study Area is located at approximately 1,560-1,680 feet in elevation and is underlain by eight (8) soil mapping units, according to the United States Department of Agriculture, Natural Resources Conservation Service's *Web Soil Survey* (Appendix D: Map 6: USGS Soils): Cummiskey gravelly loam, 30 to 75 percent slopes, Hopland loam, 30 to 50 percent slopes, high ffd, Hopland loam, 50 to 75 percent slopes, high ffd, Hopland-Maymen-Etsel complex, 50 to 75 percent slopes, Hopland-Wohly loams, 50 to 75 percent slopes, Maymen-Etsel-Snook complex, 30 to 75 percent slopes, high ffd, Urban land 0.2 0.0%, and Yorkville-Ashokawna-Witherell complex, 30 to 50 percent slopes. A description of the soil series is as follows:

116- Cummiskey gravelly loam, 30 to 75 percent slopes: This unit includes a very deep well drained solid that is typically vegetated with oaks, annual grasses and brush. The elevation is 500 to 2500 ft, avg precipitation is 35-50 in, and avg annual temperature is 54-59 degrees F. Permeability is low and water capacity is moderate.

141-Hopland loam, 30 to 50percent slopes, high ffd: This unit is moderately deep, well drained soils that is typically vegetated with oaks, annual grasses and forbs, and the occasional Douglas fir. The elevation is 500-3000 ft, average precipitation is 35-50 inches annually, avg annual temperature is 54-59 degrees F. Permeability is slow and water capacity is low to moderate. Runoff is rapid and the risk of erosion is high.

142-Hopland loam, 50 to 75 percent slopes, high ffd: Moderately deep, well drained soils, on hills and mountains, vegetated with black oak, live oak, Oregon white oak, Douglas fir, and madrone. The elevation is 500-3000 ft, average annual precipitation is 35-50 in, and average annual temperature is 54-59 degrees F. Permeability is moderately slow and the available water capacity is low to moderate. Harvesting trees is not likely because of the steep slopes and unstable ground.

144 Hopland-Maymen-Etsel complex, 50 to 75 percent slopes: Located on the tops of mountains and ridges, vegetated with oaks and chaparral. The elevation is 2000-3500 ft, annual precipitation is 40 to 55 inches a year, and the average annual temperature is 53 to 58 degrees F. Most of the vegetation is oaks and chaparral. This type of soil usually occupies a small area imbedded in other soil types. The permeability of the soil is moderately slow and the water holding capacity is low to moderate. With this soil type, runoff is rapid, and the hazard of erosion is high.

151-Hopland-Wohly loams, 50 to 75 percent slopes: Located on hills and mountains, which typically consist of oaks and pockets of Douglas fir for their vegetation. The elevation is 500 to 2500 ft, average precipitation 35 to 50 inches, average annual temperature is 54 to 59 degrees F. This soil type is well drained, permeability is moderately slow, and available water is low to moderate. The runoff for this soil happens fast and the hazard of erosion is very high.

160-Maymen-Etsel-Snook complex, 30 to 75 percent slopes, high ffd: This soil type is found on hills and mountains with the main type of vegetation consisting of chaparral plants. It is typically found at elevations of 1000 to 4000 ft. The average precipitation is 35 to 55 inches, and the average annual temperature is 53 to 58 degrees F. The permeability of this soil type is moderate and available water is low. Runoff is very fast, and the hazard of soil erosion is very high.

210-Urban land 0.2 0.0%: This soil type is found on terraces and alluvial plains in Ukiah. Slopes are nearly level or gently sloping with elevations of 500 to 1400 ft. More than 60 percent of this soil type is covered with impervious surfaces like concrete, asphalt, and buildings. Drainage, permeability, surface runoff, and available water capacity are variable because of all the impervious surfaces.

211-Witherell-Hopland-Ashokawna complex, 50 to 75 percent slopes, high ffd: This soil type exists on hills and mountains with native vegetation consisting of oaks and annual grasses. The elevation is 500 to 2500 ft, with annual precipitation of 35 to 55 inches, and average annual temperature 54 to 59 degrees F.

4.3 Biota and Land Use

Areas in which these soils reside are typically used for aggregate, wildlife habitat, recreation, watershed, and livestock grazing (USDA Web Soil Survey, 2024). Section 5 provides a detailed account of the biological communities found on-site, including sensitive and non-sensitive biological communities and additionally the special-status flora and fauna with potential to occur within the Study Area.

Section 5.0: Field Survey Results

5.1 Natural Communities

The Study Area and immediate surroundings were assessed during a site visit on April 17th, April 18th, May 22nd, May 23rd and July 18th, 2024, to determine local biological communities present and develop a comprehensive list of all plant and wildlife species observed. Biological communities referred to in this report include Holland 1986 descriptions, USFS CALVEG classifications, and the Manual of California Vegetation (MCV2) alliance descriptions.

Holland Descriptions:

The Study Area is within the Valley and Foothill Grassland and Chamise Chaparral habitats as best classified by the habitat classification system described by Holland 1986. A description of this habitat type is as follows:

Valley and Foothill Grassland: This habitat includes introduced, annual Mediterranean grasses and native herbs. On most sites the native bunch grass species, such as needle grass, have been largely or entirely supplanted by introductions. Stands rich in natives are usually found on unusual substrates, such as serpentinite or somewhat alkaline soils.

Chamise Chaparral: This habitat is like the Upper Sonoran Mixed Chaparrals, but on shallower, drier soils or at somewhat lower elevations. Often on xeric slopes and ridges, with adjacent more mesic slopes and ridges, with adjacent mesic sites mantles by Upper Sonoran Mixed Chaparrals.

USFS CALVEG Classifications:

According to USDA Forest Service CALVEG mapping delineation, the regionally dominant vegetation type within the Study Area is a combination of Interior Live Oak Alliance and Lower Montane Mixed Chaparral Alliance (Appendix D: Map 4, CalVeg Classification). A description of this vegetation type is as follows:

INTERIOR LIVE OAK ALLIANCE: The Interior Live Oak (*Quercus wislizenii*) Alliance occurs mainly in southern areas of the Coast and Mountains Sections as mapped in eight subsections. It is often found to the north and east of the Coast Live Oak (*Q. agrifolia*) Alliance distribution and topographically above Blue Oak (*Q. douglasii*) dominated stands towards the east. This type often indicates xeric or rocky sites when associated with other hardwood types and has been mapped at elevations up to about 4400 feet (1342 m). The shrubby form (*Q. wislizenii* var. *frutescens*) may also dominate a site, especially in areas of frequent fires. Occasional trees and shrubs such as Douglas-fir (*Pseudotsuga menziesii*), Gray Pine (*Pinus sabiniana*), Blue Oak (*Q. douglasii*), Oregon White Oak (*Q. garryana*) and Chamise (*Adenostoma fasciculatum*) may be associated with this pure hardwood alliance. Interior Live Oak is known to hybridize with California Black Oak (*Q. kelloggii*) and Coast Live Oak (*Q. agrifolia*), occasionally making field identification more difficult.

LOWER MONTANE MIXED CHAPARRAL ALLIANCE: This widespread low-elevation mixed shrub type is usually found below about 5000 feet (1524 m) in this zone, having been mapped in thirty-three subsections. No single shrub species is dominant, as the mixture includes varying mixtures of Chamise (*Adenostoma fasciculatum*), Wedgeleaf Ceanothus (*Ceanothus cuneatus*), Common and Whiteleaf Manzanita (*Arctostaphylos manzanita*, *A. viscida*), shrubby California Buckeye (*Aesculus californica*), Birchleaf Mountain Mahogany (*Cercocarpus betuloides*), Huckleberry Oak (*Quercus vaccinifolia*) and shrub oaks such as Scrub, Canyon Live, and Sadler Oaks (*Quercus berberidifolia*, *Q. chrysolepis* var. *nana*, *Q. sadleriana*). In western areas, it is sometimes found on poorer or ultramafic sites in proximity to Chamise and Knobcone Pine (*Pinus attenuata*) sites. At higher elevations it is often adjacent to the Upper Montane Mixed Chaparral type, with which it may share species such as Greenleaf Manzanita (*A. patula*), Brewer Oak (*Quercus garryana* var. *breweri*) and Deerbrush (*C. integerrimus*). Trees such as Douglas-fir (*Pseudotsuga menziesii*), various

MCV2 Alliances:

Biological communities observed were classified using the Manual of California Vegetation Online Edition (MCV2 Alliances, CNPS 2024) (Appendix D: Map 9: MCV2 Habitat Classification). In the Study Area, three (3) non-sensitive MCV2 Alliance were observed on site: (1) *Quercus wislizeni*-*Quercus chrysolepis* (shrub) Shrubland Alliance, (2) *Avena* ssp.-*Bromus* ssp. Herbaceous Semi-Natural Alliance, and (3) *Pinus sabiniana* Woodland Alliance.

5.1.1 Non-sensitive Natural Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other Federal, State, and local laws, regulations, and ordinances. The Study Area is comprised of three (3) non-sensitive biological community, as classified under the MCV2 system:

Quercus wislizeni - *Quercus chrysolepis* (shrub) Shrubland Alliance: Canyon live oak - Interior live oak chaparral State Rarity: S3S4, Global Rarity: G4

- Characteristic Species: *Quercus chrysolepis*, *Quercus parvula* and/or *Quercus wislizeni* are dominant or co-dominate together in the shrub canopy with *Adenostoma fasciculatum*, *Adenostoma sparsifolium*, *Arctostaphylos glandulosa*, *Arctostaphylos glauca*, *Carpenteria californica*, *Ceanothus cuneatus*, *Ceanothus integerrimus*, *Ceanothus leucodermis*, *Ceanothus oliganthus*, *Cercocarpus montanus*, *Frangula californica*, *Fraxinus dipetala*, *Hesperoyucca whipplei*, *Heteromeles arbutifolia*, *Prunus ilicifolia*, *Quercus agrifolia*, *Quercus berberidifolia*, *Rhamnus ilicifolia* and/or *Toxicodendron diversilobum*. Emergent trees may be present at low cover, including *Aesculus californica*, *Juniperus californica*, *Pinus attenuata*, *Pinus coulteri*, *Pinus sabiniana* or *Umbellularia californica*.
- Habitats: Variable topography with steep slopes. Soils are alluvial or bedrock and may be rocky.
- Vegetation Layers: Sparse cover of emergent trees may be present. Shrubs < 6 m; canopy is intermittent to continuous. The herbaceous layer is variable.
- Membership Rules:
 - *Quercus wislizeni* shrubs > 30% relative cover in the shrub canopy.
 - *Quercus chrysolepis* shrubs > 50% relative cover in the shrub canopy.
 - Regenerating or shrubby *Quercus wislizeni* (or *Quercus parvula*) is > 30% relative cover in the shrub layer or is codominant with *Ceanothus oliganthus*.
 - Regenerating or shrubby *Quercus chrysolepis*, *Q. wislizeni*, *Q. parvula* and/or *Q. agrifolia* > 30% relative cover in the shrub layer.

Arctostaphylos (canescens, manzanita, stanfordiana) Shrubland Alliance: Hoary, common, and Stanford manzanita chaparral State Rarity: S3S4, Global Rarity: G4

- Characteristic Species: *Arctostaphylos canescens*, *Arctostaphylos manzanita* or *Arctostaphylos stanfordiana* is dominant or co-dominant in the shrub canopy with *Adenostoma fasciculatum*, *Arctostaphylos auriculata*, *Arctostaphylos glandulosa*, *Arctostaphylos viscida*, *Baccharis pilularis*, *Ceanothus spp.*, *Eriodictyon californicum*, *Heteromeles arbutifolia*, *Lotus scoparius*, *Pickeringia montana* or *Quercus berberidifolia*. Emergent trees may be present at low cover, including *Pinus attenuata*, *Pseudotsuga menziesii*, *Quercus chrysolepis*, *Quercus douglasii* or *Quercus wislizeni*.
- Habitats: Mid to upper slopes and ridges in transitional settings between grassland and oak woodland or closed-cone coniferous forest or associated with extensive old growth chaparral. Soils are sandy to clayey loam, often derived from sandstone or volcanic.
- Vegetation Layers: Shrubs 1-5 m; canopy is intermittent to continuous. Herbaceous layer is sparse to intermittent.
- Membership Rules:
 - *Arctostaphylos canescens*, *A. manzanita* and/or *A. stanfordiana* dominant or co- dominant in the shrub canopy.
 - *Arctostaphylos canescens* dominant or co-dominant in the shrub canopy.
 - *Arctostaphylos canescens* and/or *A. manzanita* > 30% relative in the shrub canopy.

Pinus sabiniana Woodland Alliance Foothill pine woodland, State Rarity: S4, Global Rarity: G4

- Characteristic Species: *Pinus sabiniana* is dominant or co-dominant in the tree canopy with *Aesculus californica*, *Juniperus californica*, *Juniperus occidentalis*, *Pinus coulteri*, *Quercus chrysolepis* and *Quercus wislizeni*.
- Habitats: Streamside terraces, valleys, slopes, and ridges. Soils are shallow, often stony, infertile, and moderately to excessively drained.

- Vegetation Layers: Trees < 20 m; canopy open to intermittent and one or two tiered. Shrubs are common or infrequent. The herbaceous layer is sparse or grassy.
- Membership Rules:
 - o *Pinus sabiniana* > 10% absolute cover and dominant in the tree canopy.
 - o *Pinus sabiniana* > 50% relative cover in the tree canopy.

5.1.2 Sensitive Natural Communities

Sensitive biological communities include those that are listed in CNDDDB as well as observed MCV2 alliances or associations with state ranks of S1-S3 and are listed on CDFW's *List of California Sensitive Natural Communities* (CDFW 2024). There are no sensitive terrestrial communities present within the Study Area.

5.2 Aquatic Resources

Aquatic resources, communities, and habitats (e.g., watercourses, ponds, wetlands, vernal pools, etc.) are considered sensitive biological communities and are afforded special protections under CEQA and other Federal, State, and local laws, regulations, and ordinances. Wet areas are areas with observed hydrophytic vegetation and/or other hydrologic indicators that suggest the area is influenced by ponding or flooding for a significant amount of time throughout the growing season. Wet areas may provide habitat for special-status plants and wildlife as well as for nesting birds protected by the Migratory Bird Treaty Act (MBTA).

Stream, Rivers, and Anadromous Fish Habitat:

Three (3) watercourses flow through the Study Area including Doolin Creek, a Class I watercourse, and two (2) unnamed Class III watercourses.

Wetlands:

Doolin Creek is a Class I watercourse that flows through the APN 157-06-003. The second and third watercourses flow through the furthest extent of the Study Area and are both Class III watercourses. All three (2) watercourses are classified by the NWI as a Riverine system (Appendix B: Map 7: National Wetland Inventory).

100-Year Flood Zone:

The entirety of the Study Area falls within a moderate hazard rating for 100-Year Flood Zone. This was concluded using the FEMA National Flood Hazard Layer (NFHL) (Appendix D: Map 8, National Flood Hazard Layer 100-Year Flood Zone). Recommendations to avoid or mitigate potential impacts to aquatic resources are discussed in Section 6.0, Assessment Summary and Recommendations.

5.3 Special-status Species

5.3.1 Special-status Plant Species

Upon review of the resource databases listed in Section 3.2, forty-two (42) special-status plant species have been documented within the vicinity of the Study Area. Please refer to Appendix A for a table of all special-status plant species which occur within a nine-quad search surrounding the Study Area and additional discussion of the potential for each species to occur within the Study Area. Special-status species documented within five miles of the Study Area are depicted in the CNDDDB Vicinity map (Appendix D: Map 5, CNDDDB Vicinity).

Of the forty-two (42) special-status plant species within the vicinity of the Study Area, twenty-three (23) special-status plant species have a moderate to high potential to occur within the Study Area. The remaining nineteen (19) special-status plant species documented within the vicinity of the Study Area are unlikely to occur or do not have the potential to occur due to one or more of the following reasons:

- Hydrologic conditions (e.g., vernal pools, riverine) necessary to support the special- status plant species are not present within the Study Area.
- Edaphic conditions (soils, e.g., rocky outcrops, serpentinite) necessary to support the special-status plant species are not present within the Study Area.
- Topographic conditions (e.g., montane) necessary to support the special-status plant species are not present within the Study Area.
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present within the Study Area.
- Associated vegetation communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present within the Study Area.
- The Study Area is geographically isolated (e.g., outside of required elevations, coastal environment) from the documented range of the special-status plant species.
- Ecological conditions (last recorded observations, human-made or natural disturbance) have encroached on species to a point causing presumed extinction.

The habitat requirements for the twenty-three (23) special-status plant species with moderate or high potential to occur within the Study Area is described in the table below:

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Plants				
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B.2 G5T2 S2	Cismontane woodland, valley and foothill grassland, often in clay soils, sometimes on serpentine or volcanics. <i>A. peninsulare</i> var. <i>franciscanum</i> has a weak serpentine affinity of 1.8. The elevation ranges from 17 to 1050 feet (5 to 320 meters). A perennial herb (bulb), the blooming period is from May-Jun.	Moderate Potential. The Study Area contains valley and foothill grassland, cismontane woodlands, and serpentine soils. The Study Area may provide suitable habitat for these species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Raiche's manzanita <i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Rank 1B.1 BLM: S G3T2 S2	Chaparral, lower montane coniferous forest (openings), rocky, serpentine sites, often on slopes and ridges. <i>A. stanfordiana</i> ssp. <i>raichei</i> has a strong serpentine affinity of 2.6. The elevation ranges from 1591 to 3511 feet (485 to 1070 meters). A perennial evergreen shrub, the blooming period is from Feb-Apr.	Moderate Potential. The Study Area contains chaparral and lower montane coniferous forest habitat and serpentine soil. The Study Area may provide suitable habitat for the species.	Not Observed. Please see Section 6 for recommendations.
Brewer's milk-vetch <i>Astragalus breweri</i>	Rank 4.2 G3 S3	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Often in grassy flats, meadows moist in spring, and open slopes in chaparral. Commonly on or near volcanic or serpentine sites. <i>A. breweri</i> has a strong serpentine affinity of 3.2. The elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.	Moderate Potential. The Study Area contains chaparral and grassland habitats. The Study Area may provide suitable habitat for the species.	Not Observed. Please see Section 6 for recommendations.
Rincon Ridge ceanothus <i>Ceanothus confusus</i>	Rank 1B.1 BLM: S G1 S1	Closed-cone coniferous forest, chaparral, cismontane woodland, known from volcanic or serpentine soils, dry shrubby slopes. <i>C. confusus</i> has a weak serpentine affinity of 1.3. The elevation ranges from 492 to 4200 feet (150 to 1280 meters). A shrub, the blooming period is from Feb-Jun.	High Potential. The Study Area does provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
mountain lady's-slipper <i>Cypripedium montanum</i>	Rank 4.2 BLM: S IUCN: VU USFS: S G4 S4	Lower montane coniferous forest, broadleaved upland forest, cismontane woodland, north coast coniferous forest, often on dry, undisturbed slopes. The elevation ranges from 607 to 7300 feet (185 to 2225 meters). A perennial herb (rhizomatous), the blooming period is from Mar-Aug.	High Potential. The Study Area does provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
bare monkeyflower <i>Erythranthe nudata</i>	Rank 4.3 G4 S4	Chaparral, cismontane woodland, moist areas, often along drainages and roadsides in serpentine seeps. The elevation ranges from 820 to 2297 feet (250 to 700 meters). An annual herb, the blooming period is from May-Jun.	Moderate potential. The Study Area contains chaparral, cismontane woodlands, and roadside seeps along roadsides. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
stinkbells <i>Fritillaria agrestis</i>	Rank 4.2 G3 S3	Cismontane woodland, chaparral, valley and foothill grassland, pinyon and juniper woodland, sometimes on serpentine, mostly found in non- native grassland or in grassy openings in clay soil. The elevation ranges from 33to 5102 feet (10 to 1555 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	Moderate Potential. The Study Area contains chaparral, cismontane woodlands, and grassland habitats. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Purdy's fritillary <i>Fritillaria purdyi</i>	Rank 4.3 G4 S4	Chaparral, cismontane woodland, lower montane coniferous forest, usually on serpentine. <i>F. fritillaria</i> has a broad endemic serpentine affinity of 4.5. The elevation ranges from 574 to 7399 feet (175 to 2255 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	High Potential. The Study Area does provide the habitat requirements for the species.	Not Observed. Please see Section 6 for recommendations.
Toren's grimmia <i>Grimmia torenii</i>	Rank 1B.3 G2 S2	Cismontane woodland, lower montane coniferous forest, chaparral, often found in openings, rocky, boulder and rock walls, carbonate, volcanic soils. The elevation ranges from 1067 to 3806 feet (325 to 1160 meters). A moss, no distinct blooming period.	Moderate Potential. The Study Area contains chaparral and cismontane woodlands habitats. The Study Area may provide suitable habitat for this species.	Not Observed. There are no recommendations for this species.
Mendocino tarplant <i>Hemizonia congesta ssp. calyculata</i>	Rank 4.3 G5T4 S4	Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. <i>H. congesta ssp. calyculata</i> has a weak serpentine affinity of 1.5. The elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.	High Potential. The Study Area does provide the habitat requirements for the species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
glandular western flax <i>Hesperolinon adenophyllum</i>	Rank 1B.2 BLM: S G2G3 S2S3	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils, generally found in serpentine chaparral. <i>H. adenophyllum</i> has a strict endemic serpentine affinity of 5.7. The elevation ranges from 1395 to 4413 feet (425 to 1345 meters). An annual herb, the blooming period is from May-Aug.	High Potential. The Study Area does provide the habitat requirements for the species.	Not Observed. Please see Section 6 for recommendations.
small groundcone <i>Kopsiopsis hookeri</i>	Rank 2B.3 G4? S1S2	North coast coniferous forest, open woods, shrubby places, generally on <i>Gaultheria shallon</i> . The elevation ranges from 394 to 4708 feet (120 to 1435 meters). A perennial herb, the blooming period is from Apr-Aug.	Moderate Potential. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
Colusa layia <i>Layia septentrionalis</i>	Rank 1B.2 BLM: S G2 S2	Chaparral, cismontane woodland, valley and foothill grassland, scattered colonies in fields and grassy slopes in sandy or serpentine soil. The elevation ranges from 49 to 3609 feet (15 to 1100 meters). An annual herb, the blooming period is from Apr-May.	High Potential. The Study Area does provide the habitat requirements for the species.	Not Observed. Please see Section 6 for recommendations.
bristly leptosiphon <i>Leptosiphon acicularis</i>	Rank 4.2 G4? S4?	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. The elevation ranges from 180 to 4920 feet (55 to 1500 meters). An annual herb, the blooming period is from Apr-Jul.	Moderate Potential. The Study Area contains chaparral, cismontane woodland, and valley and foothill grassland habitats. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3 G2G3 S2S3	Coastal scrub, lower montane coniferous forest, valley and foothill grassland, broadleaved upland forests, often on clay or serpentine along fields and roadsides. <i>L. hololeuca</i> has a strong serpentine affinity of 2.5. The elevation ranges from 49 to 1001 feet (15 to 305 meters). An annual herb, the blooming period is from Jun-Oct.	Moderate Potential. The Study Area contains valley and foothill grassland habitat. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
redwood lily <i>Lilium rubescens</i>	Rank 4.2 G3 S3	Chaparral, lower montane coniferous forest, broadleaved upland forest, upper montane coniferous forest, north coast coniferous forest, sometimes serpentine. <i>L. rubescens</i> has a weak serpentine affinity of 2. The elevation ranges from 99 to 6267 feet (30 to 1910 meters). A perennial herb (bulb), the blooming period is from Apr-Aug.	Moderate Potential. The Study Area contains chaparral habitat. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
Mendocino bush-mallow <i>Malacothamnus mendocinensis</i>	Rank 1A GXQ SX	Chaparral, open roadside banks. The elevation ranges from 1395 to 1887 feet (425 to 575 meters). A shrub, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains chaparral habitat. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
green monardella <i>Monardella viridis</i>	Rank 4.3 G3 S3	Broadleaved upland forest, chaparral, cismontane woodland. The elevation ranges from 328 to 3314 feet (100 to 1010 meters). A perennial herb, the blooming period is from Jun-Sep.	High Potential. The Study Area does provide the habitat requirements for the species.	Not Observed. Please see Section 6 for recommendations.
Bolander's catchfly <i>Silene bolanderi</i>	Rank 1B.2 G2 S2	Cismontane woodland, lower montane coniferous forest, North Coast coniferous forest, meadows and seeps, chaparral (edges). Usually grassy openings, sometimes dry rocky slopes, canyons, or roadsides; sometimes serpentinite. The elevation ranges from 1380 to 3775 feet (420 to 1150 meters). A perennial herb, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains lower montane coniferous forest that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Hoffman's bristly jewelflower <i>Streptanthus glandulosus</i> ssp. <i>hoffmanii</i>	Rank 1B.3 G4T2 S2	Chaparral, cismontane woodland, valley and foothill grassland, moist, steep rocky banks in serpentine and non-serpentine soils. The elevation ranges from 197 to 2510 feet (60 to 765 meters). An annual herb, the blooming period is from Mar-Jul.	Moderate Potential. The Study Area contains chaparral, cismontane woodland, valley and foothill grassland. The Study Area may provide suitable habitat for this species.	Not Observed. Please see Section 6 for recommendations.
beaked tracyina <i>Tracyina rostrata</i>	Rank 1B.2 USFS: S G2 S2	Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. The elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains chaparral, cismontane woodland and grassland habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Santa Cruz clover <i>Trifolium buckwestiorum</i>	Rank 1B.1 BLM: S G2 S2	Coastal prairie, broadleaved upland forest, cismontane woodland, often found in moist grasslands along gravelly margins. The elevation ranges from 99 to 2641 feet (30 to 805 meters). An annual herb, the blooming period is from Apr-Oct.	Moderate Potential. The Study Area contains cismontane woodland and broadleaved upland forest habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3 G4G5 S3?	Chaparral, cismontane woodland, lower montane coniferous forest. The elevation ranges from 706 to 4593 feet (215 to 1400 meters). A shrub, the blooming period is from May-Jun.	High Potential. The Study Area does provide the species' habitat requirements.	Not Observed. Please see Section 6 for recommendations.

No (0) special status plant species were observed within the Study Area during the biological site assessment. Please see Section 6 for plant species recommendations.

Please refer to Appendix A for a table of all special-status plant species within a nine-quad vicinity of the Study Area as well as a discussion of the potential for each species to occur within the Study Area based on habitat present. No special-status species were observed within the Study Area during the Rare and Special-Status Plant Surveys conducted on April 17th, 18th, May 22nd, May 23rd and July 18th, 2024. Please refer to Appendix B for a complete list of all floristic species observed within the Study Area during the BA site visit.

5.3.2 Special-status Animal Species

A total of fifty-four (54) special-status wildlife species have been documented within the vicinity of the Study Area. Please refer to Appendix A for a table of all special-status wildlife species which occur within the vicinity of the Study Area and discussion of the potential for each species to occur within the Study Area. Special-status species documented within five miles of the Study Area are depicted in the CNDDDB Vicinity map (Appendix D: Map 5, CNDDDB Vicinity).

Of the fifty-four (54) special-status wildlife species within the vicinity of the Study Area, twenty (20) special-status wildlife species recorded have a moderate to high potential to occur within the Study Area. The remaining thirty-two (34) special-status wildlife species documented within the vicinity of the Study Area are unlikely to occur or do not have the potential to occur due to one or more of the following reasons:

- Aquatic Habitats (e.g., streams, rivers, vernal pools) necessary to support special- status wildlife species are not present within the Study Area.
- Vegetation Habitats (e.g., forested area, riparian, grassland) that provide nesting and/or

foraging resources necessary to support special-status wildlife species are not present within the Study Area.

- Physical Structures and Vegetation (e.g., caves, old-growth trees) that provide nesting, cover, and/or foraging habitat necessary to support special-status wildlife species are not present within the Study Area.
- Host Plants (e.g., *Cirsium* sp.) that provide larval and nectar resources necessary to support special-status wildlife species are not present within the Study Area.
- Historic and Contemporary Disturbance (e.g., cattle grazing, agriculture) deter the presence of the special-status wildlife species from occupying the Study Area.
- The Study Area is outside the documented nesting range of special-status wildlife species.

The twenty-two (22) special-status wildlife species with moderate or high potential to occur within the Study Area are described in the table below.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Amphibians				
red-bellied newt <i>Taricha rivularis</i>	CDFW: SSC IUCN: LC G2 S2	<i>T. rivularis</i> occur in coastal drainages from Humboldt County south to Sonoma County, inland to Lake County within broadleaved upland forest, North Coast coniferous forest, redwood, and riparian forest and woodland habitats. There is an isolated population of uncertain origin in Santa Clara County. Adults are active at the surface in moist environments. Transformed juveniles leave aquatic environments and go into hiding in underground shelters, often until they are ready to reproduce. This species will migrate over 1km to breed, typically in streams with moderate flow and clean, rocky substrate.	High Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within High (1) suitability for this species and does provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Avifauna				
American goshawk <i>Accipiter atricapillus</i>	CDFW: SSC IUCN: LC G5 S3	Throughout their range, whether at sea level or in alpine settings, American Goshawks nest in mature and old-growth forests with more than 60% closed canopy. They typically build nests in conifers, such as Douglas-fir, white fir, California red fir, ponderosa pine, western larch, and western hemlock, along with deciduous trees including aspens and paper birch ear breaks in the canopy, such as a forest trail, jeep road, or opening created by a downed tree, and prefer sites with a creek, pond, or lake nearby.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11), Medium (0.44), and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
Cooper's hawk <i>Accipiter cooperies</i>	CDFW: WL IUCN: LC G5 S4	<i>A. cooperii</i> are forest and woodland birds, often in open, interrupted or marginal woodlands within cismontane woodland, riparian forest/woodland and upper montane coniferous forested habitats. Nest sites mainly in riparian growths of deciduous trees as in canyon bottoms on river flood plains and in live oak trees.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33), Medium (0.66), and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
grasshopper sparrow <i>Ammodramus savannarum</i>	CDFW: SSC IUCN: LC G5 S3	<i>A. savannarum</i> are an uncommon and local, summer resident in valley and foothill grassland west of the Cascade- Sierra Nevada crest from Mendocino and Trinity Counties south to San Diego County. <i>A. savannarum</i> nests on the ground in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes in areas with a variety of native grasses and tall forbs and scattered shrubs for singing perches. Nests are typically found at the base of a small clump of overhanging grass or other vegetation, perhaps in close proximity to other breeding grasshopper sparrows, and this species may double or triple clutch.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for the species.	Not Observed: See Section 6 for general recommendations for avifauna species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
golden eagle <i>Aquila chrysaetos</i>	BLM: S CDF: S CDFW: FP, WL IUCN: LC G5 S3	Golden eagles are found primarily in rolling foothills, mountain areas, sage-juniper flats, and desert in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinon and juniper woodlands, upper montane coniferous forest and valley foothill grassland habitats up to 12,000 feet. Cliff-walled canyons provide nesting habitat in most parts of the range; also, large trees in open areas.	High Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within High (0.77) suitability for this species and does provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
white-tailed kite <i>Elanus leucurus</i>	BLM: S CDFW: FP IUCN: LC G5 S3S4	<i>E. leucurus</i> forages in open grasslands, meadows, or marshes close to isolated, dense-topped trees for nesting and perching. This species is located in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland within cismontane woodland, marsh and swamp, riparian woodland, valley and grassland, and wetland habitats.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
osprey <i>Pandion haliaetus</i>	CDF: S CDFW: WL IUCN: LC G5 S4	<i>P. haliaetus</i> occupies riparian forest habitat. They forage over ocean shores, bays, freshwater lakes and larger streams. They construct large nests in large trees, snags, and blown-out treetops within 15 miles of a good fish-producing body of water.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
yellow warbler <i>Setophaga petechia</i>	CDFW: SSC IUCN: LC G5 S3S4	<i>S. petechia</i> often inhabits riparian forest, scrub and woodland habitats in summer in close proximity to water. Frequently found nesting and foraging in willows shrubs and thickets and in alders, ash, cottonwoods, and sycamores. This species will also nest in montane shrubbery in open conifer forest in the Cascades and Sierra Nevada.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
Insects				
obscure bumble bee <i>Bombus caliginosus</i>	IUCN: VU G2G3 S1S2	<i>Bombus caliginosus</i> inhabits open grassy coastal prairies and Coast Range meadows in coastal areas from Santa Barbara County to north to Washington state. Nesting occurs underground as well as above ground in abandoned bird nests. Males patrol circuits in search of mates. This species is classified as a medium long-tongued species, whose food plants include <i>Ceanothus</i> , <i>Cirsium</i> , <i>Clarkia</i> , <i>Keckiella</i> , <i>Lathyrus</i> , <i>Lotus</i> , <i>Lupinus</i> , <i>Baccharis</i> , <i>Rhododendron</i> , <i>Rubus</i> , <i>Trifolium</i> , and <i>Vaccinium</i> .	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.
western bumble bee <i>Bombus occidentalis</i>	SCE IUCN: VU USFS: S G3 S1	The habitat for this species is described as open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. typically nests underground in abandoned rodent burrows or other cavities Food plants of <i>Bombus occidentalis</i> include <i>Ceanothus</i> , <i>Centaurea</i> , <i>Chrysothamnus</i> , <i>Cirsium</i> , <i>Geranium</i> , <i>Grindellia</i> , <i>Lupinus</i> , <i>Melilotus</i> , <i>Monardella</i> , <i>Rubus</i> , <i>Solidago</i> , and <i>Trifolium</i> .	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
monarch – California overwintering pop. <i>Danaus plexippus</i> pop. 1	FC IUCN: EN USFS: S G4T1T2 S2	<i>D. plexippus</i> are a migratory species, making massive migrations from August-October to hibernate along the California coast and central Mexico. They commonly occur in closed-cone coniferous forest habitat. This species roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. <i>D. plexippus</i> feeds on flower nectar from all milkweeds, dogbane, lilac, red clover, lantana, thistles, goldenrods, blazing stars, ironweed and tickseed sunflower. The majority of overwintering sites are found within 1.5 miles of the Pacific Ocean or San Francisco Bay which moderates temperatures. Sites are typically found at low elevations (200-300ft) and situated on slopes oriented to the south, southwest, or west which provide the most solar radiation, or in shallow canyons or gullies. Monarchs require very specific microclimatic conditions at overwintering sites including dappled sunlight, high humidity, fresh water, and an absence of freezing temperatures or high winds. Fall or winter-blooming flowers provide nectar which may be needed to maintain lipid levels necessary for spring migration.	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.
Mammals				
pallid bat <i>Antrozous pallidus</i>	BLM: S CDFW: SSC IUCN: LC USFS: S G4 S3	<i>A. pallidus</i> is found in chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, valley & foothill grassland habitats. Most common in open, dry habitats with rocky areas for roosting. This species forages along river channels. Roosts must protect bats from high temperatures. This species is very sensitive to disturbance of roosting sites.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11) and Moderate (0.66) suitability, for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
northern California ringtail <i>Bassariscus astutus raptor</i>	CDFW: FP G5TNR SNR	This species will exploit a variety of habitats such as dry, rocky, brush-covered hillsides or riparian areas, typically near an open water source. Dens are most often located in rock crevices, boulder piles, or talus, but also tree hollows, root cavities, and rural buildings. They rarely use the same den for more than a few days. Females with litters change dens within 10 days of birth and almost daily after 20 days.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.67) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
North American porcupine <i>Erethizon dorsatum</i>	IUCN: LC G5 S3	<i>E. dorsatum</i> inhabit broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, lower montane coniferous forest, North coast coniferous forest, and upper montane coniferous forest habitats. This herbivore eats leaves, twigs, and green plants like Skunk cabbage (<i>Symplocarpus foetidus</i>) and clovers (<i>Trifolium</i> sp.). This species makes its dens in hollow trees, decaying logs and caves in rocky areas. Recognized as primarily solitary and nocturnal, <i>E. dorsatum</i> may be seen foraging during daytime.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.67) suitability for this species. The study area provides a significant amount of the species' habitat requirements.	Not Observed. See Section 6 for general recommendations for mammal species.
western mastiff bat <i>Eumops perotis californicus</i>	BLM: S CDFW: SSC G4G5T4 S3S4	<i>E. perotis californicus</i> occurs in a wide variety of habitats, including chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland. Roosting sites occur in rocky outcrops, crevices and cliffs with 50-100% rocky slopes. Day roosts are established in crevices in rocky canyons and cliffs, trees, tunnels and buildings with a minimum 2-meter (6.5 foot) drop-off to provide a takeoff or launching area. The animals are strong, fast fliers, with a likely extensive foraging range, up to 15 miles from the nearest possible roosting site. Foraging occurs in broad, open areas, woodlands and forest, scrub, chaparral, grassland, riparian and agricultural areas and there is no evidence of this species being habitat specialists.	High Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within High (1) suitability for this species throughout the study area.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
hoary bat <i>Lasiurus cinereus</i>	IUCN: LC G3G4 S4	<i>L. cinereus</i> prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding in broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and North coast coniferous forest habitats. Hoary bats roost in dense foliage of medium to large trees. They feed primarily on moths and requires water.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.4) suitability for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
western red bat <i>Lasiurus frantzii</i>	CDFW: SSC IUCN: LC G4 S3	<i>L. blossevillii</i> roosts primarily in trees, often 2-40ft above the ground from sea level through mixed conifer forests. Typical habitats include cismontane woodland, lower montane coniferous forest, riparian forests and woodlands. This species prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.55) suitability for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
long-eared myotis <i>Myotis evotis</i>	BLM:S IUCN: LC G5 S3	<i>M. evotis</i> is found in all brush, woodland and forested habitats from sea level to approximately 9,000 feet in elevation; however, prefers coniferous woodlands and forests. Foraging occurs along habitat edges, in open spaces and over water. Nursery colonies are often found within buildings, crevices, spaces under bark and snags. Caves are used primarily as night roosts.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate suitability with pockets of High for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
fisher [West Coast DPS] <i>Pekania pennanti</i>	CDFW: SSC IUCN: LC BLM: S G5 S3	<i>P. pennanti</i> inhabit forest stands with late-successional characteristics including intermediate-to-large tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure in North coast coniferous forest, old growth and riparian forest habitat. <i>P. pennanti</i> use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest. Fishers are primarily solitary, except during breeding season (February – April).	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate and High suitability for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
American badger <i>Taxidea taxus</i>	CDFW: SSC IUCN: LC G5 S3	<i>T. taxus</i> are found throughout most of California in a variety of habitats and are most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. <i>T. taxus</i> dig burrows in the friable soils and frequently reuse old burrows and prey on burrowing rodents.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate and High suitability for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

No (0) special status wildlife species were observed within the Study Area during the biological site assessment. Please see Section 6 for animal species recommendations.

Section 6.0: Assessment Summary and Recommendations

6.1 Biological Communities

The Study Area and immediate surroundings were assessed during a site visit April 17th, April 18th, May 22nd, May 23rd and July 18th, 2024, to determine local biological communities present. Biological communities observed were classified using data collected in the field and the Manual of California Vegetation Online Edition (MCV2 Alliances, CNPS 2024). The Study Area contains three (3) non-sensitive biological communities, three (3) sensitive aquatic communities and no (0) sensitive biological communities.

Non-Sensitive Communities:

Three (3) non-sensitive biological community In the Study Area, three (3) non-sensitive MCV2 Alliance were observed on site: (1) *Quercus wislizeni*-*Quercus chrysolepis* (shrub) Shrubland Alliance, (2) *Avena* ssp.-*Bromus* ssp. Herbaceous Semi-Natural Alliance, and (3) *Pinus sabiniana* Woodland Alliance. No (0) sensitive biological communities were identified. A detailed description of these biological communities is discussed in section 5.1.1.

Sensitive Aquatic Communities:

Aquatic resources, communities, and habitats (e.g., watercourses, ponds, wetlands, vernal pools, etc.) are considered sensitive biological communities and are afforded special protections under CEQA and other Federal, State, and local laws, regulations, and ordinances. Aquatic habitats present within the Study Area could provide suitable aquatic or riparian habitats for sensitive flora and fauna.

Three (3) watercourses flow through the Study Area including Doolin Creek a Class I and two unnamed Class III watercourses. All three (3) watercourses are classified as a Riverine system by the USFWS National Wetland Inventory (Appendix D: Map 7, National Wetland Inventory).

Recommendations for wetland habitats are listed below:

- It is recommended that all earthwork within 50-ft of any wetland adhere to standard methods of erosion and sediment control.
- It is recommended that any future removal or disturbance to wetland vegetation be avoided if

possible or mitigated at a ratio of 3:1 total vegetative cover.

The Study Area does fall within the 100-year flood zone according to the FEMA National Flood Hazard Layer (NFHL) (Appendix D: Map 8, NFHL 100-Year Flood Zone). All the study areas were determined to have moderate risk within the 100-year flood zone.

Recommendations for sensitive aquatic communities are listed below:

- It is recommended that all earthwork adjacent to any watercourse or wetlands adhere to standard methods of erosion and sediment control and, if possible, complete all work while the channel is dry to reduce sediment load downstream.
- It is recommended that any work within a watercourse or wetlands with the potential to impact aquatic resources be conducted in compliance with CDFW's Lake and Streambed Alteration Agreement.
- It is recommended that future expansions or development associated with this project be located outside of the NFHL 100-year flood zone as well as SWRCB setbacks.

6.2 Special-status Species

Twenty-three (23) special-status plant species and twenty (20) special-status wildlife species have a moderate or high potential to occur within the Study Area based on habitat present. Please refer to the tables in section 5.2, Special-Status Species, for a complete list, state rarity ranks, and habitat descriptions of species with moderate or high potential to occur within the Study Area. No (0) special status plant or wildlife species were observed within the Study Area during the biological site assessment and botanical surveys.

6.2.1 Special-status Plant Species

Special-status plant species are afforded special protections under CEQA Section 15380 and the Native Plant Protection Act (NPPA). Twenty-three (23) special-status plant species have a moderate or high potential to occur within the Study Area. These species are listed in Section 5.2.1 above.

The Biological Assessment and Rare Plant Survey constitutes a seasonally appropriate botanical survey for this project that was conducted on April 17th, April 18th, May 22nd, May 23rd and July 18th, 2024. No (0) special-status species were observed during the BA and Rare Plant Survey. The Rare Plant Surveys were conducted during the blooming period for all plants with moderate or high potential to occur within the Study Area. A complete list of all plant species observed is included in Appendix B: List of Observed Taxa.

6.2.2 Special-status Wildlife Species

Special-status wildlife species are afforded special protections under the ESA, CESA, CEQA, CFGC, and other local laws and regulations. Native nesting and migratory birds are protected under the MBTA and CFGC Section 3503, 3503.5, and 3513.

Twenty (20) special-status wildlife species have a moderate or high potential to occur within the Study Area. These species are listed in Section 5.2.2 above. No (0) special-status wildlife species were observed within the Study Area during the biological site visits. A complete list of all wildlife species observed is included in Appendix B: List of Observed Taxa.

Amphibians:

One (1) special status amphibian species has a moderate potential to occur within the Study Area.

Recommendations for special-status amphibian species:

- It is recommended that all earthwork within or adjacent to any watercourse or waterbody adhere to standard methods of erosion and sediment control.
- It is recommended that a qualified biologist be on site for any groundbreaking activities or dewatering event within or adjacent to a watercourse or waterbody to address the potential for the presence of special-status amphibian species.
- It is recommended that any modifications to watercourses and waterbodies be notified for and adhere to a CDFW Lake and Streambed Alteration Agreement.
- It is recommended that any future expansions or development associated with the project be located outside of the SWRCB setbacks.

No (0) special-status amphibian species were observed within the Study Area during the biological site assessment.

Avifauna

Seven (7) special status avian species have moderate to high potential to occur within the Study Area. Development within the Study Area may have the potential to significantly impact bird species if present. Most non-game bird species in California are protected under the Migratory Bird Treaty Act (MBTA) which prohibits the deliberate destruction of active nests belonging to protected species. Groundbreaking activities, specifically vegetation removal, within the Study Area during avian breeding periods could significantly impact nesting bird species.

Recommendations for special-status avian species and migratory bird species are listed below:

- It is recommended that nesting bird surveys be conducted by a qualified biologist prior to the commencement of any activity that results in the removal of vegetation during nesting bird season. Nesting bird season is between March 1st and August 31st of any year.
- It is recommended that any active bird nest not be removed, relocated, or otherwise disturbed for any purpose until all fledglings have left the nest.

No (0) special-status avian species or nests were observed within the Study Area during the biological assessment.

Insects:

Three (3) special status insect species have a moderate to high potential to occur within the Study Area.

Recommendations for special-status insect species are listed below:

- It is recommended that trees or other vegetation occupied by overwintering populations of monarch not be removed or otherwise disturbed until all monarchs have left the site.
- It is recommended that monarch surveys be conducted by a qualified biologist no more than 14 days prior to the commencement of tree/shrub removal from November 1st-January 31st of any year when monarchs are most likely to be found overwintering.
- Land managers could consider planting or cover cropping with beneficial forage or host species for special-status insects. Host species for the monarch butterfly include milkweed (*Asclepias* sp.). Forage species for the western bumblebee include *Ceanothus*, *Centaurea*, *Chrysothamnus*, *Cirsium*, *Geranium*, *Grindellia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium*.

- If a special-status insect nests are observed, it is recommended that active nests not be removed, relocated, or otherwise disturbed until the nest becomes inactive.

No (0) special-status insects or insect nests were observed within the Study Area during the biological site assessment.

Mammals

Nine (9) special status mammal species have a moderate to high potential to occur within the Study Area.

Recommendations for special-status insect species are listed below:

- If evidence of bat roosts are observed (i.e. bat guano, ammonia odor, grease stained cavities) around trees, cavities, or structures proposed for removal, it is recommended that pre-construction bat surveys be conducted no more than 14 days prior to groundbreaking activities. If bat roosts are identified, buffer or mitigation measures should be established by a qualified biologist.
- If evidence of special-status mammal borrows or denning activity is observed, it is recommended that pre-construction surveys be conducted by a qualified biologist for activities that may affect den sites.

No (0) special-status mammals or evidence were observed during the biological site assessment.

6.3 Wildlife Corridors

No change to foraging or wintering habitat for migratory birds has occurred as a result of the cannabis development. Additionally, no significant impacts to migratory corridors for amphibian, aquatic, avian, mammalian, or reptilian species is expected because of the cannabis development.

6.4 Critical Habitat

The Study Area does not contain and is not adjacent to critical habitat for any Federal or State- listed species (Appendix E: Supporting Documents; USFWS IPAC Official Species List).

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Alicia Ives Ringstad received a B.S. in Wildlife Management and Conservation from Humboldt State University in 2007, with studies including plant taxonomy. She is a Consulting Senior Wildlife Biologist with over 17 years professional wildlife biology, forestry, botany and environmental planning experience. Ms. Ives Ringstad provides Botanical surveys and Biological Assessments for large and small projects requiring compliance with the California Environmental Quality Act (CEQA), these projects include timber harvesting, land conversion, minor and major subdivisions, and development plans/permits. Ms. Ives Ringstad's experience includes conducting wetland delineations that met the requirements of the US Army Corps of Engineers Technical Report (Y-87-1).

Sincerely,

A handwritten signature in black ink, appearing to read 'Alicia Ives Ringstad', with a stylized, flowing script.

Alicia Ives Ringstad
Biological and Botanical Program Manager
Jacobszoon & Associates, Inc.

Appendix A: Table of Potential for Special-Status Plants and Wildlife within the Study Area



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Amphibians				
northern red- legged frog <i>Rana aurora</i>	CDFW: SSC IUCN: LC USFS: S G4 S3	<i>R. aurora</i> are often observed within humid forests, woodlands, wetlands, grasslands and stream sides in northwestern California, usually near dense riparian cover. This species is generally found near permanent water but can be found far from water in damp woods and meadows during the non-breeding season. Typical habitat types include Klamath/North coast flowing waters, riparian forest and woodland.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
foothill yellow- legged frog - north coast DPS <i>Rana boylei</i> pop. 1	CDFW: SSC BLM: S USFS: S G3TNRQ S4	The foothill yellow-legged frog pop 1 (Northwest/North Coast clade) is found in or near partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including chaparral, cismontane woodland, coastal scrub, Klamath/North Coast flowing waters, lower montane coniferous forest, meadows and seeps, riparian forest, riparian woodland and flowing waters. This species needs at least some cobble-sized substrate for egg-laying and need at least 15 weeks to attain metamorphosis.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) suitability for this species and isn't likely to provide the required habitat for this species.	Not Present. There are no recommendations for this species.
red-bellied newt <i>Taricha rivularis</i>	CDFW: SSC IUCN: LC G2 S2	<i>T. rivularis</i> occur in coastal drainages from Humboldt County south to Sonoma County, inland to Lake County within broadleaved upland forest, North Coast coniferous forest, redwood, and riparian forest and woodland habitats. There is an isolated population of uncertain origin in Santa Clara County. Adults are active at the surface in moist environments. Transformed juveniles leave aquatic environments and go into hiding in underground shelters, often until they are ready to reproduce. This species will migrate over 1km to breed, typically in streams with moderate flow and clean, rocky substrate.	High Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within High (1) suitability for this species and does provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDA- TIONS
Avifauna				
American goshawk <i>Accipiter atricapillus</i>	CDFW: SSC IUCN: LC G5 S3	Throughout their range, whether at sea level or in alpine settings, American Goshawks nest in mature and old-growth forests with more than 60% closed canopy. They typically build nests in conifers, such as Douglas-fir, white fir, California red fir, ponderosa pine, western larch, and western hemlock, along with deciduous trees including aspens and paper birch ear breaks in the canopy, such as a forest trail, jeep road, or opening created by a downed tree, and prefer sites with a creek, pond, or lake nearby.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11), Medium (0.44), and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
Cooper's hawk <i>Accipiter cooperies</i>	CDFW: WL IUCN: LC G5 S4	<i>A. cooperii</i> are forest and woodland birds, often in open, interrupted or marginal woodlands within cismontane woodland, riparian forest/woodland and upper montane coniferous forested habitats. Nest sites mainly in riparian growths of deciduous trees as in canyon bottoms on river flood plains and in live oak trees.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33), Medium (0.66), and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
tricolored blackbird <i>Agelaius tricolor</i>	ST BLM: S CDFW: SSC IUCN: EN NABCI: RWL USFWS: BCC G1G2 S2	<i>A. tricolor</i> is largely endemic to California, most numerous in the Central Valley and vicinity within freshwater marsh, marsh and swamp. Swamp and wetland habitats. This species is highly colonial requiring open water, protected nest substrate and foraging area with insect prey within a few km of the colony.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
grasshopper sparrow <i>Ammodramus savannarum</i>	CDFW: SSC IUCN: LC G5 S3	<i>A. savannarum</i> are an uncommon and local, summer resident in valley and foothill grassland west of the Cascade- Sierra Nevada crest from Mendocino and Trinity Counties south to San Diego County. <i>A. savannarum</i> nests on the ground in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes in areas with a variety of native grasses and tall forbs and scattered shrubs for singing perches. Nests are typically found at the base of a small clump of overhanging grass or other vegetation, perhaps in close proximity to other breeding grasshopper sparrows, and this species may double or triple clutch.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for the species.	Not Observed: See Section 6 for general recommendations for avifauna species.
golden eagle <i>Aquila chrysaetos</i>	BLM: S CDF: S CDFW: FP, WL IUCN: LC G5 S3	Golden eagles are found primarily in rolling foothills, mountain areas, sage-juniper flats, and desert in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinon and juniper woodlands, upper montane coniferous forest and valley foothill grassland habitats up to 12,000 feet. Cliff-walled canyons provide nesting habitat in most parts of the range; also, large trees in open areas.	High Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within High (0.77) suitability for this species and does provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
great egret <i>Ardea alba</i>	CDF: S IUCN: LC G5 S4	Great egrets are located in brackish marsh, estuary, freshwater marsh, marsh & swamp, riparian forest, and wetland habitats. They are colonial nesters in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
great blue heron <i>Ardea herodias</i>	CDF: S IUCN: LC G5 S4	Great blue herons are located in brackish marsh, estuary, freshwater marsh, marsh and swamp, riparian forest and wetland habitats. They are colonial nesters in tall trees, cliffsides and sequestered spots on marshes. Rookery sites are located in close proximity to foraging areas; marshes, lake margins, tide-flats, rivers, streams and wet meadows.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Unranked and Low (0.33) suitability for this species and does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
western snowy plover <i>Charadrius nivosus nivosus</i>	FT CDFW: SSC NABCI: RWL G3T3	<i>C. nivosus nivosus</i> need sandy, gravelly or friable soils for nesting. This species is located on sandy beaches, salt pond levees and shores of large alkali lakes in Great Basin standing waters, sandy shores and wetland habitats.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
northern harrier <i>Circus hudsonius</i>	CDFW: SSC IUCN: LC USFWS: BCC G5 S3	<i>C. hudsonius</i> are year-long residents of Mendocino and Lake County. They frequent coastal salt and freshwater marshes in coastal scrub, Great Basin grassland, marsh & swamp, riparian scrub, valley & foothill grassland, and wetland habitats. They nest on the ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Unranked and Low (0.33) suitability for this species and does not provide the required habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT SE BLM: S NABCI: RWL USFS: S G5T2T3 S1	Western yellow-billed cuckoos breed in large blocks of riparian habitats (particularly woodlands with cottonwoods and willows). Dense understory foliage appears to be an important factor in nest site selection. This species makes their nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape. often between 3 to 90 feet (1 to 28 meters).	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
white-tailed kite <i>Elanus leucurus</i>	BLM: S CDFW: FP IUCN: LC G5 S3S4	<i>E. leucurus</i> forages in open grasslands, meadows, or marshes close to isolated, dense-topped trees for nesting and perching. This species is located in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland within cismontane woodland, marsh and swamp, riparian woodland, valley and grassland, and wetland habitats.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
yellow-breasted chat <i>Icteria virens</i>	CDFW: SSC IUCN: LC G5 S3	<i>I. virens</i> occurs within riparian forest, woodland, or scrub. <i>I. virens</i> are summer residents inhabiting riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian habitat often consisting of willow, blackberry, and wild grape within 10ft. of the ground.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
Lewis' woodpecker <i>Melanerpes lewis</i>	IUCN: LC NABCI: YWL USFWS: BCC G4 S4	<i>M. lewis</i> often inhabit oak savannahs, broken deciduous, and coniferous habitats. Nests are made at the forest edge (especially ponderosa pine) or in groves or scattered trees and require snags for nest cavities. <i>M. lewis</i> ' primary diet consists of insects, nuts, and fruits.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
black-crowned night heron <i>Nycticorax nycticorax</i>	IUCN: LC G5 S4	<i>N. nycticorax</i> are colonial nester, usually in trees, occasionally in tule patches in marsh & swamp, riparian forest, riparian woodland, and wetland habitat. Rookery sites are located adjacent to foraging areas, such as, lake margins, mud-bordered bays, marshy spots.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Unranked and Low (0.33) suitability for this species and does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.
osprey <i>Pandion haliaetus</i>	CDF: S CDFW: WL IUCN: LC G5 S4	<i>P. haliaetus</i> occupies riparian forest habitat. They forage over ocean shores, bays, freshwater lakes and larger streams. They construct large nests in large trees, snags, and blown-out treetops within 15 miles of a good fish-producing body of water.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
yellow warbler <i>Setophaga petechia</i>	CDFW: SSC IUCN: LC G5 S3S4	<i>S. petechia</i> often inhabits riparian forest, scrub and woodland habitats in summer in close proximity to water. Frequently found nesting and foraging in willows shrubs and thickets and in alders, ash, cottonwoods, and sycamores. This species will also nest in montane shrubbery in open conifer forest in the Cascades and Sierra Nevada.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.33) and Medium (0.66) suitability for this species. The Study Area may provide suitable habitat for this species.	Not Observed: See Section 6 for general recommendations for avifauna species.
Lawrence's goldfinch <i>Spinus lawrencei</i>	IUCN: LC NABCI: YWL USFWS: BCC G3G4 S4	<i>S. lawrencei</i> inhabit dry, open oak woodlands with chaparral, weedy fields with access to a water source. Nests are usually placed in a forked branch of California sycamore (<i>Plantanus racemosa</i>), blue oak (<i>Quercus douglasii</i>), interior live oak (<i>Q. wislizeni</i>), canyon live oak (<i>Q. chrysolepis</i>) and coast live oak (<i>Q. agrifolia</i>), sometimes in clumps of mistletoe or lace lichen approximately 10ft above ground.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.
northern spotted owl <i>Strix occidentalis caurina</i>	FT ST CDF: S NABCI: YWL G3G4T3 S2	<i>S. occidentalis caurina</i> are year-round residents in dense, structurally complex forests, primarily with old-growth conifers. Nests on snags and within tree cavities, and often is associated with existing structures (old raptor nests, squirrel nests and <i>A. pomo</i> nests).	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of this species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDA- TIONS
Fish				
Clear Lake prickly sculpin <i>Cottus asper ssp.</i>	CDFW: SSC G5T1 SNR	<i>C. asper ssp.</i> is adaptable to environments ranging from fresh to saltwater, and from small cool stream to large warm rivers and lakes. <i>C. asper ssp.</i> has a variety of forms as some are coastal, others live in the valley, and some are limited to Clear Lake proper. The coastal forms rarely live in a stream without an estuary and rarely go farther than 50 km upstream though they have been found present over 120 km upstream. In the Central Valley of California these fish inhabit low elevation waters. The limitation to the spread of these fish. In streams these fish use a variety of habitats though good cover or overhanging vegetation is a common thread. Most spawning occurs between February and June. In lakes, juveniles forage around the lake shores and then gradually move into deeper water as they grow.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
Pacific lamprey <i>Entosphenus tridentatus</i>	AFS: VU BLM: S CDFW: SSC IUCN: LC USFS: S G4 S3	<i>E. tridentatus</i> occur in aquatic habitats such as, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, and South coast flowing waters. This species is anadromous, but also with a number of permanent freshwater resident populations. This species is parasitic as adults, feeding on blood and body fluids of its prey. To breed, <i>E. tridentatus</i> migrate into fresh water and dig nests. Adults die post-breeding. Larvae/juveniles live 5-6 years in soft sand or mud of freshwater before returning to the ocean.	Low Potential. According to the FSSC species' range map, the Study Area contains little habitat within the range for this species; however, required habitat for this species is not present within the Study Area.	Not Present. There are no recommendations for this species.
Tidewater goby <i>Eucyclogobius newberryi</i>	FE AFS: EN IUCN: NT CDFW: SSC G3 S3	<i>E. newberryi</i> occur in aquatic habitats such as, Klamath/North coast flowing waters, Sacramento/ San Joaquin flowing waters, and South coast flowing waters. This species is found in brackish water of shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels. Vegetation is generally sparse, consisting of several species of submerged or emergent plants including <i>Ruppia maritima</i> , <i>Scirpus</i> sp., and <i>Potamogeton</i> sp.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
northern coastal roach <i>Hesperoleucus venustus navarroensis</i>	CDFW: SSC GNRT3 S3	This species found generally in a wide variety of habitats in the Navarro River and Russian River basins where there is cover (e.g. fallen trees) and where alien predators are absent. They are most abundant in tributaries with clear, well oxygenated water with dominant substrates of cobble and boulder, and shallow depths (average 10-50 cm) with pools up to 1 m deep.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
Clear Lake tule perch <i>Hysterocarpus traskii lagunae</i>	CDFW: SSC G5T3 S3	<i>H. traskii lagunae</i> are endemic to three (3) highly altered lakes (Clear Lake, Lower Blue and Upper Blue Lake); however, it is expected that they are only commonly found in Upper Blue Lake now. Clear Lake and Lower Blue Lake are typically warm (summer temperatures 25-28°C) and shallow, with primarily sandy or soft bottom substrates. Upper Blue Lake is similar but is also clearer and colder. Tule perch are very tolerant of environmental variables; however, low water quality limits their distribution in their historic ranges. This species is found in small shoals in deep (3+ m) tule beds, among rocks (especially along steep rocky shores), or among the branches of fallen trees.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
Russian River tule perch <i>Hysterocarpus traskii pomo</i>	AFS: VU CDFW: SSC G5T4 S4	<i>H. traskii pomo</i> inhabits the low elevation streams of the Russian River system. They require clear, flowing water with abundant cover. They also require deep (> 1 m) pool habitat. Mating occurs in July-Sept. In May-June the female bears 10- 60 live fish.	Low Potential. According to the FSSC species' range map, the Study Area contains little habitat within the range for this species; however, required habitat for this species is not present within the Study Area.	Not Present. There are no recommendations for this species.
hardhead <i>Mylopharodon conocephalus</i>	CDFW: SSC IUCN: LC USFS: S G3 S3	<i>M. conocephalus</i> are found within low to mid-elevation streams in the Sacramento-San Joaquin drainage and the Russian River. This species requires clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Hardheads are not found where exotic centrarchids predominate.	Low Potential. According to the FSSC species' range map, the Study Area contains little habitat within the range for this species; however, required habitat for this species is not present within the Study Area.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDA- TIONS
coho salmon – southern Oregon/northern California ESU <i>Oncorhynchus kisutch</i> pop. 2	FT ST AFS: TH G5T2Q S2	The Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California. <i>O. kisutch</i> are anadromous, migrating and spawning in streams that flow directly into the ocean or tributaries of larger rivers. Migration peaks around mid-May till mid-June. Coho lay egg masses (redds), often located between a pool and a riffle. This ESU includes naturally spawned coho salmon originating from coastal streams and rivers between Cape Blanco, Oregon, and Punta Gorda, California.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
coho salmon – central California coast ESU <i>Oncorhynchus kisutch</i> pop. 4	FE SE AFS: EN G5T2Q S2	Coho are anadromous, migrating and spawning in streams that flow directly into the ocean or tributaries of larger rivers. Migration peaks mid-May till mid-June. The fish will spend two to three years at sea before migrating back to their natal stream to spawn. Coho lay egg masses (redds), often located between a pool and a riffle. This ESU, includes naturally spawned coho salmon originating from rivers south of Punta Gorda, Ca. to and including Aptos Creek, as well as such coho salmon originating from tributaries to San Francisco Bay.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the watercourses present in Study Area does not have the intrinsic potential for this species.	Not Present. There are no recommendations for this species
steelhead - central California coast DPS <i>Oncorhynchus mykiss irideus</i> pop. 8	FT AFS: TH G5T2T3Q S3	<i>O. mykiss irideus</i> are anadromous coastal rainbow trout. As adults, this species requires high flows, with depths of at least 18cm for passage. Clean well-aerated gravel beds, typically in steep, rocky reaches of upper tributaries are needed for spawning. This DPS includes naturally spawned anadromous <i>O. mykiss</i> originating below natural and manmade impassable barriers from the Sacramento and San Joaquin Rivers and their tributaries; excludes such fish originating from San Francisco and San Pablo Bays and their tributaries.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the watercourses present in Study Area does not have the intrinsic potential for this species.	Not Present. There are no recommendations for this species.
steelhead – northern California DPS <i>Oncorhynchus mykiss irideus</i> pop. 16	FT AFS: TH G5T2T3Q S1	<i>O. mykiss irideus</i> are anadromous fish located in coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead. As adults, this species requires high flows, with depths of at least 18cm for passage. Clean well-aerated gravel beds, typically in steep, rocky reaches of upper tributaries are needed for spawning.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
summer-run steelhead trout <i>Oncorhynchus mykiss irideus</i> pop. 36	CDFW: SSC SCE G5T4Q S2	<i>O. mykiss irideus</i> are anadromous located in northern Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS and Northern California DPS. They require cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
steelhead - northern California DPS summer-run <i>Oncorhynchus mykiss irideus</i> pop. 48	FT SE G5TNRQ S2	<i>O. mykiss irideus</i> are a naturally spawning population of the stream-maturing summer-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution within range more limited.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
steelhead - northern California DPS winter-run <i>Oncorhynchus mykiss irideus</i> pop. 49	FT G5TNRQ S3	<i>O. mykiss irideus</i> are a naturally spawning population of the ocean-maturing winter-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution throughout range.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is within the species' range, but there is not a watercourse that has enough flow to sustain the species.	Not Present. There are no recommendations for this species.
chinook salmon – California coastal ESU <i>Oncorhynchus tshawytscha</i> pop. 17	FT AFS: TH G5T2Q S2	The Federal listing refers to wild spawned, coastal, spring and fall runs between Redwood Cr, Humboldt Co and Russian River, Sonoma Co. Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures greater than 27°C are lethal.	No Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area is not within the range of the species.	Not Present. There are no recommendations for this species.
Insects				
obscure bumble bee <i>Bombus caliginosus</i>	IUCN: VU G2G3 S1S2	<i>Bombus caliginosus</i> inhabits open grassy coastal prairies and Coast Range meadows in coastal areas from Santa Barbara County to north to Washington state. Nesting occurs underground as well as above ground in abandoned bird nests. Males patrol circuits in search of mates. This species is classified as a medium long-tongued species, whose food plants include <i>Ceanothus</i> , <i>Cirsium</i> , <i>Clarkia</i> , <i>Keckiella</i> , <i>Lathyrus</i> , <i>Lotus</i> , <i>Lupinus</i> , <i>Baccharis</i> , <i>Rhododendron</i> , <i>Rubus</i> , <i>Trifolium</i> , and <i>Vaccinium</i> .	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
western bumble bee <i>Bombus occidentalis</i>	SCE IUCN: VU USFS: S G3 S1	The habitat for this species is described as open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. typically nests underground in abandoned rodent burrows or other cavities Food plants of <i>Bombus occidentalis</i> include <i>Ceanothus</i> , <i>Centaurea</i> , <i>Chrysothamnus</i> , <i>Cirsium</i> , <i>Geranium</i> , <i>Grindellia</i> , <i>Lupinus</i> , <i>Melilotus</i> , <i>Monardella</i> , <i>Rubus</i> , <i>Solidago</i> , and <i>Trifolium</i> .	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.
monarch – California overwintering pop. <i>Danaus plexippus pop. 1</i>	FC IUCN: EN USFS: S G4T1T2 S2	<i>D. plexippus</i> are a migratory species, making massive migrations from August-October to hibernate along the California coast and central Mexico. They commonly occur in closed-cone coniferous forest habitat. This species roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. <i>D. plexippus</i> feeds on flower nectar from all milkweeds, dogbane, lilac, red clover, lantana, thistles, goldenrods, blazing stars, ironweed and tickseed sunflower. Most overwintering sites are found within 1.5 miles of the Pacific Ocean or San Francisco Bay with moderate temperatures. Sites are typically found at low elevations (200-300ft) and situated on slopes oriented to the south, southwest, or west which provide the most solar radiation, or in shallow canyons or gullies. Monarchs require very specific microclimatic conditions at overwintering sites including dappled sunlight, high humidity, fresh water, and an absence of freezing temperatures or high winds. Fall or winter-blooming flowers provide nectar which may be needed to maintain lipid levels necessary for spring migration.	Moderate Potential. The Study Area may contain suitable habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for insect species.
Mammals				
pallid bat <i>Antrozous pallidus</i>	BLM: S CDFW: SSC IUCN: LC USFS: S G4 S3	<i>A. pallidus</i> is found in chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, valley & foothill grassland habitats. Most common in open, dry habitats with rocky areas for roosting. This species forages along river channels. Roosts must protect bats from high temperatures. This species is very sensitive to disturbance of roosting sites.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11) and Moderate (0.66) suitability, for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Sonoma tree vole <i>Arborimus pomo</i>	CDFW: SSC IUCN: NT G3 S3	<i>A. pomo</i> is distributed along the North Coast from Sonoma County north to the Oregon border, being practically restricted to the fog belt. They are found in Douglas-fir, redwood and montane hardwood conifer forests. This species feeds almost exclusively on Douglas-fir needles but will occasionally eat grand fir, western hemlock, and/or Sitka spruce needles as well. Nests are frequently found in trees along the bole, in branch crotches, or in the top of snags. Nests are most often found along roads, skid trails, or forest edges; however, they could exist further in the forest with dense canopies making nest identification difficult.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the majority of the Study Area falls within Unranked and Low (0.33) suitability, with small areas of High (1) suitability for this species and does not provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
northern California ringtail <i>Bassariscus astutus raptor</i>	CDFW: FP G5TNR SNR	This species will exploit a variety of habitats such as dry, rocky, brush-covered hillsides or riparian areas, typically near an open water source. Dens are most often located in rock crevices, boulder piles, or talus, but also tree hollows, root cavities, and rural buildings. They rarely use the same den for more than a few days. Females with litters change dens within 10 days of birth and almost daily after 20 days.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.67) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
tule elk <i>Cervus canadensis nannodes</i>	G5T3 S3	<i>C. canadensis nannodes</i> favors grasslands and oak woodlands. This species may also be found in freshwater wetlands, riparian forest, mixed conifer forest, scrublands, and irrigated agricultural lands. All extant populations are derived from reintroductions back into historic range.	Low Potential. The Study Area has a very limited watershed and aquatic pool but has sufficient oak woodland.	Not Present. There are no recommendations for this species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	BLM: S CDFW: SSC IUCN: LC USFS: S G4 S3	<i>C. townsendii</i> inhabits mesic sites within broadleaved upland forest, chaparral, chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, lower montane coniferous forest, meadow & seep, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, upper montane coniferous forest, and valley & foothill grassland. Females form maternity colonies in buildings, caves, mines and in basal hollows in large conifer trees and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	Low Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11) suitability for this species and does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
North American porcupine <i>Erethizon dorsatum</i>	IUCN: LC G5 S3	<i>E. dorsatum</i> inhabit broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, lower montane coniferous forest, North coast coniferous forest, and upper montane coniferous forest habitats. This herbivore eats leaves, twigs, and green plants like Skunk cabbage (<i>Symplocarpus foetidus</i>) and clovers (<i>Trifolium</i> sp.). This species makes its dens in hollow trees, decaying logs and caves in rocky areas. Recognized as primarily solitary and nocturnal, <i>E. dorsatum</i> may be seen foraging during daytime.	Moderate Potential. According to the CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.67) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
western mastiff bat <i>Eumops perotis californicus</i>	BLM: S CDFW: SSC G4G5T4 S3S4	<i>E. perotis californicus</i> occurs in a wide variety of habitats, including chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland. Roosting sites occur in rocky outcrops, crevices and cliffs with 50-100% rocky slopes. Day roosts are established in crevices in rocky canyons and cliffs, trees, tunnels and buildings with a minimum 2-meter (6.5 foot) drop-off to provide a takeoff or launching area. The animals are strong, fast fliers, with a likely extensive foraging range, up to 15 miles from the nearest possible roosting site. Foraging occurs in broad, open areas, woodlands and forest, scrub, chaparral, grassland, riparian and agricultural areas and there is no evidence of this species being habitat specialists.	High Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within High (1) suitability for this species and does provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
hoary bat <i>Lasiurus cinereus</i>	IUCN: LC G3G4 S4	<i>L. cinereus</i> prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding in broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and North coast coniferous forest habitats. Hoary bats roost in dense foliage of medium to large trees. They feed primarily on moths and requires water.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.4) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
western red bat <i>Lasiurus frantzii</i>	CDFW: SSC IUCN: LC G4 S3	<i>L. blossevillei</i> roosts primarily in trees, often 2-40ft above the ground from sea level through mixed conifer forests. Typical habitats include cismontane woodland, lower montane coniferous forest, riparian forests and woodlands. This species prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.55) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
long-eared myotis <i>Myotis evotis</i>	BLM: S IUCN: LC G5 S3	<i>M. evotis</i> is found in all brush, woodland and forested habitats from sea level to approximately 9,000 feet in elevation; however, prefers coniferous woodlands and forests. Foraging occurs along habitat edges, in open spaces and over water. Nursery colonies are often found within buildings, crevices, spaces under bark and snags. Caves are used primarily as night roosts.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.11), Moderate (0.66) and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
Yuma myotis <i>Myotis yumanensis</i>	BLM: S IUCN: LC G5 S4	<i>M. yumanensis</i> commonly inhabits open forests and woodlands from British Columbia across the western U.S. and south into Baja and southern Mexico in lower montane coniferous forest, riparian forest, riparian woodland, and upper montane coniferous forest habitat. Foraging occurs almost exclusively over water. Typical roosting habitats are caves, mines, buildings, under bridges and in cliff and tree crevices. Maternity colonies are often in caves, mines, buildings and crevices.	Low Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Low (0.22) suitability for this species and does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.
fisher [West Coast DPS] <i>Pekania pennanti</i>	CDFW: SSC IUCN: LC USFS: S BLM: S G5 S2S3	<i>P. pennanti</i> inhabit forest stands with late-successional characteristics including intermediate-to-large tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure in North coast coniferous forest, old growth and riparian forest habitat. <i>P. pennanti</i> use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest. Fishers are primarily solitary, except during breeding season (February – April).	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls mostly within Unranked and small areas of Moderate (0.66) and High (0.88) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.
American badger <i>Taxidea taxus</i>	CDFW: SSC IUCN: LC G5 S3	<i>T. taxus</i> are found throughout most of California in a variety of habitats and are most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. <i>T. taxus</i> dig burrows in the friable soils and frequently reuse old burrows and prey on burrowing rodents.	Moderate Potential. The CWHR Predicted Habitat Suitability Map, the Study Area falls within Moderate (0.49) and High (1) suitability for this species and may provide the required habitat for this species.	Not Observed. See Section 6 for general recommendations for mammal species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDA- TIONS
Mollusks				
western ridged mussel <i>Gonidea angulata</i>	IUCN: VU G3 S1S2	<i>G. angulata</i> inhabits cold creeks and streams from low-to- mid elevations that are seasonally and not continuously turbid. <i>G. angulata</i> requires a host species to reproduce and disperse and can be found in diverse substrates from firm mud to coarse particles. Documented fish hosts for this species include hardhead (<i>Mylopharodon conocephalus</i>), pit sculpin (<i>Cottus pitensis</i>), and Tule perch (<i>Hysterothorax traski</i>).	No Potential. The Study Area does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.
Reptiles				
western pond turtle <i>Emys marmorata</i>	FC BLM: S CDFW: SSC IUCN: VU USFS: S G3G4 S3	<i>E. marmorata</i> are associated with permanent ponds, lakes, streams, stock ponds, marshes, seasonal wetlands, artificial areas including reservoirs or irrigation ditches, or permanent pools along intermittent streams in a wide variety of habitats. This species requires basking sites in the aquatic environment or upland, grassy openings with loose soil for nesting and overwintering. Nest sites can be found within 100 meters of aquatic habitat.	Low Potential. The Study Area does not provide the required habitat for this species.	Not Present. There are no recommendations for this species.
Plants				
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B.2 G5T2 S2	Cismontane woodland, valley and foothill grassland, often in clay soils, sometimes on serpentine or volcanics. <i>A. peninsulare</i> var. <i>franciscanum</i> has a weak serpentine affinity of 1.8. The elevation ranges from 17 to 1050 feet (5 to 320 meters). A perennial herb (bulb), the blooming period is from May-Jun.	Moderate Potential. The Study Area contains valley and foothill grassland, cismontane woodlands, and serpentine soils. This may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for plant species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Raiche's manzanita <i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Rank 1B.1 BLM: S G3T2 S2	Chaparral, lower montane coniferous forest (openings), rocky, serpentine sites, often on slopes and ridges. <i>A. stanfordiana</i> ssp. <i>raichei</i> has a strong serpentine affinity of 2.6. The elevation ranges from 1591 to 3511 feet (485 to 1070 meters). A perennial evergreen shrub, the blooming period is from Feb-Apr.	Moderate Potential. The Study Area contains chaparral and lower montane coniferous forest habitat and serpentine soil. The Study Area may provide suitable habitat for the species.	Not Observed. See Section 6 for general recommendations for plant species.
Brewer's milk-vetch <i>Astragalus breweri</i>	Rank 4.2 G3 S3	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Often in grassy flats, meadows moist in spring, and open slopes in chaparral. Commonly on or near volcanic or serpentine sites. <i>A. breweri</i> has a strong serpentine affinity of 3.2. The elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.	Moderate Potential. The Study Area provides chaparral, cismontane forest and foothill grassland. The Study Area may provide suitable habitat for the species.	Not Observed. Please see Section 6 for plant recommendations.
Sonoma sunshine <i>Blennosperma bakeri</i>	Rank 1B.1 FE SE G1 S1	Vernal pools, swales (mesic areas), valley and foothill grasslands. The elevation ranges from 33 to 952 feet (10 to 290 meters). An annual herb, the blooming period is from Mar-May.	Low Potential. The Study Area contains grassland habitat, does not have the wetland habitat the species requires.	Not Present. There are no recommendations for this species.
watershield <i>Brasenia schreberi</i>	Rank 2B.3 IUCN: LC G5 S3	Freshwater marshes and swamps. Aquatic, known from water bodies both natural and artificial. The elevation ranges from 3 to 7152 feet (1 to 2180 meters). A perennial rhizomatous herb (aquatic), the blooming period is from Jun-Sep.	No Potential. The Study Area does not contain the wetland habitat requirements suitable for this species.	Not Present. There are no recommendations for this species.
bristly sedge <i>Carex comosa</i>	Rank 2B.1 ICCN: LC G5 S2	Marshes and swamps, coastal prairie, valley and foothill grasslands, lake margins, wetlands. The elevation ranges from 17 to 3314 feet (5 to 1010 meters). A perennial rhizomatous herb, the blooming period is from May-Sep.	Low Potential. The Study Area contains grassland habitat; however, does not have the wetland habitat the species requires.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Rincon Ridge ceanothus <i>Ceanothus confusus</i>	Rank 1B.1 BLM: S G1 S1	Closed-cone coniferous forest, chaparral, cismontane woodland, known from volcanic or serpentine soils, dry shrubby slopes. <i>C. confusus</i> has a weak serpentine affinity of 1.3. The elevation ranges from 492 to 4200 feet (150 to 1280 meters). A shrub, the blooming period is from Feb-Jun.	Moderate Potential. Study Area provides chaparral and cismontane forest habitats. The Study Area may provide suitable habitat for the species.	Not Observed. See Section 6 for general recommendations for species.
California lady's- slipper <i>Cypripedium californicum</i>	Rank 4.2 IUCN: EN G4 S4	Lower montane coniferous forest, bogs and fens (seeps and streambanks, usually serpentine). This species has a broad endemic serpentine affinity of 4.5. The elevation ranges from 99 to 9023 feet (30 to 2750 meters). A perennial herb (rhizomatous), the blooming period is from Apr-Aug.	Low Potential. The Study Area contains lower montane coniferous forest; however, does not have the wet habitat or serpentine soil that the species requires	Not Present. There are no recommendations for this species.
mountain lady's-slipper <i>Cypripedium montanum</i>	Rank 4.2 BLM: S IUCN: VU USFS: S G4 S4	Lower montane coniferous forest, broadleaved upland forest, cismontane woodland, north coast coniferous forest, often on dry, undisturbed slopes. The elevation ranges from 607 to 7300 feet (185 to 2225 meters). A perennial herb (rhizomatous), the blooming period is from Mar-Aug.	High Potential. The Study Area contains lower montane coniferous forest, cismontane woodland and broadleaved upland forest. The Study Area does contain suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Koch's cord moss <i>Entosthodon kochii</i>	Rank 1B.3 BLM: S G1 S1	Cismontane woodland, often growing on soil over riverbanks. The elevation ranges from 607 to 1198 feet (185 to 365 meters). A moss, there is no distinct blooming period.	Low Potential. The Study Area contains cismontane woodland with little actively flowing waterways that could provide the suitable habitat for this species.	Not Present. There are no recommendations for this species.
bare monkeyflower <i>Erythranthe nudata</i>	Rank 4.3 G4 S4	Chaparral, cismontane woodland, moist areas, often along drainages and roadsides in serpentine seeps. The elevation ranges from 820 to 2297 feet (250 to 700 meters). An annual herb, the blooming period is from May-Jun.	Moderate potential. The Study Area contains chaparral and cismontane woodland and may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
stinkbells <i>Fritillaria agrestis</i>	Rank 4.2 G3 S3	Cismontane woodland, chaparral, valley and foothill grassland, pinyon and juniper woodland, sometimes on serpentine, mostly found in non-native grassland or in grassy openings in clay soil. The elevation ranges from 33 to 5102 feet (10 to 1555 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	Moderate Potential. The Study Area contains cismontane woodland, chaparral, and grassland habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Purdy's fritillary <i>Fritillaria purdyi</i>	Rank 4.3 G4 S4	Chaparral, cismontane woodland, lower montane coniferous forest, usually on serpentine. <i>F. fritillaria</i> has a broad endemic serpentine affinity of 4.5. The elevation ranges from 574 to 7399 feet (175 to 2255 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	High Potential. The Study Area does provide the habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for species.
Roderick's fritillary <i>Fritillaria roderickii</i>	Rank 1B.1 SE G1Q S1	Coastal bluff scrub, coastal prairie, valley and foothill grassland, often on grassy slopes, mesas. The elevation ranges from 66 to 2002 feet (20 to 610 meters). A perennial herb (bulb), the blooming period is from Mar-May.	Low Potential. The Study Area contains grassland; however, not on the coast and it is unlikely this species will be present within the Study Area.	Not Present. There are no recommendations for this species.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	Rank 1B.2 SE BLM: S G2 S2	Marshes and swamps (freshwater), vernal pools, often found in clay soils, usually in vernal pools or sometimes lake margins. The elevation ranges from 13 to 7907 feet (4 to 2410 meters). An annual herb, the blooming period is from Apr-Aug.	No Potential. The Study Area does not contain the habitat requirements suitable for this species.	Not Present. There are no recommendations for this species.
Toren's grimmia <i>Grimmia torenii</i>	Rank 1B.3 G2 S2	Cismontane woodland, lower montane coniferous forest, chaparral, often found in openings, rocky, boulder and rock walls, carbonate, volcanic soils. The elevation ranges from 1067 to 3806 feet (325 to 1160 meters). A moss, no distinct blooming period.	Moderate Potential. The Study contains chaparral and cismontane woodland habitats. The Study Area may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Mendocino tarplant <i>Hemizonia congesta ssp. calyculata</i>	Rank 4.3 G5T4 S4	Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. <i>H. congesta ssp. calyculata</i> has a weak serpentine affinity of 1.5. The elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.	High Potential. The Study Area does provide the habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Tracy's tarplant <i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Rank 4.3 G5T4 S4	Coastal prairie, north coast coniferous forest, lower montane coniferous forest, often found in openings and sometimes on serpentine. <i>H. congesta</i> ssp. <i>tracyi</i> has a weak serpentine affinity of 1.8. The elevation ranges from 394 to 3937 feet (120 to 1200 meters). An annual herb, the blooming period is from May-Oct.	Low Potential. The Study Area contains lower montane coniferous forest; however, the species isn't tolerant of serpentine soils. This species is unlikely to be present within the Study Area.	Not Present. There are no recommendations for this species.
glandular western flax <i>Hesperolinon adenophyllum</i>	Rank 1B.2 BLM: S G2G3 S2S3	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils, generally found in serpentine chaparral. <i>H. adenophyllum</i> has a strict endemic serpentine affinity of 5.7. The elevation ranges from 1395 to 4413 feet (425 to 1345 meters). An annual herb, the blooming period is from May-Aug.	High Potential. The Study Area does provide the habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for species.
Bolander's horkelia <i>Horkelia bolanderi</i>	Rank 1B.2 BLM: S G1 S1	Lower montane coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, often found in grassy margins of vernal pools and meadows. The elevation ranges from 1493 to 2805 feet (455 to 855 meters). A perennial herb, the blooming period is from Jun-Aug.	Low Potential. The Study Area contains lower montane coniferous forest and chaparral habitats; however, does not contain vernal pools that this species requires.	Not Present. There are no recommendations for this species.
small groundcone <i>Kopsiopsis hookeri</i>	Rank 2B.3 G4? S1S2	North coast coniferous forest, open woods, shrubby places, generally on <i>Gaultheria shallon</i> . The elevation ranges from 394 to 4708 feet (120 to 1435 meters). A perennial herb, the blooming period is from Apr-Aug.	Moderate Potential. The Study Area contains coniferous forests, shrubland and open woods, and may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Burke's goldfields <i>Lasthenia burkei</i>	Rank 1B.1 FE SE G1 S1	Vernal pools and swales, meadows and seeps. The elevation ranges from 49 to 1969 feet (15 to 600 meters). An annual herb, the blooming period is from Apr-Jun.	No Potential. The Study Area does not have vernal pools or wetlands to support this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Colusa layia <i>Layia septentrionalis</i>	Rank 1B.2 BLM: S G2 S2	Chaparral, cismontane woodland, valley and foothill grassland, scattered colonies in fields and grassy slopes in sandy or serpentine soil. The elevation ranges from 49 to 3609 feet (15 to 1100 meters). An annual herb, the blooming period is from Apr-May.	High Potential. The Study Area does provide the habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for species.
bristly leptosiphon <i>Leptosiphon acicularis</i>	Rank 4.2 G4? S4?	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. The elevation ranges from 180 to 4920 feet (55 to 1500 meters). An annual herb, the blooming period is from Apr-Jul.	Moderate Potential. The Study Area contains chaparral, cismontane forests and valley and grassland habitats, and may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
broad-lobed leptosiphon <i>Leptosiphon latisectus</i>	Rank 4.3 G4 S4	Broadleaved upland forest, cismontane woodland. <i>L. latisectus</i> has a weak serpentine affinity of 2.0. The elevation ranges from 558 to 4922 feet (170 to 1500 meters). An annual herb, the blooming period is from Apr-Jun.	Low Potential. The Study Area contains broadleaved upland forest and cismontane woodland habitats; however, this species is not tolerant of serpentine soils.	Not Present. There are no recommendations for this species.
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3 G2G3 S2S3	Coastal scrub, lower montane coniferous forest, valley and foothill grassland, broadleaved upland forests, often on clay or serpentine along fields and roadsides. <i>L. hololeuca</i> has a strong serpentine affinity of 2.5. The elevation ranges from 49 to 1001 feet (15 to 305 meters). An annual herb, the blooming period is from Jun-Oct.	Moderate Potential. The Study Area contains lower montane coniferous forest, broadleaved upland forest and grassland habitats, and may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
redwood lily <i>Lilium rubescens</i>	Rank 4.2 G3 S3	Chaparral, lower montane coniferous forest, broadleaved upland forest, upper montane coniferous forest, north coast coniferous forest, sometimes serpentine. <i>L. rubescens</i> has a weak serpentine affinity of 2. The elevation ranges from 99 to 6267 feet (30 to 1910 meters). A perennial herb (bulb), the blooming period is from Apr-Aug.	Moderate Potential. The Study Area contains chaparral, lower montane coniferous forest, and broadleaved upland forest habitats, and may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDA- TIONS
Baker's meadowfoam <i>Limnanthes bakeri</i>	Rank 1B.1 SR G1 S1	Marshes and swamps, valley and foothill grassland, meadows and seeps, vernal pools, seasonally moist or saturated sites within grassland, also in swales, roadside ditches and margins of freshwater marshy areas. The elevation ranges from 574 to 3002 feet (175 to 915 meters). An annual herb, the blooming period is from Apr-May.	No Potential. The Study Area does not contain wetlands or vernal pools that this species requires.	Not Present. There are no recommendations for this species.
Mendocino bush- mallow <i>Malacothamnus mendocinensis</i>	Rank 1A GXQ SX	Chaparral, open roadside banks. The elevation ranges from 1395 to 1887 feet (425 to 575 meters). A shrub, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains chaparral habitat and may provide suitable habitat for this species.	N Not Observed. See Section 6 for general recommendations for species.
green monardella <i>Monardella viridis</i>	Rank 4.3 G3 S3	Broadleaved upland forest, chaparral, cismontane woodland. The elevation ranges from 328 to 3314 feet (100 to 1010 meters). A perennial herb, the blooming period is from Jun-Sep.	High Potential. The Study Area does provide the habitat requirements for this species.	Not Observed. See Section 6 for general recommendations for species.
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Rank 1B.1 G4T2 S2	Cismontane woodland, meadows and seeps, vernal pools and swales, valley and foothill grassland, lower montane coniferous forest, adobe or alkaline soils. The elevation ranges from 10 to 5512 feet (3 to 1680 meters). An annual herb, the blooming period is from Apr-Jul.	Low Potential. The Study Area does contain cismontane woodland; however, does not contain vernal pools that this species requires.	Not Present. There are no recommendations for this species.
California Gairdner's yampah <i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Rank 4.2 G5T3T4 S3S4	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Often found on adobe flats or grasslands, wet meadows and vernal pools, under <i>Pinus radiata</i> along the coast, and mesic sites. The elevation ranges from 0 to 2002 feet (0 to 610 meters). A perennial herb, the blooming period is from Jun-Oct.	Low Potential. The Study Area does contain lower coniferous forest and grassland habitats; however, does not contain vernal pools that this species requires.	Not Present. There are no recommendations for this species.
white-flowered rein orchid <i>Piperia candida</i>	Rank 1B.2 G3 S3	North Coast coniferous forest, lower montane coniferous forest, broadleaved upland forest, sometimes serpentine. Often found in forest duff, mossy banks, serpentine rock outcrops and muskeg. <i>P. candida</i> has a weak serpentine affinity of 1.2. The elevation ranges from 66 to 5299 feet (20 to 1615 meters). A perennial herb, the blooming period is from May-Sep.	Low Potential. Th Study Area contains broadleaved upland forest and lower monte coniferous forest habitats; however, this species is not tolerant of serpentine soils.	Not Present. There are no recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
North Coast semaphore grass <i>Pleuropogon hooverianus</i>	Rank 1B.1 ST G2 S2	Broadleaved upland forest, meadows and seeps, north coast coniferous forest, often found in wet, grassy, shady areas, sometimes freshwater marsh. Often associated with forest environments. The elevation ranges from 148 to 3806 feet (45 to 1160 meters). A perennial rhizomatous herb, the blooming period is from Apr-Jun.	Low Potential. The Study Area does contain broadleaved upland habitat; however, does not contain marsh habitat suitable for this species.	Not Present. There are no recommendations for this species.
angel's hair lichen <i>Ramalina thrausta</i>	Rank 2B.1 G5? S2S3	North coast coniferous forest, often on dead twigs and other lichens. The elevation ranges from 246 to 4561 feet (75 to 1390 meters). A lichen, there is no distinct blooming period.	No Potential. The Study Area does not contain north coast coniferous forest habitat suitable for this species.	Not Present. There are no recommendations for this species.
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2 IUCN: LC G4 S3	Cismontane woodland, valley and foothill grassland, vernal pools, north coast coniferous forest (mesic sites). The elevation ranges from 50 to 1542 feet (15 to 470 meters). An annual herb (aquatic), the blooming period is from Feb-May.	Low Potential. The Study Area has the cismontane woodland and grassland habitats but does not have the vernal pools to support the species.	Not Present. There are no recommendations for this species.
Bolander's catchfly <i>Silene bolanderi</i>	Rank 1B.2 G2 S2	Cismontane woodland, lower montane coniferous forest, North Coast coniferous forest, meadows and seeps, chaparral (edges). Usually grassy openings, sometimes dry rocky slopes, canyons, or roadsides; sometimes serpentinite. The elevation ranges from 1380 to 3775 feet (420 to 1150 meters). A perennial herb, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains lower montane coniferous forest that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Hoffman's bristly jewelflower <i>Streptanthus glandulosus</i> ssp. <i>hoffmanii</i>	Rank 1B.3 G4T2 S2	Chaparral, cismontane woodland, valley and foothill grassland, moist, steep rocky banks in serpentine and non-serpentine soils. The elevation ranges from 197 to 2510 feet (60 to 765 meters). An annual herb, the blooming period is from Mar-Jul.	Moderate Potential. The Study Area contains chaparral, cismontane woodland and grassland habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
beaked tracyina <i>Tracyina rostrata</i>	Rank 1B.2 USFS: S G2 S2	Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. The elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains chaparral, cismontane woodland and grassland habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Santa Cruz clover <i>Trifolium buckwestiorum</i>	Rank 1B.1 BLM: S G2 S2	Coastal prairie, broadleaved upland forest, cismontane woodland, often found in moist grasslands along gravelly margins. The elevation ranges from 99 to 2641 feet (30 to 805 meters). An annual herb, the blooming period is from Apr-Oct.	Moderate Potential. The Study Area contains cismontane woodland and broadleaved upland forest habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.
Methuselah's beard lichen <i>Usnea longissima</i>	Rank 4.2 G4 S4	North coast coniferous forest, broadleaved upland forest. Often grows in the "redwood zone" on tree branches of a variety of trees, including bigleaf maple (<i>Acer macrophyllum</i>), various oaks (<i>Quercus spp.</i>), ash (<i>Fraxinus spp.</i>), Douglas-fir (<i>Pseudotsuga menziesii</i>) and California bay (<i>Umbellularia californica</i>). The elevation ranges from 148 to 4807 feet (45 to 1465 meters). A moss, no distinct blooming period.	Low Potential. The study area doesn't provide habitat with sufficient available water but does provide the species that host the moss.	Not Present. There are no recommendations for this species.
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3 G4G5 S3?	Chaparral, cismontane woodland, lower montane coniferous forest. The elevation ranges from 706 to 4593 feet (215 to 1400 meters). A shrub, the blooming period is from May-Jun.	Moderate Potential. The Study Area contains chaparral, cismontane woodland and lower montane coniferous forest habitats that may provide suitable habitat for this species.	Not Observed. See Section 6 for general recommendations for species.

TERRESTRIAL OR AQUATIC COMMUNITY	HABITAT DESCRIPTIONS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Northern Interior Cypress Forest Holland 1986 83220	Description: An open, fire-maintained scrubby "forest" like Knobcone Pine Forest but dominated by one of several Cupressus species. These stands may be as much as 15 m tall, but usually are lower. Characteristic species: <i>Cupressus Abramsiana</i> (Santa Cruz Mountains, on sandstone), <i>C. backeri</i> (Cascade and northern sierra Nevada, on serpentine or aerated basic sites), <i>C. Macnabiana</i> (North Coast Ranges and northern Sierra Nevada, on serpentine), <i>C. sargentii</i> (North and South Coast Ranges, on serpentine), <i>Pinus attenuata</i>, <i>Quercus durata</i>. Distribution: Scattered through the Siskiyou Mountains, North and south coast Ranges, cascades and northern Sierra Nevada. Combining the four species into a single element is open to question but does reflect a common pattern of occurring on serpentine or other sterile substrate and moisture status intermediate between mesic Coastal Closed Cone conifer Forests and xeric southern Interior Cypress Forests.	No Potential. The Study Area does not contain this type of forest community.	Not Present: This community is not located within or adjacent to the Study Area. There are no further recommendations for this community.
Serpentine Bunchgrass Holland 1986 42130	Description: Not all serpentinite outcrops support distinct vegetation; only those with very low Ca:Mg ratios impact biotic composition. In this system, native bunchgrass dominates, though typically in less dense cover than other perennial bunchgrass types. Site Factors: Restricted to serpentine soils. Characteristic species: Characteristic species include <i>Calamagrostis ophitidis</i>, <i>Eschscholzia californica</i>, <i>Vulpia microstachys</i> var. <i>ciliata</i>, <i>Poa secunda</i>, <i>Hemizonia congesta</i> ssp. <i>luzulifolia</i>, <i>Nassella cernua</i>, and <i>Nassella pulchra</i>. Distribution: This system is found in the Coast Ranges, Sierra Nevada, and Transverse Ranges of California on deep soils with serpentine-rich parent material. It may also occur on serpentine in the Klamath Mountains of southern Oregon.	No Potential. The Study Area does not contain this type of forest community.	Not Present: This community is not located within or adjacent to the Study Area. There are no further recommendations for this community.

Abbreviation

FC
FE
FT
FPE
FPT
FPD
FD
SE
ST
SR
SCE
SCT
SCD
SD
AFS_EN
AFS_TH
AFS_VU
BLM_S
BCC
CDF_S
CDFW_SSC
CDFW_FP
CDFW_WL
IUCN_CD
IUCN_CR
IUCN_DD
IUCN_EN
IUCN_EW
IUCN_EX
IUCN_LC
IUCN_NE
IUCN_NT
IUCN_VU
NABCI_RWL
NABCI_YWL
NMFS_SC
USFS_S
USFWS_BCC
WBWG_H

Organization

Federal Candidate
Federal Endangered
Federal Threatened
Federally Proposed for listing as Endangered
Federally Proposed for listing as Threatened
Federally Proposed for delisting
Federally Delisted
State Endangered
State Threatened
State Rare
State Candidate for listing as Endangered
State Candidate for listing as Threatened
State Candidate for delisting
State Delisted
American Fisheries Society - Endangered
American Fisheries Society - Threatened
American Fisheries Society – Vulnerable
Bureau of Land Management – Sensitive
USFWS Birds of Conservation Concern
Calif. Dept. of Forestry & Fire Protection – Sensitive
Calif. Dept. of Fish & Wildlife – Species of Special Concern
Calif. Dept. of Fish & Wildlife – Fully Protected
Calif. Dept. of Fish & Wildlife – Watch List
IUCN – Conservation Dependent
IUCN – Critically Endangered
IUCN – Data Deficient
IUCN – Endangered
IUCN – Extinct in the Wild
IUCN – Extinct
IUCN – Least Concern
IUCN – Not Evaluated
IUCN – Near Threatened
IUCN – Vulnerable
North American Bird Conservation Initiative – Red Watch List
North American Bird Conservation Initiative – Yellow Watch List
National Marine Fisheries Service – Species of Concern
U. S. Forest Service – Sensitive
U. S. Fish & Wildlife Service – Birds of Conservation Concern
Western Bat Working Group – High Priority

Abbreviation

WBWG_MH
WBWG_M
WBWG_LM
Xerces: CI
Xerces: IM
Xerces: VU
Xerces: DD
CA Rare Plant Rank (CRPR)

Organization

Western Bat Working Group – Medium-High Priority
Western Bat Working Group – Medium Priority
Western Bat Working Group – Low-Medium Priority
Xerces Society – Critically Imperiled
Xerces Society – Imperiled
Xerces Society – Vulnerable
Xerces Society – Data Deficient
California Native Plant Society (CNPS)

California Rare Plant Ranks (CRPRs) are a ranking system developed by the California Native Plant Society (CNPS) to define and categorize rarity in the California flora. All plants that are assigned to a California Rare Plant Rank category are tracked by the CNDDB; however, element occurrence (EO) information is only maintained for CRPR 1 and 2 plants, and some CRPR 3 plants. Most CRPR 3 and 4 plants that have EO information in this Inventory and the CNDDB were previously assigned to CRPR 1 or 2; their EO data reflect their prior rank and have generally not been updated since the date of their change to CRPR 3 or 4.

Rank 1A	CRPR Rank 1A: Presumed Extirpated or Extinct — Plants presumed extirpated in California and either rare or extinct elsewhere. These plants have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.
Rank 1B	CRPR Rank 1B: Rare or Endangered — Plants rare, threatened, or endangered in California and elsewhere. These plants are rare throughout their entire range with the majority also being endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century.
Rank 2A	CRPR Rank 2A: Extirpated in California — Plants presumed extirpated in California but common elsewhere. These plants are presumed extirpated because they have not been observed or documented in California for many years. This list only includes plants that are presumed extirpated in California but are common elsewhere in their range outside of the state.
Rank 2B	CRPR Rank 2B: Rare or Endangered in California — Plants rare, threatened, or endangered in California but common elsewhere. Except for being common beyond the boundaries of California, 2B plants would have been ranked 1B.
Rank 3	CRPR Rank 3: Needs Review — Plants about which more information is needed. These plants are united by one common theme—we lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic, yet if taxonomically valid would demonstrably qualify for rank 1B or 2B.
Rank 4	CRPR Rank 4: Uncommon in California — Plants of limited distribution, a watch list. These plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

Threat Rank

California Rare Plant Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are assigned as follows:

THREAT RANK DESCRIPTION

- 0.1 Seriously threatened in California — Over 80% of occurrences threatened / high degree and immediacy of threat.
- 0.2 Moderately threatened in California — 20-80% of occurrences threatened / moderate degree and immediacy of threat.
- 0.3 Not very threatened in California — Less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known.

Global Rank

The Global Rank (G-rank) is an indication of the overall condition and imperilment of an element throughout its global range. It is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on the rarity factors. The Global Ranks are assigned by NatureServe in coordination with the state program(s) where the element occurs.

GLOBAL RANK	DEFINITION
GX	Presumed Extinct — Not located despite intensive searches and virtually no likelihood of rediscovery.
GH	Possibly Extinct — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty.
G1	Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, very restricted range, very severe threats, or other factors.
G2	Imperiled — At high risk of extinction due to restricted range, very few populations or occurrences (often 20 or fewer), steep declines, severe threats, or other factors.
G3	Vulnerable — At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, threats, or other factors.
G4	Apparently Secure — At fairly low risk of extinction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
G5	Secure — At very low risk of extinction due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
GNR	Unranked — Global rank not yet assessed.
GU	Unrankable — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
G#G#	Range Rank — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.
G#T#	Intraspecific Taxon — The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank.
?	Qualifier: Inexact Numeric Rank — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.
Q	Qualifier: Questionable Taxonomy — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.
C	Qualifier: Captive or Cultivated Only — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

State Rank

The State Rank (S-rank) is an indication of the condition and imperilment of an element throughout its range within the state. As with the G-rank, it is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on rarity. The State Ranks are assigned by the CNDDB biologists using standard natural heritage methodology.

STATE RANK	DESCRIPTION
SX	Presumed Extirpated — Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
SH	Possibly Extirpated (Historical) — Species occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.
S1	Critically Imperiled — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2	Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
S3	Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	Apparently Secure — At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5	Secure — At very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
SNR	Unranked — State conservation status not yet assessed.
SU	Unrankable — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
S#S#	Range Rank — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.
?	Qualifier: Inexact or Uncertain — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

Ultramafic (serpentine) Affinity:

≥ 5.5	strict endemic	taxa with 95% of their occurrences on ultramafics
< 5.5	≥ 4.5	broad endemic
< 4.5	≥ 3.5	transition from broad endemic to strong indicator
< 3.5	≥ 2.5	strong indicator
< 2.5	≥ 1.5	weak indicator
< 1.5	≥ 1.0	weak indicator / indifferent
		taxa with 50-54% of their occurrences on ultramafics

National Wetland Plant List Indicator Rating Definitions

OBL (Obligate Wetland Plants)—Almost always occur in wetlands.

FACW (Facultative Wetland Plants)—Usually occur in wetlands but may occur in non-wetlands.

FAC (Facultative Wetland Plants)—Occur in wetlands and non-wetlands.

FACU (Facultative Upland Plants)—Usually occur in non-wetlands but may occur in wetlands.

UPL (Upland Plants)—Almost never occurs in wetlands.

Potential to Occur:

No Potential. Habitat on and within 100 feet adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and within 100 feet adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or within 100 feet adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or within 100 feet adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Results and Recommendations:

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

Not Present. Species is assumed to not be present due to a lack of key habitat components.

Not Observed. Species was not observed during surveys

Appendix B: List of Species Observed

SCIENTIFIC NAME	COMMON NAME
Plants	
<i>Acmispon glaber</i>	deerweed
<i>Acmispon parviflorus</i>	short flower deervetch
<i>Adelinia grandis</i>	Pacific hounds tongue
<i>Adenocaulon bicolor</i>	California trailplant
<i>Adenostoma fasciculatum</i>	chamise
<i>Adiantum jordanii</i>	California maidenhair fern
<i>Aesculus californica</i>	California buckeye
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Anisocarpus madioides</i>	woodland madia
<i>Aralia californica</i>	California spikenard
<i>Arbutus menziesii</i>	Pacific madrone
<i>Arctostaphylos manzanita</i>	common manzanita
<i>Arnica discoidea</i>	rayless arnica
<i>Athyrium filix-femina</i>	lady fern
<i>Baccharis pilularis</i>	coyote bush
<i>Briza maxima</i>	greater quaking grass
<i>Bromus madritensis</i>	red brome
<i>Calochortus amabilis</i>	Diogenes' lantern
<i>Calochortus tolmiei</i>	Tolmie's pussy ears
<i>Cardamine californica</i>	milkmaids
<i>Cardamine hirsuta</i>	hairy bittercress
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Caucalis platycarpus</i>	bur parsley
<i>Centaurea solstitialis</i>	yellow star thistle
<i>Cerastium glomeratum</i>	sticky mouse ear chickweed
<i>Chlorogalum pomeridianum</i>	wavy-leaf soap plant
<i>Cirsium vulgare</i>	bull thistle
<i>Claytonia parviflora</i>	streambank springbeauty
<i>Clinopodium Douglasii</i>	yerba buena
<i>Collinsia heterophylla</i>	purple Chinese houses
<i>Collomia heterophylla</i>	variable leaf collomia
<i>Crocanthemum scoparium</i>	peak rush rose
<i>Cyperus eragrostis</i>	tall flat sedge

SCIENTIFIC NAME	COMMON NAME
<i>Cytisus scoparius</i>	scotch broom
<i>Daucus pusillus</i>	American wild carrot
<i>Delphinium nudicaule</i>	red larkspur
<i>Dichelostemma capitatum</i>	blue dicks
<i>Diplacus aurantiacus</i>	sticky monkey flower
<i>Dittrichia graveolens</i>	stinkwart
<i>Dryopteris arguta</i>	coastal wood fern
<i>Equisetum telmateia</i>	great horsetail
<i>Eriodictyon californicum</i>	California yerba santa
<i>Eriophyllum lanatum</i>	common woolly sunflower
<i>Erodium cicutarium</i>	red stem stork's bill
<i>Erosion moschatum</i>	musk storks bill
<i>Erythronium californicum</i>	California fawn lily
<i>Eucalyptus globulus</i>	blue gum eucalyptus
<i>Fraxinus latifolia</i>	Oregon ash
<i>Fritillaria affinis</i>	checker lily
<i>Galium californicum</i>	California bedstraw
<i>Galium soaring</i>	catchweed bedstraw
<i>Genista monspessulana</i>	French broom
<i>Geranium molle</i>	dove's foot crane's bill
<i>Helichrysum luteoalbum</i>	Jersey cudweed
<i>Heteromeles arbutifolia</i>	toyon
<i>Hibiscus syriacus</i>	rose of Sharon
<i>Hieracium albiflorum</i>	white hawkweed
<i>Holodiscus discolor</i>	ocean spray
<i>Hypericum concinnum</i>	goldwire
<i>Hypochaeris glabra</i>	smooth cats ear
<i>Iris douglasiana</i>	Douglas iris
<i>Iris purdyi</i>	Purdy's iris
<i>Jacobaea vulgaris</i>	common ragwort
<i>Juncus bufonius</i>	toad rush
<i>Lathyrus vestitus</i>	Pacific pea
<i>Lepidium lasiocarpum</i>	hairypod pepperweed
<i>Lepidium nitidum</i>	shining pepperweed
<i>Leptosiphon bicolor</i>	true babystars
<i>Lewisia leeana</i>	quill-leaf lewisia
<i>Lilium rubescens</i>	redwood lily
<i>Lithophragma heterophyllum</i>	hillside woodland star

SCIENTIFIC NAME	COMMON NAME
<i>Lonicera hispidula</i>	pink honeysuckle
<i>Medicago polymorpha</i>	bur clover
<i>Mentha pulegium</i>	penny royal
<i>Micropus californicus</i>	q-tips
<i>Nemophila menziesii</i> var. <i>atomaria</i>	white nemophila
<i>Nemophila parviflora</i>	small flowered nemophila
<i>Nerium oleander</i>	oleander
<i>Notholithocarpus densiflorus</i>	tan oak
<i>Pedicularis densiflora</i>	warriors plume
<i>Pentagramma triangularis</i>	goldback fern
<i>Petrorhagia dubia</i>	hairypink
<i>Pinus muricata</i>	Bishop pine
<i>Pinus ponderosa</i>	Ponderosa pine
<i>Pinus sabiniana</i>	gray pine
<i>Plagiobothrys tenellus</i>	Pacific popcornflower
<i>Poa annua</i>	annual meadow grass
<i>Polypodium calirhiza</i>	nested polypody
<i>Polypodium glycyrrhiza</i>	licorice fern
<i>Polystichum munitum</i>	sword fern
<i>Primula hendersonii</i>	Henderson's shooting star
<i>Prosartes hookeri</i>	Hooker's fairy bells
<i>Pseudotsuga menziesii</i>	Douglas fir
<i>Psilocarphus brevissimus</i>	woolly marbles
<i>Psilocarphus tenellus</i>	slender woolly marbles
<i>Pteridium aquilinum</i>	common Bracken fern
<i>Quercus berberidifolia</i>	California scrub oak
<i>Quercus douglasii</i>	Blue oak
<i>Quercus garryana</i>	Oregon white oak
<i>Quercus velutina</i>	black oak
<i>Ranunculus abortivus</i>	small flowered buttercup
<i>Ranunculus occidentalis</i>	western buttercup
<i>Rhinotropis californica</i>	California milkwort
<i>Rosa gymnasia</i>	baldhip rose
<i>Rubus leucodermis</i>	whitebark raspberry
<i>Rubus ursinus</i>	trailing blackberry
<i>Sanicula bipinnatifida</i>	purple sanicle
<i>Sanicula crassicaulis</i>	Pacific sanicle
<i>Scutellaria lateriflora</i>	blue skullcap

JACOBSZOOM & ASSOCIATES, INC.

SCIENTIFIC NAME	COMMON NAME
<i>Sequoia sempervirens</i>	coast redwood
<i>Sidalcea diploscypha</i>	fringed checkerbloom
<i>Silybum marianum</i>	milk thistle
<i>Sisyrinchium bellum</i>	western blue eyed grass
<i>Soliva sessili</i>	common Soliva
<i>Sonchus asper</i>	prickly sow thistle
<i>Stachys ajugoides</i>	bugle hedgenettle
<i>Symphoricarpos albus</i>	common snowberry
<i>Symphoricarpos mollis</i>	creeping snowberry
<i>Taraxacum californicum</i>	California dandelion
<i>Thlaspi arvense</i>	field penny-cress
<i>Tonella tenella</i>	lesser baby innocence
<i>Torilis arvensis</i>	common hedge parsley
<i>Toxicodendron diversilobum</i>	poison oak
<i>Trientalis latifolia</i>	western starflower
<i>Trifolium bifidum</i>	notch leaf clover
<i>Trifolium hirtum</i>	rose clover
<i>Umbellularia californica</i>	California bay laurel
<i>Verbena lasiostachys</i>	western vervain
<i>Vicia hirsuta</i>	hairy vetch
<i>Vicia sativa</i>	common vetch
<i>Viola ocellata</i>	western heart's ease
<i>Whipplea modesta</i>	modesty
<i>Woodwardia fimbriata</i>	giant chain fern
<i>Wyethia glabra</i>	smooth mule's ears
Mammals	
<i>Lepus californicus</i>	jack rabbit
<i>Sciurus griseus</i>	western grey squirrel
<i>Ursus americanus</i>	black bear
Avifauna	
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Cathartes aura</i>	California quail
<i>Turdus migratorius</i>	scrub jay
Insects	
<i>Eriodictyon calcedona</i>	variable checkerspot

Appendix C: Photographs



Photo 1:

East view off
existing road

Date:

May 22nd, 2024



Photo 2:

Chaparral and
Oak Woodland

Date:

May 22nd, 2024



Photo 3:

Proposed Trail
Location

Date:

May 22nd, 2024



Photo 4:

Proposed Trail
Location

Date: July 18th,
2024



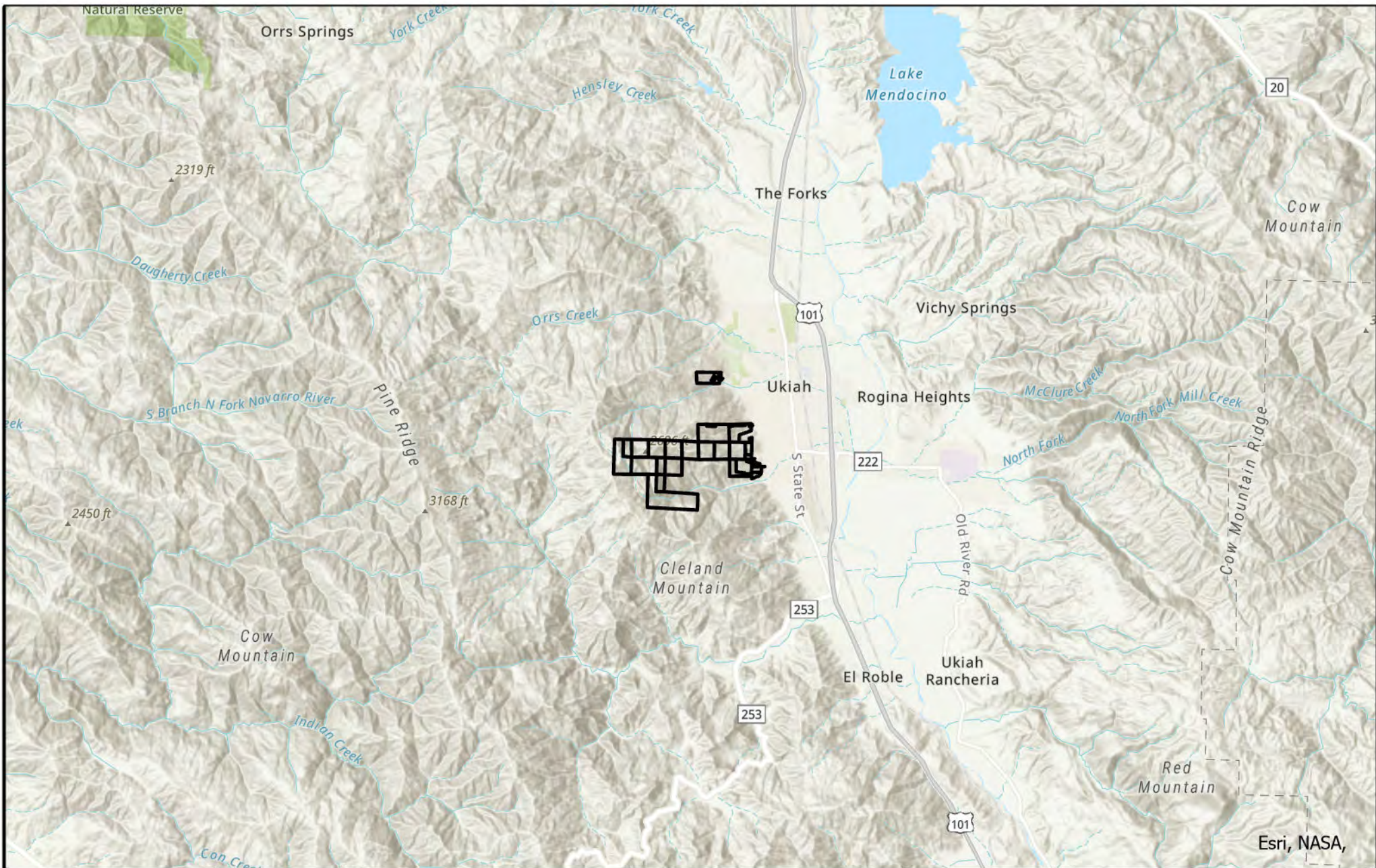
Photo 5:

Variable
Checkerspot
(*Euphydryas
chalcedona*) on
California
Yerba Santa
(*Eriodictyon
californicum*)

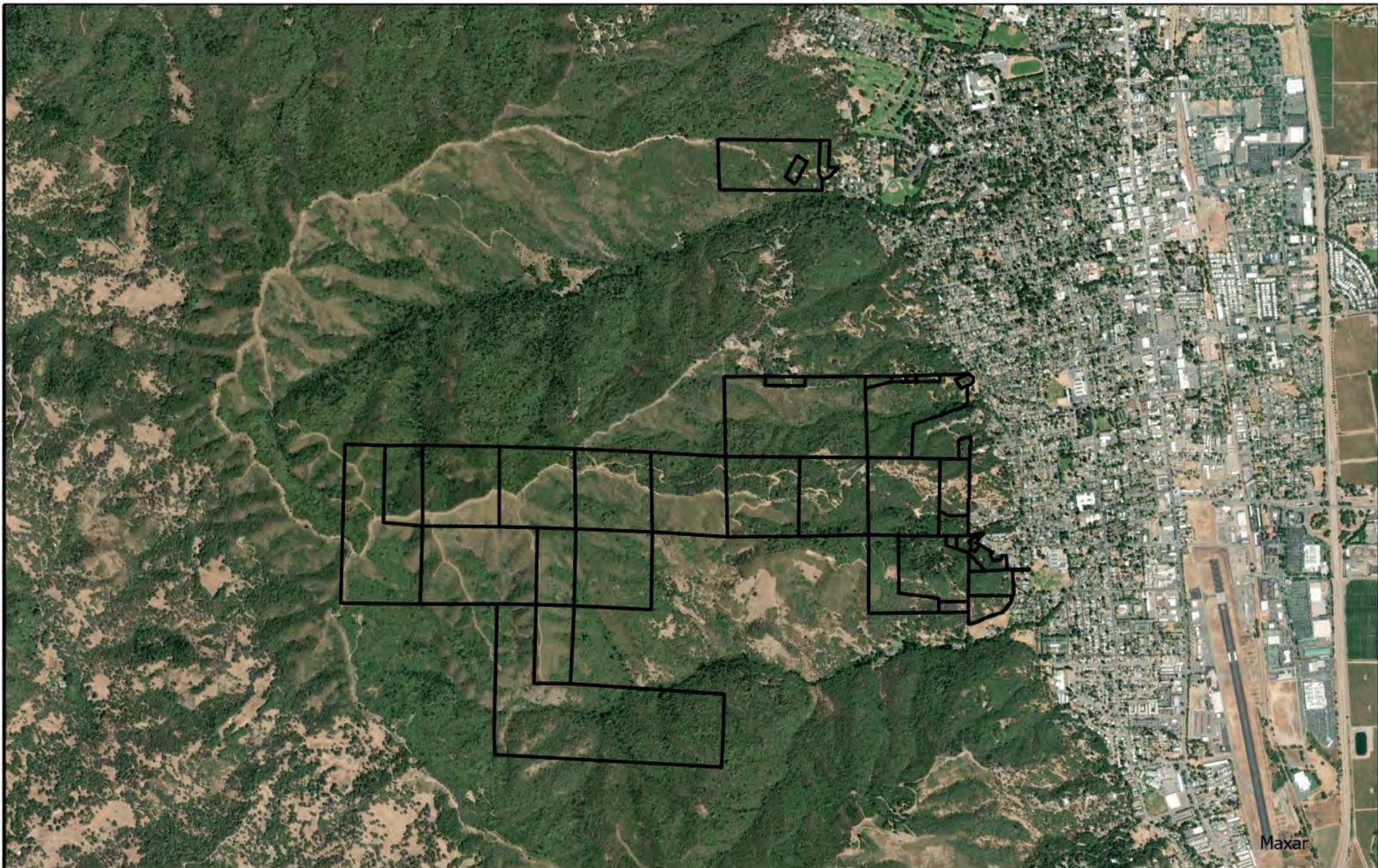
Date:

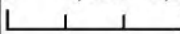
July 18th, 2024

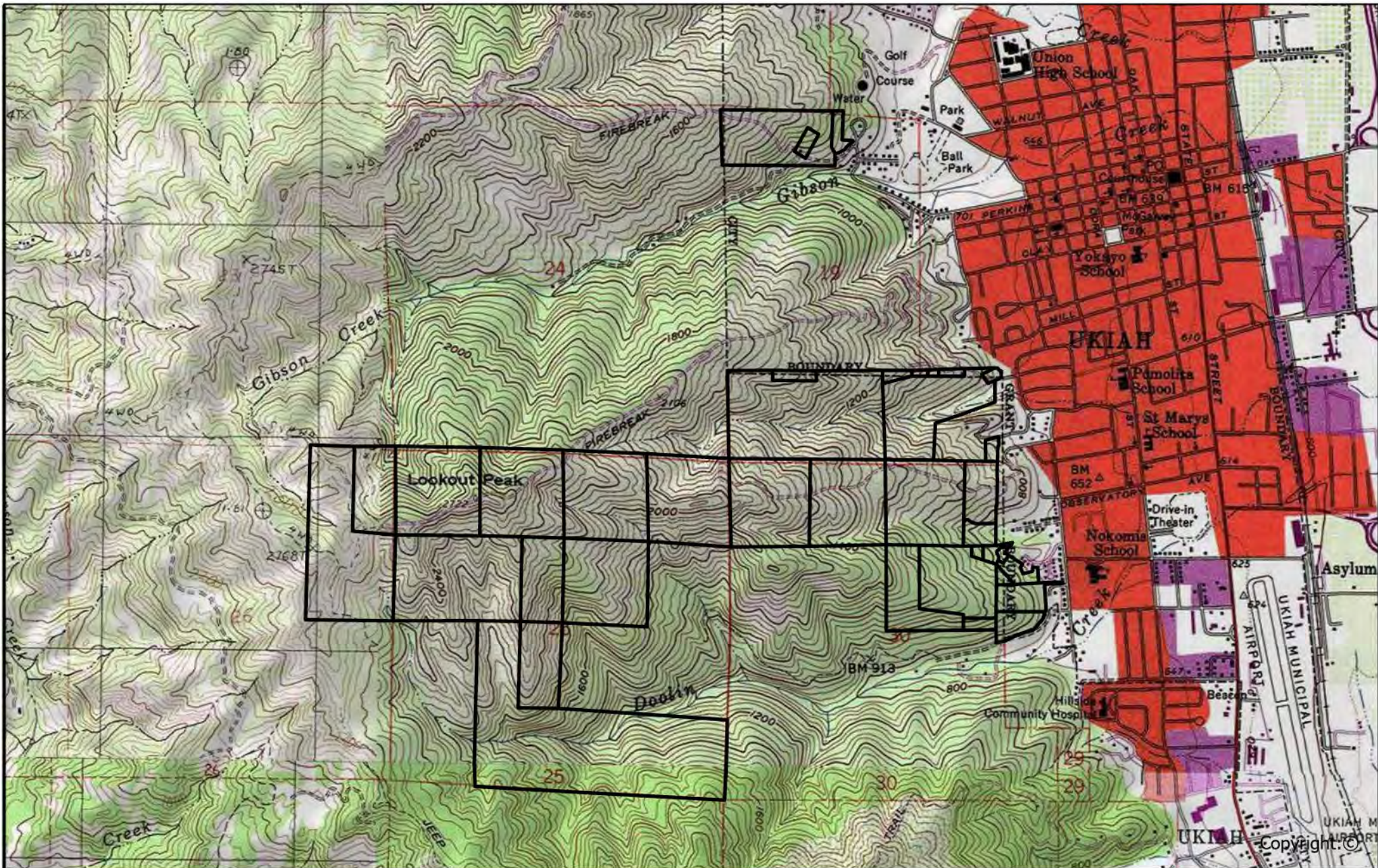
Appendix D: Maps



N  0 5,000 10,000 Feet	Ukiah Trails Biological Vicinity Map		 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management	☐ Ukiah Valley Trails Parcels	
	Property Owner:	City of Ukiah			PLSS: Section 30, T15N, R12W, MDBM
	Applicant:	Ukiah Valley Trails			Elledge Peak 7.5 minute quad
	Site Address:	Ukiah, CA			
	APN(s):	Multiple APN			
	Acreage:	833 acres	Drawn By: j.rivas on 8/13/2024		
				Page 89 of 124 Page 236 of 4316	



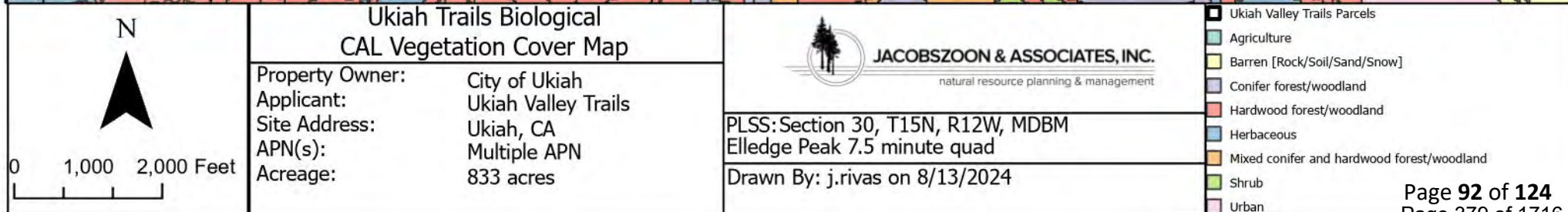
N  0 1,000 2,000 Feet 	Ukiah Trails Biological Study Area (Imagery) Property Owner: City of Ukiah Applicant: Ukiah Valley Trails Site Address: Ukiah, CA APN(s): Multiple APN Acreage: 833 acres	 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management PLSS: Section 30, T15N, R12W, MDBM Elledge Peak 7.5 minute quad Drawn By: j.rivas on 8/13/2024	☒ Ukiah Valley Trails Parcels Page 90 of 124 Page 377 of 1716
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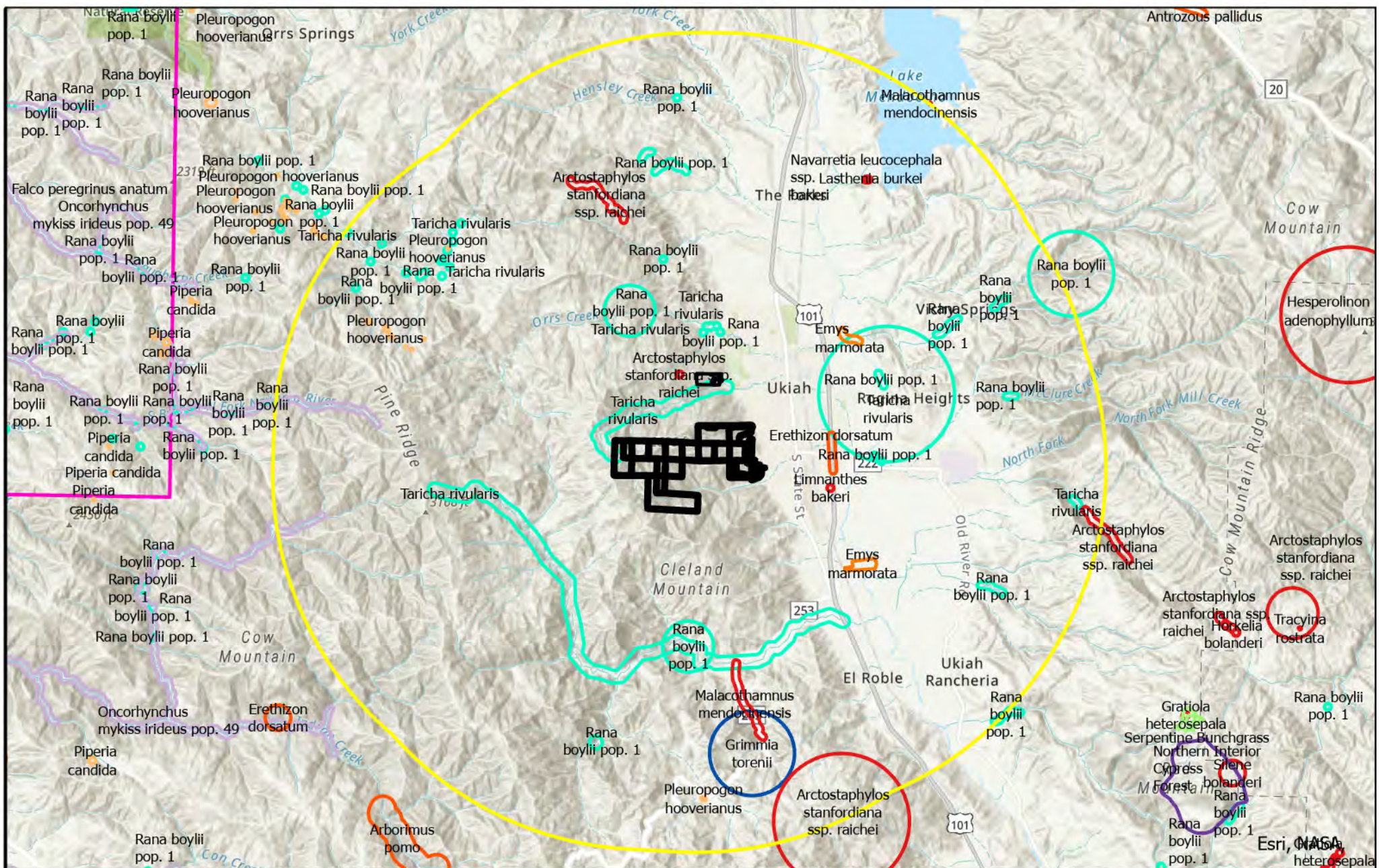


N  0 1,000 2,000 Feet	Ukiah Trails Biological Study Area (Topographic)		 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management	☐ Ukiah Valley Trails Parcels
	Property Owner: City of Ukiah			
	Applicant: Ukiah Valley Trails		Elledge Peak 7.5 minute quad	
	Site Address: Ukiah, CA		Drawn By: j.rivas on 8/13/2024	
	APN(s): Multiple APN			
	Acreage: 833 acres			

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Doc 2372 of 1346





 0 5,000 10,000 Feet	Ukiah Trails Biological CNDDDB Vicinity Map		 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management	■ Parcels ■ Ukiah Valley Trails Parcels ■ Amphibians ■ Birds ■ Bryophytes ■ Dicots	■ Fish ■ Forest ■ Herbaceous ■ Mammals ■ Monocots ■ Reptiles	
	Property Owner: City of Ukiah Applicant: Ukiah Valley Trails Site Address: Ukiah, CA APN(s): Multiple APN Acreage: 833 acres					PLSS: Section 30, T15N, R12W, MDBM Elledge Peak 7.5 minute quad
						Drawn By: j.rivas on 8/13/2024

Soil Map—Mendocino County, Eastern Part and Southwestern Part of Trinity County, California
(Ukiah Valley Trails Soil Map)

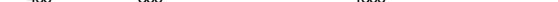
Map Scale: 1:27,500 if printed on A landscape (11" x 8.5") sheet.

Map units are labeled with numbers: 144, 141, 151, 116, 211, 160, 142, 210.

Geographic features include Gibson Creek and Doolin Creek.

Coordinates: 123° 16' 9" W, 39° 9' 20" N, 123° 11' 58" W, 39° 7' 13" N.

Map Scale: 1:2,500 if printed on A landscape (11 X 8.5) sheet



0 400 800 1600 2400 Meters

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



Soil Map—Mendocino County, Eastern Part and Southwestern Part of Trinity County, California
(Ukiah Valley Trails Soil Map)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Eastern Part and Southwestern Part of Trinity County, California

Survey Area Data: Version 19, Aug 28, 2023

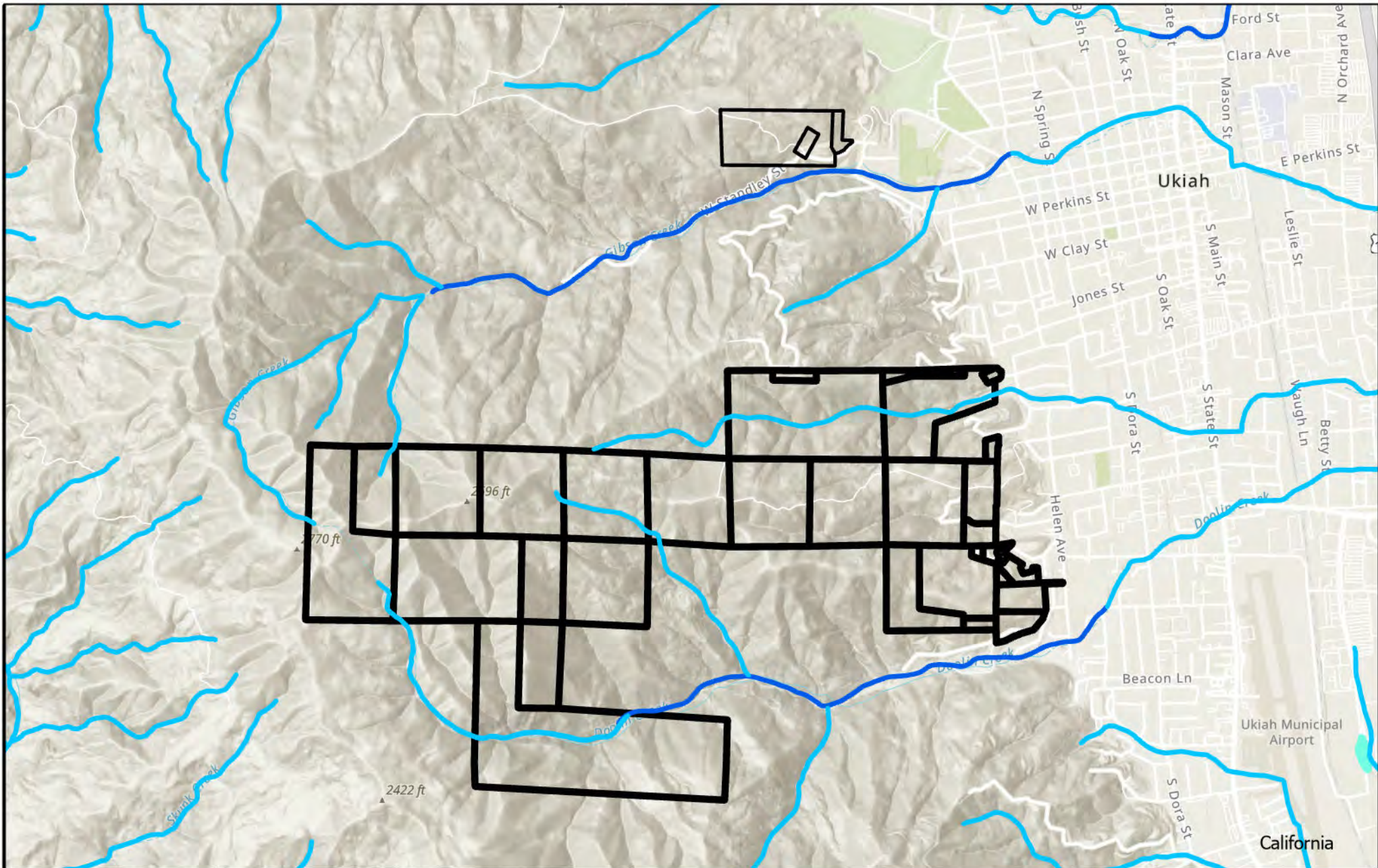
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 7, 2022—May 31, 2022

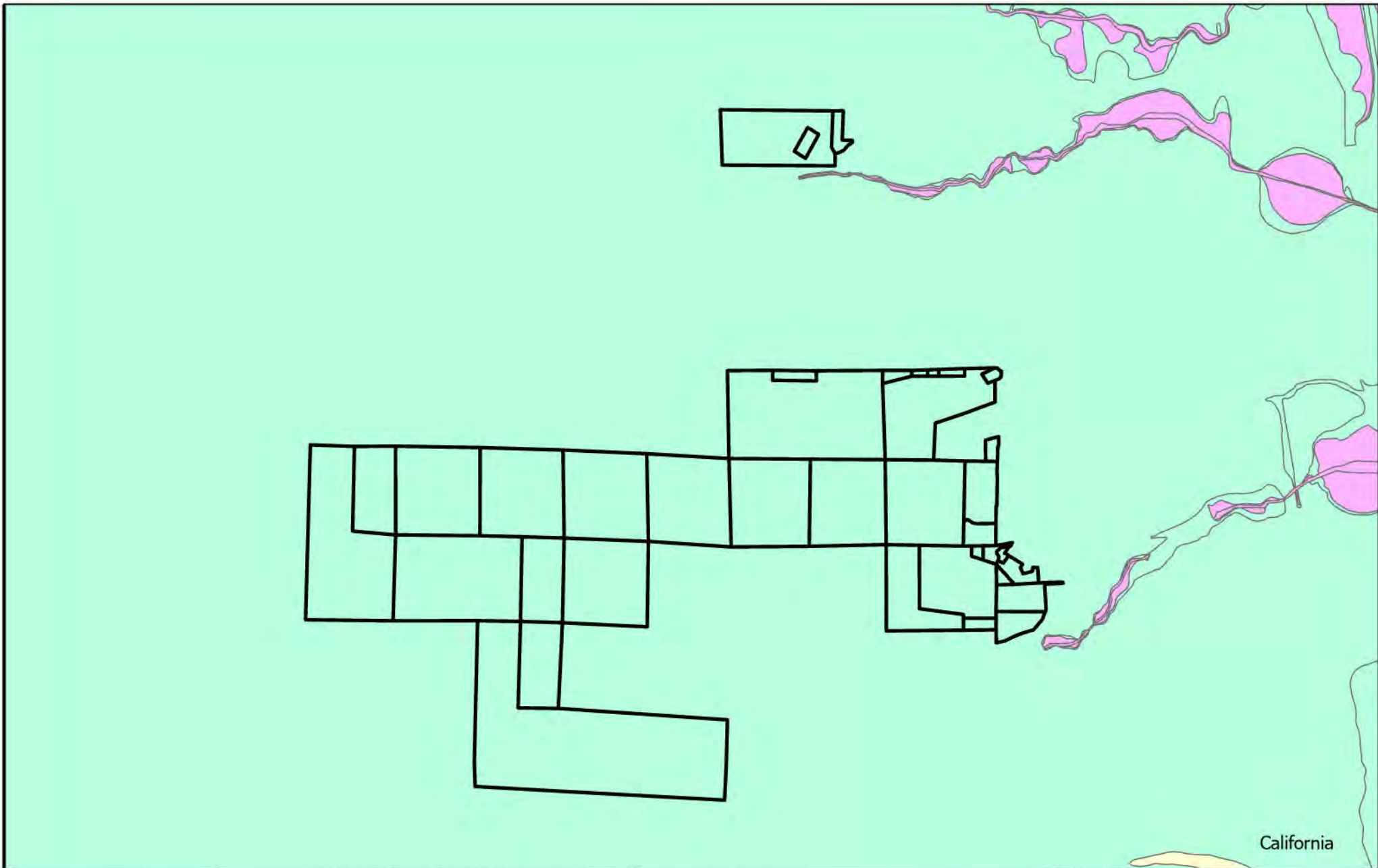
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

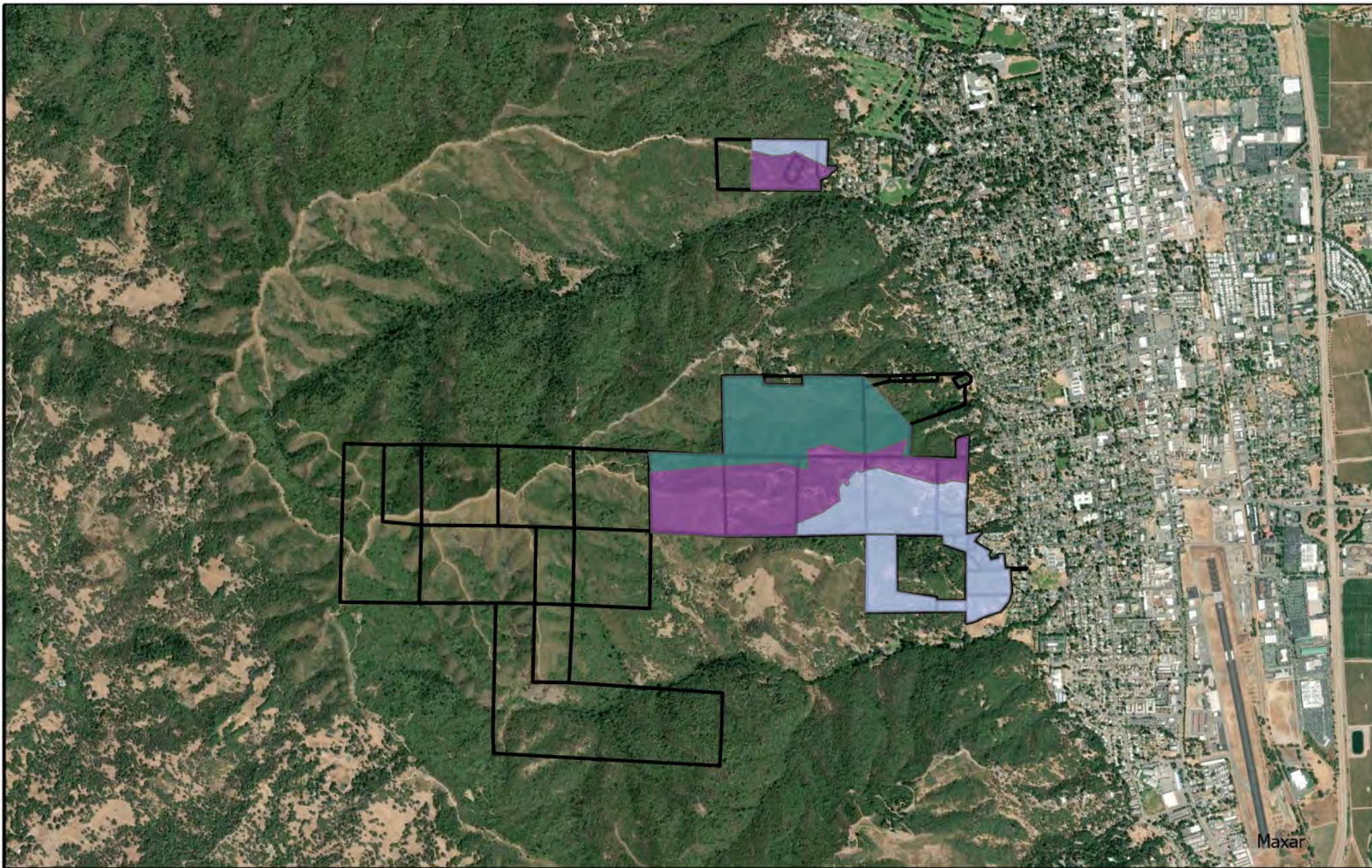
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
116	Cummiskey gravelly loam, 30 to 75 percent slopes	53.4	6.4%
141	Hopland loam, 30 to 50 percent slopes, high ffd	109.0	13.1%
142	Hopland loam, 50 to 75 percent slopes, high ffd	28.1	3.4%
144	Hopland-Maymen-Etsel complex, 50 to 75 percent slopes	16.8	2.0%
151	Hopland-Wohly loams, 50 to 75 percent slopes	332.2	39.9%
160	Maymen-Etsel-Snook complex, 30 to 75 percent slopes, high ffd	266.1	31.9%
210	Urban land	0.2	0.0%
211	Witherell-Hopland-Ashokawna complex, 50 to 75 percent slopes, high ffd	27.2	3.3%
Totals for Area of Interest		833.0	100.0%



	Ukiah Trails Biological National Watershed Inventory			- Ukiah Valley Trails Parcels - Freshwater Emergent Wetland - Freshwater Forested/Shrub Wetland - Riverine	
	Property Owner:	City of Ukiah			PLSS: Section 30, T15N, R12W, MDBM
	Applicant:	Ukiah Valley Trails			Elledge Peak 7.5 minute quad
Site Address:	Ukiah, CA	Drawn By: j.rivas on 8/13/2024			
APN(s):	Multiple APN				
Acreage:	833 acres				



N  0 1,000 2,000 Feet	Ukiah Trails Biological National Floodplain Hazard Rating Property Owner: City of Ukiah Applicant: Ukiah Valley Trails Site Address: Ukiah, CA APN(s): Multiple APN Acreage: 833 acres	 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management PLSS: Section 30, T15N, R12W, MDBM Elledge Peak 7.5 minute quad Drawn By: j.rivas on 8/13/2024	 Ukiah Valley Trails Parcels  High  Base Flood  Moderate
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N  01,0002,000 Feet	Ukiah Trails Biological MCV2 Map		 JACOBSZOOM & ASSOCIATES, INC. natural resource planning & management	█ Ukiah Valley Trails Parcels
	Property Owner: City of Ukiah Applicant: Ukiah Valley Trails Site Address: Ukiah, CA APN(s): Multiple APN Acreage: 833 acres			█ Quercus wislizeni-Quercus chrysolepis (shrub) Shrubland Alliance
			PLSS: Section 30, T15N, R12W, MDBM Elledge Peak 7.5 minute quad	█ Arctostaphylos Shrubland Alliance
			Drawn By: j.rivas on 8/13/2024	█ Pinus sabiniana Woodland Alliance

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Appendix E: Supporting Documents





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:

06/12/2024 17:30:37 UTC

Project Code: 2024-0103128

Project Name: Ukiah Valley Trails- Doolin Ridge Trails

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

(707) 822-7201

PROJECT SUMMARY

Project Code: 2024-0103128
Project Name: Ukiah Valley Trails- Doolin Ridge Trails
Project Type: Clearing Forest
Project Description: Creating trails for recreational purposes
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.132544949999996,-123.24574172896402,14z>



Counties: Mendocino County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle <i>Actinemys marmorata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

FISHES

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered

NAME	STATUS
Lassics Lupine <i>Lupinus constancei</i> Population: There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7976	Endangered
Showy Indian Clover <i>Trifolium amoenum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE

SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

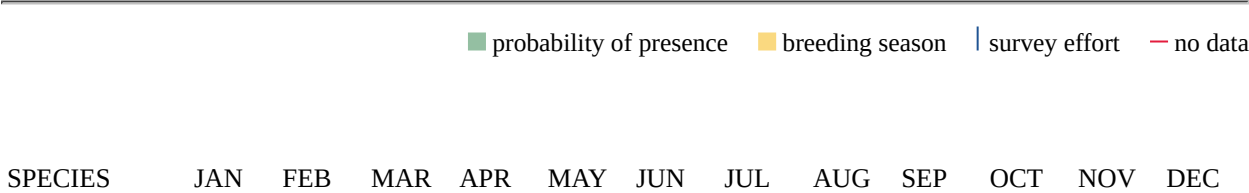
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

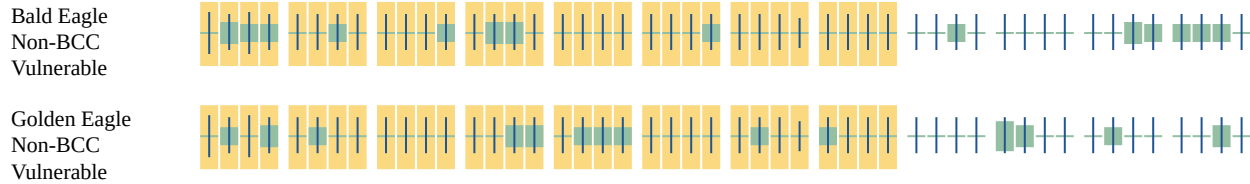
Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole <i>Icterus bullockii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9458	Breeds Mar 21 to Jul 25
California Gull <i>Larus californicus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10955	Breeds Mar 1 to Jul 31
California Thrasher <i>Toxostoma redivivum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9436	Breeds Jan 1 to Jul 31
Cassin's Finch <i>Haemorhous cassinii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10575	Breeds Jun 1 to Aug 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch <i>Spinus lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20

NAME	BREEDING SEASON
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Northern Harrier <i>Circus hudsonius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15
Nuttall's Woodpecker <i>Dryobates nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Santa Barbara Song Sparrow <i>Melospiza melodia graminea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5513	Breeds Mar 1 to Sep 5
Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Western Gull <i>Larus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11969	Breeds Apr 21 to Aug 25
Western Screech-owl <i>Megascops kennicottii cardonensis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11923	Breeds Mar 1 to Jun 30

NAME	BREEDING SEASON
Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10668	Breeds Mar 15 to Aug 10

PROBABILITY OF PRESENCE SUMMARY

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Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

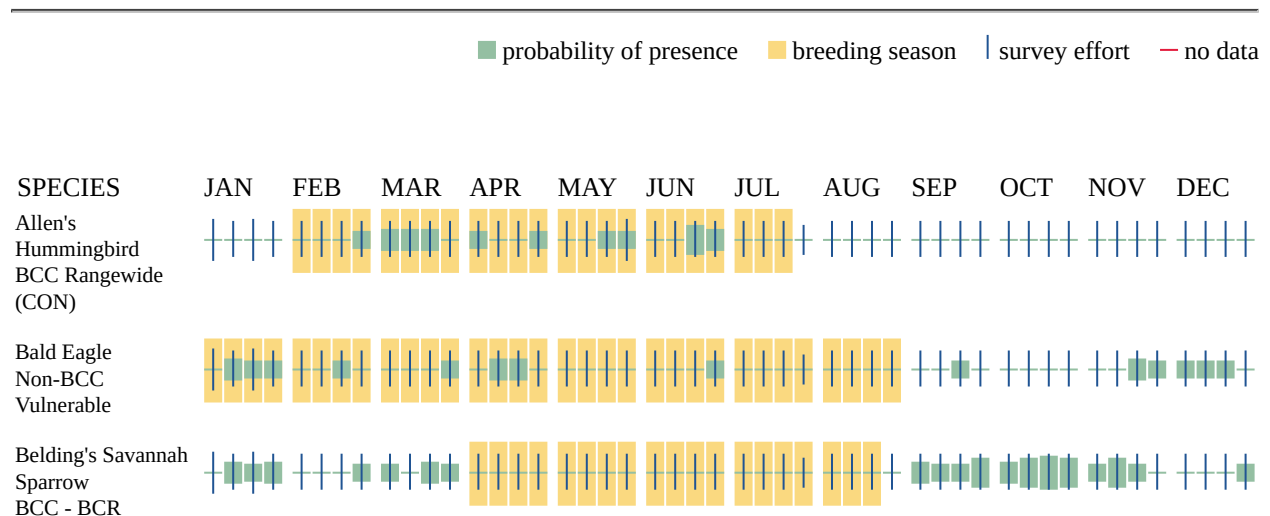
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

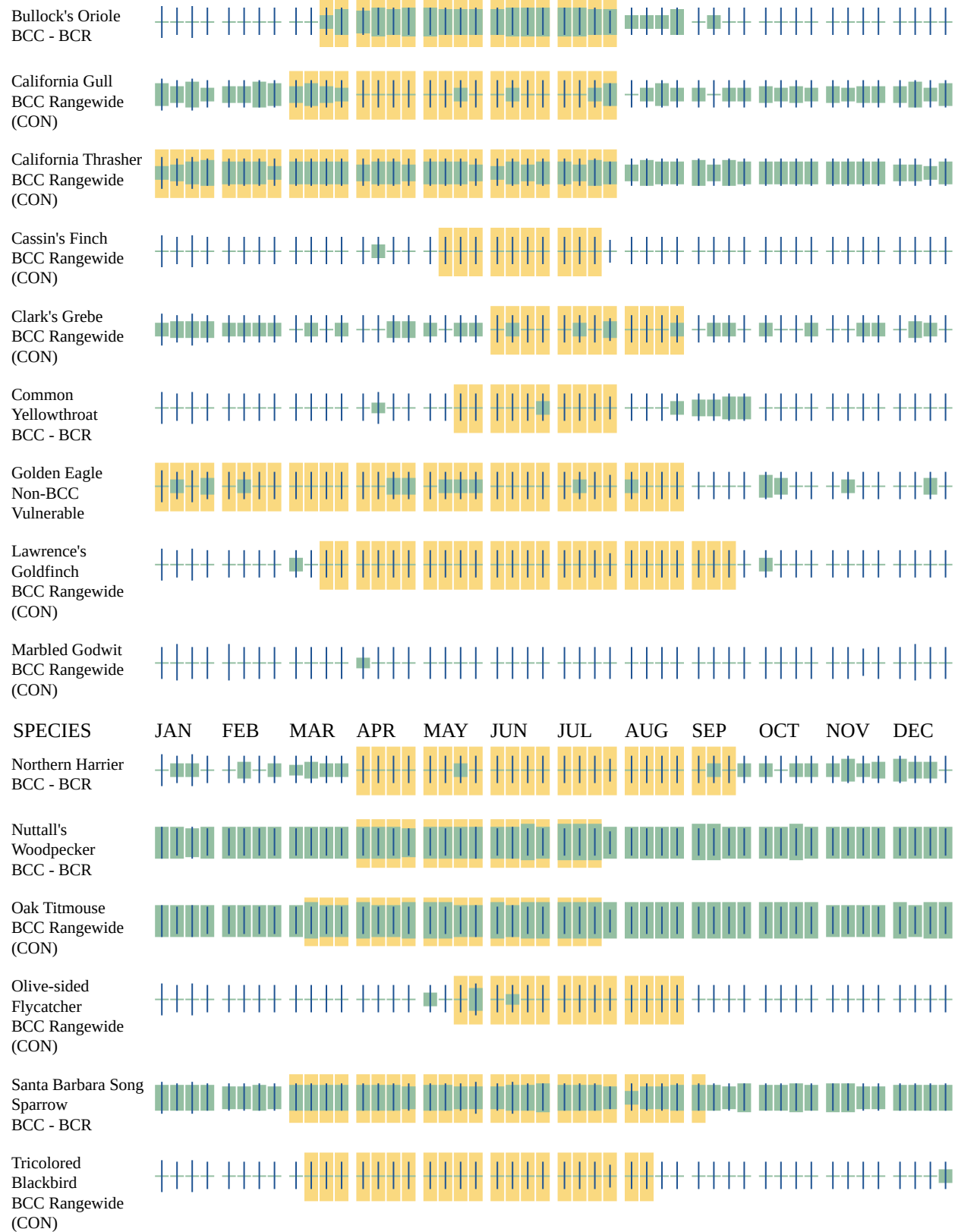
Survey Effort (|)

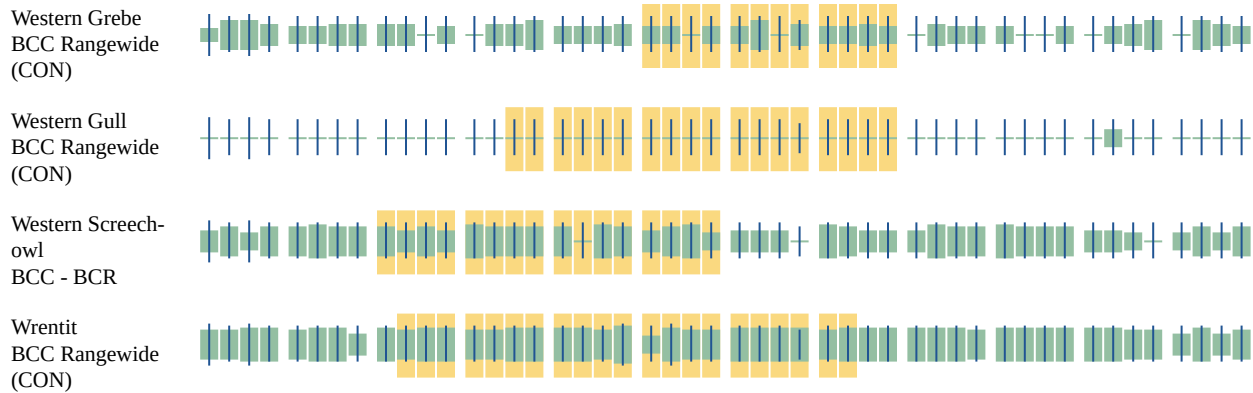
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

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- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R4SBA
- R4SBC
- R4SBAx

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Jessenya Rivas
Address: 117 Clara Ave
City: Ukiah
State: CA
Zip: 95482
Email: j.rivas@jaforestry.com
Phone: 7074855544

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE **RareFind**

Query Summary:

Quad **IS** (Potter Valley (3912331) **OR** Cow Mountain (3912321) **OR** Purdys Gardens (3912311) **OR** Orrs Springs (3912323) **OR** Ukiah (3912322) **OR** Redwood Valley (3912332) **OR** Laughlin Range (3912333) **OR** Boonville (3912313) **OR** Elledge Peak (3912312))

Print

Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter atricapillus	American goshawk	Birds	ABNKC12061	433	1	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	North coast coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	960	5	None	Threatened	G1G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Wetland
Ammodramus savannarum	grasshopper sparrow	Birds	ABPBXA0020	27	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Valley & foothill grassland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	1	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Arboremus pomo	Sonoma tree vole	Mammals	AMAFF23030	222	3	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	North coast coniferous forest, Oldgrowth, Redwood
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Dicots	PDERI041G2	13	7	None	None	G3T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Chaparral, Lower montane coniferous forest, Ultramafic
Blennosperma bakeri	Sonoma sunshine	Dicots	PDAST1A010	24	1	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Valley & foothill grassland, Vernal pool, Wetland
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	2	None	None	G2G3	S1S2	null	IUCN_VU-Vulnerable	null
Bombus occidentalis	western bumble bee	Insects	IIHYM24252	306	1	None	Candidate Endangered	G3	S1	null	IUCN_VU-Vulnerable, USFS_S-Sensitive	null
Brasenia schreberi	watershield	Dicots	PDCAB01010	43	1	None	None	G5	S3	2B.3	IUCN_LC-Least Concern	Marsh & swamp, Wetland
Carex comosa	bristly sedge	Monocots	PMCYP032Y0	31	1	None	None	G5	S2	2B.1	IUCN_LC-Least Concern	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill

												grassland, Wetland
Ceanothus confusus	Rincon Ridge ceanothus	Dicots	PDRHA04220	33	1	None	None	G1	S1	1B.1	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Ultramafic
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	2	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1559	10	Proposed Threatened	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Entosthodon kochii	Koch's cord moss	Bryophytes	NBMUS2P050	6	1	None	None	G1	S1	1B.3	BLM_S-Sensitive	Cismontane woodland
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	523	4	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
Fritillaria roderickii	Roderick's fritillary	Monocots	PMLIL0V0M0	8	1	None	Endangered	G1Q	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal prairie, Valley & foothill grassland
Gonidea angulata	western ridged mussel	Mollusks	IMBIV19010	158	1	None	None	G3	S2	null	IUCN_VU-Vulnerable	Aquatic
Gratiola heterosepala	Boggs Lake hedge-hyssop	Dicots	PDSCR0R060	99	2	None	Endangered	G2	S2	1B.2	BLM_S-Sensitive	Freshwater marsh, Marsh & swamp, Vernal pool, Wetland
Grimmia torenii	Toren's grimmia	Bryophytes	NBMUS32330	13	2	None	None	G2	S2	1B.3	BLM_S-Sensitive	Chaparral, Cismontane woodland, Limestone, Lower montane coniferous forest

Hesperolinon adenophyllum	glandular western flax	Dicots	PDLIN01010	48	4	None	None	G2G3	S2S3	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Horkelia bolanderi	Bolander's horkelia	Dicots	PDROS0W011	13	1	None	None	G1	S1	1B.2	BLM_S-Sensitive	Cismontane woodland, Lower montane coniferous forest, Meadow & seep, Valley & foothill grassland
Hysteroecarpus traskii lagunae	Clear Lake tule perch	Fish	AFCQK02013	3	2	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern	Aquatic
Kopsiopsis hookeri	small groundcone	Dicots	PDORO01010	21	1	None	None	G4?	S1S2	2B.3	null	North coast coniferous forest
Lasthenia burkei	Burke's goldfields	Dicots	PDAST5L010	36	1	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Meadow & seep, Vernal pool, Wetland
Layia septentrionalis	Colusa layia	Dicots	PDAST5N0F0	69	4	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Limnanthes bakeri	Baker's meadowfoam	Dicots	PDLIM02020	21	1	None	Rare	G1	S1	1B.1	SB_UCBG-UC Botanical Garden at Berkeley, SB_USDA-US Dept of Agriculture	Freshwater marsh, Marsh & swamp, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Malacothamnus mendocinensis	Mendocino bushmallow	Dicots	PDMAL0Q0D0	2	2	None	None	G1Q	S1	1B.1	null	Chaparral, Cismontane woodland
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Dicots	PDPLM0C0E1	64	3	None	None	G4T2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Cismontane woodland, Lower montane coniferous forest, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Northern Interior Cypress Forest	Northern Interior Cypress Forest	Forest	CTT83220CA	22	1	None	None	G2	S2.2	null	null	Closed-cone coniferous forest
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	Fish	AFCHA0213P	10	1	Threatened	Endangered	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Estuary, Klamath/North coast flowing waters
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	Fish	AFCHA0213Q	96	5	Threatened	None	G5T3Q	S3	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern	Aquatic, Estuary, Klamath/North coast flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	504	2	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	2	None	None	G5	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	North coast coniferous forest, Oldgrowth, Riparian forest
Piperia candida	white-flowered rein orchid	Monocots	PMORC1X050	222	2	None	None	G3?	S3	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous

												forest, Ultramafic
Plagiobothrys lithocaryus	Mayacamas popcornflower	Dicots	PDBOR0V0P0	2	1	None	None	GX	SX	1A	null	Chaparral, Cismontane woodland, Valley & foothill grassland
Pleuropogon hooverianus	North Coast semaphore grass	Monocots	PMPOA4Y070	34	11	None	Threatened	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG- California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland
Rana boylii pop. 1	foothill yellow- legged frog - north coast DPS	Amphibians	AAABH01051	1608	56	None	None	G3T4	S4	null	BLM_S-Sensitive, CDFW_SSC- Species of Special Concern, USFS_S- Sensitive	Aquatic, Klamath/North coast flowing waters, Riparian forest, Riparian scrub, Riparian woodland
Serpentine Bunchgrass	Serpentine Bunchgrass	Herbaceous	CTT42130CA	22	1	None	None	G2	S2.2	null	null	Valley & foothill grassland
Silene bolanderi	Bolander's catchfly	Dicots	PDCAR0U2L0	30	6	None	None	G2	S2	1B.2	null	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadow & seep, North coast coniferous forest, Ultramafic
Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	Dicots	PDBRA2G0J4	16	1	None	None	G4T2	S2	1B.3	SB_UCSC-UC Santa Cruz	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	17	None	None	G2	S2	null	CDFW_SSC- Species of Special Concern, IUCN_LC- Least Concern	Broadleaved upland forest, North coast coniferous forest, Redwood, Riparian forest, Riparian woodland
Tracyina rostrata	beaked tracyina	Dicots	PDAST9D010	15	3	None	None	G2	S2	1B.2	USFS_S-Sensitive	Chaparral, Cismontane woodland, Valley & foothill grassland
Trifolium buckwestiorum	Santa Cruz clover	Dicots	PDFAB402W0	64	1	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden, SB_UCSC- UC Santa Cruz, SB_USDA-US Dept of Agriculture	Broadleaved upland forest, Cismontane woodland, Coastal prairie
Usnea longissima	Methuselah's beard lichen	Lichens	NLLEC5P420	206	1	None	None	G4	S4	4.2	BLM_S-Sensitive	Broadleaved upland forest, North coast coniferous forest, Oldgrowth, Redwood
Viburnum ellipticum	oval-leaved viburnum	Dicots	PDCPR07080	39	1	None	None	G4G5	S3	2B.3	null	Chaparral, Cismontane woodland, Lower montane coniferous forest



CNPS Rare Plant Inventory

Search Results

43 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [3912331:3912321:3912311:3912323:3912322:3912332:3912333:3912313:3912312]

CA RARE												DATE ADDED	PHOTO
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	PLANT RANK	CA ENDEMIC			
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G4G5T2	S2	1B.2	Yes	2001-01-01		© 2019 Aaron Arthur
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	None	G3T2	S2	1B.1	Yes	1988-01-01	No Photo Available	
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available	
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available	
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	G5	S3	2B.3		2010-10-27		©2014 Kirsten Bovee
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01		Dean Wm. Taylor 1997
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1	Yes	1980-01-01		© 2012 Jake Ruygt
Cypripedium californicum	California lady's-slipper	Orchidaceae	perennial rhizomatous herb	Apr-Aug(Sep)	None	None	G3	S4	4.2		1980-01-01		© 2012 Barry Rice

<u>Cypripedium montanum</u>	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	None	None	G4G5	S4	4.2			1980-01-01	 ©2021 Scot Loring
<u>Entosthodon kochii</u>	Koch's cord moss	Funariaceae	moss		None	None	G1	S1	1B.3	Yes		2001-01-01	No Photo Available
<u>Erythranthe nudata</u>	bare monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	G4	S4	4.3	Yes		1974-01-01	 John Doyen 2015
<u>Fritillaria agrestis</u>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes		1980-01-01	 © 2016 Aaron Schusteff
<u>Fritillaria purdyi</u>	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G4	S4	4.3			1974-01-01	 Aaron Schusteff, 2004
<u>Fritillaria roderickii</u>	Roderick's fritillary	Liliaceae	perennial bulbiferous herb	Mar-May	None	CE	G1Q	S1	1B.1	Yes		1974-01-01	No Photo Available
<u>Gratiola heterosepala</u>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2			1974-01-01	 ©2004 Carol W. Witham
<u>Grimmia torenii</u>	Toren's grimmia	Grimmiaceae	moss		None	None	G2	S2	1B.3	Yes		2014-05-14	 ©2021 Scot Loring
<u>Hemizonia congesta ssp. calyculata</u>	Mendocino tarplant	Asteraceae	annual herb	Jul-Nov	None	None	G5T4	S4	4.3	Yes		1974-01-01	 © 2015 John Doyen
<u>Hemizonia congesta ssp. tracyi</u>	Tracy's tarplant	Asteraceae	annual herb	(Mar-Apr)May-Oct	None	None	G5T4	S4	4.3	Yes		1974-01-01	 © 2016 Steve Matson

<u>Hesperolinon adenophyllum</u>	glandular western flax	Linaceae	annual herb	May-Aug	None	None	G2G3	S2S3	1B.2	Yes	1974-01-01	 © 2002 John Game
<u>Horkelia bolanderi</u>	Bolander's horkelia	Rosaceae	perennial herb	(May)Jun-Aug	None	None	G1	S1	1B.2	Yes	1988-01-01	 © 2012 Barry Rice
<u>Kopsiopsis hookeri</u>	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	Apr-Aug	None	None	G4?	S1S2	2B.3		1994-01-01	 ©2016 Vernon Smith
<u>Lasthenia burkei</u>	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2015 Neal Kramer
<u>Layia septentrionalis</u>	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2013 Jake Ruygt
<u>Leptosiphon aureus</u>	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2	Yes	1994-01-01	 © 2007 Len Blumin
<u>Leptosiphon latisectus</u>	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	Yes	2001-01-01	 © 2015 Steve Matson
<u>Lessingia hololeuca</u>	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
<u>Lilium rubescens</u>	redwood lily	Liliaceae	perennial bulbiferous herb	(Mar)Apr-Aug(Sep)	None	None	G3	S3	4.2	Yes	1974-01-01	 Gerald and Buff Corsi © 2022 California Academy of Sciences

<u><i>Limnanthes bakeri</i></u>	Baker's meadowfoam	Limnanthaceae	annual herb	Apr-May	None	CR	G1	S1	1B.1	Yes	1974-01-01	 © 2019 Zoya Akulova
<u><i>Malacothamnus mendocinensis</i></u>	Mendocino bushmallow	Malvaceae	perennial deciduous shrub	Jun-Aug	None	None	G1Q	S1	1B.1	Yes	1974-01-01	 © 2021 Keir Morse
<u><i>Monardella viridis</i></u>	green monardella	Lamiaceae	perennial rhizomatous herb	Jun-Sep	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
<u><i>Navarretia leucocephala</i> ssp. <i>bakeri</i></u>	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	Yes	1994-01-01	 © 2018 Barry Rice
<u><i>Perideridia gairdneri</i> ssp. <i>gairdneri</i></u>	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	None	None	G5T3T4	S3S4	4.2	Yes	1974-01-01	 ©2007 Neal Kramer
<u><i>Piperia candida</i></u>	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar-Apr)May-Sep	None	None	G3?	S3	1B.2		1994-01-01	 ©2016 Barry Rice
<u><i>Plagiobothrys lithocaryus</i></u>	Mayacamas popcornflower	Boraginaceae	annual herb	Apr-May	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
<u><i>Pleuropogon hooverianus</i></u>	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	None	CT	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Ramalina thrausta</i></u>	angel's hair lichen	Ramalinaceae	fruticose lichen (epiphytic)		None	None	G5?	S2S3	2B.1		2014-03-01	 © 2013 Scot Loring
<u><i>Ranunculus lobbii</i></u>	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2		1974-01-01	No Photo Available
<u><i>Silene bolanderi</i></u>	Bolander's catchfly	Caryophyllaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2		2021-07-30	No Photo Available
<u><i>Streptanthus glandulosus</i> ssp. <i>hoffmanii</i></u>	Hoffman's bristly jewelflower	Brassicaceae	annual herb	Mar-Jul	None	None	G4T2	S2	1B.3	Yes	1980-01-01	No Photo Available

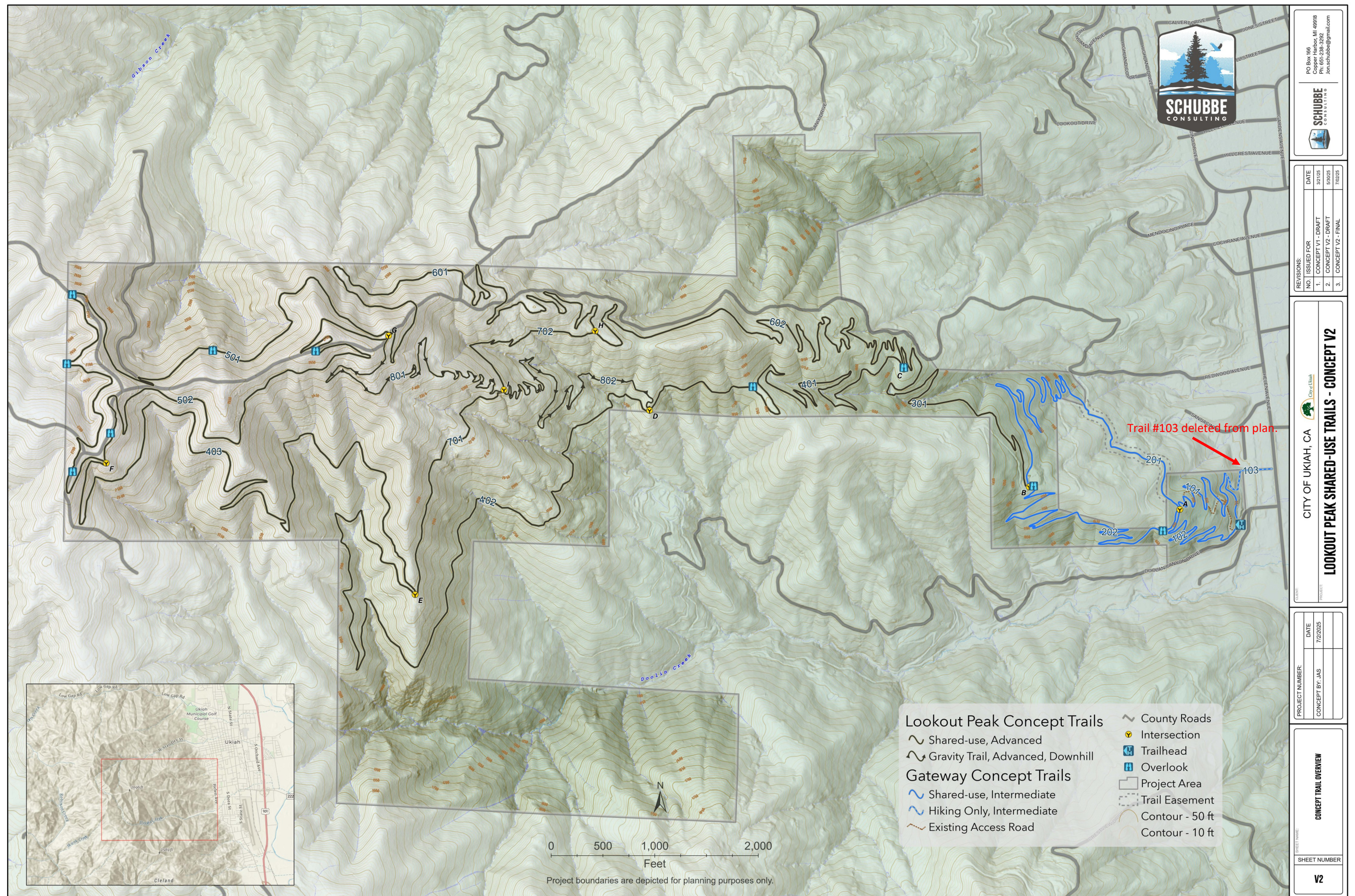
<u>Tracyina rostrata</u>	beaked tracyina	Asteraceae	annual herb	May-Jun	None	None	G2	S2	1B.2	Yes	1974- 01-01	 ©2018 John Game
<u>Trifolium buckwestiorum</u>	Santa Cruz clover	Fabaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.1	Yes	1994- 01-01	No Photo Available
<u>Usnea longissima</u>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2		2014- 03-01	 © 2021 Scot Loring
<u>Viburnum ellipticum</u>	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3	2B.3		1974- 01-01	 © 2006 Tom Engstrom

Showing 1 to 43 of 43 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed 12 June 2024].

Attachment I



Staff Responses to Public Concerns Regarding the Lookout Peak Trail Project

1) There's not enough parking

In response to complaints of “inadequate parking” for the project, it may be helpful to compare the parking needs of Low Gap Park with the parking needs of this project. Both locations provide a starting point for trail users. While the Lookout peak project will only include trails, Low Gap Park not only provides parking for trail users, it also provides parking for the Skate Park, two tennis courts, a playground, a disc golf course, an archery range, and a picnic area. The parking lot at Low Gap Park has room for fifty cars, and even with all these uses, it adequately serves the park. While the Lookout Peak Trail project only adds trails, there are existing uses at Nokomis School on weekends and afternoons that may make the influx of cars into the neighborhood similar to that which is at Low Gap Park. Currently organized sports (soccer) are only utilizing the Nokomis fields for about 10 weeks per year, and only on the weekends.

Helen Ave., from Washington Ave. to its terminus is over 1200 feet long with on-street parking on both sides of the street. There is room for 84 cars to be parked on the street. There are twenty-four homes on Helen Ave., all of which have off-street parking for a minimum of two cars. Residents wishing to own more cars than they have room for on their property or choosing to park in the public right of way for other reasons will need to compete for those 84 on-street public parking spots with other residents who may want to visit or work in the area. Additionally, there is parking to the north of Washington Ave on Helen Ave. as well as on Washington Ave.

On typical weekdays and weekends when no sports are scheduled at the Nokomis field, parking should be more than adequate. On days when sports are being played, on-street parking will be very limited immediately in front of the fields. However, parking will continue to be available within easy walking distance.

Further, currently available parking is decreased by inefficient spacing of parked cars, trash receptacles left on the street for days after pickup, and a number of residents who use the street for long-term parking of seldom used vehicles or trailers. The city can paint in parking delineators to increase the orderliness of parked vehicles. Neighbors can speak to one another about long-term parking and if necessary contact code enforcement regarding 72 hour parking violations. Additionally, Section §4486 B requires that trash and recycle bins not be placed on the street more than 12 hours before or after pickup. Addressing these issues at a neighborhood level can help open additional parking spaces.

After construction, should the trails prove so popular that on-street parking is frequently at capacity, the City could consider a variety of interventions to further manage parking.

2) There shouldn't be a second trailhead off Helen. It's been a private road for years.

Based on community feedback during the comment period regarding the impact of the second trailhead and the concern regarding trail users being able to look down into neighbors' backyards, City staff and Ukiah Valley Trail Group trail planners are eliminating the second trailhead and trail #103 from the plan. Trail #101 has been realigned so it will utilize the Doolin Creek Trailhead exclusively. The new alignment utilizes existing truck roads and will lead trail users further up the hill ensuring the greatest distance possible between adjoining property owners' backyards. The single trailhead on Doolin Canyon Rd. will route users on a trail that will be at least 150' from the neighbor property lines. A trailhead Kiosk with information about the trail will be sited, and native plants will be planted to guide users up the trail and away from neighbors.



Figure 1 Trail Head; TH. Black lines designate existing road. Yellow dotted line indicates proposed trail.

3) The trails will lead to an increase in homeless activity.

The unfortunate reality is that there is an epidemic of homelessness in our Nation, State and local communities. It is a situation that has widespread impacts throughout our urban

and suburban communities. However, parks and trails neither create nor solve homelessness. Currently, with no trails in the area, the occasional trespasser will decide to spend the night in the hills. The addition of trails and trail users actually makes this a less desirable place for illegal camping because they are more likely to be discovered. As is the case throughout the City, staff and or law enforcement will intervene when people are breaking the law. Staff and volunteers will continue to clean the remnants of illegal camping and dumping as soon as it is discovered.

As an existing and uncommon condition, the impact of homeless individuals, camping or passing through, is not expected to increase with the addition of this trail system.

4) The trails will increase fire risk.

A number of comments have been received stating concerns that the trails will increase fire risk in the western hills. To proactively address this concern, Ukiah Valley Fire Authority (UVFA) staff were included in discussions of the WHWPA management plan (adopted 2024) and the scope of work for the project early this year. These discussions were formalized in March of this year when project developers presented the concept of Fire Hardened trails to UVFA staff for their review and incursion in the plan. This ISMND includes a white paper on the concept and allows for fuel load reduction measures to be undertaken under this CEQA document thus decreasing the overall susceptibility to fire in the western hills. Further, trails are widely acknowledged in fire preparedness literature as an asset during fires.

Staff also prepared a Road and Fire Break Maintenance plan that is included in the CEQA document without which the City's new fire crew would not be able to perform valuable road and fuel load maintenance in the WHWPA.

Even without this proactive approach to wildfire mitigation, according to Jenkins et. al.¹ recreational activities are responsible for a small total percentage (12%) of wildfire ignitions and eight percent of acres burned. The primary causes of these recreational fires include "campfires, smoking, and children playing with matches." According to Grala² the number of fires caused by smoking and campfires is only five percent. Further, these fires are primarily started along streets or, in and around campgrounds. Cal Fire's 2020 report on Mendocino County listed just 3% of fires started from campgrounds and 1.5% from smoking.

The incidence of smoking and starting campfires is extraordinarily low among trail users, so fires started along these trails are even less likely.

As with homelessness, trail users will be quick to report illegal activities and City staff and law enforcement will respond quickly to reports. The low incidence of pyrogenic behaviors

among trail users combined with the inclusion of “fire hardened” trails will lead to little to no increase in fire risk.

5) This will lead to illegal parking on my property.

The concern regarding trespass parking is confined to those living along Doolin Canyon Rd and the public alley that has been proposed as a secondary access point for the trails. As discussed in #2 above, in response to public comment, the alley is no longer being proposed as an access point and therefore not at increased risk of trespass parking. For those living on Doolin Canyon Rd trespass parking is more likely to occur. Doolin Canyon Rd is a public street for approximately 300 feet where it then becomes a private road. Residents living beyond the City maintained road could choose to place a gate that would stop illegal trespass and parking along the private section of the road. For the short ~300' section of public right of way on Doolin Canyon Rd there is very limited on-street parking potential and no place for a driver to turn around.

In response to these concerns and due to the limited parking and lack of room for turnaround, the City will place signage indicating the street has no turn around, no through traffic, and no parking.

6) This will decrease my property value.

The concern regarding trails decreasing property value is likely tied to the fear of homelessness and various illegal activities that have already been addressed. However, this subject has received a good deal of study and surveys of homeowners who have recently been involved in a sale, and real estate agents largely agree that homes near trails sell faster and for a higher price than homes farther from trails. More rigorous studies of home values have found that homes near trails typically sell for 3-5% more, and may sell for as much as 15% more if located near a trail.³

7) The project will harm wildlife.

The City received some comments expressing concern regarding the threat to the habitat, peace, and security of wildlife in the area. The project preparation included a biological study of the area. The study was conducted by Jacobszoon and Associates, a well-respected local firm. The study did not identify species of concern in the area, nor did it suggest mitigations to reduce the impact of new trail use on wildlife. Trail users will be constrained to the trails and the topography and vegetation of the area do not lend themselves to off trail travel. While the total mileage of trails is relatively high, the trails will be spread out such that trails will rarely be within sight or hearing of one another. The separation of the trails and their spread over 700+ acres will ensure that animals will have the vast majority of the area to themselves.

8) There will be motorcycle and ATV trespass.

The trails in the area will not be built or maintained wide enough to accommodate an ATV so this will not be a problem. While motorcycles could theoretically make it up the trail, rates of motorcycle trespass in local trails (Lake Mendocino, Mill Creek, Low Gap Park) are very low. Should a problem with motorcycle trespass occur, the trailhead suits itself well to the placement of a motorcycle barrier that could be placed should it become necessary.

9) People will smoke on the trails and increase fire risk.

Only eleven percent of Americans smoke, and the rate is steadily if slowly decreasing. The rate of smoking is likely lower among trail users. Further, as discussed in #4 above, smoking is a very rare cause of wildfire. While the introduction of smokers to the area could theoretically increase the risk of wildfire, it is insignificant in comparison to the benefits of the project.

10) No sidewalk on the west side of Helen

The installation and maintenance of sidewalks is the responsibility of adjacent property owners. Residents along Helen Ave are encouraged to install sidewalks. Unfortunately, there are many sidewalk gaps throughout the City. Nevertheless, neighborhood traffic speeds are low, and collisions and injury rates are very low. The increase in traffic, including pedestrians and bicyclists, is not expected to change this.

11) The trailhead should be on Redwood Ave.

The City does not possess a public access easement on this street.

12) The trails should be wider for safety (5+ feet wide).

The commenter suggested that the trails should be five or more feet wide to better allow first responders to access and extricate injured trail users. While this clearly would make emergency response faster it is inconsistent with the desires of trail users. Trail users seeking back country trails such as these are looking for narrow “single track” trails that are typically three feet or less wide. This is the industry standard for trails, and it is the type of trail that will make the trails popular. City staff and the Ukiah Valley Trail Group will collaborate with UVFA to find the best way to facilitate public safety needs.

13) These trails will lead to trespass on my property. My liability will increase.

In addition to homelessness, some neighbors are concerned that trail users will trespass from the trail system onto their private property. With a few specific exceptions, there is little reason for trail users to trespass onto private property. Trail 201 will cross a private road. At this crossing some trail users may mistakenly take the road or may be tempted to

take a short-cut down the private road. Signage will be designed and placed to try to ensure people don't mistakenly go down the private road. The City will post no trespassing and directional signs at the crossing.

One commenter worried that along with trespass would come an increase in property owner liability. California's recreational use statute, primarily found in [Civil Code Section 846](#), protects landowners from liability for injuries to people using their property for recreational purposes. Landowners generally have no duty to keep their property safe for such uses, nor do they have a duty to warn of hazardous conditions. The law was created specifically to encourage property owners to allow public access to their land for recreation. Nothing in this project relies on or expects property owners to allow recreational use, but should a user trespass as part of a recreational outing it provides indemnification for the property owner.

14) There should be signage, so people know the rules and resources.

A trailhead kiosk will be placed with information about park rules and other pertinent information. Directional signage will be placed at trail intersections and other appropriate locations.

15) Will there be restrooms?

Restrooms are not commonly placed along back country trails and users do not expect them. There is no plan for amenities at the trailhead. Adding restrooms, picnic tables, BBQ pits, and shade structures encourage people to remain at the trailhead which would cause further nuisance to neighbors. These types of facilities also increase maintenance costs and can become a target of vandalism. Trail users will know or learn that they need to come prepared.

16) Crime

Proposals for new trails are frequently met with concerns of increased crime. Fortunately, the issue has been widely studied, and have concluded the fear of increased crime is unfounded. Some general conclusions include^{4,5};

- Far more crimes occur, on both an absolute basis and per capita, inside the home, on streets or at workplaces than on trails.
- Every major study of trails confirms that crime does not increase with the building of a new trail. This includes studies which include input from local homeowners, law enforcement officers, real estate professionals, and trail managers.

- After the trails are built, adjacent residents of properties, and police agree that new trails do not increase crime for them and become enjoyable amenities.

17) People will be looking into my backyard

A few adjacent property owners have shared a concern regarding trail use intruding on their privacy. There are four homes for which this is at least to some degree true. Following input from homeowners, trail planners have eliminated trail #103 from the plan and realigned trail #101 such that the trail will utilize an existing road to send users up hill and away from the three homes nearest the trailhead. Trail #101 will then traverse the hillside above their backyards. The realignment brings the trail ~50 feet in elevation and ~150 linear feet from the homes. There is a substantial amount of vegetation in the ~150 from the trail to the homes. While there will be gaps in the vegetation cover that allow views into the backyards, the distance is great enough that it is not a meaningful intrusion on privacy.



Figure 2 View from proposed trail location to neighbors' backyard.

Trail #201 will traverse a hillside above three homes at the top of San Jacinta Drive. Two of the homes are less visible from the trail than the homes at the trailhead. However, trail #201 will cross relatively closely to the house at the top of San Jacinta Drive. This section of trail utilizes a legally established easement across private property and the trail cannot be realigned. Trail construction through this area will include the possibility of planting native plants to obscure sight lines where possible. Property owners are free to place fences along their property line if they would like greater privacy.

18) Jurisdiction and Zoning Authority Regarding Adjacent Unincorporated Property

A commenter expressed concerns regarding rezoning and subdivision of their 160-acre property located in unincorporated Mendocino County adjacent to the City of Ukiah's Western Hills annexation. They requested the City's involvement in zoning decisions and referenced various state laws and alleged inequitable treatment compared to other landowners.

The City of Ukiah acknowledges these concerns but clarifies that the property in question lies outside City limits and is under the jurisdiction of Mendocino County Planning and Building Services and the Mendocino Local Agency Formation Commission (LAFCo). As such, zoning, subdivision, and annexation decisions for this parcel are the responsibility of the County and LAFCo, not the City. The City's CEQA review for the Lookout Peak Trails project is limited to activities within its jurisdiction and does not include land use authority or rezoning for adjacent unincorporated properties.

The City has forwarded the commenter's concerns to Mendocino County for their consideration. No further action by the City is required regarding rezoning or subdivision requests on this parcel.

Citations

1. Jeffery s. Jenkins et al. Environmental Research Communications (2023). *Human and climatic influences on wildfires ignited by recreational activities in national forest in Washington, Oregon, and California.*
2. Katarzyna Grala et al. Forest Policy and Economics (2027). *Impact of human factors on wildfire occurrence in Mississippi, United States.*
3. Suzanne Webel Boulder Area Trails Council. Research Review. *Trail effects on neighborhoods: Home value, safety, quality of life.*

<https://www.americantrails.org/resources/trail-effects-on-neighborhoods-home-value-safety-quality-of-life>

4. John L Compton Ph.D. Parks & Recreation Monthly Magazine (2020). *The impact of trails and greenways of property values*.
5. Jennifer Shearin. Walk Bike Cupertino (2018). *Should neighbors close to bike trail worry about crime?* <https://walkbikecupertino.org/2018/08/should-neighbors-close-to-bike-trails-worry-about-crime/>

Project Background and Statement of Need

The Western Hills Watershed Protection Area (WHWPA) extends from the valley floor at 760 feet to its highest point at Lookout Peak at 2,726 feet in elevation. Overall, the WHWPA is steep with slopes ranging from 30-70 percent. The vegetation is overgrown in some locations and wildfire has been suppressed for decades. Looking to the west from the highest ridge, views of Pine Mountain and the headwaters of Robinson Creek can be seen. Looking to the east provides views of Lake Mendocino, the Ukiah Valley, and the mountain tops of Sanhedrin, Hull, Snow, Red, and Konocti Mountains. Two forks of Doolin Creek flow east out of the central and southern parts of the WHWPA. The headwaters of Gibson Creek lie in the northwesternmost corner of the WHWPA and an unnamed creek in the northeastern parcel of the WHWPA flows east toward Hillcrest Avenue.

The WHWPA Management Plan (2024) identifies road and forest management needs but provides no “Scope of Work” specifics. Objective 3 of the plan outlines the need to control erosion, protect water quality, and maintain facilities. This objective requires that road work be in accord with the *Handbook for Forest, Ranch, & Rural Roads* (2015). Objective 11 of the plan identifies the need for routine vegetation control to maintain safe ingress and egress and create a safe environment for current and future property uses. Decades of fire suppression have led to increasingly dense and unhealthy western forests.

Redwood Avenue extends past a locked gate crossing approximately a quarter mile of private property before heading up hill and due east along the main ridge line at the center of the WHWPA. A number of secondary roads and old fire breaks combine for a total of five and a half miles of roads and fire breaks that require maintenance.

These roads are an asset to firefighting as well as a liability, due to fire risks associated with road use. The community of Ukiah as well as outlying rural communities to the north, south and east, benefit from fire suppression opportunities provided along the ridgeline; however maintenance of these roads and fire breaks is needed to ensure safe access during a fire event, due to fuel loading as well as the present condition of the running surface of the road. Facilities including public schools, parks, and county offices are concentrated at the east end of the boundary of the WHWPA. These make the roads and fire breaks of the WHWPA a key resource in defense of these assets. Additionally, Nokomis Elementary would be a potentially useful staging area for suppression resources, further enhancing the strategic value of this ridge system.

Maintenance Project Goals

The primary objectives of this WHWPA maintenance plan are to assure existing roads and fire breaks are open and available to emergency personnel and vehicles, forest lands are thinned of hazardous deadfall, shaded fuel breaks along roads are maintained, and the area is safe for future anticipated public access.

The project area includes oak and mixed hardwood forests that have overgrown to an unhealthy degree. Clusters of knobcone pines have died from old age and create a hazard.

Project Area and Measures to Avoid Adverse Impacts

- Project activities will be limited to the ~760 acres of the Western Hills Watershed Protection Area.
- No work will be done under this management plan within 50 feet of a class III or higher flow stream.
- No work will be done during the blooming period of *Lilium rubescens* (Redwood Lily) and until after it has naturally dispersed seed (May 15-June 30th) unless a survey has been performed and no Lilys are present.
- From April 1st to August 31st nesting bird surveys will be conducted prior to any project activities.
- Clearing of deadfall trees will ensure that a minimum of 6 “snags” per acre remain to provide habitat.

Proposed Activities

- 1) *Road Work*: Clearing of encroaching vegetation with hand crews, dozers, or masticators will assure safe ingress and egress for routine maintenance, site monitoring, and emergency access. Grading and shaping of the running surface of the road will be required to keep the roads open and available for emergency access and to manage erosion. The City Engineer or designated staff may identify additional necessary repair needs, such as deep ruts, failing fill, or inadequate drainage features. Road work be in accord with the *Handbook for Forest, Ranch, & Rural Roads* (2015).
- 2) *Hand Crew - Understory Thinning/Brushing To Promote Healthy Growth*: Manual thinning of understory bush and ladder fuels will be conducted by hand crews. Lop and scatter and piling material in the unit will process most of the biomass. Some material, where feasible, will be staged on a landing where it will be processed by grinder or left for later burning. This activity can be conducted year-round.

SCOPE OF WORK

Western Hills Watershed Protection Area Road and Fire Break Maintenance Plan

- 3) *Piling, Burning*: Where feasible, understory fuels including brush, small trees, and invasive species removed in manual thinning units will be piled in-unit and burned during wetter months (September through March).
- 4) *Chipping/Hauling*: When feasible slash will be staged at landings and will be processed by a grinder and spread on the site or at other City owned locations.
- 5) *Dead Tree Removal*: Clusters of dead trees (primarily knobcone pines) will be felled to improve safety of the area and ensure roads remain unblocked. A cluster of trees is a grouping of three or more trees wherein one falling tree may hit another dead tree. Dead trees that risk falling and blocking an access road or fuel break may also be felled. Felled trees will be limbed up with slash treated as in sections 2-4 above.
- 6) *Vegetation Management Plan Development*: City staff will begin the process of developing and submitting a Vegetation Management Plan for the WHWPA to cover more intensive fuel reduction strategies such as controlled burns and mastication.
- 7) *Maintenance of Medevac Landing Zones*: In feasible locations, flat areas that have already been cleared of brush for historic reasons will be maintained as flat (less than 10 degrees), firm, and clear for at least 75'x75' (100' x 100' if possible), to allow medevac helicopter landing.

RESOLUTION NO. 2025-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH ADOPTING THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION (ISMND) PREPARED FOR THE LOOKOUT PEAK TRAIL PROJECT.

WHEREAS:

1. The City of Ukiah has prepared a Lookout Peak Trail Plan (LPT); and
2. The City of Ukiah, in accordance with the requirements of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, has prepared an Initial Study Mitigated Negative Declaration (ISMND) dated July 2025 which analyzes the environmental impacts of the LPT; and
3. The ISMND concluded that with mitigations the Project would not cause any significant environmental impacts; and
4. A Notice of Availability (NOA) to adopt the ISMND was circulated for 30 calendar days, beginning on July 11, 2025 and ending on August 11, 2025; and
5. A Notice of Intent (NOI) to adopt the ISMND was circulated for 30 calendar days, beginning on August 11, 2025 and ending on September 11, 2025; and
6. The City transmitted the NOA, NOI, and ISMND, and other relevant documents in accordance with the State CEQA Guidelines, to the State Clearinghouse (SCH) for review; and
7. The Notice of Intent to adopt the ISMND provided notice to all interested persons and agencies inviting comments on the Draft ISMND in accordance with the provisions of CEQA and the State CEQA Guidelines; and
8. The City of Ukiah responded to comments provided during the public review and state review period for the NOA, NOI, ISMND, and other relevant documents and made minor alterations to the ISMND in response to those concerns; and
9. On August 8, 2025, a Notice of Public Hearing was duly posted for consideration of the adoption of the Draft LPT and consideration of the ISMND by the City Council at a public hearing on September 17, 2025.

NOW, THEREFORE, BE IT RESOLVED that:

1. The above recitals are true and correct, and incorporated herein by this reference.
2. The City Council hereby adopts the Initial Study Mitigated Negative Declaration which has been completed in compliance with the California Environmental Quality Act (CEQA).

BE IT FURTHER RESOLVED that:

1. The ISMND and record of proceedings of the decision on the LPT are available for public review at the City of Ukiah Community Development Department, Ukiah Civic Center, 300 Seminary Avenue, Ukiah, CA.

2. On September 17, 2025, the City Council held a public hearing to receive public comment and consider approval of the ISMND for the Project. The ISMND was approved by the City Council via Resolution No. 2025-___ and reflects the City Council's independent judgment and analysis.

PASSED AND ADOPTED this 17th day of September, 2025, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk

From: Jeff Sheldon <[REDACTED]>
Sent: Monday, September 15, 2025 8:47 AM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail System

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I fully support the UVTG's effort regarding the **Lookout Peak Trail System**. As a former longtime resident of Mendocino county (now residing in Sonoma county), I continue to work and recreate in Ukiah. The benefits to the community, including bringing people together to build/maintain trails, run, walk, bike and enjoy the outdoors far outweigh the opposition. We need more local trails!

Sincerely,
Jeff Sheldon
[REDACTED]

Kita Grinberg

████████████████████
Ukiah, CA 95482

Katherine Schaefer

Planning Manager

Department of Community Development

300 Seminary Avenue, Ukiah, CA 95482

Re: Public Comment on Lookout Peak Trails Project

Dear Katherine Schaefer and Neil Davis,

I am the resident who lives directly adjacent to the proposed Lookout Peak Trailhead and project area. First, I would like to express my support for the vision and values behind this project. I believe expanding access to nature and recreation is incredibly valuable for our community. Trails provide opportunities for people of all ages to be active, healthy, and connected with the outdoors, and I am glad Ukiah is investing in this kind of infrastructure. I am a trail-user myself, and look forward to the ability to be able to hike right out of my front door. I am also glad the City has acquired this land, knowing it will prevent future building developments.

At the same time, I have a few concerns I hope the City will take into consideration as planning and development move forward:

1. **Parking and traffic-** With more visitors, parking and traffic will become pressing concerns. There are currently no sidewalks or crosswalks in the area, creating hazards for both residents and trail users. Additionally, I worry about cars blocking driveways, including my own. I have heard the idea of restricting parking on Doolan Canyon, keeping only Helen available for parking. I like this proposal, and would like to see signs restricting access to even drive up Doolan Canyon (as people would be bound to do while looking for the trailhead.) I think prominent and clear signage will be extremely important. I also wonder about enforcement. Are there actually personnel to enforce these rules, or will I be left having to make a lot of calls to the city to report violators? Are there other solutions to prevent Doolan Canyon from becoming a traffic trap? Also, on

Saturdays when there is soccer, most of Helen is full of cars, so I'm wondering where people would be expected to park then.

2. **Peace and privacy for the neighborhood-** When I purchased my home just five years ago, the main appeal was its location- proximity to nature, and the peaceful atmosphere. I enjoy quiet mornings, watching and listening to turkeys, deer, quail in their natural habitat. I know this project will bring many more humans to the hillside, and the animals will no doubt retreat a little. The rustling of the leaves will be replaced by human voices and dogs barking. I know this is inevitable, and I am sad to lose some of the tranquility of my home. I also don't want to be so selfish as to think my own quiet is more important than the ability of all the people to enjoy the hills. I just ask- please- that as you plan the exact map of the trail, you give my house and my neighbors' houses as wide a berth as you possibly can. There are so many acres available, and I know the topography will determine trails, but I hope you can find a way to preserve the privacy and peace of our homes.

3. **Erosion and Runoff** – My home has already been impacted by hillside runoff, which has caused flooding in my backyard during heavy rains. Additional foot traffic could accelerate erosion and worsen these drainage issues. I hope measures can be taken to stabilize the soil and manage water flow responsibly. I know it has been said that trails do not cause erosion, but anything that cuts into the hillside does promote erosion, so I hope this will be taken into consideration.

Sincerely,

Kita Grinberg

[REDACTED]

[REDACTED]

From: Daniel Harrington <[REDACTED]>
Sent: Monday, September 15, 2025 6:05 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Support for Lookout Peak trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello Katherine,

I am writing to voice my support for approving the CEQA document and building the Lookout Peak trails. I live in the neighborhood and look forward to frequent use of the trails, with the trailhead(s) within easy walking distance from our house. I feel that these trails will only make the neighborhood more attractive for residents and those looking to buy here.

As you know, trails and the opportunity to get outside provide multiple benefits for physical and mental health. My family is likely to use these trails 2-3 times a week, and will definitely be something we showcase to visitors.

Thanks for your time,

Daniel Harrington

[REDACTED]
Ukiah, CA 95482

[REDACTED]

Daniel M. Harrington

[REDACTED]

-----Original Message-----

From: Bret Morton <[REDACTED]>

Sent: Tuesday, September 16, 2025 3:38 PM

To: Katherine Schaefer <KSchaefer@cityofukiah.com>

Subject: Support for Lookout Pk Trails

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To whom it concerns. My name is Bret Morton and I am in support of the Lookout Peak trail system that is being proposed by Ukiah Valley Trails. I endorse the CEQA document and full support to Ukiah Valley Trails.

As a hiker and biker I appreciate all of the work Ukiah Valley trails have put together. Low Gap park has been a touchstone for our community as I have seen all walks of life enjoying the trails. This also bring mountain biking to Ukiah of which there are no trails. These trails build community, foster health through fitness and being outdoors.

Sincerely,

Bret Morton

[REDACTED]

Sent from my iPhone

From: Jo Ann Henrie <[REDACTED]>
Sent: Tuesday, September 16, 2025 6:10 PM
To: Katherine Schaefer <KSchaefer@cityofukiah.com>
Subject: Lookout Peak Trail Project

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ms. Schaefer and Ukiah City Council,

Since 1981, I have lived at [REDACTED] Ukiah, across the road from the proposed Lookout Peak Trail Project. My property shares a several hundred feet border with the project.

My first suggestion would be that you identify the street name properly. The access point is Doolan Canyon Drive. (Street sign picture attached.) Various documents identify it with other spellings and Avenue or Road.

I have more serious concerns: access, parking, fencing, wildlife disruption, fire danger, and erosion.

1. **Access:**
 - a. Will access be allowed along Doolan Canyon Drive west of the trailhead?
 - b. What will the access point be for the Downhill Bike Trail? How will bikers get to the top of it. Typically, there are either chair lifts (ski resorts) or road drop-off points for downhill mountain biking.
 - c. Will drop-off vehicle access be allowed at the trailheads?
 - d. What signage is planned for access points.
2. **Parking:**
 - e. How will prohibited parking be enforced? (For example: on Doolan Canyon Drive.)
 - f. Will there be signage for parking?
 - g. Helen is already often over-parked.
3. **Fencing:**
 - h. Will there be perimeter fencing?
4. **Wildlife:**
 - i. The area has abundant wildlife, including deer, raccoon, fox, skunk, bear, occasional mountain lion, turkeys and many other birds. What measures will be take to mitigate disturbing the animals?
5. **Fire danger:**
 - j. More access, more chance of fire.
 - k. Lack of access for fire responders and emergency personnel.
6. **Erosion:**
 - l. The Downhill Bike Trail, especially, will cause erosion.

I recommend elimination of the Downhill Bike Trail because of lack of access, erosion, and disruption of wildlife.

I also recommend adequate signage for parking, access, and use rules.

Jo Ann Henrie



-----Original Message-----

From: Joyce Cleland <[REDACTED]>

Sent: Tuesday, September 16, 2025 1:36 PM

To: Katherine Schaefer <KSchaefer@cityofukiah.com>

Subject: Lookout peak

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hi

My name is Joyce Cleland and I live in Ukiah. Please approve the plans for the new trail Lookout Peak. It's so nice to have reliable trails close to home.

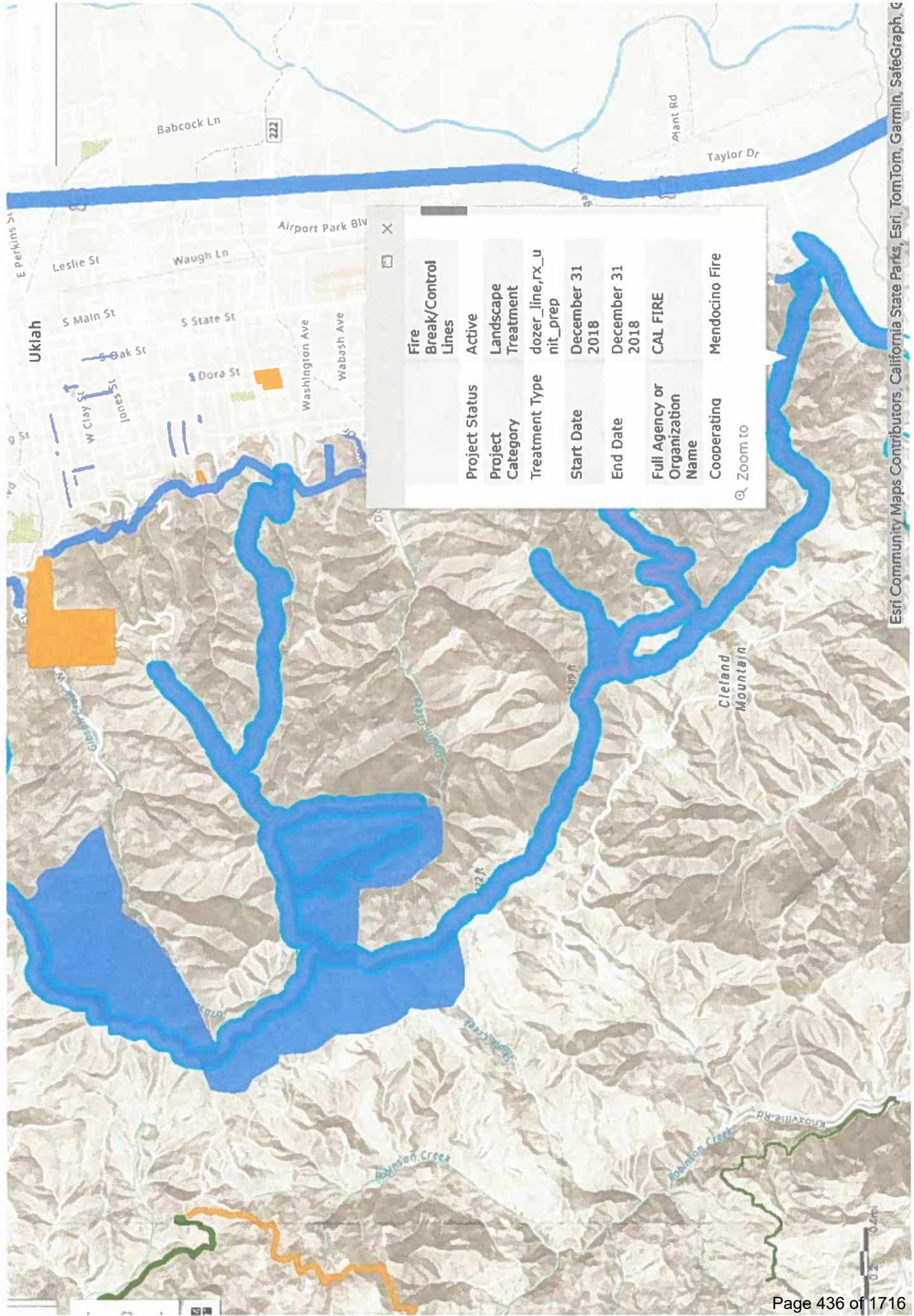
Thank you.

Sent from my iPhone

Handout from Kyle St. Pierre - Agenda Item 12a
Public Comment

Paths we use to access our parcels





Fire Break/Control Lines	
Project Status	Active
Project Category	Landscape Treatment
Treatment Type	dozer_line,rx_u nit_prep
Start Date	December 31 2018
End Date	December 31 2018
Full Agency or Organization Name	CAL FIRE
Cooperating	Mendocino Fire

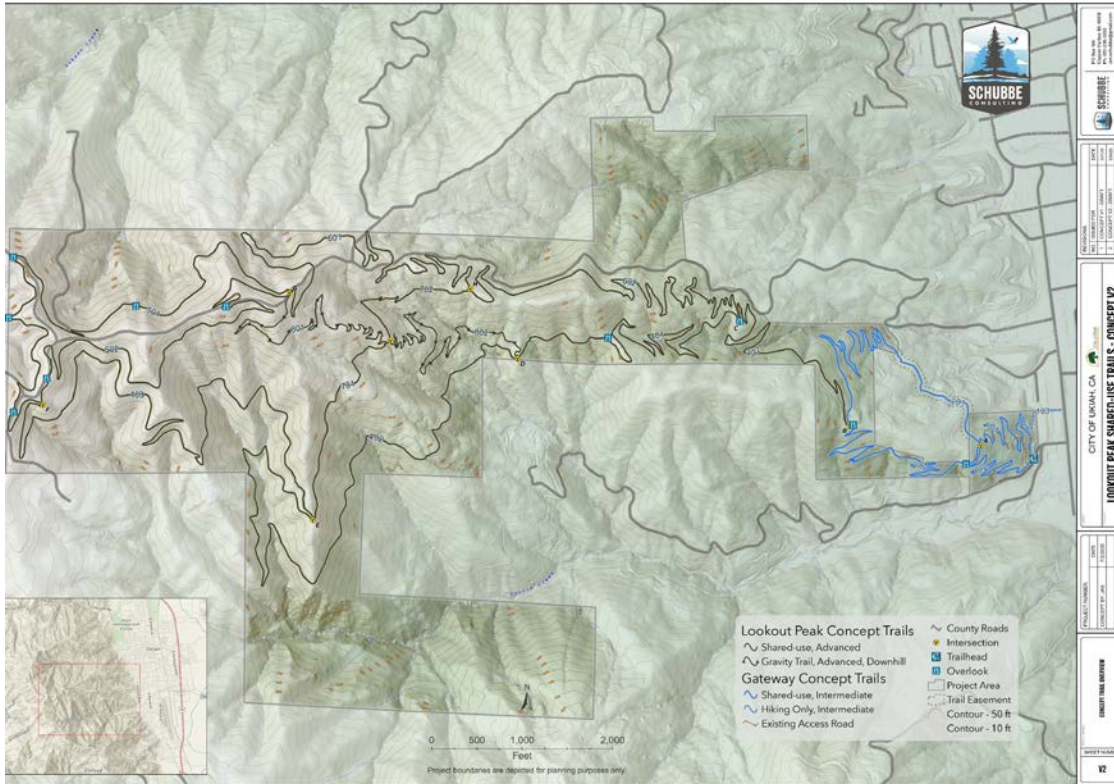


Consideration of the Lookout Peak Trail Project CEQA Analysis and Project Approval

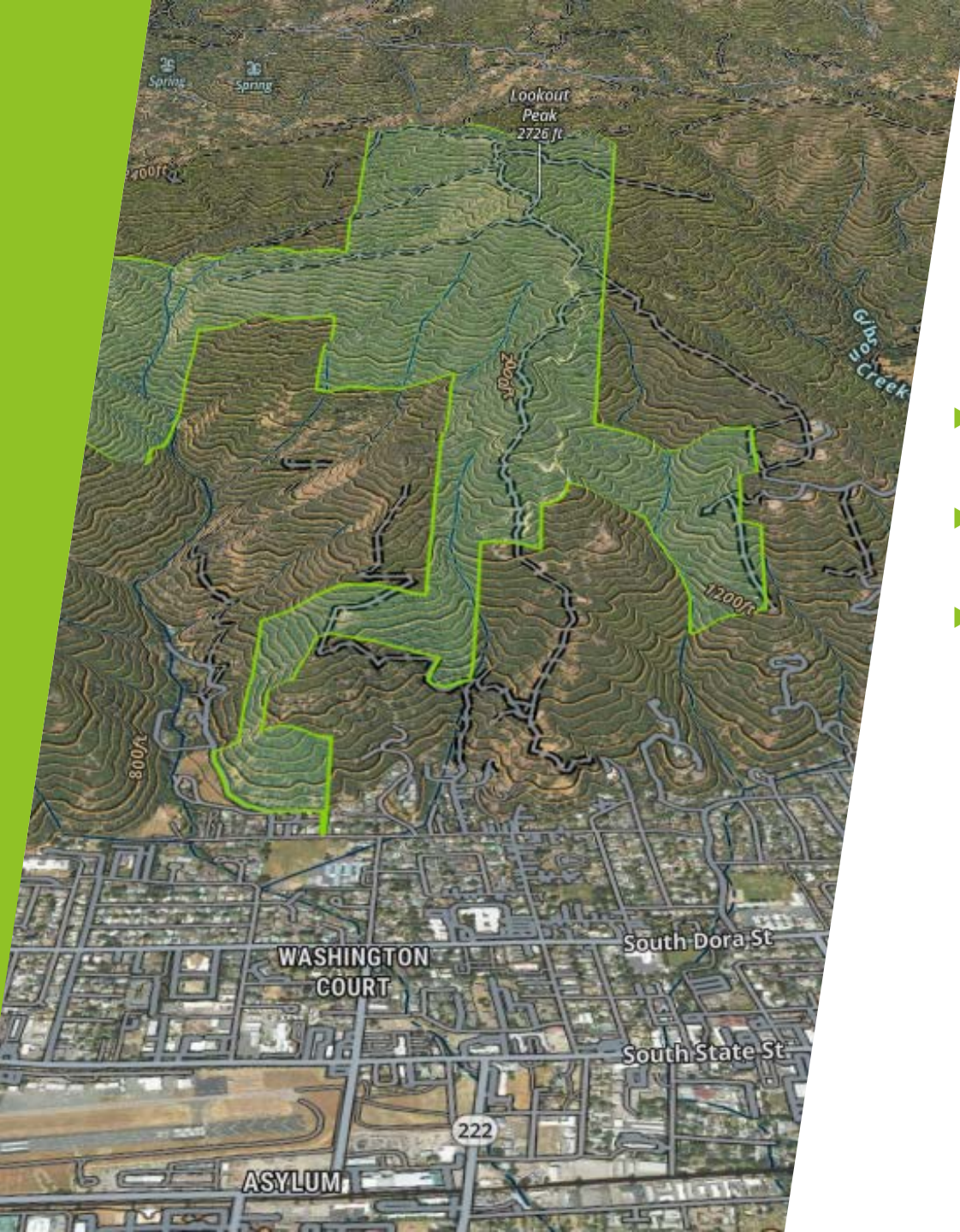
Neil Davis – Community Services Director

Katherine Schaefer – Planning Manager

Lookout Peak Trail System Proposal



- ▶ Proposal to build a system of trails in the Western Hills Watershed Protection Area (WHWPA)
- ▶ Up to 22 miles of trails for hikers, runners, mountain bikers, and nature lovers
- ▶ Non-motorized use only
- ▶ To be built and maintained by the Ukiah Valley Trail Group (UVTG)



Lookout Peak Trails Location

- ▶ Western Hills Watershed Protection Area (WHWPA).
- ▶ Redwood Ave. is ~300 yards long and ends in locked gate to private property.
- ▶ City has maintenance easement up Redwood Ave. to the WHWPA. Not a public access easement.

A goal identified in the 2040 General Plan

- ▶ **Public Facilities Element**

- ▶ goal of ensuring residents have access “to recreational facilities and trails”

- ▶ **Environment and Sustainability Element**

- ▶ opportunities for “the enjoyment of scenic beauty and recreation.”



Western Hills Watershed Protection Area Management Plan

- ▶ Public Spaces Commission recommended approval 2023
- ▶ Approved by Council February 2024
- ▶ Goals
 - ▶ Conservation
 - ▶ Fire readiness
 - ▶ Public Access
 - ▶ objective 13a to provide public trails for passive use recreation.



Western Hills Watershed Protection Area Management Plan

Western Hills Watershed Protection Area Management



City of Ukiah
300 Seminary Drive
Ukiah, CA 95482
January 2024

Adopted February 7, 2024



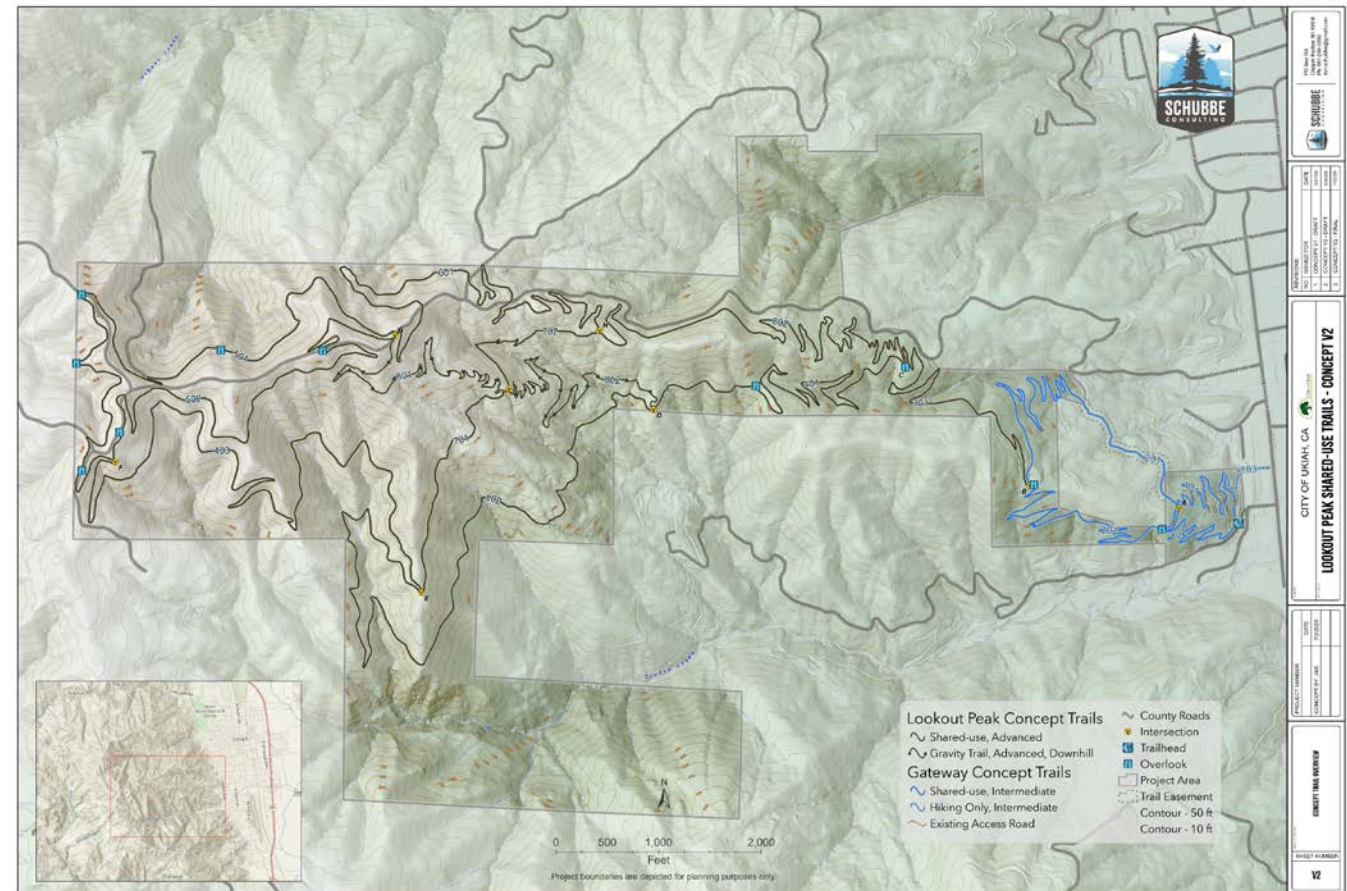
Collaboration with Ukiah Valley Trail Group (UVTG)

- ▶ UVTG Founded 2005
- ▶ UVTG designed, funded, built and maintain City View and Sol y Sombra trails at Low Gap Park on City of Ukiah Property.
- ▶ Additionally, do trail work at Lake Mendocino, Mill Creek Park, and Cow Mountain.
- ▶ UVTG hired Jacobszoon and Assoc, Inc to perform biological assessment of WHWPA for this CEQA doc
- ▶ UVTG donated \$50,000 to help purchase property connecting WHWPA to public street.



Lookout Peak Trail Design

- Design by Jon Schubbe Consulting
- Four-day site visit in 2024.
- Four-day site visit in 2025.
- Trail alignments using ArcGIS and lidar maps to design conceptual trail alignments.



Fire Hardened Trails

- ▶ Concept of “Fire Hardened Trails” incorporated into scope of work and design
- ▶ Early consultation with Ukiah Valley Fire Authority
- ▶ Fire hardened trails are essentially shaded fuel breaks with a trail at the center.
- ▶ Not all trails will be suitable for this treatment, but the CEQA allows for the treatment.

Fire- Hardened Trails (Vegetation Management Corridors)

The following proposal is a cross discipline collaborative concept proposal from Sierra Buttes Trail Stewardship in partnership with: US Forest Service Pacific Southwest Region 5, Plumas, Tahoe, Lassen and Humboldt-Toiyabe National Forest, Nevada, Sierra, Plumas, Lassen and Butte Counties as well as the cities of Loyalton and Portola.

Report was prepared by:

Ryan Tompkins, UC Cooperative Extension Forest & Natural Resource Advisor, UC Berkeley
Jason Moghaddas, Co-Director of the Natural Hazards and Director of Operations, Spatial Informatics Group.

Jeff Dupras, former Division Chief-Fire Management Officer for the Mt Hough Ranger District of the Plumas National Forest.

Matt Myrle, Fire Management Specialist, Natural Hazards
Spatial Informatics Group

With review and support by:

Stewart McMorow, California Department of Forestry and Fire Protection/ Staff Chief of Wildfire Resilience

Ryan McCarthy, Abandoned Mine Lands Division Manager - Environmental Protection Services

Proposal

The following proposal is a cross discipline collaborative concept proposal from Sierra Buttes Trail Stewardship in partnership with: US Forest Service Pacific Southwest Region 5, Plumas, Tahoe, Lassen and Humboldt-Toiyabe National Forest, Nevada, Sierra, Plumas, Lassen and Butte Counties as well as the cities of Loyalton and Portola.

Background

During the Dixie Fire and North Complex Fire of 2020, trails were used as firelines for fire crew access, fire containment, anchor points, and strategic firing operations.

The USDA Forest Service's longstanding history of managing for multiple uses is embodied by the 1960 Multiple Use Sustained Yield Act, which recognizes public benefit in managing multiple and often competing





Road and Fire Break Maintenance Plan

- ▶ WHWPA Management Plan “Objective 11- Reduce Fire Risk to the WHWPA through Fire Abatement and Vegetation Management Activities
- ▶ Objective 13 “Provide safe public access for... recreation.”
- ▶ During scope of work development, staff created a Road and Fire Break Maintenance Plan.
- ▶ WHWPA Road and Fuel Break Maintenance Plan incorporated into CEQA document. Which will allow City crews to do necessary maintenance

CEQA Process and Public Notification

- ▶ Notice of Availability (NOA) released July 11th, 2025, notified public that the CEQA is available for review
 - ▶ Not required but provided for extra public comment time.
- ▶ Notice of Intent (NOI) released August 11th, 2025. This announced the intent to move forward with the process and alerts to a scheduled public hearing on September 17th.

City of Ukiah
Notice of Public Hearing and Intent to Adopt
Mitigated Negative Declaration Lookout Peak Trails

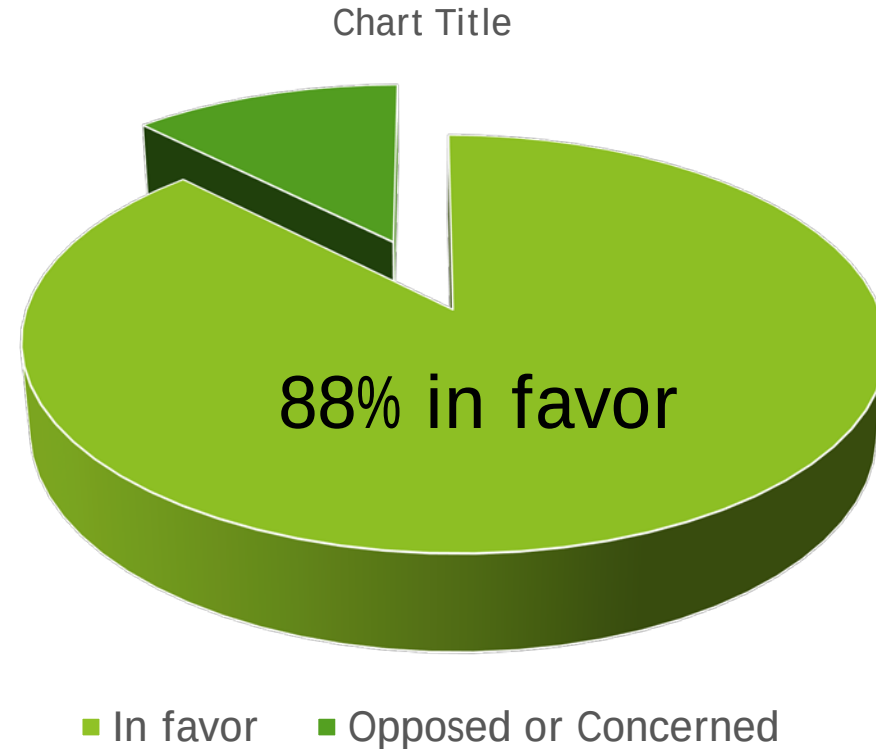
NOTICE IS HEREBY GIVEN that a Draft Initial Study/Mitigated Negative Declaration (IS/MND) under the California Environmental Quality Act has been prepared and is available for public review. A public hearing has been tentatively scheduled to consider adoption of the ISMND. See below.

PROJECT DESCRIPTION: The proposed project involves the development of a passive-use public access trail system located in the Western Hills area of the Ukiah Valley, Mendocino County, California. The trail system is intended for non-motorized recreational uses including hiking, mountain biking, and general access to nature. The project area is situated on mostly undeveloped land within the Western Hills Watershed Protection Area and is consistent with the City's adopted Western Hills Watershed Protection Area Management Plan, which identifies non-motorized recreational trails as an allowable land use.

PROJECT LOCATION: Recent lot line adjustments approved in January 2025 resulted in the current parcel boundaries for the project site (See Figures on second page). Public access to the trail system will be from two trailheads approximately 350 feet apart on Helen Avenue and Doolin Canyon Road.

Public Comments

- Public comment closed on Thursday September 11th. (Open Sixty Days)
- Fifty-nine letters of support received.
- Nine letters of either opposition or concern requesting changes to scope of work
- 7 of 9 letters of concern or opposition are from immediate neighbors (share a property line).
- 6 of 9 letters of concern or opposition stated support for trails in general.





Project benefits 88% of commenters support the project

- ▶ Health
 - ▶ People exercise more when there are convenient pleasant places to exercise
- ▶ Economy
 - ▶ Tourism
 - ▶ Recruitment of Businesses to Ukiah
 - ▶ Bike shops and retail sales supporting outdoor recreation
- ▶ Quality of Life
 - ▶ Parks Gap Analysis results showed trails as the most desired rec amenity
 - ▶ Family oriented activity
 - ▶ Something for youth to do.

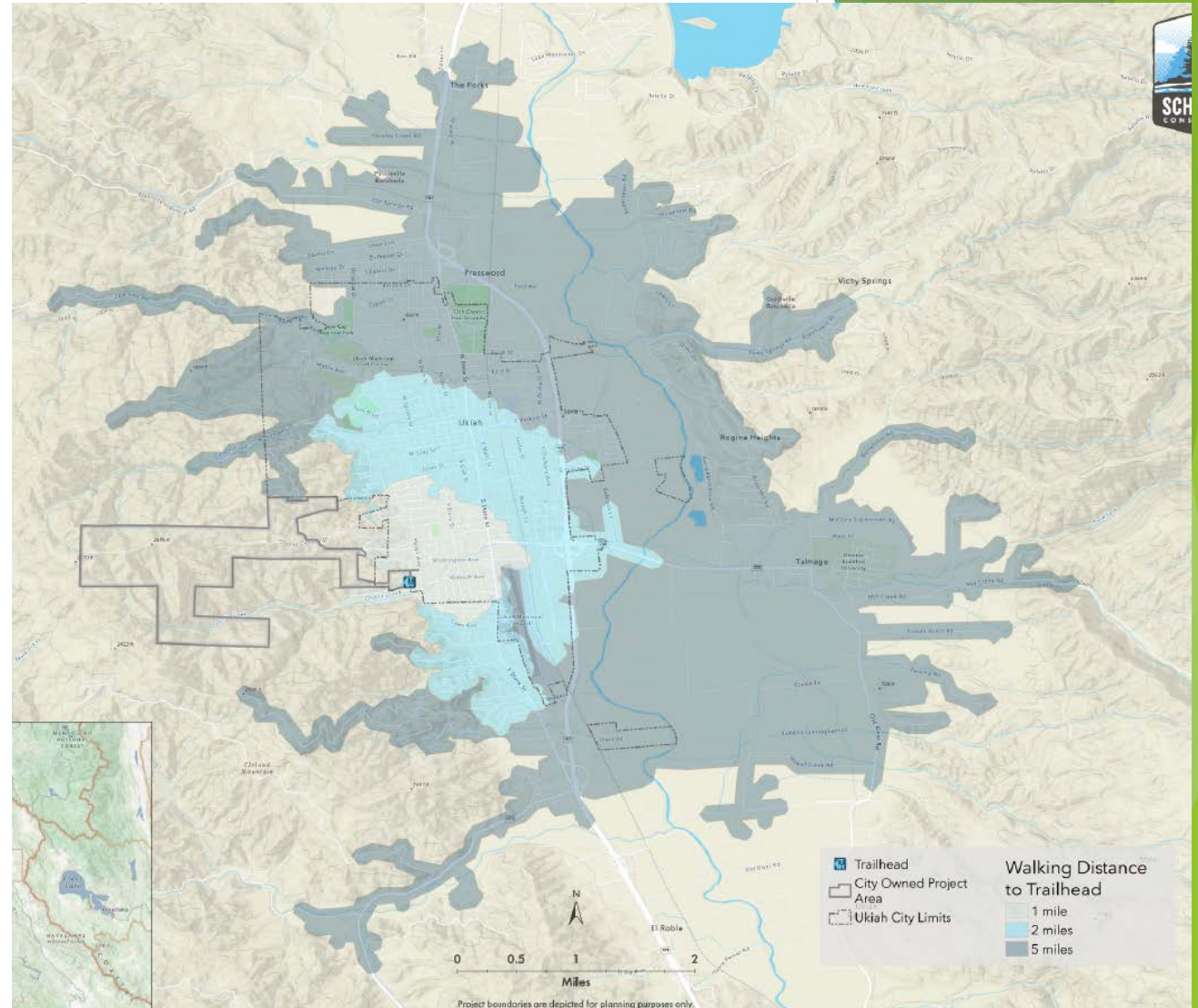
Great Trails. Close to Home.

Walking / Biking Distance to Trailhead.

- Light gray area is within 1 mile of trailhead.(6-minutes by bike)
- Light blue area is within 2 miles of trailhead.
- Dark gray area is within 5 miles of trailhead.



Great Trails.
Close to Home.



Addressing Concerns



In response to comments;

1. changes to the scope of work,
2. additional mitigation measures,
3. inclusion of a Road and Fire Break Maintenance Plan.

All commenters received an email confirming receipt of comment.

Commenters who posed specific question received individual replies.

Staff drafted a full response to all questions/comments that were raised in letters, meetings, and phone calls. The document is attached in the staff report as Attachment 4.

Two in-person meetings were held with four neighbors who had requested meetings.

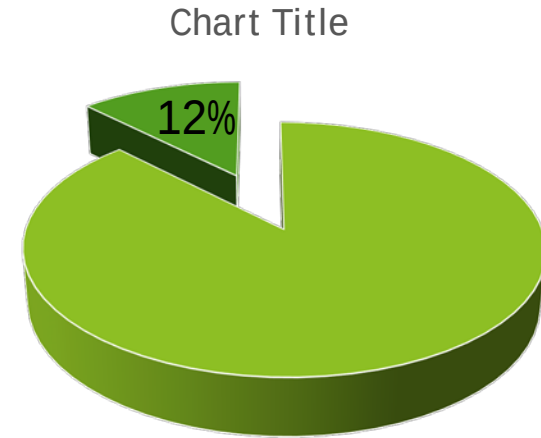
Meetings lasted until there were no more questions or comments (1hr and 1:40).

Documentation of meetings and phone calls were recorded as memorandum.

Public Comments - Opposed or Concerned

Concerns in order of frequency

- Will decrease neighborhood parking
- Will increase homelessness in neighborhood
- Will increase risk of wildfire
- Opposition to location of second trailhead, loss of privacy
- Will induce crime, trespass, decreased property values



■ In favor ■ Opposed or Concerned

- 7 of 9 letters of concern or opposition are from immediate neighbors (share a property line).
- 6 of 9 letters of concern or opposition state support for trails in general.



Project benefits

88% of commenters support the project

- ▶ Health
 - ▶ People exercise more when there are convenient pleasant places to exercise
- ▶ Economy
 - ▶ Tourism
 - ▶ Recruitment of Businesses to Ukiah
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- ▶ Quality of Life
 - ▶ Parks Gap Analysis results showed trails as the most desired rec amenity
 - ▶ Family oriented activity
 - ▶ Something for youth to do.



Project benefits 88% of commenters support the project

- ▶ Broad Public Support for the Project
- ▶ Strong CEQA Document.
- ▶ Concerns have been acknowledged; mitigations have been incorporated.
- ▶ Ukiah Valley Trail Group is a competent and trusted partner.

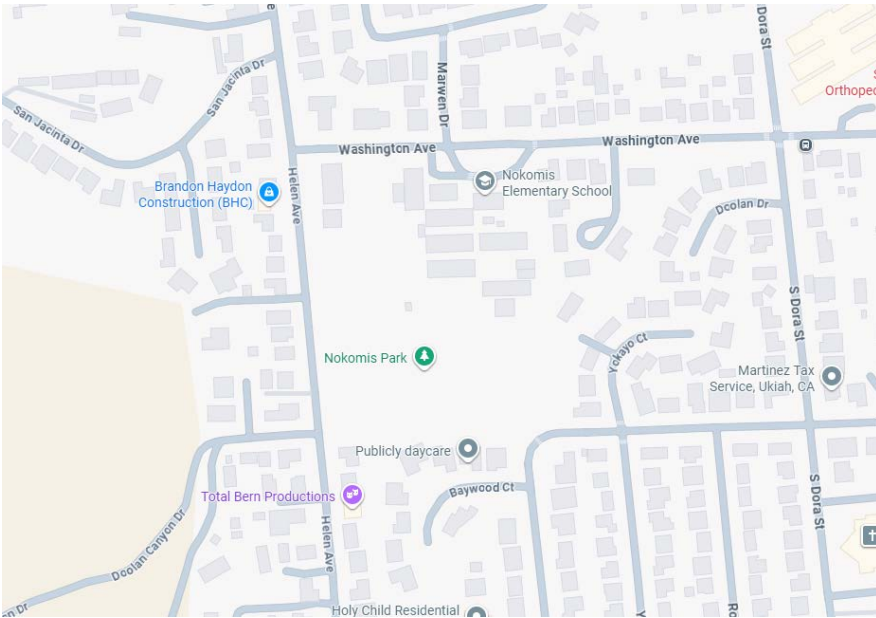


Questions?

Grand Opening of Sol y Sombra (Upper City View) Trail.
120 hikers attended the ribbon cutting event.

The trailheads – Access points.

Google Maps View



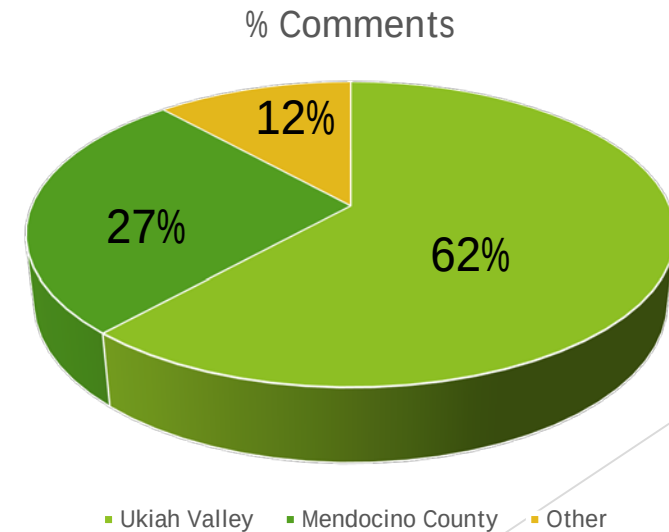
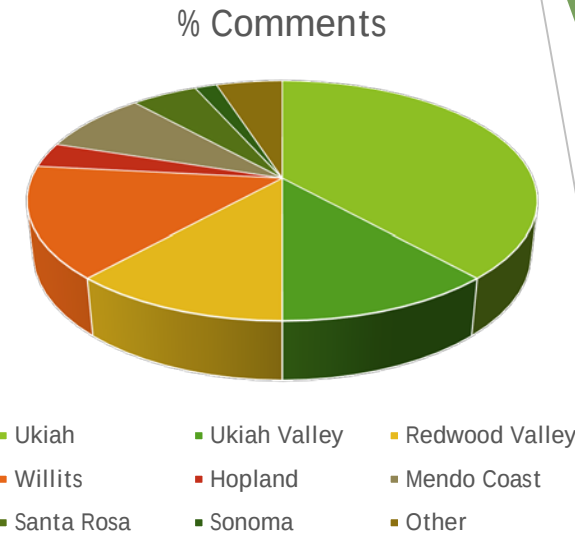
Trailhead locations



Project benefits

88% of commenters support the project

- Health
 - People exercise more when there are convenient pleasant places to exercise
- Economy
 - Tourism
 - Recruitment of Businesses to Ukiah
 - Bike shops and retail sales supporting outdoor recreation
- Quality of Life
 - Parks Gap Analysis results showed trails as the most desired rec amenity
 - Family oriented activity
 - Something for youth to do.



How much will it cost?

Schubbe (Contractor) Estimate

Trail Construction	= \$956,600	-	\$1,446,900
Design and Engineering	= \$76,528	-	\$144,690
Wayfinding and Signage	= \$41,240	-	\$82,480
Total =	= \$1,075,000	-	\$1,675,000

UVTG Estimate

\$807,600

- Cheaper to train and hire local people than using contractors
- Developing local work force ensures affordable, timely, sustainable maintenance.



How soon would you start?

How long will it take?

- **Year 1;**
- With CEQA Approval and Notice to Proceed
- Trail flagging / ground truthing of concept alignments
- Brush clearing of alignments
- Construction starting early winter
- Opening of 4-mile Gateway loop in late spring early summer.
- **Year 2 and beyond;**
- Rate of construction will be based on funding.
- Minimum 3-4 years of construction.
- Grant applications in review process;
 - WCF \$800,000
 - PGE Better Together \$100,000



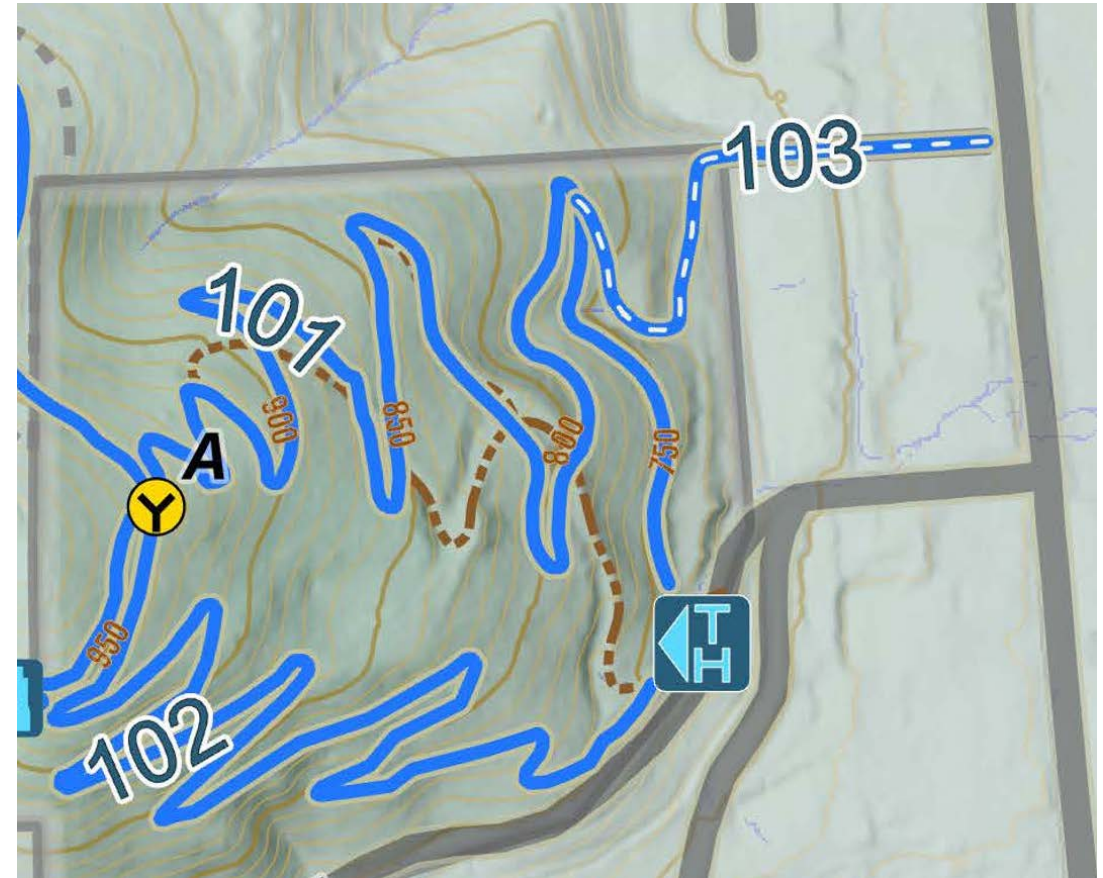




Oppose to second trailhead

Scope of work change.

- ▶ The original plan included two trailheads. One on Doolin Ave, the other on a small road that neighbors thought was a private driveway. The City owns that right of way.
- ▶ In response to comments, the City is removing the second trailhead as it provides limited benefit.
- ▶ Trail #103 will also be removed. This will also decrease the loss of privacy for neighbors.
- ▶ Trail #101 realigned higher on the hill.



Parking Mitigations in place.

- ▶ Will decrease neighborhood parking – **Mitigations** in place
- ▶ Signage on Doolin Canyon Dr.



Oppose to second trailhead

Scope of work change.

- ▶ The original plan included two trailheads. One on Doolin Ave, the other on a small road that neighbors thought was a private driveway. The City owns that right of way.
- ▶ In response to comments, the City is removing the second trailhead as it provides limited benefit.
- ▶ Trail #103 will also be removed and trail #101 realigned higher on the hill.
- ▶ This will help protect the privacy of neighbors.



Addressing Concerns – Will increase fire risk.

- ▶ Most common causes of fire include
 - ▶ Powerlines
 - ▶ Gas combustion engines
 - ▶ Burn piles
- ▶ Hiking and biking are not inherently pyrogenic
- ▶ Associated behaviors that could lead to fire include smoking and campfire use
- ▶ These are very low on the list of activities that cause fires.
- ▶ They are uncommon activities for hikers and mtn bikers to engage in.

CSIRO PUBLISHING

International Journal of Wildland Fire 2018, 27, 781–799
<https://doi.org/10.1071/WF18026>

Historical patterns of wildfire ignition sources in California ecosystems

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^BDepartment of Ecology and Evolutionary Biology, University of California, 612 Charles E. Young Drive East, Los Angeles, CA 90095, USA.

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Abstract. State and federal agencies have reported fire causes since the early 1900s, explicitly for the purpose of helping land managers design fire-prevention programs. We document fire-ignition patterns in five homogenous climate divisions in California over the past 98 years on state Cal Fire protected lands and 107 years on federal United States Forest Service lands. Throughout the state, fire frequency increased steadily until a peak c. 1980, followed by a marked drop to 2016. There was not a tight link between frequency of ignition sources and area burned by those sources and the relationships have changed over time. Natural lightning-ignited fires were consistently fewer from north to south and from high to low elevation. Throughout most of the state, human-caused fires dominated the record and were positively correlated with population density for the first two-thirds of the record, but this relationship reversed in recent decades. We propose a mechanistic multi-variate model of factors driving fire frequency, where the importance of different factors has changed over time. Although ignition sources have declined markedly in recent decades, one notable exception is powerline ignitions. One important avenue for future fire-hazard reduction will be consideration of solutions to reduce this source of dangerous fires.

Additional keywords: arson, debris burning, equipment, lightning, powerlines, smoking.

Received 20 February 2018, accepted 25 September 2018, published online 7 November 2018

Addressing Concerns – Project will attract people experiencing homelessness.

- ▶ Homelessness is a national problem, and it impacts all areas of the City, including parks, businesses, sidewalks, rivers etc.
- ▶ Parks and trails neither create nor solve homelessness.
- ▶ While evidence of illegal camping has been seen on the lower slopes of the WHWPA, it is uncommon.
- ▶ Introducing law abiding citizens to the area will increase the neighborhood watch effect and make the location less desirable for trespassing.



Addressing Concerns – Increase crime, litter, vandalism.

- ▶ More crimes occur, on both an absolute basis and per capita, inside the home, on streets or at workplaces than on trails.
- ▶ Every major study of trails confirms that crime does not increase with the building of a new trail. This includes studies which include input from local homeowners, law enforcement officers, real estate professionals, and trail managers.
- ▶ After the trails are built, adjacent residents of properties, and police agree that new trails do not increase crime for them and become enjoyable amenities.

Trail Effects on Neighborhoods: Home Value, Safety, Quality of Life

Compiled by Suzanne Webel, Boulder Area Trails Coalition

Are trails safe? How do they affect property values of adjacent residents?

These perennial issues have been the subject of a few studies which find that trails are quite benign in their social impact. The facts haven't stopped groups organized against rail trail development from trumpeting that the few instances of crime are proof that trails are unsafe.

Homeowners nationwide express the same concerns and fears about proposed trails in their neighborhoods. But studies in various parts of the United States seem to show that concerns about trails lowering property values and increasing crime are unfounded. In fact, trails have consistently been shown to increase (or have no effect on) property values, to have no measurable effect on public safety, and to have an overwhelming positive influence on the quality of life for trail neighbors as well as the larger community.

1. The Effect of Greenways on Property Values and Public Safety; The Conservation Fund and Colorado State Parks State Trails Program (1995)



Addressing Concerns – Increase crime, litter, vandalism.

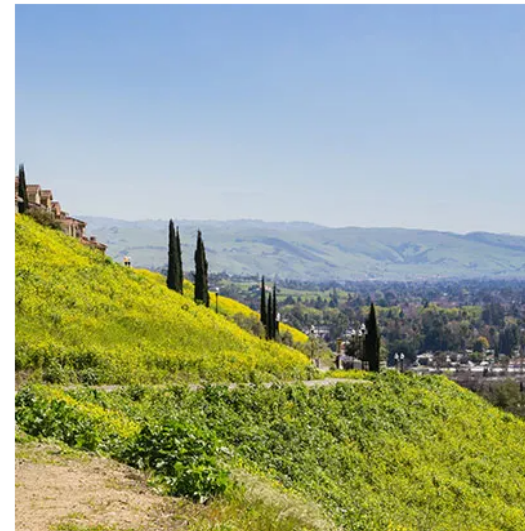
► Rigorous studies of home values have found that homes near trails typically sell for 3-5% *more* and may sell for as much as 15% more if located near a trail.

► Suzanne Webel. Boulder Area Trails Council. Research Review. *Trail effects on neighborhoods: Home value, safety, quality of life.*

The Impact of Trails and Greenways on Property Values

April 23, 2020, Department, by John L. Crompton, Ph.D.

Finance for the Field



For an enhanced digital experience, [read this story in the ezine.](#)

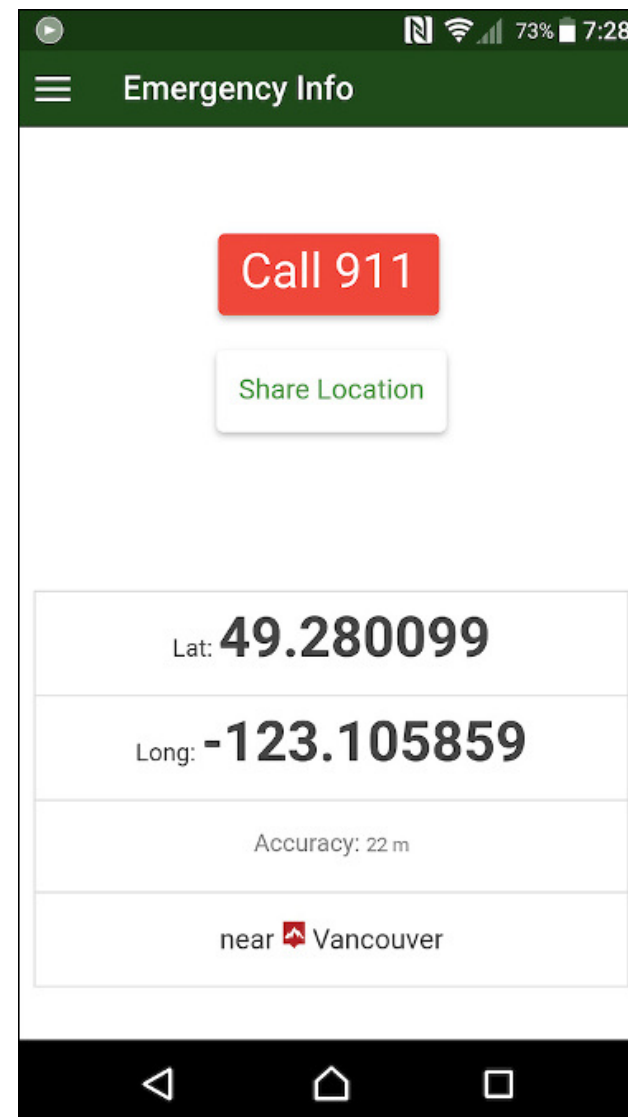
In 1989, the President's Commission on Americans Outdoors recommended the nation develop a system of recreational corridors: "Fingers of green that reach out from and around and through communities all across America." They called for a "prairie fire of local action" to implement the vision. Three factors came together to create a "perfect storm," which ignited that vision.

First, Congress was concerned the dramatic contraction of active rail lines from their peak of 254,251 miles in 1916 to 141,000 miles by 1980 was resulting in a loss of land corridors — which preempted any future reactivation that may be desired for military or mass transportation purposes. Consequently, in 1983 to preserve the corridors for potential future transportation uses, Congress amended section 8(d) of the National

Trail Systems Act (often called the Railbanking Act or the Rails-to-Trails Act) to preserve established railroad corridors for interim trail and future rail use. This legislation spurred an extraordinary surge in trails.

Addressing Concerns – Trails should be wider to assist with Search and Rescue Operations.

- One commenter (a retired firefighter) suggested trails should be wider to facilitate emergency response.
- Trails are designed for the user experience that will make the trails popular.
- Trails 5 or more feet wide would not be popular with the kinds of users that are strong enough to venture beyond the first few miles.
- City staff will work with the Ukiah Valley Fire Authority to employ best practices for public safety.



“Trailforks” App emergency response option

Addressing Concerns - Parking

← Post



...

Every great place has a parking problem, & trying to solve the #parking problem often weakens the place. People come for place, not parking.

5:11 PM · May 11, 2016



...

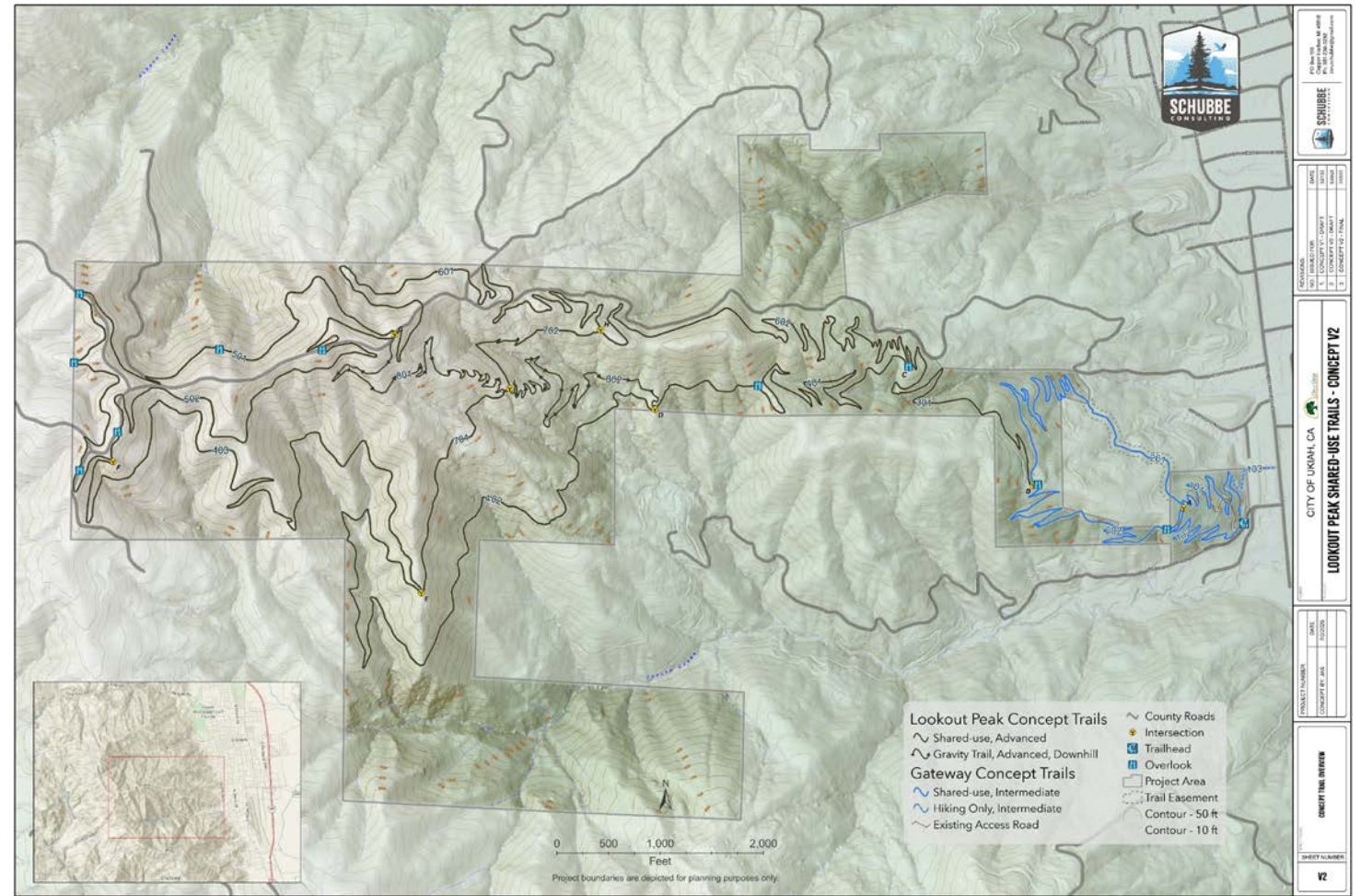
"There are 2 billion parking spots in the U.S. for about 200 million cars. The area of parking per car in the United States is thus larger than the area of housing per human."

Cars make your life much more expensive, even if you don't have one.
Via @VICE: [vice.com/en/article/n7j...](https://www.vice.com/en/article/n7j...)

- The street is adjacent to Nokomis Elementary and the associated playing field.
- Helen Ave south of Washington has room for 84 cars
- All 24 of the homes in this area have driveway parking for a minimum of 2 cars. Most also have garages.
- Comparisons with Low Gap Park suggest on street parking will be adequate.
- Staff have not observed routine school activities to significantly impact street parking
- Parking will likely be tight on weekends when soccer games are scheduled (~8-10 weeks per year).

Lookout Peak Trail System Details

- Stacked loop design
- Approx. 4 mile lower loop (Gateway Trails)
- Single connector trail to public access road on Redwood Ave Ridge
- Connector trail also connects to Lookout Peak Trails (~18 miles)



Addressing Concerns – Oppose second trailhead using “driveway”

- The original plan included two trailheads. One on Doolin Ave, the other on a small road that neighbors thought was a private driveway. The City owns that right of way.
- In response to comments, the City is removing the second trailhead as it provides limited benefit.
- Trail #103 will also be removed. This will also decrease the loss of privacy for neighbors.
- Trail #101 realigned higher on the hill.





AGENDA SUMMARY REPORT

SUBJECT: Proposition 218 Protest Hearing and Consideration of Adjustments to Sewer Service Rates by Resolution.

DEPARTMENT: Finance

PREPARED BY: Dan Buffalo, Finance Director

PRESENTER: Dan Buffalo, Finance Director

ATTACHMENTS:

1. Ukiah_Sewer_Rate_Resolution_2025
2. City of Ukiah 2025 Sewer Financial Plan draft 7.10.25 (002)
3. City of Ukiah 2025 Sewer Rate Study Presentation, 7-16-25
4. Protest Letter - Trudy Babcock
5. Protest Letter - Allyne Brown
6. Protest Letter - Caminiti Property Management
7. Protest Letter - Heather Seggel
8. Protest Letter - Karen Lee
9. Protest Letter - Lucia Bianchi
10. Protest Letter - Marsa Zail Viera
11. Protest Letter - Michael & Terisa Buchanan
12. Protest Letter - Oona Aven
13. Protest Letter - Robert & Karen Snediker
14. Protest Letter - Josh & Jenna Mason
15. Protest Letter - Cecelia Sullivan

Summary: On July 16, 2025, the City Council initiated the Proposition 218 process for adjustments to sewer service rates by mailing notices to all affected property owners and customers at least 45 days prior to the public hearing scheduled for September 17, 2025. Tonight's duly noticed meeting serves as that public hearing at which the Council must receive and consider written protests, and if a majority of affected parcels submit valid protests, the proposed rates cannot be adopted; but if no majority protest is received, the Council may adopt the resolution (Attachment 1) implementing the proposed rate adjustments.

Background: The City's sewer utility is a self-supporting enterprise that must generate sufficient revenues to cover operating expenses, debt service, capital improvements, and reserves. Hildebrand Consulting was retained to update the financial plan and rate study (Attachment 2) for the sewer enterprise. In addition to preparing the written report, Hildebrand presented a summary of the study's findings (Attachment 3) to the Council and community on July 16, 2025, highlighting the major cost drivers—including depleted reserves, increased insurance and recycled water costs, repayment of the internal loan, and reduced connection fee revenues—and explaining how the proposed rate increases align with cost-of-service requirements under Proposition 218. The presentation included comparative regional rate surveys, reserve targets, a forecast of revenues and expenses, and the proposed multi-year schedule of phased rate adjustments.

The proposed rate structure maintains the existing customer classes and proportional cost-of-service methodology. Only the level of rates is adjusted.

Proposition 218 Protest Hearing Requirements

- **Mailed Notice:** Notices were mailed the week of July 21, 2025, to all property owners and customers of record, in English and Spanish, describing the proposed rates, basis of calculation, reasons for the increase, and the date/time/place of the public hearing.
- **Public Hearing:** The Council is to conduct the hearing no sooner than 45 days after mailing. At the hearing, written protests must be tabulated. One valid protest per parcel is counted.
- **Majority Protest:** If written protests are submitted by owners/customers representing a majority of affected parcels, the proposed rate adjustments cannot be adopted.
- **Brown Act Posting:** This hearing is also noticed as part of the Council's regular meeting agenda, consistent with the Ralph M. Brown Act.

There is no separate newspaper publication requirement for the hearing under Proposition 218. If the Council adopts rates by resolution, no further publication is required.

Discussion: The financial plan developed by Hildebrand Consulting incorporates current and projected operating costs, debt obligations, capital improvement needs, and recommended reserve levels. Given those factors, the study found that current rates are not sufficient to meet the utility's funding requirements and recommends a series of moderate rate increases to:

- Rebuild depleted operating reserves to meet the City's reserve policy of 25% of annual operating costs (approx. \$1.8 million).
- Establish a new capital reserve target of \$1.3 million.
- Address increased insurance and operating costs.
- Support repayment of an internal loan to rebuild reserves used for capital projects.
- Account for a decline in connection fee revenue and increased recycled water cost allocations.

The proposed rate structure has been developed to be proportional to the cost of service, as required under Proposition 218. No changes to customer classes or fundamental rate design are proposed—only phased rate adjustments over the next five years.

Financial Assistance Programs:

The City recognizes that utility rate adjustments may present a financial challenge to some households. While Proposition 218 prohibits the City from funding customer assistance programs by charging other ratepayers more than the proportional cost of service, customers may qualify for assistance from external programs, including:

- **United Way, Catholic Charities, and other non-profit community organizations** – often provide emergency utility bill assistance to qualifying households.
- **County and local social services agencies** – Mendocino County Health and Human Services Agency and affiliated programs can help connect residents to available financial support.
- **Payment Arrangements** – The City may also provide flexible payment plans to help customers manage balances over time.

City staff will continue to direct residents to these programs and resources, and maintain updated information on the City's website and customer service materials.

Council is required to receive and tabulate all written protests. Protests must be in writing and received prior to the Mayor closing the hearing. If a majority protest is received, the proposed rates cannot be adopted. If no majority protest exists, the Council may proceed with adoption of the proposed multi-year rate adjustments, with the first increase scheduled for October 1, 2025. Currently, the City serves 3,531 active sewer accounts. The majority threshold is not based on accounts but on parcels served or could be served by the City. Nonetheless, active accounts is a useful proxy to calculate the protest threshold, which would be 1,766,

the amount of eligible protests needed to preclude Council from adopting these sewer rates as proposed.

Staff requests Council conduct the Proposition 218 protest hearing, and adopt a resolution (Attachment 1) adjusting sewer service rates, with the first increase effective October 1, 2025.

Recommended Action: Conduct the Proposition 218 protest hearing, and adopt a resolution adjusting sewer service rates, with the first increase effective October 1, 2025.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: Yes / No GRANT: Yes / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.:N/A

COORDINATED WITH: Sean White, Water Resources Director and Sage Sangiacomo, City Manager

STRATEGIC PLAN (SP):N/A

CLIMATE INITIATIVES (CI):N/A

GENERAL PLAN ELEMENTS (GP):N/A

Approved: 
Sage Sangiacomo, City Manager

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH ADOPTING SEWER SERVICE RATE ADJUSTMENTS FOR THE FIVE-YEAR PERIOD OCTOBER 1, 2025 THROUGH JUNE 30, 2030****WHEREAS:**

1. The City of Ukiah operates and maintains a municipal wastewater collection and treatment system that must recover its costs from customer charges as a self-supporting enterprise fund; and
2. The report entitled "City of Ukiah 2025 Sewer Rate Study" prepared by Hildebrand Consulting, LLC, and the accompanying 2025 Sewer Financial Plan were presented to the City Council on July 16, 2025, and provide a comprehensive analysis of the sewer utility's revenues, expenses, reserve targets, and proposed rate adjustments; and
3. On July 16, 2025, the City Council adopted Resolution No. 2025-33 initiating proceedings under Article XIII D, Section 6 of the California Constitution (Proposition 218) and directed staff to mail written notice of the proposed sewer service rate adjustments to all affected property owners and customers of record at least 45 days in advance of the public hearing; and
4. Such written notices, in English and Spanish, were mailed the week of July 20, 2025, in compliance with Proposition 218, providing the amount of the proposed fee or charge, the basis for calculation, the reason for the charge, and the date, time, and location of the public hearing; and
5. On September 17, 2025, the City Council conducted the duly noticed public hearing, received the consultant's presentation, heard and considered all oral and written testimony, and tabulated all written protests; and
6. The City Council finds that written protests were not submitted by a majority of the affected parcels; and
7. The City Council further finds that the proposed sewer service rates comply with Article XIII D of the California Constitution in that (1) revenues will not exceed the cost to provide service; (2) revenues will not be used for any purpose other than that for which the rates are imposed; (3) the rates are proportional to the cost of service attributable to each parcel; and (4) the services are actually used by, or immediately available to, the parcels subject to the charge.

NOW, THEREFORE, BE IT RESOLVED that:

1. Supersession of Prior Rates: This resolution supersedes and replaces all prior resolutions establishing sewer rates in the City of Ukiah.
2. Residential Users: "Residential users" are defined as a residential dwelling unit, consisting of each single-family dwelling, each occupiable unit in a duplex, tri-plex, four-plex, or apartment

complex, and each occupied space in a mobile home park. This user category shall pay a monthly Service Charge per dwelling unit at the rate established in Exhibit A.

3. **Commercial Users:** "Commercial users" are defined as all non-residential accounts, including public utilities and public agency facilities. This category shall pay a monthly Service Charge per Equivalent Sewer Service Flow Unit (ESSFU), calculated annually as the average winter water use of residential dwelling units during the months of January through March. A commercial account's ESSFU assignment shall be determined by dividing its average winter water usage by the ESSFU value, with a minimum of one (1) ESSFU per account. If a connection receives water from a source other than an established metered system, special metering or another approved method must be used to establish consumption.
4. **Commercial Classifications:** Commercial accounts shall be classified and charged in accordance with the following strength categories:

Classification	Description	Examples
Commercial 1 – Low Strength	Low strength users	Professional offices, retail, hospital/convalescent, schools/colleges, car wash, laundromat
Commercial 2 – Moderate Strength	Moderate strength users	Hotel without dining, service station, auto repair shop
Commercial 3 – Medium Strength	Medium strength users	Hotel with dining, market with food service, coffee/tea shop
Commercial 4 – High Strength	High strength users	Restaurants, mortuary, bakery, high-strength industrial

5. **Adoption of Rates:** Sewer service charges for all categories of users shall be adjusted as set forth in Exhibit A – Sewer Rate Schedule, which is incorporated by reference and attached hereto.
6. **Effective Date:** The first rate adjustment shall take effect on October 1, 2025, with subsequent scheduled adjustments effective on July 1 of each fiscal year through July 1, 2029, unless superseded by further Council action.
7. The City Council reaffirms that the rates adopted herein are consistent with the findings of the 2025 Sewer Rate Study and Financial Plan, are necessary to recover the costs of providing service, and comply with all applicable provisions of state law, including Article XIII D of the California Constitution and Government Code § 53756.

PASSED AND ADOPTED this 17th day of September, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk

Exhibit A – City of Ukiah Sewer Rate Schedule

	Current Rates	October 1, 2025	July 1, 2026	July 1, 2027	July 1, 2028	July 1, 2029
Monthly Service Charge*:	\$59.71	\$63.29	\$65.82	\$68.45	\$71.19	\$74.04
Consumptions Rate (per HCF)						
Residential:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commercial 1:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commercial 2:	\$4.71	\$4.99	\$5.19	\$5.40	\$5.62	\$5.84
Commercial 3:	\$9.39	\$9.95	\$10.35	\$10.76	\$11.19	\$11.64
Commercial 4:	\$12.49	\$13.24	\$13.77	\$14.32	\$14.89	\$15.49



2025 Sewer Financial Plan

Draft Report

July 10, 2025



Mr. Daniel Buffalo
Finance Director
City of Ukiah
300 Seminary Ave
Ukiah CA, 95482

Re: 2025 Sewer Financial Plan

Dear Mr. Buffalo,

Hildebrand Consulting is pleased to present this 2025 Sewer Financial Plan (Financial Plan) for the City of Ukiah's Sewer Enterprise. We appreciate the assistance provided by you and all of the members of the City staff who participated in the study.

If you or others at the City have any questions, please do not hesitate to contact me at:

mhildebrand@hildco.com
(510) 316-0621

We appreciate the opportunity to be of service to the City and look forward to the possibility of doing so again in the near future.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Hildebrand', is positioned above the printed name.

Mark Hildebrand
Hildebrand Consulting, LLC

Enclosure

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- Schedule 2 - 6-Year Capital Spending Projections
- Schedule 3 - Sewer Enterprise Cash Flow Pro Forma

List of Acronyms

AWWA	American Water Works Association
CIP	capital improvement program
DCR	debt service coverage ratio
ESSFU	equivalent sewer service flow unit, a measure of sewer utility service based on the estimated volume of wastewater from an average residential dwelling
FY	fiscal year (which ends on June 30)
hcf	hundred cubic feet (i.e. 748 gallons)
MG	million gallons
WEF	Water Environment Federation
WWTP	Wastewater treatment plant

1. INTRODUCTION AND SUMMARY

Hildebrand Consulting has been retained by the City of Ukiah (City) to conduct an update to the financial plan for the City's Sewer Enterprise. This report describes in detail the assumptions, procedures, and results of the study, including conclusions and recommendations.

1.1. SEWER UTILITY BACKGROUND

The City of Ukiah is located within the Ukiah Valley and owns the collection system within a portion of its jurisdictional boundaries and a wastewater treatment plant (WWTP). The City shares costs with the Ukiah Valley Sanitation District (District) associated with the operation, maintenance, and rehabilitation of the sewer collection system and the WWTP, including debt service for the 2020 Refunding Bond.

1.2. STUDY BACKGROUND

The City's last formal sewer rate study was a financial plan update that was conducted in 2024 (2024 Rate Study¹), which addressed the revenue requirement of the City's sewer enterprise. The 2024 Rate Study recommended a one-time sewer rate increase of 14 percent.

1.3. STUDY OBJECTIVES

The purpose of this Study is to develop new 10-year projection of operating and capital expenses in order to create a financial plan, including a rate 5-year rate schedule for the period from Fiscal Year 2025/26 through Fiscal Year 2029/30, which will generate sufficient revenue

¹ *City of Ukiah 2024 Sewer Financial Plan*, Hildebrand Consulting, April 24, 2020

to meet the Sewer Enterprise’s financial and service obligations for ongoing operation and maintenance, debt service, and capital improvements while maintaining prudent reserves.

1.4. STUDY METHODOLOGY

This Study applied methodologies that are aligned with industry standard practices for rate setting as laid out in the AWWA M1 Manual, and applicable law, including California Constitution Article XIII D, Section 6(b), commonly known as Proposition 218.

The Study began with a review of the Sewer Enterprises’ current financial dynamics and the latest available data for the utilities’ operations. A multi-year financial management plan was then developed to determine the level of annual rate revenue required to cover projected annual operating expenses, debt service (including coverage targets), and capital cost requirements while maintaining adequate reserves. This portion of the Study was conducted using MS Excel®-based financial planning models which were customized to reflect financial dynamics and latest available data for the City’s operations in order to develop a long-term financial management plan, inclusive of projected annual revenue requirements and corresponding annual rate adjustments.

While this Study did not include an update to the cost-of-service analysis (COSA), a comprehensive COSA was completed as part of a comprehensive rate study in 2020 (“2020 Joint Rate Study”) ².

² *City of Ukiah and Ukiah Valley Sanitation District 2020 Joint Sewer Rate Study*, Hildebrand Consulting, April 24, 2020

2. SEWER ENTERPRISE FINANCIAL PLAN

This section presents the 2025 Financial Plan for the City's Sewer Enterprise, including a description of the source data, assumptions, and City's financial policies. The City has provided Sewer Enterprise actual spending data for FY 2023/24 and budgeted financial information for FY 2024/25 and FY 2025/26, including recent actual operating costs, budgeted operating costs, and forecasted capital spending. City staff also assisted in confirming other assumptions and policies, such as reserve targets and escalation rates for operating costs (all of which are described in the following subsections).

The Sewer Enterprise's rate revenue requirement is the amount of revenue needed from sewer rates to cover planned operating, maintenance, debt service, and capital program costs with consideration of other revenues and financial reserves.

2.1. FINANCIAL PLAN ASSUMPTIONS

The financial plan is an annual cash flow model. As a cash flow model, it differs from standard accounting income statements, and balance sheets. This update to the Sewer Enterprise financial plan reflects the FY 2025/26 budgeted expenses and estimated financial conditions as of the beginning of the fiscal year. The financial plan also reflects the Sewer Enterprise's debt service obligations and capital improvement program, as identified by City staff, during the planning period that extends through FY 2033/34. The financial plan is based on the best available information and reasonable assumptions; future estimates have been reviewed with staff and are believed to be reasonable.

2.2. PROJECTED CUSTOMER GROWTH

This Study assumes that the annual growth rate will average 0.64 percent for the next 10 years. This rate is based on recent historical connection fee revenue and assumes that the same pace of revenue will continue for the planning period. The customer growth rate is relevant to this financial plan to the extent that (1) an increase in the customer base results in an increase in

rate revenue and (2) growth results in connection fee revenue that can contribute to funding capital projects.

2.3. SEWER FUND STRUCTURE

The City's sewer utility is comprised of five funds that are used to manage the sewer utility's use of funds in a transparent manner. The following describes the purpose of each fund and how this Study's financial plan model reflected the use of those funds.

Fund 840 – The **Sewer Operating Fund** is the primary operating fund of the City's sewer utility and tracks most operating and maintenance expenditures that are shared by the City and the District. Fund 840 also collects all revenue (including rate revenue) that is designated for the City.

Fund 841 – The **Sewer Debt Service Fund** is used to track all existing debt and is used as a "clearing fund" to allocate those costs, as appropriate, to Fund 840.

Fund 842 – The **Sewer Rate Stabilization Fund** holds reserves, including reserves that are conditions for debt.

Fund 843 – The **Sewer Connection Fee Fund** holds funds from connect fee revenues, reserves, which are restricted for the purpose of paying for growth-related sewer system capital projects.

Fund 844 – The **Sewer Capital Reserve** holds unrestricted funds for the use of paying for encumbered capital projects.

While the financial plan model for this Study was developed with an understanding of these funds, the model did not attempt to replicate the internal movement of all moneys between funds.

2.4. SEWER FUND BEGINNING FUND BALANCES

The financial plan model is based on the fund structure currently used by the City. The starting cash balance in all funds associated with the Sewer Enterprise at the beginning of FY 2024/25 was about \$584 thousand, which includes the Operating Fund (Fund 840) and the Rate Stabilization Fund (Fund 842). The Sewer Enterprise's other funds (i.e., the Connection Fee Fund (Fund 843) and the Sewer Capital Reserve Fund (Fund 844)) had a balance of zero on July 1, 2024.

2.5. RESERVE TARGETS

Reserves for utilities are cash balances that are maintained in order to (a) comply with contractual obligations (e.g. bond covenants), (b) protect the utility from unexpected financial events, and/or (c) accommodate operational and capital program cash flow needs. Often multiple reserves are maintained, each with a specific function. In addition to the direct benefits of financial stability, reserves can help utilities obtain higher credit rankings, which can then help qualify the utility for cheaper debt. Credit rating agencies evaluate utilities on their financial stability, which includes adherence to formally adopted reserve targets.

The City has adopted financial management policies which include guidance with respect to reserve levels. The City's policies call for City enterprise funds (including the sewer utility) to maintain a minimum working capital balance of at least 25 percent of operating expenses. The primary purpose of this balance is to set aside funds to maintain cash balances sufficient to pay expenses as needed and to provide for unanticipated or emergency expenses that could not be reasonably foreseen during the preparation of the budget.

The City's financial policies also require that fund balances and retained earnings should be sufficient to meet debt service reserve requirements, reserves for encumbrances, funding requirements for projects approved in prior years that are carried forward and established rate stabilization reserves.

In addition to the City's existing reserve policies, this study recommends that the City establish a capital reserve target which would create a funding cushion which would help

manage the inherent volatility of capital spending and would also provide cash in the event of catastrophic infrastructure failure. It is recommended that this reserve target be built over time and ultimately reach a level equal to an average year of capital spending (about \$1.2 million in the current financial plan).

The above policy and recommendations are consistent with Consultant’s industry experience for similar systems.

2.6. REVENUES

The following addresses the various forms of revenue received by the Sewer Enterprise.

2.6.1. CURRENT RATE REVENUE

Rate revenue is the revenue generated from customers for sewer service. All customers pay a fixed monthly Service Charge and a Consumption Rate. Residential customers pay a Service Charge for each dwelling unit while Commercial customers will pay a Service Charge for each “equivalent sewer service flow unit”³ (ESSFU). The Consumption Rate for all customers is determined by multiplying the account’s winter water usage by the respective Consumption Rate for the customer classification (which accounts for sewer strength). Water usage is measured in hundreds of cubic feet (“HCF”) which is equal to 748 gallons.

This financial plan uses budgeted rate revenue for FY 2025/26 as a baseline. Projected rate revenues for the 10-year planning period are listed in **Schedule 3**.

2.6.2. CONNECTION FEE REVENUE

The City charges a connection fee to new development as a condition for connecting to the sewer system. By law (see California Government Code 66013), connection fee revenue is required to be used “solely for the purposes for which the charges were collected” (i.e.,

³ ESSFUs are calculated based on water usage from the previous winter. A minimum of one (1) ESSFU is assigned to each commercial account.

growth-related capital projects). The City uses available connection fee revenues to pay growth-related capital projects and debt service. The sewer fund's current debt service includes amounts borrowed to expand the system; therefore, Sewer connection fees are eligible to contribute to debt service payments.

2.6.3. NON-RATE REVENUES

In addition to rate revenue and connection fee revenue, the Sewer Enterprise is reimbursed by the District for its portion of operating costs and debt service on the 2020 Refunding Bond (see Section 1.1) and the City also collects miscellaneous fees and interest earnings on investments. Estimates of future interest income were calculated annually based upon estimated average fund balances and historic effective return on cash and invested funds (0.5% in this case). Projections of all other non-rate revenues were based on FY 2023/24 actual revenues.

All revenues for the District are depicted below and detailed in **Schedule 3**.

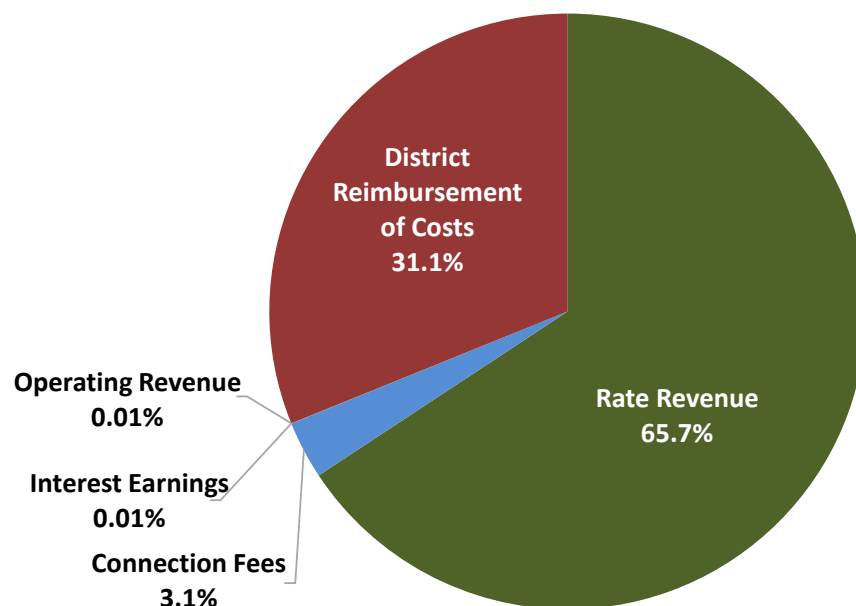


Figure 1: Sewer Enterprise Revenue Categories (Budget FY 2024/25)

2.7. EXPENSES

The following subsections describe current and projected Sewer Enterprise expenditures.

2.7.1. OPERATING AND DEBT EXPENSES

The Sewer Enterprise's expenses include operating and maintenance expenses, debt service, and capital spending. Capital spending is addressed separately in Section 2.7.3. Future operating and maintenance expenses were projected based upon the budgeted expenditures from FY 2025/26 and adjusted for inflation (see Section 2.7.2). The three largest cost categories include employee costs, debt service, and the internal allocation for support services provided by other City departments. The Sewer Fund's primary debt obligation is the 2020 Refunding Bond. The City also pays a portion of the City's 2022 Lease Revenue Bond.

Major budgeted expense categories for FY 2025/26 are depicted in **Figure 2**. Budgeted and projected operating and maintenance costs as well as debt service expenses are listed in detail in **Schedule 1**.

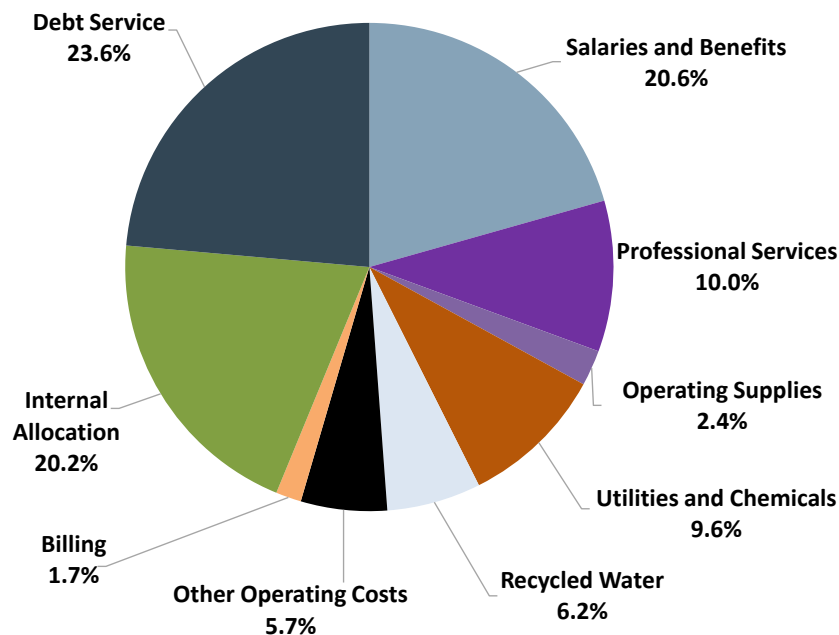


Figure 2: Sewer Enterprise Operating & Debt Expenses (Budget FY 2025/26)

2.7.2. COST ESCALATION ASSUMPTIONS

Annual cost escalation factors for the various types of expenses were developed based upon a review of historical inflation trends, published inflation forecasts, industry experience, and discussions with City staff. During the projection period, all operating expenses are projected to increase at 4.0 percent per year, with the exception of insurance which is projected to increase at the rate of 7.0 percent. These inflation assumptions are slightly higher than long-term historical inflation rates in order to reflect recent inflation trends.

2.7.3. CAPITAL IMPROVEMENT PROGRAM

Figure 3 shows that from FY 2020/21 through FY 2024/25 the City has spent an average of about \$2.8 million per year for capital projects to rehabilitate or improve the sewer system. The forecasted average spending from FY 2025/26 through FY 2028/29 is about \$1.2 million. Starting in FY 2029/30 this financial plan assumes that the annual capital spending will be \$1 million (in 2025 dollars).

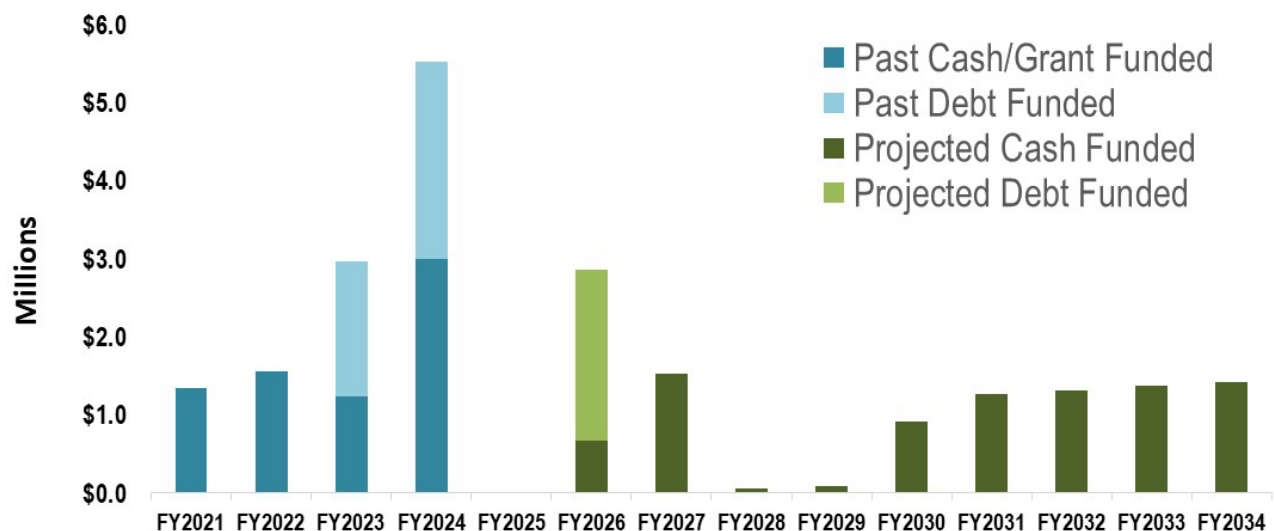


Figure 3: Sewer Enterprise Historical and Forecasted Capital Spending

2.8. PROPOSED RATE STRATEGY

All of the above information was entered into a financial planning model to produce a projection of revenue requirements. While the scope of this Study examines a 10-year financial planning horizon, the proposed rate increase is limited to a 5-year rate schedule (FY 2025/26 through FY 2029/30) since cost projections become increasingly less reliable over time and a new rate study will be needed after 5 years (if not sooner).

Based on the previously discussed financial data, assumptions, policies, this Study proposes the rate increases shown in Figure 4. The proposed rate increases are larger than those forecasted by the 2024 Rate Study due to (1) an unexpected 4.5 percent decrease in rate revenue in FY 2023/24, (2) higher capital spending than previously forecasted, and (3) lower connection fee revenue than expected in FY 2024/25.

Schedule 3 (cash flow proforma) shows a recommended a rate revenue increase of 6 percent in Year 1 (FY 2026) and 4 percent annual rate increases over the subsequent four years. These recommendations are summarized graphically in Figure 4.

This approach is predicated on the Sewer Fund receiving a \$2.0 million internal loan in order to meet its reserve targets. The described rate increases, as well as strategic use of the Rate Stabilization Fund (see Row 23 of Schedule 3) will allow the Sewer Enterprise to keep its debt coverage ratio (DCR) above 1.25 every year.

Given that it is too late to implement a rate increase on July 1, 2025, it is recommended that the first rate increase be implemented on October 1, 2025. Subsequent rate increases are proposed to occur on the first day of each fiscal year (July 1). The proposed schedule of rates is provided in Table 1. The basis for the existing rate structure was established by the 2020 Joint Rate Study.

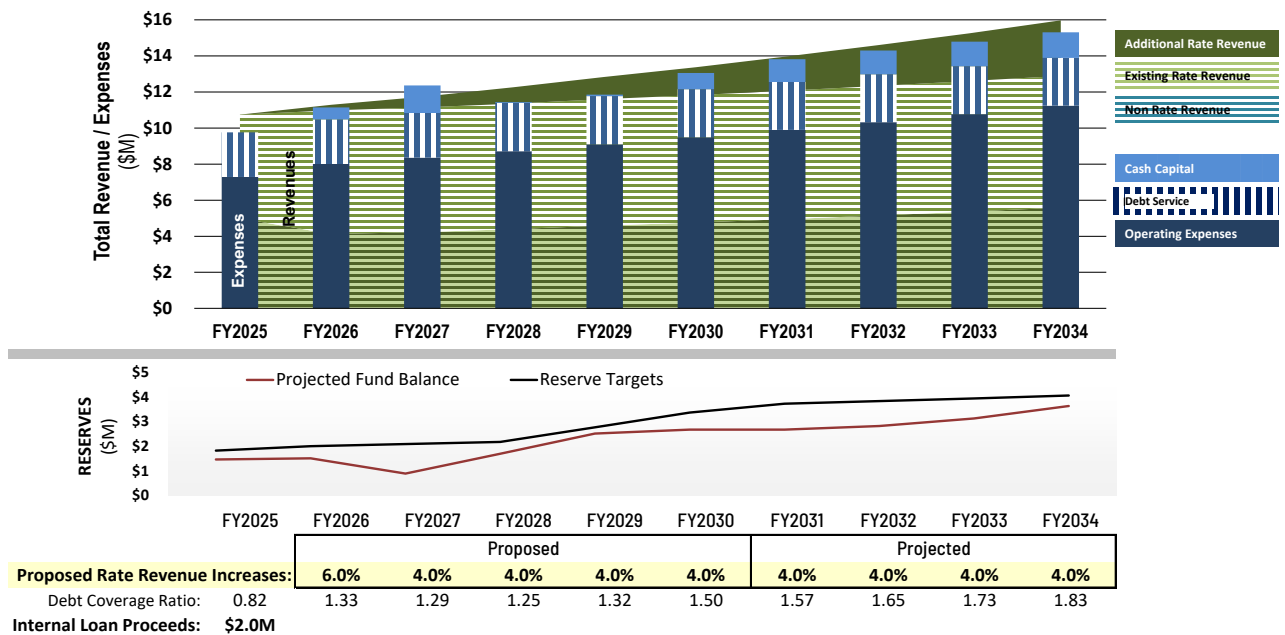


Figure 4: Sewer Enterprise 10-Year Cash Flow Projection

Table 1 – Proposed Sewer Rate Schedule

		Proposed				
		October 1, 2025	July 1, 2026	July 1, 2027	July 1, 2028	July 1, 2029
Current Rates						
Monthly Service Charge*:	\$59.71	\$63.29	\$65.82	\$68.45	\$71.19	\$74.04
Consumptions Rate (per HCF)						
Residential:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commercial 1:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commercial 2:	\$4.71	\$4.99	\$5.19	\$5.40	\$5.62	\$5.84
Commercial 3:	\$9.39	\$9.95	\$10.35	\$10.76	\$11.19	\$11.64
Commercial 4:	\$12.49	\$13.24	\$13.77	\$14.32	\$14.89	\$15.49

3. CONCLUSION

This 2025 Sewer Financial Plan finds that the Sewer Fund needs to increase sewer rates and issue new debt immediately in order to avoid a negative fund balance and re-establish healthy cash reserves. The proposed 5-year schedule of rate increases will support the sewer fund's increases in operating costs, its capital program and the new debt service.

The sewer rate increases need to be adopted in accordance with Proposition 218, which will require a detailed notice describing the proposed sewer rates to be mailed to each affected property owner or customer at least 45 days prior to conducting a Public Hearing to adopt the rates.

This Report used methodologies that are aligned with all applicable laws (including California's Proposition 218), as well as industry standard practices for rate setting as promulgated by the AWWA and WEF.

SCHEDULES

- Schedule 1: Sewer Enterprise Projected Operating and Debt Expenses**
- Schedule 2: 6-Year Capital Spending Projections**
- Schedule 3: Sewer Enterprise Cash Flow Pro Forma**

Budgeted and Projected Cash Outflows

Schedule 1

	Budget FY 2025	Forecast FY 2026	Forecast FY 2027	Forecast FY 2028	Forecast FY 2029	Forecast FY 2030	Forecast FY 2031	Forecast FY 2032	Forecast FY 2033	Forecast FY 2034
1 REGULAR SALARIES & WAGES	\$1,385,300	\$1,472,600	\$1,531,500	\$1,592,800	\$1,656,400	\$1,722,700	\$1,791,700	\$1,863,300	\$1,937,800	\$2,015,400
2 OVERTIME SALARIES & WAGES	\$75,000	\$80,000	\$83,200	\$86,500	\$90,000	\$93,500	\$97,300	\$101,200	\$105,200	\$109,500
3 STAND-BY SALARIES & WAGES	\$29,000	\$33,000	\$34,300	\$35,600	\$37,100	\$38,600	\$40,200	\$41,800	\$43,400	\$45,100
4 RETIREMENT (PERS)	\$173,600	\$169,900	\$176,600	\$183,700	\$191,100	\$198,700	\$206,700	\$215,000	\$223,600	\$232,500
5 PERS UNFUNDED LIABILITY	\$328,500	\$383,400	\$414,700	\$431,300	\$448,600	\$466,500	\$485,100	\$504,600	\$524,700	\$545,700
6 INSURANCE	\$308,800	\$314,000	\$326,600	\$339,600	\$353,200	\$367,300	\$382,000	\$397,300	\$413,200	\$429,700
7 WORKERS COMP	\$98,700	\$98,700	\$102,700	\$106,700	\$111,000	\$115,500	\$120,000	\$124,900	\$129,900	\$135,100
8 MEDICARE	\$19,100	\$20,400	\$21,300	\$22,100	\$23,000	\$23,900	\$24,900	\$25,900	\$27,000	\$28,000
9 CELL PHONE STIPEND	\$5,100	\$4,300	\$4,600	\$4,700	\$4,900	\$5,100	\$5,300	\$5,600	\$5,700	\$5,900
10 CONTRACTUAL SERVICES	\$429,400	\$449,500	\$467,500	\$486,100	\$505,600	\$525,800	\$546,800	\$568,600	\$591,400	\$615,100
11 COMPLIANCE STUDIES	\$2,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 LEGAL SERVICES/EXPENSES	\$0	\$5,000	\$5,200	\$5,400	\$5,600	\$5,800	\$6,100	\$6,300	\$6,600	\$6,800
13 SECURITY SERVICES	\$1,300	\$1,300	\$1,400	\$1,400	\$1,500	\$1,500	\$1,600	\$1,600	\$1,700	\$1,800
14 SUPPLIES	\$170,000	\$140,000	\$145,600	\$151,400	\$157,500	\$163,800	\$170,300	\$177,100	\$184,300	\$191,600
15 POSTAGE	\$400	\$400	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
16 SMALL TOOLS	\$32,000	\$42,000	\$43,700	\$45,400	\$47,200	\$49,100	\$51,100	\$53,200	\$55,300	\$57,500
17 LAB SUPPLIES	\$15,000	\$15,000	\$15,600	\$16,200	\$16,900	\$17,500	\$18,200	\$19,000	\$19,700	\$20,500
18 BACKGROUND & PHYSICALS	\$2,500	\$2,500	\$2,600	\$2,700	\$2,800	\$2,900	\$3,000	\$3,100	\$3,300	\$3,400
19 SOFTWARE	\$11,800	\$12,300	\$12,800	\$13,200	\$13,800	\$14,400	\$14,900	\$15,500	\$16,100	\$16,800
20 COMPUTER AND TECHNOLOGY	\$6,500	\$8,000	\$8,300	\$8,600	\$9,000	\$9,300	\$9,700	\$10,100	\$10,500	\$10,900
21 TELEPHONE	\$9,200	\$9,200	\$9,600	\$10,000	\$10,300	\$10,700	\$11,200	\$11,600	\$12,100	\$12,600
22 PG&E	\$70,000	\$80,000	\$83,200	\$86,500	\$90,000	\$93,600	\$97,300	\$101,200	\$105,300	\$109,500
23 UTILITIES	\$441,100	\$468,000	\$486,700	\$506,200	\$526,400	\$547,500	\$569,400	\$592,100	\$615,800	\$640,500
24 EQUIPMENT MAINTENANCE & REPAIR	\$425,000	\$420,000	\$436,800	\$454,200	\$472,400	\$491,300	\$511,000	\$531,400	\$552,700	\$574,800
25 LAB EQUIP-REPAIR & MAINT.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 EXTERNAL SERVICES	\$35,000	\$65,000	\$67,600	\$70,300	\$73,100	\$76,000	\$79,100	\$82,200	\$85,500	\$88,900
27 FUEL & FLUIDS	\$60,000	\$50,000	\$52,000	\$54,000	\$56,200	\$58,500	\$60,800	\$63,300	\$65,800	\$68,500
28 BUILDING MAINT. & REPAIR	\$96,000	\$96,000	\$99,800	\$103,900	\$108,000	\$112,300	\$116,800	\$121,500	\$126,300	\$131,400
29 EQUIPMENT RENTAL - PRIVATE	\$13,000	\$13,000	\$13,500	\$14,100	\$14,600	\$15,200	\$15,800	\$16,400	\$17,100	\$17,700
30 FACILITY MAINTENANCE & REPAIR	\$0	\$2,500	\$2,600	\$2,700	\$2,800	\$2,900	\$3,000	\$3,200	\$3,300	\$3,400
31 LEARNING AND DEVELOPMENT	\$42,000	\$37,000	\$38,500	\$40,000	\$41,600	\$43,300	\$45,000	\$46,900	\$48,700	\$50,600
32 MEMBERSHIPS & SUBSCRIPTIONS	\$3,500	\$3,500	\$3,700	\$3,800	\$3,900	\$4,100	\$4,200	\$4,400	\$4,600	\$4,800
33 TREATMENT PLANT CHEMICALS	\$378,200	\$460,200	\$478,600	\$497,800	\$517,700	\$538,400	\$559,900	\$582,300	\$605,600	\$629,800
34 GARAGE LUBRICANTS & PARTS	\$4,000	\$500	\$500	\$500	\$600	\$600	\$600	\$600	\$700	\$700
35 PROPERTY TAXES PAID	\$8,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
36 FEES	\$43,200	\$43,200	\$44,900	\$46,700	\$48,500	\$50,500	\$52,500	\$54,600	\$56,700	\$59,000
37 GRANTS ISSUED	\$35,000	\$36,400	\$37,900	\$39,400	\$40,900	\$42,600	\$44,300	\$46,100	\$47,900	\$49,800
38 PURCHASING ALLOCATION	\$46,300	\$44,000	\$45,700	\$47,600	\$49,400	\$51,400	\$53,500	\$55,600	\$57,900	\$60,300
39 PURCHASING - BUYER SERVICES	\$10,100	\$10,100	\$10,500	\$11,000	\$11,400	\$11,900	\$12,300	\$12,800	\$13,300	\$13,900
40 BILLING & COLLECTION ALLOCATIO	\$200,200	\$191,500	\$199,100	\$207,000	\$215,400	\$223,900	\$232,900	\$242,200	\$252,000	\$262,000
41 RENT ALLOCATION	\$16,500	\$16,500	\$17,200	\$17,800	\$18,600	\$19,300	\$20,100	\$20,900	\$21,700	\$22,600
42 BUILDING MAINTENANCE ALLOCATIO	\$9,100	\$8,600	\$9,000	\$9,300	\$9,700	\$10,100	\$10,500	\$10,900	\$11,300	\$11,800
43 IT ALLOCATION	\$119,000	\$113,000	\$117,600	\$122,300	\$127,100	\$132,300	\$137,500	\$143,000	\$148,800	\$154,700
44 CORP YARD ALLOCATION	\$246,900	\$246,900	\$256,800	\$267,000	\$277,700	\$288,800	\$300,400	\$312,400	\$324,900	\$337,900
45 INSURANCE ALLOCATION	\$1,003,000	\$1,132,400	\$1,211,700	\$1,296,500	\$1,387,300	\$1,484,400	\$1,588,300	\$1,699,500	\$1,818,500	\$1,945,700
46 GARAGE ALLOCATION	\$120,200	\$114,100	\$118,700	\$123,500	\$128,400	\$133,500	\$138,800	\$144,400	\$150,200	\$156,200
47 DISPATCH	\$30,700	\$29,200	\$30,400	\$31,600	\$32,900	\$34,200	\$35,500	\$37,000	\$38,400	\$40,000
48 ADMIN & OVERHEAD ALLOCATION	\$378,400	\$359,500	\$374,000	\$389,000	\$404,400	\$420,500	\$437,400	\$454,800	\$473,100	\$491,900
49 TRANSFER TO FUND 830	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Debt Service										
50 2022 Refunding Bond	\$1,989,000	\$1,983,000	\$1,978,000	\$1,971,000	\$1,966,000	\$1,960,000	\$1,953,000	\$1,948,000	\$1,942,000	\$1,936,000
51 2022 Lease Revenue Bonds	\$178,000	\$178,000	\$178,000	\$396,000	\$397,000	\$395,000	\$396,000	\$396,000	\$396,000	\$395,000
52	\$9,404,600	\$9,463,600	\$9,801,200	\$10,353,500	\$10,707,900	\$11,075,200	\$11,462,500	\$11,869,900	\$12,296,100	\$12,741,800

5-year Sewer Capital Spending Schedule

Schedule 2

Project Name	Cost Sharing ¹		FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	City	District					
1 AWTCCB Cover	49.7%	50.3%					\$150,000
2 IPS Liner Replacement	49.7%	50.3%		\$60,000			
3 Replace Water/Sewer Operations Call Truck	49.7%	50.3%		\$45,000			
4 Replace Water/Sewer Operations Lead Worker Truck	49.7%	50.3%		\$45,000			
5 Digester Rehabilitation and Methane Scrubber	49.7%	50.3%			\$1,500,000		
6 Replace Ford Ranger	49.7%	50.3%		\$90,000			
7 Vichy Springs Lift Station Upgrade	0.0%	100.0%			\$400,000		
8 New Sodium Hypochlorite Tanks	49.7%	50.3%		\$100,000			
9 Bisulfite Tank	49.7%	50.3%			\$100,000		
10 Solids Conveyor	49.7%	50.3%		\$950,000			
11 Replace Water/Sewer Operations Call Truck	49.7%	50.3%			\$45,000		
12 WWTP Service Truck	49.7%	50.3%				\$90,000	
13 Septage Receiving Station	49.7%	50.3%			\$1,200,000		
14	Total²:		\$0	\$1,290,000	\$3,245,000	\$90,000	\$150,000
15	After Inflation:		\$0	\$1,342,000	\$3,510,000	\$101,000	\$175,000
16	Total Paid By City:		\$0	\$667,000	\$1,530,000	\$50,000	\$87,000
17	Total Paid By District:		\$0	\$675,000	\$1,980,000	\$51,000	\$88,000

¹ Percentages based on current cost sharing ratios. These values may change with future updates.

² Expressed in 2025 dollars

Sewer Enterprise Cash Flow Proforma

Schedule 3

	Budget FY2025	Budget FY2026	Forecast FY2027	Forecast FY2028	Forecast FY2029	Forecast FY2030	Forecast FY2031	Forecast FY2032	Forecast FY2033
1 Rate Revenue Increase:	6.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Rate Revenue									
2 Service Charge Revenue	\$5,746,000	\$6,819,000	\$7,272,000	\$7,610,000	\$7,963,000	\$8,333,000	\$8,720,000	\$9,125,000	\$9,549,000
3 Change due to growth & use	\$0	\$44,000	\$47,000	\$49,000	\$51,000	\$54,000	\$56,000	\$59,000	\$62,000
4 Increase due to rate adjustments	\$0	\$307,000	\$291,000	\$304,000	\$319,000	\$333,000	\$349,000	\$365,000	\$382,000
Non-Rate Revenues									
5 Interest Earnings	\$1,000	\$7,000	\$8,000	\$4,000	\$9,000	\$13,000	\$13,000	\$13,000	\$14,000
6 Connection Fees	\$274,000	\$438,000	\$438,000	\$438,000	\$438,000	\$438,000	\$438,000	\$438,000	\$438,000
7 Operating Revenue	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 District Reimbursement (excluding capital)	\$2,722,000	\$3,674,000	\$3,784,000	\$3,954,000	\$4,153,000	\$4,306,000	\$4,498,000	\$4,701,000	\$4,914,000
9 Total Revenue	\$8,744,000	\$11,289,000	\$11,840,000	\$12,359,000	\$12,933,000	\$13,477,000	\$14,074,000	\$14,701,000	\$15,359,000
O&M Costs									
10 Salaries and Benefits	\$2,010,000	\$2,160,000	\$2,262,000	\$2,353,000	\$2,447,000	\$2,545,000	\$2,646,000	\$2,752,000	\$2,862,000
11 Professional Services	\$999,000	\$1,047,000	\$1,089,000	\$1,132,000	\$1,178,000	\$1,225,000	\$1,274,000	\$1,325,000	\$1,378,000
12 Operating Supplies	\$281,000	\$248,000	\$258,000	\$268,000	\$279,000	\$290,000	\$302,000	\$314,000	\$326,000
13 Utilities and Chemicals	\$889,000	\$1,008,000	\$1,049,000	\$1,090,000	\$1,134,000	\$1,179,000	\$1,227,000	\$1,276,000	\$1,327,000
14 Recycled Water	\$300,000	\$653,000	\$665,000	\$678,000	\$691,000	\$704,000	\$718,000	\$733,000	\$748,000
14 Other Operating Costs	\$602,000	\$598,000	\$622,000	\$647,000	\$673,000	\$700,000	\$728,000	\$757,000	\$787,000
15 Billing	\$186,000	\$177,000	\$184,000	\$191,000	\$199,000	\$207,000	\$215,000	\$224,000	\$233,000
16 Internal Allocation	\$2,019,000	\$2,115,000	\$2,234,000	\$2,360,000	\$2,493,000	\$2,634,000	\$2,784,000	\$2,943,000	\$3,112,000
17 Total Operating Expenses	\$7,286,000	\$8,006,000	\$8,363,000	\$8,719,000	\$9,094,000	\$9,484,000	\$9,894,000	\$10,324,000	\$10,773,000
Capital Costs									
18 Total Capital Spending	\$0	\$1,342,000	\$3,510,000	\$101,000	\$175,000	\$1,825,000	\$1,265,000	\$1,316,000	\$1,369,000
19 Existing Debt Service	\$2,478,000	\$2,472,000	\$2,467,000	\$2,678,000	\$2,674,000	\$2,666,000	\$2,660,000	\$2,655,000	\$2,648,000
20 City Funded Capital Projects (cash)	\$0	\$667,000	\$1,530,000	\$50,000	\$87,000	\$907,000	\$1,265,000	\$1,316,000	\$1,369,000
21 District Funded Capital Projects (cash)	\$0	\$675,000	\$1,980,000	\$51,000	\$88,000	\$918,000	\$0	\$0	\$0
22 Internal Loan Repayment	\$100,000	\$100,000	\$100,000	\$100,000	\$259,000	\$259,000	\$259,000	\$259,000	\$259,000
22 Total Capital and Debt Expenses	\$2,578,000	\$3,239,000	\$4,097,000	\$2,828,000	\$3,020,000	\$3,832,000	\$4,184,000	\$4,230,000	\$4,276,000
Other Sources									
23 Use of/(Transfer to) Rate Stabilization Fund	\$570,000	\$0	(\$300,000)	(\$300,000)	(\$300,000)	\$0	\$0	\$0	\$0
24 Total Revenue Requirement	\$7,864,000	\$11,245,000	\$12,460,000	\$11,547,000	\$12,114,000	\$13,316,000	\$14,078,000	\$14,554,000	\$15,049,000
25 Beginning Year Balance (all funds*)	\$584,000	\$1,464,000	\$1,508,000	\$888,000	\$1,700,000	\$2,519,000	\$2,680,000	\$2,676,000	\$2,823,000
26 Surplus/(Shortfall)	\$880,000	\$44,000	(\$620,000)	\$812,000	\$819,000	\$161,000	(\$4,000)	\$147,000	\$310,000
27 End of Year Balance	\$1,464,000	\$1,508,000	\$888,000	\$1,700,000	\$2,519,000	\$2,680,000	\$2,676,000	\$2,823,000	\$3,133,000
28 Reserve Target	\$1,822,000	\$2,002,000	\$2,091,000	\$2,180,000	\$2,774,000	\$3,371,000	\$3,729,000	\$3,836,000	\$3,948,000
Debt Coverage Calculations									
29 Total Revenue Available for Debt Service	\$2,028,000	\$3,283,000	\$3,177,000	\$3,340,000	\$3,539,000	\$3,993,000	\$4,180,000	\$4,377,000	\$4,586,000
30 Total Yearly Parity Debt Payment	\$2,478,000	\$2,472,000	\$2,467,000	\$2,678,000	\$2,674,000	\$2,666,000	\$2,660,000	\$2,655,000	\$2,648,000
31 Debt Coverage Ratio	0.82	1.33	1.29	1.25	1.32	1.50	1.57	1.65	1.73

* includes restricted connection fee funds and bond proceeds



2025 Sewer Financial Plan Study

Final Recommendation

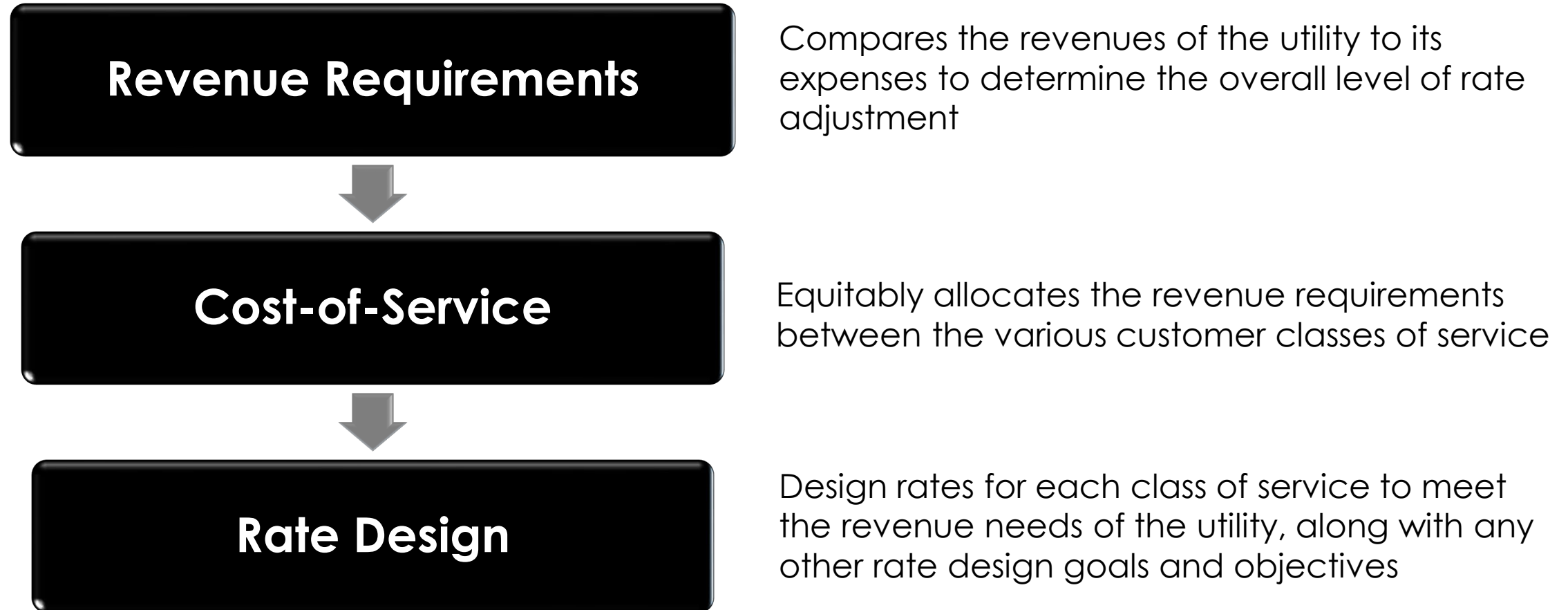
July 16, 2025



Agenda

1. General Utility Rate Setting
2. Sewer Enterprise Financial Plan
3. Proposed Rate Adjustments
4. Project Schedule

The Rate Setting Process



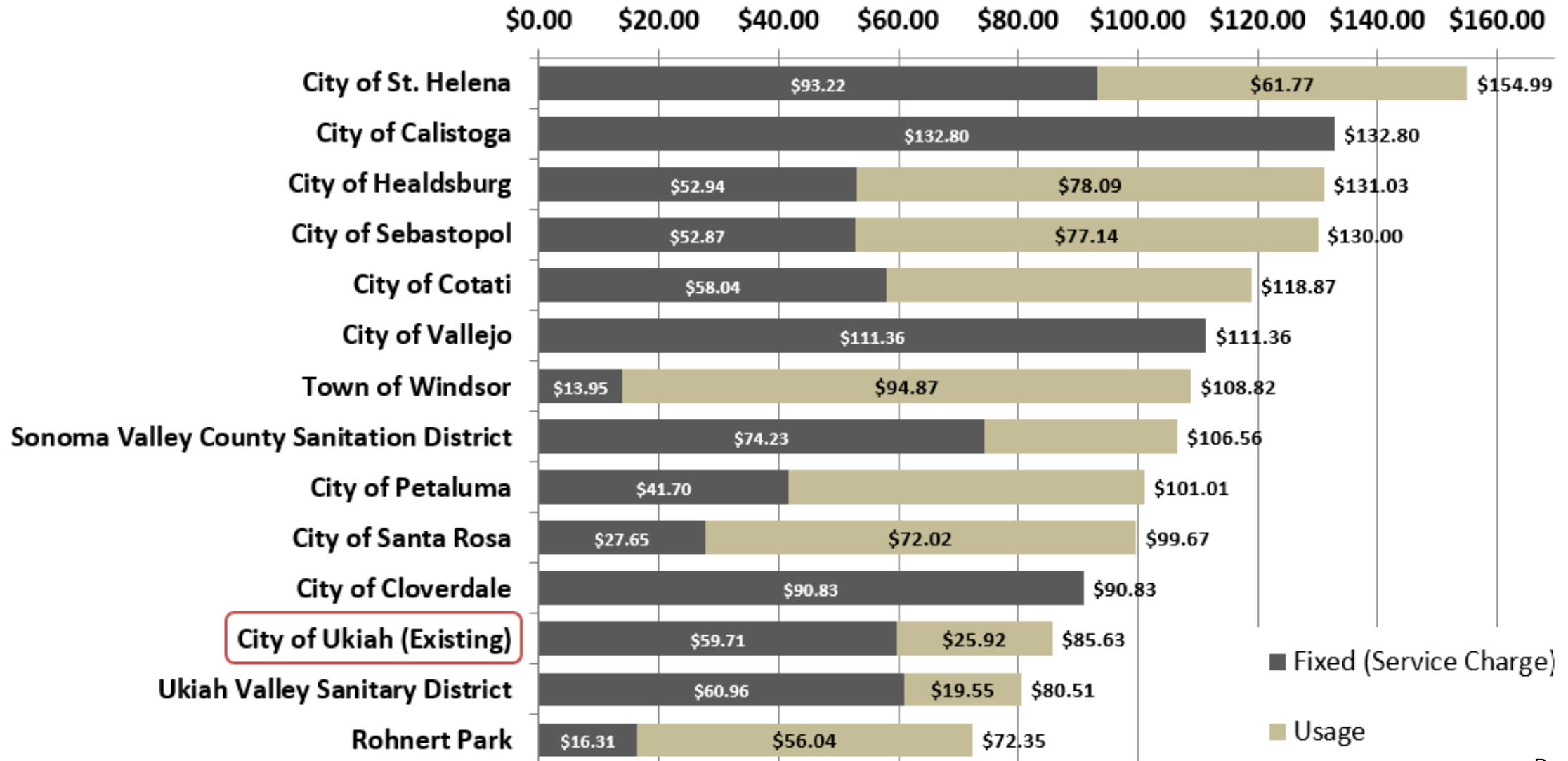
Legal Requirements for Setting Water Rates In California

Proposition 218 (Article XIID, Section 6 of California Constitution)

- Revenues shall not exceed funds required to provide service; nor used for another purpose
- Amount shall not exceed the proportional cost of the service attributable to the parcel
- Service must be actually used or immediately available
- Approval process includes 45-day notice, public hearing, and written majority protest. Does not require a voting process (unlike taxes).

Regional Survey

Monthly Bill for Single Family Homes with 6.0 HCF of monthly water usage



Reserve Policies

In addition to protecting the City against unforeseen circumstances, Reserve policies also contribute towards the City's credit rating.

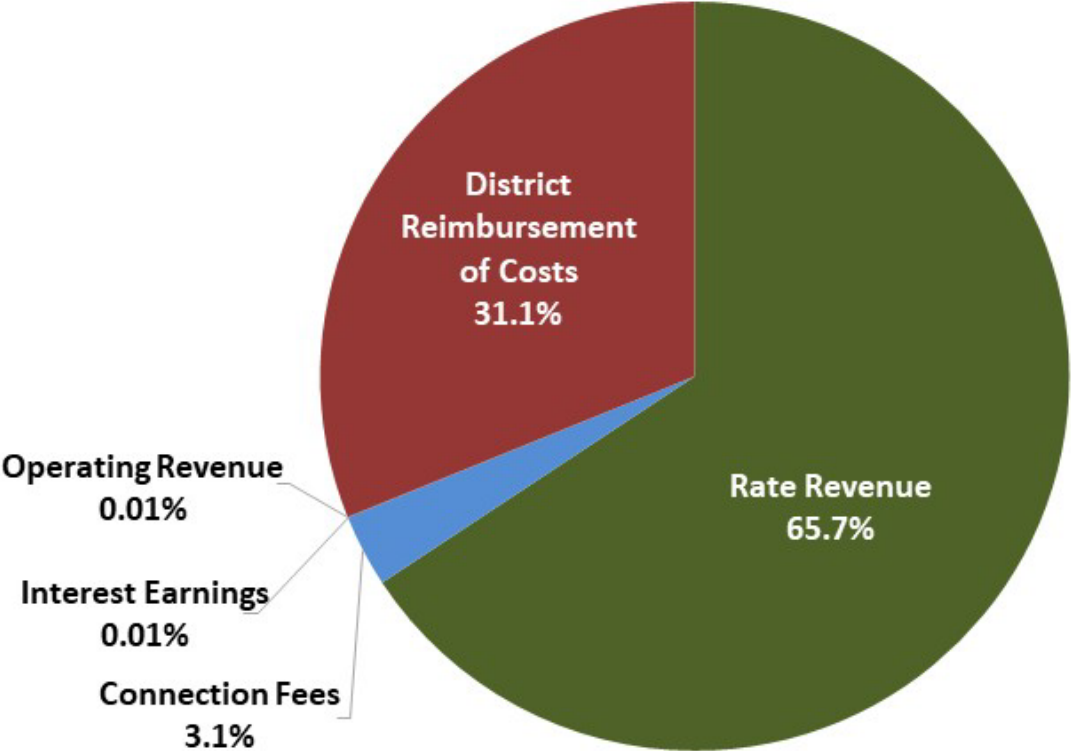
The City's Operating Reserve policy requires the sewer utility to maintain cash reserves of at least 25 percent of operating expenses (currently equal to about **\$1.8 million**).

The Study recommends that the City work towards developing a Capital Reserve policy of **\$1.3 million** (based on average annual capital spending). This reserve will help the City absorb any spikes in capital spending or unforeseen infrastructure failure.

Revenue

FY2024/25 Budget

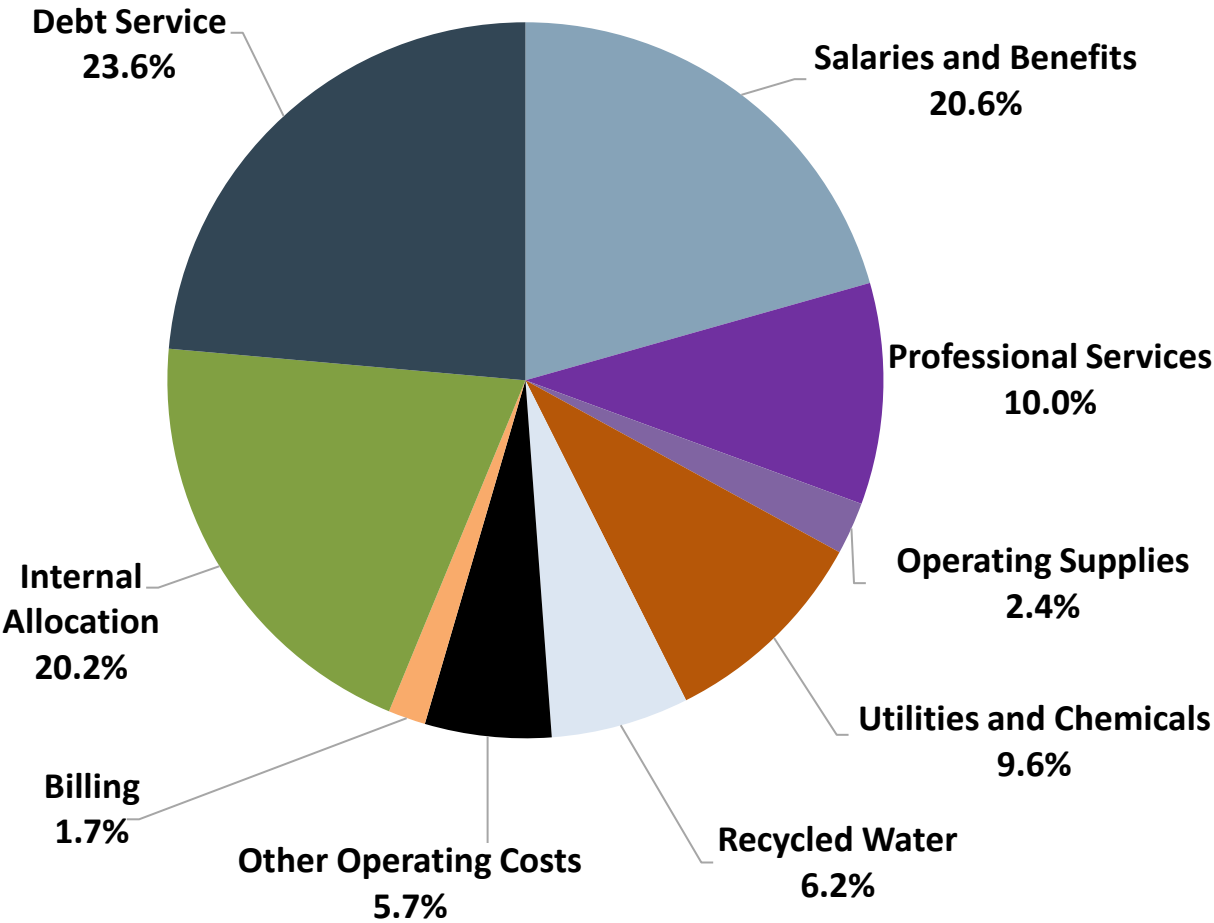
Rate Revenue	\$5,746,000
Non-Rate Revenue	
Connection Fees	\$274,000
Interest Earnings	\$1,000
Operating Revenue	\$1,000
District Reimbursement of Costs	\$2,722,000
Total:	\$8,744,000



Operating and Debt Expenses

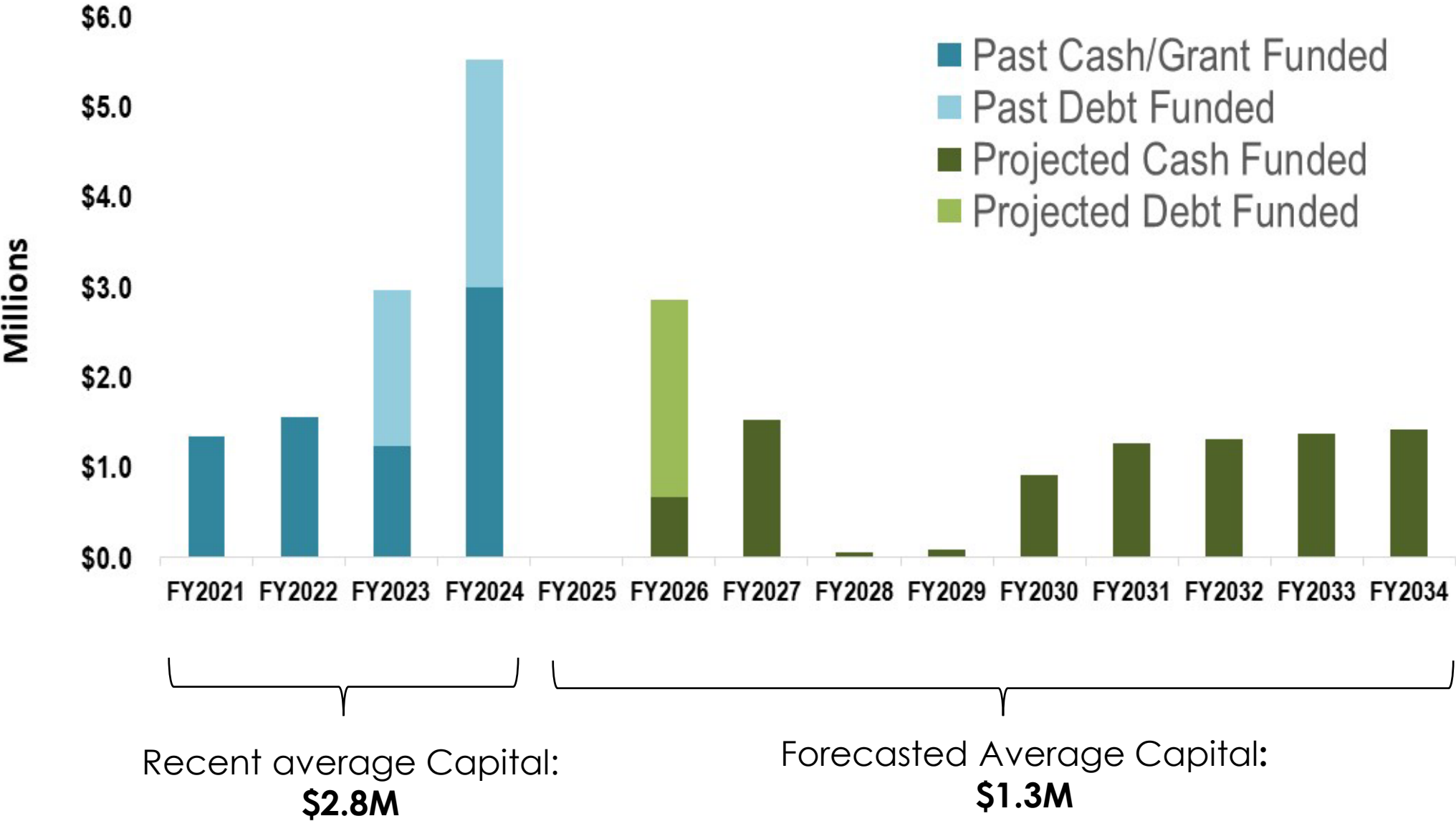
FY2025/26 Budget

Salaries and Benefits	\$2,160,000
Professional Services	\$1,047,000
Operating Supplies	\$248,000
Utilities and Chemicals	\$1,008,000
Recycled Water	\$653,000
Other Operating Costs	\$598,000
Billing	\$177,000
Internal Allocation	\$2,115,000
Debt Service	\$2,472,000
Total Budget:	\$10,478,000*



* Does not include capital spending

Historical and Projected Capital Spending



Capital Spending Plan

Project Name	Cost Sharing ¹		FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	City	District					
1 AWTCCB Cover	49.7%	50.3%					\$150,000
2 IPS Liner Replacement	49.7%	50.3%		\$60,000			
3 Replace Water/Sewer Operations Call Truck	49.7%	50.3%		\$45,000			
4 Replace Water/Sewer Operations Lead Worker Truck	49.7%	50.3%		\$45,000			
5 Digester Rehabilitation and Methane Scrubber	49.7%	50.3%			\$1,500,000		
6 Replace Ford Ranger	49.7%	50.3%		\$90,000			
7 Vichy Springs Lift Station Upgrade	0.0%	100.0%			\$400,000		
8 New Sodium Hypochlorite Tanks	49.7%	50.3%		\$100,000			
9 Bisulfite Tank	49.7%	50.3%			\$100,000		
10 Solids Conveyor	49.7%	50.3%		\$950,000			
11 Replace Water/Sewer Operations Call Truck	49.7%	50.3%			\$45,000		
12 WWTP Service Truck	49.7%	50.3%				\$90,000	
13 Septage Receiving Station	49.7%	50.3%			\$1,200,000		
14	Total²:		\$0	\$1,290,000	\$3,245,000	\$90,000	\$150,000
15	After Inflation:		\$0	\$1,342,000	\$3,510,000	\$101,000	\$175,000
16	Total Paid By City:		\$0	\$667,000	\$1,530,000	\$50,000	\$87,000
17	Total Paid By District:		\$0	\$675,000	\$1,980,000	\$51,000	\$88,000

¹ Percentages based on current cost sharing ratios. These values may change with future updates.

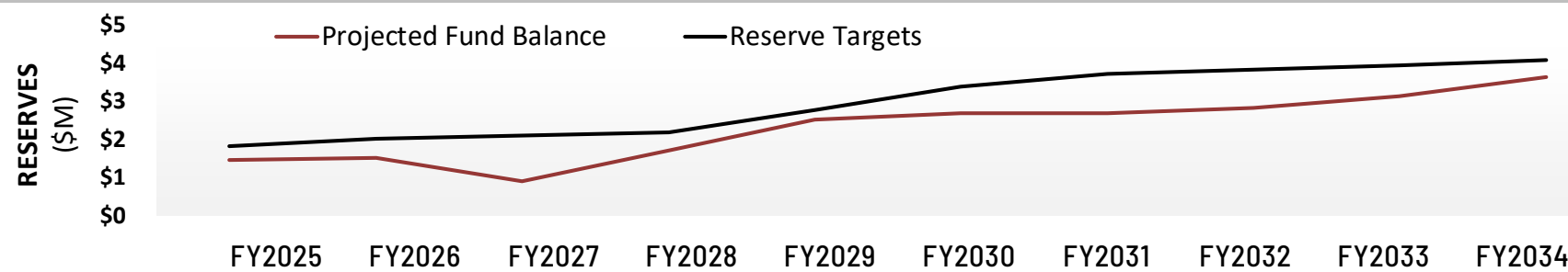
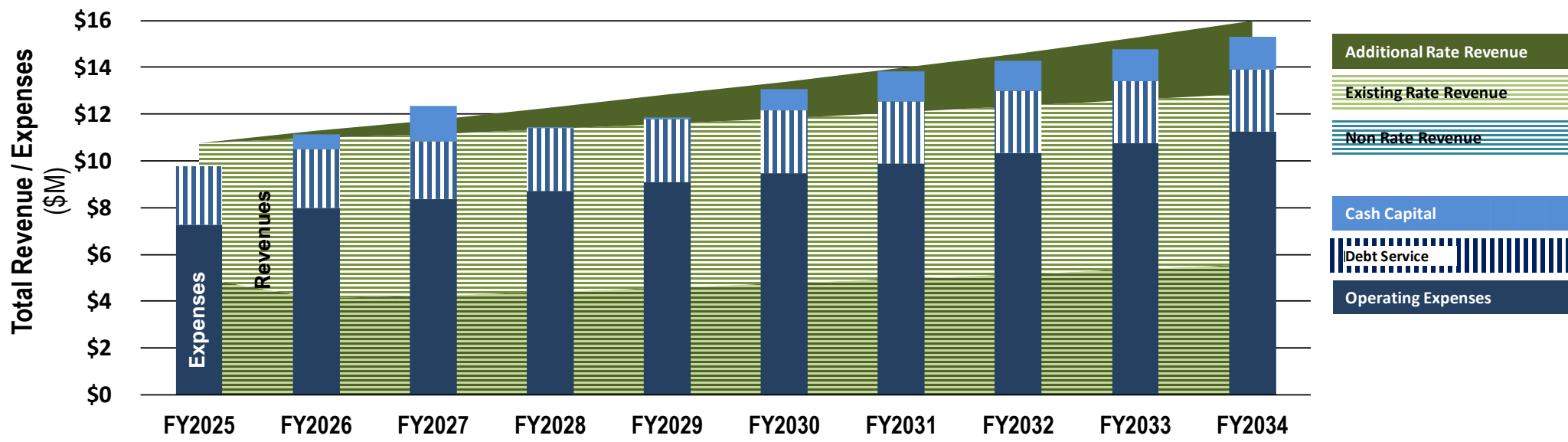
² Expressed in 2025 dollars

Rate Increase Drivers

1. Need to build reserves after an unplanned spike in recent capital spending
2. Substantial increase in insurance costs
3. New allocation of Recycled Water costs (operations and debt service)
4. Lower connection fee revenue than previously expected

Financial Forecast & Proposed Rate Revenue Increases

Internal loan* for \$2.0 million required to build reserves



	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Proposed Rate Revenue Increases:		6.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Debt Coverage Ratio:	0.82	1.33	1.29	1.25	1.32	1.50	1.57	1.65	1.73	1.83
Internal Loan Proceeds:	\$2.0M									

* Assumes 5% interest and a 13-year repayment schedule, with interest-only for first three years

Page 512 of 1716

Proposed Rates

	Current Rates	October 1, 2025	July 1, 2026	July 1, 2027	July 1, 2028	July 1, 2029
Monthly Service Charge*:	\$59.71	\$63.29	\$65.82	\$68.45	\$71.19	\$74.04
Consumptions Rate (per HCF)						
Residential:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commerical 1:	\$4.32	\$4.58	\$4.76	\$4.95	\$5.15	\$5.36
Commercial 2:	\$4.71	\$4.99	\$5.19	\$5.40	\$5.62	\$5.84
Commercial 3:	\$9.39	\$9.95	\$10.35	\$10.76	\$11.19	\$11.64
Commercial 4:	\$12.49	\$13.24	\$13.77	\$14.32	\$14.89	\$15.49

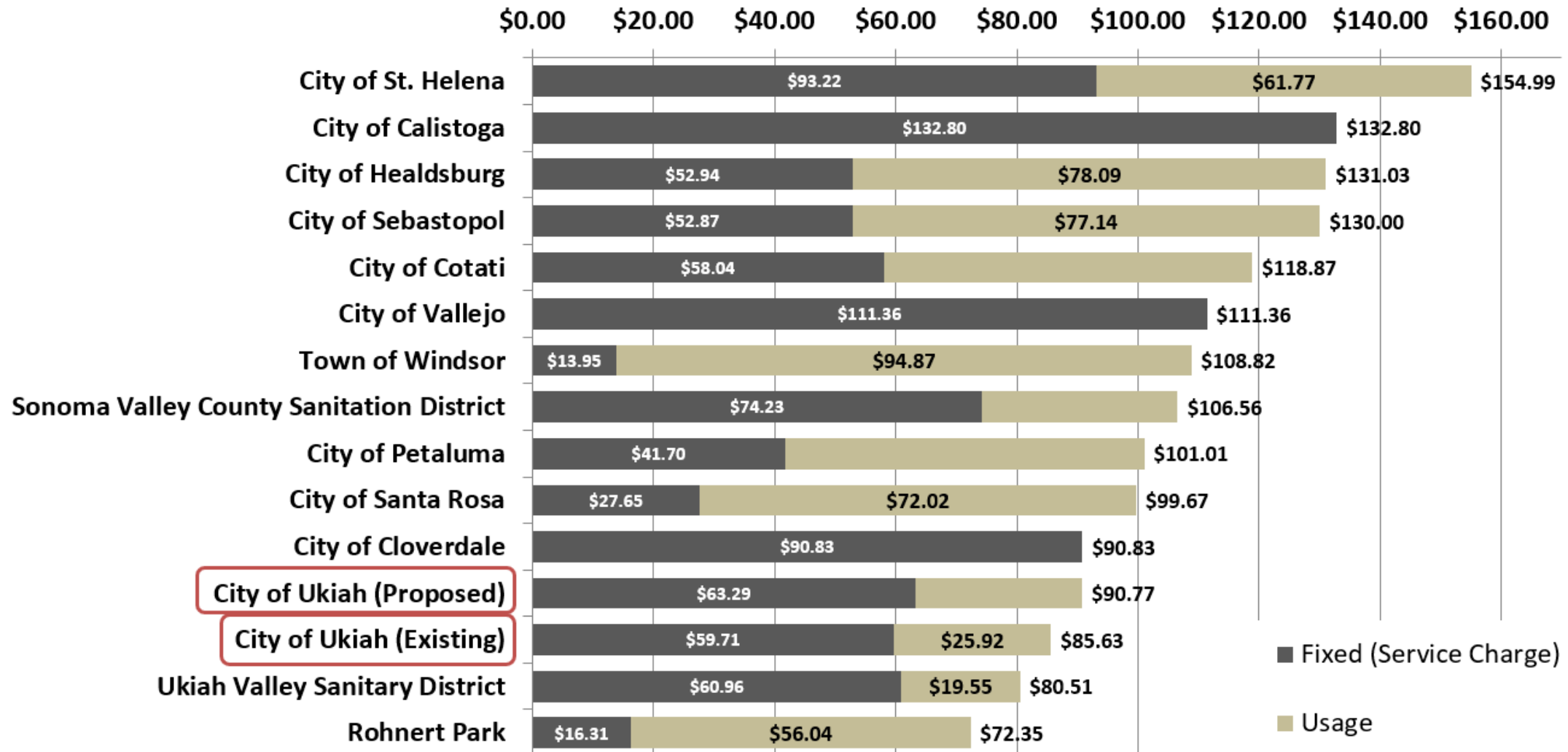
* Service Charge is per dwelling unit for residential and per ESSFU for commercial accounts (with a minimum charge of 1 ESSFU)

Year 1 Monthly Bill Impacts for Single Family Homes

	HCF	Current	Proposed	Increase
Low Water User	3	\$72.67	\$77.03	\$4.36
Average Water User	6	\$85.63	\$90.77	\$5.14
High Water User	12	\$111.55	\$118.25	\$6.70

Regional Survey

Monthly Bill for Single Family Homes with 6 HCF of monthly water usage



Next Steps

- 
- Final recommendation to Council on July 16th
 - Mail Prop 218 Notifications
 - Conduct Public Hearing on September 17th
 - Implement first rate increase on October 1st, 2025

9-6-25

City of Ukiah.

I oppose the rate increase
on the proposed Sewer Rates.

Trudy Babcock

Ukiah, CA 95482

July 29, 2025

Kristine Lawler
City of Ukiah Clerk
300 Seminary Ave
Ukiah, CA 95482

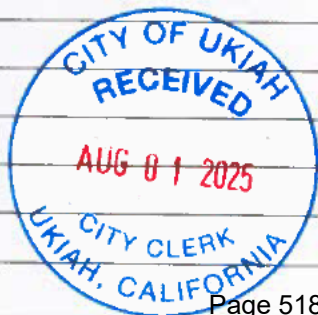
Ms. Lawler,

Please be advised that I protest
the proposed sewer increase of
July 2025, 22% over the next
5 years is excessive and
just gives more fuel to the
anti-annexation contingent.

Please reconsider this action.

Allene Brown

Ukiah, CA 95482



CAMINITI PROPERTY
MANAGEMENT

Ukiah, Ca 95482

%City of Ukiah
Kristine Lawler
300 Seminary Ave
Ukiah, CA 95482

No Sewer Rate
Increase !!! Please!
We are already struggling ☹️

2 AUGUST 2025

MS. LAWLER,

I'M WRITING TO OBJECT TO THE PROPOSED SEWER RATE INCREASE IN UKIAH (I THINK IT'S PROP 218). I AM A RENTER AT 306 WEST CHURCH STREET, SO IF THIS PROPERTY IS NOT AFFECTED DISREGARD MY COMMENTS. IT'S JUST SO DIFFICULT TO MANAGE INCREASING EXPENSES FROM EVERY DIRECTION WHILE FINDING NO WAY TO EARN ENOUGH TO COVER IT ALL. I'M SYMPATHETIC TO THE NEED FOR INFRASTRUCTURE IMPROVEMENT AND MAINTENANCE, BUT HOPE THE MEANS CAN BE FOUND ANOTHER WAY.

THANKS FOR YOUR CONSIDERATION.

Sincerely,

Heather

HEATHER SEGGER

UKIAH CA 95462

August 3, 2025

To Whom It May Concern,

My name is Karen Lee, I'm the owner of property at 407 + 409 McPeak St in Ukiah CA 95482.

I object to the sewer rate increases proposed by the city of Ukiah.

I've lived and worked in Ukiah for more than 30 years. I've always paid all my taxes + bills on time.

I'm now a senior citizen living on a fixed income. My social security payments are less than 1000 dollars per month. My property taxes are over 500 dollars per month. I feel like I'm being forced out of my house. I can barely afford to make ends meet. After contributing financially to this community for more than 30 years, I feel like I'm being punished with ever increasing bills.

I strongly object to the proposed sewer rate increases.

Sincerely,

Karen Lee
Karen Lee

Ukiah CA
95482



LUCIA BIANCHI

UKIAH CA 95482

July 27, 2025

Kristine Lawler
City Clerk
300 Seminary Ave.
Ukiah CA 95482

Dear Ms. Lawler:

I am writing to respectfully protest the proposed Sewer Rates described in the Notice of Public Hearing marked DRAFT that I received in the mail on approximately July 25, 2025.

I am writing to say that the proposed rates will impose a hardship on me. I am 81 years old. I live on a fixed income. I live alone in my home.

If the proposed rates take effect each year from 2025 through 2029, I will probably find a way to reduce my expenses so I can stay in my home. But it will be difficult.

It seems like the Notice of Public Hearing says that every residential household pays the same Sewer Rate. So a household of ten people pays the same as my household of one person, even though my sewer usage would surely be considerably less.

I want to acknowledge that I realize it is expensive and difficult to operate the City's sewer collection, treatment, and disposal infrastructure. I hope for my sake, and others who live on a fixed income, it can be done cheaper.

Respectfully,

Property Owner & Resident: Lucia Bianchi
Property Address: [REDACTED] Ukiah

8/6/25

Dear Ms Lawler,

I'm writing this letter to oppose raising the price of sewer, not only this year but the next 5 years!

Our prices for electric went up, our charges for garbage continues to increase, water as well. This is out of control.

I live in Oak Manor area and we don't get street cleaners any more on Pomo Drive. Why? So we're getting less, and more expensive services.

I am 76 years old, retired from the County as a CPS Social Worker. I am on a budget that keeps getting smaller. My health care just went up 35\$ which means I'm paying over 300.- a month for that.

I have learned to live without air conditioning. I don't flush my toilet every time I use it. I budget everything I possibly can. Please I am asking you to not raise sewer prices. This is depressing!

Sincerely,

Marsa Gail Vining

8/27/2025

Kristine Lawler – City Clerk

300 Seminary Ave.

Ukiah, CA 95482

Ms. Lawler,

We do protest the proposed Sewer Rates. The increases are high and with other cost of living increases are not sustainable.

Respectfully,

A handwritten signature in dark ink, appearing to read "Michael Buchanan", with a long horizontal flourish extending to the right.

Michael & Terisa Buchanan

A solid gray rectangular box used to redact a line of text, likely a street address.

Ukiah, CA 95482

Oona Aven

Ukiah, CA. 95482

August 29, 2025

City of Ukiah
Kristine Lawler, City Clerk
300 Seminary Ave.
Ukiah, CA. 95482

To Whom it May Concern,

As per proposition 218, I, Oona Aven, property owner of 453 North School Street, Ukiah, CA. 95482, am submitting this letter of strong protest to the proposed sewer rate increase.

I based my decision to use this right on the following points which are both deeply personal, as well as, with deep regard for our lovely town and community:

1. In your draft you refer to "Higher than anticipated inflation...significant unforeseen capital for infrastructure improvements."
Every single citizen can claim to have the same issues; yet, we can't simply pass the bill on to somebody else - - especially seniors on fixed incomes.

If the citizens of Ukiah must "tighten their belts" and make personal sacrifices to revise our budgets, it certainly seems that our representatives should do the same. The taxpayers do not have "deep pockets" every time the municipal budget has issues.

2. The draft also states "An increase is necessary at this time in order to pay for existing operating costs". (I would also appreciate more details re: "operating costs.") Also more specific information re: "professional services" @10% of the budget for \$1,047,000 and what constitutes "internal allocation" for 20% or \$2,115,000.

As a representative body of public servants it is part of your job to be vigilant with the tax payer dollars. Certainly, a concerted effort to re-allocate funds, balance the budget, and triage what you see as the public needs from a different perspective could precede a raise in our sewer rates which will increase my personal "operating costs".

Therefore, I submit this letter of protest with the hope that it will actually be read and considered; and, that my fellow citizens of Ukiah unite in their protest writing.

Thank you for listening,

Sincerely,



Oona Aven

City of Ukiah Notice of Public Hearing on Proposed Rates for Sewer Service Charges

September 17, 2025 at 5:15 pm

Ukiah Civic Center
300 Seminary Ave, Ukiah, CA, 95482

The City of Ukiah will hold a public hearing on a proposed rate schedule for Sewer Rates.

The City's sewer utility provides sewer collection, treatment and disposal services for nearly 3,600 residential and business accounts located within a portion of the City's jurisdictional boundaries. The City's sewer utility collects and treats wastewater at the City's wastewater treatment plant. These sewer services are essential to protecting public health and the environment and maintaining a high quality of life.

The City of Ukiah charges Sewer Rates to each property that is connected to the City's sewer system. The City uses these funds to operate the collection and treatment systems, and to pay for effluent and biosolids disposal.

WHY INCREASE RATES NOW?

Higher than anticipated inflation and significant, unforeseen capital outlays for infrastructure improvements have impacted the sewer enterprise reserves and maintenance costs. An increase in rate revenue is necessary at this time in order to pay for existing operating costs and to increase capital reinvestment in the sewer collection system and the wastewater treatment plant.

In order to meet the sewer utility's current expenses, the City is proposing increases to the Sewer Rates over the next five years. The proposed rates are designed to meet the current cost of operations as well as the annual capital budget for sewer assets.

HOW WERE RATES CALCULATED?

The proposed Sewer Rates were calculated using methodologies that are aligned with industry standard practices for rate setting and all applicable laws, including California Constitution Article VIII D, Section 6 (commonly known as Proposition 218). The revenue

requirements for the City sewer utility were based on a financial plan that integrated operational, debt and capital funding needs.

Residential users will continue to pay a fixed monthly Service Charge on a per-dwelling basis in addition to a Consumption Rate based on the average monthly water used during the prior winter months of January through March.

Commercial users will be charged a monthly Service Charge for each "equivalent sewer service flow unit" (ESSFU), which is a measure of the average winter water use of residential dwelling units. The ESSFU assignment for a Commercial user will be calculated based on the user's average monthly water consumption during the previous winter (with a minimum of one (1) ESSFU per commercial account). The Consumption Rate for Commercial users is determined by multiplying the account's average winter water usage by the respective rate for the Commercial customer's classification (which accounts for sewer strength).

HOW MUCH OF AN INCREASE?

Under this proposal, rate revenue from the Sewer Service Charge will increase 6% overall on October 1, 2025, then 4% each July 1 of 2026, 2027, 2028, and 2029. The proposal involves no structural changes to the rates, but simply an update to the existing structure given cost increases and the need to build reserves.

For complete details, the 2025 Sewer Financial Plan Report is available at: <http://www.cityofukiah.com/utility-services/>.

For more information on proposed Sewer Rates, please call:

(707) 463-6228

or email: lmartin@cityofukiah.com

HOW TO PARTICIPATE

Proposition 218 establishes a protest process for the public to follow if they wish to oppose the rates.

Written protests on the proposed Sewer Rates must be received prior to the close of the Public Hearing on September 17, 2025 and may be hand delivered during the hearing, mailed or delivered to:

Kristine Lawler

City Clerk

300 Seminary Ave, Ukiah, CA, 95482

E-mail protests are not accepted.

Written protests on the proposed Sewer Rates must identify the owner(s) or tenant of the property and provide the property address. Only one protest per affected parcel will be considered. If written protests are presented by owners from a majority of affected parcels, the City cannot approve the proposed rate.

Robert Smedley
Karen Smedley

Ukiah, Ca. 95482

We object to
protest the
proposed sewer
increase

9/7/2025

To whom it may concern,
I oppose the rate increases described
in the City of Ukiah Notice of Public
Hearing on Proposed Rates for Sewer
Service Charges letter.

Josh and Jenna Mason

Ukiah, CA 95482



Kristine Lawler
City Clerk
300 Seminary Ave.
Ukiah, CA 95482

To The City of Ukiah:

As a resident of Ukiah and payer of utilities, I request that with this increase in fees, wastewater viral surveillance for COVID-19 be reinstated as a condition for my support. This would allow the County of Mendocino to resume reporting this data. Without this, I protest this increase.

Thanks,
Cecelia Sullivan

Ukiah, CA 95482



AGENDA SUMMARY REPORT

SUBJECT: Conduct a Public Hearing to Receive Public Comment; Discuss Final Grantee Performance Under State Community Development Block Grant 21-CDBG-NH-20004; Adopt Resolution Confirming Project Closeout and Reimbursement of Grant Expenses from the California Department of Housing and Community Development; and Approve any Corresponding Budget Amendments Required as Part of the Grant Closeout Process.

DEPARTMENT: Community
Development

PREPARED BY: Jim Robbins, Housing and Grants Manager

PRESENTER: Jim Robbins, Housing and Grants Manager

ATTACHMENTS:

1. Resolution 2021-12 CDBG
2. StandardAgreement_21-CDBG-NH-20004
3. Code-Enforcement-Policies-and-Procedures
4. Code-Enforcement-Presentations
5. Resolution_2025-XX_Close

Summary: Council is requested to conduct a public hearing to receive a report from Staff on performance and accomplishments from State Community Development Block Grant # 21-CDBG-NH-20004; receive public comment related to the City's performance on this grant project; adopt a resolution acknowledging project accomplishments and confirming activity completion; and approve any corresponding budget amendments required as part of the grant closeout process.

Background: On April 7, 2021, the Ukiah City Council adopted Resolution No. 2021-12 (ATTACHMENT 1) authorizing the submittal of a State Community Development Block Grant (CDBG) application in response to the 2021 CDBG Notice of Funding Availability (NOFA) issued by the State Department of Housing and Community Development (HCD). The authorizing Resolution for application included the standing up of a new Code Enforcement program, the current project, as well as a Housing Rehabilitation Program. The two CDBG-funded projects were awarded in separate standard agreements.

The City was awarded \$500,000 in State CDBG funds for the current project, which included no additional Program Income. The City executed Standard Agreement 21-CDBG-NH-20004 on September 9, 2022 (ATTACHMENT 2). Awarded activities consisted of the following:

“City of Ukiah Code Enforcement Services Program”

The goals of the program were to stand up and restore code enforcement services in six City of Ukiah census tract block groups, improve living conditions for low and moderate income households and individuals, and address hazards to the community that manifest as code violations. The Code Enforcement Services were provided by staff in the Community Development Department's Building Services and Code Enforcement Services Divisions in coordination with the Ukiah Police Department and other departments. With the contribution of CDBG grant funds, the Community Development Department was able to hire a full-time code enforcement inspector to serve the City's six low- and moderate-income census tract block groups.

The CDBG-funded code enforcement inspector position was filled in January 2023, and the inspector was actively engaged in the program for thirty-one (31) months. The most commonly identified violations were community blight, unauthorized construction, and lack of property maintenance. The code enforcement inspector completed work in the project areas educating tenants and property owners about city ordinances, regulations, and policies to voluntarily correct code deficiencies, violations, and other health and safety concerns. In many instances, compliance was achieved within 15-30 days of notification. The inspector also informed property owners of various city assistance programs, including the City of Ukiah CDBG Housing Rehabilitation Program.

The combination of a Housing Rehabilitation Program together with a Code Enforcement Services Program was a City of Ukiah innovation that has been recognized by HCD as a model for other cities and counties, and HCD now requires cities and counties to apply for housing rehabilitation funding if they are proposing a code enforcement program. In November 2023, City Housing Division staff were invited by HCD to present the new statewide program to other cities and counties, discussing best practices and tips for making the program effective.

The grant program deliverables included the following:

- Hiring of Code Enforcement Inspector
- Training completion certificates from the California Association of Code Enforcement Officers
- Conducting code enforcement inspections
- Creating, maintaining, and updating code enforcement tracking system using a new (CitizenServe) online electronic permitting system
- Completing letters and follow-up code enforcement actions to fully address and resolve code compliance and health and safety issues
- Completing After Action Reports for resolved code enforcement cases
- Identifying and referring code compliance cases for assistance from the Housing Rehabilitation Program

Discussion: City of Ukiah Community Development Department staff successfully implemented the CDBG-funded Code Enforcement Services Program between October 2022 and September 2025. Since the hiring of the Code Enforcement Inspector in January 2023, all grant deliverables were completed, including the design of Code Enforcement Policies and Procedures (ATTACHMENT 3). Code enforcement staff also designed and launched a new Code Compliance website, at: <https://cityofukiah.com/community-development/code-compliance/>, and set up a recurring Code Enforcement Annual Report to the City Council (see Code Enforcement Annual Reports in ATTACHMENT 4). A number of homeowners were also referred to the Housing Rehabilitation Program.

The total amount of 21-CDBG-NH-20004 grant activity funds expended for the project was \$464,969, representing an expenditure rate of 99.99% of total available Activity grant funds. All \$35,000 in General Administration funds were also expended.

The Community Development Department has recently submitted a non-competitive Program Income-Only CDBG application to continue the Code Enforcement Services Program. It is anticipated that the new program would begin within the next six months.

Staff recommends Council receive this report, conduct a public hearing to receive public comment on the City's performance related to CDBG grant 21-CDBG-NH-20004, and adopt a Resolution acknowledging accomplishments, confirming activity completion, and confirming receipt of grant reimbursement funds from the State (ATTACHMENT 5).

Recommended Action: 1) Receive report from Staff on final performance related to State Community Development Block Grant 21-CDBG-NH-20004; 2) conduct a public hearing to receive public comment; 3)

adopt a Resolution acknowledging accomplishments, confirming activity completion, and confirming approval for receipt of grant reimbursement funds from the State; and 4) approve any corresponding budget amendments required as part of the grant closeout process.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: \$500,000

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: State CDBG Grant

REVENUE: No **GRANT:** Yes

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Craig Schlatter, AICP, Community Development Director; Matt Keizer, Chief Building Official; Mary Horger, Assistant Finance Director

STRATEGIC PLAN (SP): **SP 1A** - Build neighborhoods that provide access for all to a compatible balance of housing, employment, commercial, medical, education, and recreational resources.

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): **GP-A8 - Housing Element (2019-2027)**, Goal H-1: Conserve, rehabilitate, and improve the existing housing stock to provide adequate, safe, sustainable, and decent housing for all Ukiah residents.

Approved:


Sage Sangiacomo, City Manager

RESOLUTION NO. 2021-12**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH APPROVING AN APPLICATION FOR FUNDING AND THE EXECUTION OF A GRANT AGREEMENT AND ANY AMENDMENTS THERETO FROM THE 2020-2021 FUNDING YEAR OF THE STATE CDBG PROGRAM****BE IT RESOLVED** by the City Council of the City of Ukiah as follows:**SECTION 1:**

The City Council has reviewed and hereby approves the submission to the State of California of one or more application(s) in the aggregate amount, not to exceed, of \$1,000,000 for the following CDBG activities, pursuant to the January 2021 CDBG NOFA:

City of Ukiah Housing Rehabilitation Program	\$ 400,000
Housing Rehabilitation Administration	\$ 100,000
City of Ukiah Code Enforcement Program	\$ 465,000
General Administration – Code Enforcement Program Activity	<u>\$ 35,000</u>
Total Grant Amount	\$1,000,000

SECTION 2:

The City hereby approves the use of Program Income in an amount not to exceed \$38,000 for the Housing Rehabilitation Program activity described in Section 1.

SECTION 3:

The City acknowledges compliance with all state and federal public participation requirements in the development of its application(s).

SECTION 4:

The City hereby authorizes and directs the City Manager to execute and deliver all applications and act on the City's behalf in all matters pertaining to all such applications.

SECTION 5:

If an application is approved, the City Manager is authorized to enter into, execute and deliver the grant agreement (*i.e.*, Standard Agreement) and any and all subsequent amendments thereto with the State of California for the purposes of the grant.

SECTION 6:

If an application is approved, the City Manager is authorized to sign and submit Funds Requests and all required reporting forms and other documentation as may be required by the State of California from time to time in connection with the grant.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Ukiah held on April 7, 2021, by the following vote:

AYES: Councilmembers Crane, Rodin, Duenas, Brown, and Mayor Orozco
 NOES: None
 ABSTAIN: None
 ABSENT: None



Juan V. Orozco, Mayor
 City of Ukiah of the State of California

ATTEST:


Kristine Lawler, City Clerk
 City of Ukiah of the State of California

City of Ukiah, California
 Certified to be a
 True and Exact Copy

4/9/21
 Date


 Kristine Lawler, City Clerk

SCO ID:

STATE OF CALIFORNIA - DEPARTMENT OF GENERAL SERVICES

STANDARD AGREEMENT

STD 213 (Rev. 04/2020)

 AGREEMENT NUMBER
 21-CDBG-NH-20004

PURCHASING AUTHORITY NUMBER (If Applicable)

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

CONTRACTING AGENCY NAME

Department of Housing and Community Development (HCD)

CONTRACTOR NAME

City of Ukiah

2. The term of this Agreement is:

START DATE

Upon HCD Approval

THROUGH END DATE

Thirty-Six (36) Months from the Effective Date

3. The maximum amount of this Agreement is:

\$500,000

4. The parties agree to comply with the terms and conditions of the following exhibits, which are by this reference made a part of the Agreement.

Exhibits	Title	Pages
Exhibit A	Scope of Work	7
Exhibit B	Budget Detail and Payment Provisions	7
Exhibit C *	General Terms and Conditions	04/2017
+ - Exhibit D	CDBG Program Terms and Conditions	24
+ - Exhibit E	Program Application	105

Items shown with an asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto.

These documents can be viewed at <https://www.dgs.ca.gov/OLS/Resources>

IN WITNESS WHEREOF, THIS AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO.

CONTRACTOR

CONTRACTOR NAME (if other than an individual, state whether a corporation, partnership, etc.)

City of Ukiah

CONTRACTOR BUSINESS ADDRESS

300 Seminary Avenue

CITY

Ukiah

STATE

CA

ZIP

95482

PRINTED NAME OF PERSON SIGNING

Sage Sangiacomo

TITLE

City Manager

CONTRACTOR AUTHORIZED SIGNATURE

DATE SIGNED

September 1, 2022

SCO ID:

STATE OF CALIFORNIA - DEPARTMENT OF GENERAL SERVICES

STANDARD AGREEMENT

STD 213 (Rev. 04/2020)

AGREEMENT NUMBER

21-CDBG-NH-20004

PURCHASING AUTHORITY NUMBER (If Applicable)

STATE OF CALIFORNIA

CONTRACTING AGENCY NAME

Department of Housing and Community Development (HCD)

CONTRACTING AGENCY ADDRESS

2020 W. El Camino Avenue

CITY

Sacramento

STATE

CA

ZIP

95833

PRINTED NAME OF PERSON SIGNING

Synthia Rhinehart

TITLE

Contracts Manager

CONTRACTING AGENCY AUTHORIZED SIGNATURE

Synthia Rhinehart

DATE SIGNED

9/9/2022

CALIFORNIA DEPARTMENT OF GENERAL SERVICES APPROVAL

EXEMPTION (If Applicable)

Exempt per SCM Vol. 1 4.04. A.3 (DGS memo dated 6/12/1981)

EXHIBIT A

AUTHORITY, PURPOSE AND SCOPE OF WORK

1. Authority & Purpose

This Standard Agreement (hereinafter "Agreement") will provide official notification of the conditional reservation of funds under the State of California's administration of the federal Community Development Block Grant Program for non-entitlement jurisdictions (hereinafter, "CDBG" or the "Program") by the Department of Housing and Community Development (hereinafter the "Department") pursuant to the provisions of 42 U.S. Code (U.S.C.) 5301, et seq., 24 Code of Federal Regulations (CFR) Part 570, Subpart I, California Health and Safety Code Section 50825, et seq., and the California State CDBG Program Guidelines in effect as of October 15, 2019, all as may be amended from time to time. The Program is listed in the Catalog of Federal Domestic Assistance as 14.228 - CDBG -Community Development Block Grant Program. In accepting this conditional reservation of funds by executing this Agreement, the Grantee agrees to comply with the terms and conditions of this Agreement, the Notice of Funding Availability (NOFA) under which the Grantee applied, as identified in this document footer, the representations contained in the Grantee's application (the "Application") for this funding allocation, which is incorporated herein by reference and is included as a summary in Exhibit E, and the requirements of the authorities cited above. For activities funded outside of a NOFA, including activities funded through Program Income, and activities funded through Urgent Need, the Grantee agrees to comply with the terms and conditions of this Agreement, the representations contained in the Grantee's Application for activity funding, which is incorporated herein by reference and is included as a summary in Exhibit E, and the requirements of the authorities cited above. Any changes made to the submitted and awarded Application after this Agreement is executed must receive prior written approval from the Department. For purposes of this Agreement, use of the term "Grantee" shall be a reference to "Contractor".

2. Scope of Work

- A. The Grantee shall perform the funded activities described in the Scope of Work (Work), including applicable National Objectives as represented in Exhibit E Sections I through IV, and the Application which is on file with the Department, and which is incorporated herein by reference. All written materials or alterations submitted as addenda to the original Application, and which are approved in writing by the Department are hereby incorporated as part of the Application. The Department reserves the right to require the Grantee to modify any or all parts of the Application in order to comply with CDBG requirements. The Department

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reserves the right to monitor all Work to be performed by the Grantee, its contractors, and subgrantees in relation to this Agreement. Any proposed revision to the Scope of Work must be submitted in writing for review and approval by the Department and may require an amendment to this Agreement. Approval shall not be presumed unless such approval is made by the Department in writing.

- B. For the purposes of performing the Scope of Work, the Department agrees to provide the amount(s) identified in Exhibit B, and as detailed in Exhibit E, Section V, Budget Worksheet. Unless amended in writing, the Department shall not be liable for any costs in excess of the total approved budget. The Department shall not, under any conditions, be liable for any unauthorized or ineligible costs or activities.
- C. Except for General Program Administration, grant activity(ies) must meet one of the following three CDBG National Objectives:
 - 1) Benefit to Low/Moderate Income Persons or Households,
 - 2) Urgent Need, or
 - 3) Elimination of Slums or Blight as defined in 24 CFR 570.483.

3. Effective Date and Commencement of Work

- A. This Agreement is effective upon approval by the Department as evidenced by the Department representative's signature on page one of the fully executed Standard Agreement, STD 213.
- B. The CDBG Grantee agrees that no Work toward the implementation of the project activity or program activity, as identified in Exhibit E, Section I through V, shall commence without prior written authorization from the Department prior to the execution of this Agreement by the Department.

4. Term of Agreement and Performance Milestones

- A. Term of Agreement: With the exception of the Grant Closing Requirements set forth in Exhibit B, Section 6, the Grantee shall complete the grant activity and/or activities on or before 36 months (three (3) years) from the Department's execution date identified on the STD 213 of this Standard Agreement. Any

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extensions beyond the 36 months will require the Department's approval and a contract amendment.

- B. Expenditure Deadline: All Program funds shall be expended no later than 36 months (three (3) years) from the final Department execution date of this Agreement as identified on the STD 213. All requests for funds must be submitted prior to the Expenditure Deadline.

1) Reporting Deadlines:

- a) All activities except activities in support of new housing construction and activities in support of economic development must report final beneficiaries no later than thirty (30) days after the expiration of the Expenditure Deadline, unless otherwise indicated and explained in Exhibit E. Extensions for final reporting must be approved in writing by the Department.
- b) For activities in support of new housing construction and economic development where housing units or jobs are dependent on off-site infrastructure development, the activity shall have an extended reporting term of two years (24 months) from the expenditure deadline to complete reporting of units constructed and occupied or jobs created or retained. Activities that do not meet the reporting deadline will be deemed ineligible and the Grantee will be required to repay all grant funds expended on the activity.

- C. Milestones: Grantee shall timely adhere to project milestones as established in Exhibit E, Section V.

1) Failure to Meet Milestones:

- a) Failure to meet the first milestone identified in Exhibit E, Section V, is a material breach and will result in a for-cause termination of this Agreement. All funds, including program income, reimbursed for this activity prior to the termination shall be returned to the Department no less than thirty (30) days from the written notification of termination.
- b) Failure to meet any given subsequent milestones identified in Exhibit E, Section V, may result in loss of program eligibility and will

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restrict the Grantee from applying for additional CDBG funding until the activity is corrected and put back on schedule, or the activity is completed, or the activity is canceled.

- 2) Any milestone or deadline except the first milestone, the final activity report milestone, and the expenditure deadline may be revised administratively with the approval of the Department without incurring penalty, provided the revision request is received in advance of the original milestone due date.
- D. Scope of Work Revisions and Amendments
- 1) Contract Revisions: Adjustments to the Scope of Work that do not require:
 - a) An increase or reduction of activity scope, a change in National Objective, or
 - b) A change in the type of beneficiaries assisted may be completed as a Contract Revision. Contract Revisions must be approved by the Department prior to implementation. If approved, contract revisions shall automatically be deemed a part of, and incorporated into, this Agreement. Approval shall be provided either through the online grant management system, or in writing, as appropriate.
 - 2) Contract Revisions shall include but not be limited to:
 - a) Adjustments that:
 - i. Itemize the scope of work
 - ii. Revise milestone deadlines, except for first and last milestones; and/or
 - iii. Change the scope of work in a manner that does not change the overall budget, National Objective, or change type or reduce count of estimated beneficiaries.
 - b) Adjustments that increase the estimated number of beneficiaries without increasing or decreasing the scope of work and without changing the overall budget.

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- 3) Contract Amendments: Adjustments to the Scope of Work that:
 - a) Require an increase or a reduced scope of work;
 - b) That change the National Objective, or
 - c) Change the type or reduces the number of beneficiaries assisted shall require a Contract Amendment. Contract Amendments must be fully executed by both the Grantee and the Department prior to implementation. Adjustments may not be implemented prior to execution unless the Department has provided written notice authorizing the Grantee to proceed.
 - 4) Contract Amendments shall include but not be limited to:
 - a) Adjustments that:
 - b) Add scope beyond what was included in the original application;
 - c) Reduce scope such that the activity is materially different from the original application, or
 - d) Reduce estimated beneficiary counts.
 - e) Adjustments that change the scope in a manner that requires a change to awarded activity budget, including adding funds from other State CDBG funded activities, adding Program Income, and reducing funds from either State CDBG awarded funds or Program Income.
 - 5) HUD Matrix Codes: If HUD changes an activity matrix code(s) or if there is an error in recording the activity code, the Grantee shall be notified in writing and the correction shall not require an amendment to this Agreement.
- E. State CDBG Program Contract Management
- 1) Department Contract Manager: For purposes of this Agreement, the State CDBG Program Contract Manager for the Department is the Program Manager of the State CDBG Program in the Division of Federal Financial Assistance, or such person's designee. Written communication regarding this Agreement shall be directed to the State CDBG Program Contract

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Manager at the following address*:

State CDBG Program Contract Manager
Division of Federal Financial Assistance
Department of Housing and Community Development
P.O. Box 952054
Sacramento, California 94252-2054
Ph: (916) 263-2711
Email: CDBG@hcd.ca.gov

**Due to the emergency telework policy in place for the State of California communications should be done electronically to ensure timely response.*

- 2) Contract Management: Day-to-day administration of this Agreement shall take place through the online grant management system, including but not limited to:
 - a) Financial Reports (Funds Requests);
 - b) Activity Reports;
 - c) Semi-Annual Reports;
 - d) Annual Reports;
 - e) Submittal of any and all requested supporting documentation;
 - f) Standard Agreement Revisions (non-material contract changes); and,
 - g) Standard Agreement Amendments (material contract changes).
- 3) Grantee Contract Administrator: The Grantee's Contract Administrator (must be a Grantee employee) is identified in Exhibit E, Profile. Unless otherwise informed, any notice, report, or other communication required by this Agreement shall be directed to the Grantee's Contract Administrator at the contact information identified in Exhibit E, Profile. Written communication shall be directed to the Grantee's Contract Administrator as identified in the Grantee Profile as referenced in Exhibit E.

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- 4) Capacity to Contract: Contractor has the capacity and authority to fulfill the obligations required of it hereunder and nothing prohibits or restricts the right or ability of Contractor to carry out the terms hereof.
- 5) Authority to Execute: Each person executing this Agreement represents and warrants to the Department that he or she is duly authorized to execute and deliver this Agreement on behalf of the Contractor, and that such authority is evidenced by a binding authorization. The person executing this Agreement, and the Contractor, acknowledge that the Department is materially relying upon the foregoing representation and warranty in agreeing to enter into this Agreement. In the event of a defect in any resolution submitted to the Department in connection herewith, then this provision shall be deemed satisfactory and admissible evidence of the authority of the signer to bind Contractor to this Agreement and Contractor shall remain fully bound to the terms hereof. In the event the Department determines in its sole discretion that a resolution submitted by the Contractor is deficient in any way, then within thirty (30) days of the Department's request, Contractor shall resubmit a new resolution which is satisfactory to the Department. Failure by the Contractor to timely provide such resolution to the Department shall constitute a default under this Agreement.

EXHIBIT B

BUDGET DETAIL AND PAYMENT PROVISIONS

1. Budget

- A. Budget Detail: The activity shall follow the budget as detailed in Exhibit E, Section V.
- B. Program Income: All Program Income is state administered CDBG funding and is subject to the same federal requirements for financial administration as open grant awards. Program Income, including both cash-on-hand and future projected receipts, if identified as a funding source for any given activity, must be included in the activity budget and must be substantially expended prior to drawing grant award funds. Program Income must be identified separately from grant funds in the activity budget and must be broken out into activity and general administration funding, as applicable. The Department will not encumber locally administered Program Income against NOFA grant funds in the state's accounting system. Only new grant awards made under a NOFA or in conjunction with an Urgent Need application will be encumbered in the state's accounting system.

Funding in this Agreement may include either or both:

- 1) the total new grant award from the NOFA to be encumbered by the Department from grant funds,
 - 2) total locally held Program Income to be included in the activity budget but that will **not** be encumbered by the Department. This Agreement is for the sum total of funds to be used in the activity including grant funds and Program Income, as applicable. Program Income receipts must be reported no less than quarterly.
- C. Other Non-State CDBG Funding Sources: The Grantee shall report on the value of other contributions included as leverage for each activity via the Financial Reports required for such activity. The Financial Reports shall be accessed through the online grant management system and are the reports which convey the information needed to complete financial transactions in HUD's

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Integrated Disbursement and Information System (IDIS).

2. Availability of Funds

The Department's provision of funding to Grantee pursuant to this Agreement is contingent on the continued availability of CDBG funds and continued federal authorization for CDBG activities, as well as the conditions set forth in Exhibit D, Section 33. The Department's provision of funding is subject to amendment or termination due to lack of funds or authorization. This Agreement is subject to written modification or termination as necessary by the Department in accordance with requirements contained in any future state or federal legislation and/or state or federal regulations. All other modifications must be in written form and approved by both parties.

3. Eligible Costs

- A. No activity costs may be incurred, or funds reimbursed until the Grantee has documented compliance with the applicable National Environmental Protection Act (NEPA) requirements established in 24 CFR 50, 24 CFR 58, and 42 USC 4321, et seq.
- B. Allowable Costs: Allowable costs shall mean those necessary and proper costs under 2 CFR 200.400 through 475, and as identified in the Grantee's application and as detailed in Exhibit E, Section VI, and as approved by the Department unless any or all such costs are disallowed by the State of California or HUD. Allowable costs include necessary and proper activity and administration costs incurred prior to the execution of this Agreement. All costs incurred prior to the execution of this Agreement must be eligible to be considered allowable and suitable for reimbursement. Eligible costs must, at a minimum, be costs incurred according to the procurement requirements of 2 CFR 200.317, et seq. and be costs required for the activity in this Agreement to meet a National Objective.
- C. Priority of Funds: The Grantee agrees to utilize funds available under this Agreement to supplement rather than supplant funds otherwise available. To the extent available, the Grantee must disburse funds available from locally held funding CDBG grant resources such as, but not limited to Program Income,

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rebates, refunds, contract settlements, audit recoveries, and interest earned on such funds before requesting additional cash payments from the grant award.

- D. **Withholding Funds:** The Department reserves the right to withhold payments pending timely delivery of program reports or documents as may be required under this Agreement. Payments are contingent upon the Grantee's financial management system meeting the requirements of 2 CFR 200.302, and the internal control requirements of 2 CFR 200.303. Payment may be suspended or terminated, in whole or in part, by the Department in its sole discretion in the event of a default by Grantee.
- E. **Disencumbering Funds:** The Grantee agrees that funds determined by the Department to be surplus upon completion of the activity, or that have not been spent prior to the Expenditure Deadline will be subject to disencumbrance by the Department.
- F. **Indirect Costs:** If Grantee wishes to charge for indirect costs, the Grantee must develop an indirect cost allocation plan for determining the appropriate CDBG share of such indirect costs and submit such plan to the Department for approval prior to submission of requests for any payments for the indirect cost expenditures.
- G. **Pre-Agreement Costs:** Pre-Agreement Costs are eligible costs incurred prior to the award of funds as defined in Exhibit D, Section 1. Eligible Pre-Agreement costs as identified in Exhibit E, Section VI, Project Budget, may only be reimbursed upon the full execution of this Agreement and verification that the costs meet all eligibility criteria. Pre-Agreement costs may include both activity delivery and general program administration.

The Grantee agrees that any Pre-Agreement costs **not** previously identified in Exhibit E, Section V, Project Budget, will **not** be paid with CDBG funds.

4. **Method of Payment**

The Department will not authorize payments unless it has determined the costs incurred are in compliance with the terms of this Agreement. Funds requested through the

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Financial Reports must be for a minimum of \$1000.00 and be in whole dollar amounts, with the exception of the final funds request, which must be marked "Final". Payments will be issued to the agency identified on the Taxpayer Identification Form (TIN) provided by the Grantee to the Department.

- A. Reimbursements: The Department will reimburse the Grantee its allowable costs for the services identified in this Agreement in Exhibit E, Section V, upon presentation of invoices which Grantee certified are true and correct copies of payments due on behalf of the Grantee for the activity covered by this Agreement and made in accordance and compliance with Exhibit A, Scope of Work. The Grantee may not request reimbursements under this Agreement until the funds are needed for payment of eligible costs. The amount of each request must be limited to the amount documented as having been incurred.
- 1) To receive reimbursement for grant activities, including reimbursement for eligible Pre-Agreement costs, the Grantee must submit all Department required forms according to the applicable deadlines. Financial Reports and Activity Reports are due no less than quarterly, within 15 days of the end of the quarter. Financial Reports and Activity Reports may be submitted more frequently at the Grantee's discretion. Financial Reports shall include the level of documentation specified by the Department, including proof of expenditure, and proof of cost eligibility. Grantees must submit documentation supporting cost amounts and cost eligibility with each funds request as part of the Financial Report.
 - 2) Grantees shall submit Financial Reports (funds requests) no less than quarterly. If no funds have been expended, the Grantee shall provide a detailed description of work completed and an explanation of why no funds have been expended, and when anticipated date when funds will next be requested
- B. Advances: The Grantee must receive prior written approval from the Department before submitting an advance request. All advances are subject to the Department's consent, which may be given or withheld on its sole discretion. No advances will be issued prior to full Agreement execution.

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C. Final Payment Requests:

- 1) Grantees on the Reimbursement Payment System: All requests for final reimbursement must be submitted before the Expenditure Deadline referenced in Exhibit A, Section 4 of this Agreement.
- 2) Grantees on the Advance Payment System: The last advance payment must be submitted to the Department no later than sixty (60) days prior to the Expenditure Deadline of this Agreement.
- 3) Return of Unexpended Funds: All funds received by the Grantee but not expended by the Expenditure Deadline must be accounted for and returned to the Department within thirty (30) days after the Expenditure Deadline. Funds shall be returned in accordance with the current State CDBG Grants Management Manual. All returned funds will be disencumbered.
- 4) All Funds Not Previously Requested: If the final funds disbursement request for costs expended during the term of this Agreement has not been received by the Department before the Expenditure Deadline, and the Grantee has not requested an extension per Exhibit A Section 4, (Term of Agreement and Performance Milestones), the Department may disencumber any funds remaining and grant funds will no longer be available for the Grantee.

5. Budget Revisions and Amendments

Budget line-item adjustments may be made in accordance with the following:

- A. Budget Revisions: Adjustments to the Budget that do not require an increase or reduction of total activity budget, a change in National Objective, or a change in the type or a reduction in number of beneficiaries assisted may be completed as a Budget Revision. Budget Revisions shall include but not be limited to:
 - 1) Adjustments that reallocate funds between budget line items, including between General Administration funding, activity funding, and Program Income resources, including both Program Income cash on hand, and Program Income projected receipts, but that otherwise does not change the overall budget total, the scope of work, the National Objective, and

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type and count of estimated beneficiaries. Reallocations involving General Administration funding are subject to applicable General Administration caps identified in the Notice of Funding Availability.

- 2) Adjustments that increase or decrease the detail included in the submitted lined item budgets, including adding and removing budget line items, without increasing or decreasing the scope of work and without changing the overall budget.

Budget Revisions must be approved by the Department prior to implementation. Approval shall be provided either through the online grant management system, or in writing, as appropriate. If approved, Budget Revisions shall automatically be deemed a part of, and incorporated into, this Agreement.

- B. Budget Amendments: Adjustments to the Budget that result in an increased or a reduced total activity budget shall require a Contract Amendment. Contract Amendments must be fully executed by both the Grantee and the Department prior to implementation. Adjustments may not be implemented prior to execution unless the Department has provided written notice authorizing the Grantee to proceed.

6. Grant Closing Requirements

A. Expenditure Deadline:

- 1) All Program funds shall be expended no later than the Expenditure Deadline as defined in Exhibit A, Section 4. All requests for funds must be submitted prior to the Expenditure Deadline.
- 2) The Final Financial Report for the activity must be marked final and submitted before the Expenditure Deadline. Financial Reports submitted after the Expenditure Deadline will not be eligible for reimbursement.

Closeout Procedure: The Grantee must submit the following at the completion of the activity:

- I. A Final Activity Report that includes all required reporting data for the activity;
- II. A filed Notice of Completion (if applicable);

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- III. Evidence, satisfactory to the Department, of compliance with any and all other Special Conditions of this Agreement as set forth in Exhibit E hereto; and,
- IV. Pursuant to the Citizen Participation Requirements for the State's Annually Appropriated Federal Programs, Plans and Reports and the federal regulations at 24 CFR 570.486(a)(5), proof of publication of public hearing/meeting held during or at completion of the CDBG funded activity in which the Grantee describes the accomplishments of the activity and confirms that the activity is complete.

If the Grantee identified an extended reporting period will be required to meet the National Objective for the activity in the Application, the above closeout requirements shall be submitted upon the completion of the activity, or within twenty-four (24) months after the Expiration Deadline, whichever comes first. If no extended reporting period is required, the above closeout requirements shall be submitted within thirty (30) days after the Agreement's Expenditure Deadline. Upon receipt of the above documentation, the Department will close out this Agreement and finalize the activity in IDIS for final reporting to HUD.

- B. Ongoing Reporting: Grants that have been closed may, as applicable, have continued reporting requirements, including Program Income reporting, performance reporting, beneficiary reporting, asset reporting, and other federally required reports as identified in Exhibit D, Section 22.

EXHIBIT D

CDBG PROGRAM TERMS AND CONDITIONS

Federal Grant Identification

HUD Grant No.: B-21-DC-06-0001

CFDA Number: 14.228

Date HUD Grant Agreement Signed: 09/03/2021

2020-2021 Annual Action Plan January 2021 Substantial Amendment

1. Definitions

- A. "Activity" means one of the following HUD eligible activities as per 42 U.S.C. 5305.
- 1) Acquisition (§ 5305 (a)(1))
 - 2) Public Improvements (§ 5305 (a)(2))
 - 3) Public Facilities (§ 5305 (a)(2) and (5))
 - 4) Code Enforcement (§ 5305 (a)(3))
 - 5) Housing Rehabilitation (§ 5305 (a)(4))
 - 6) Public Services (§ 5305 (a)(8))
 - 7) Planning and Technical Assistance (Section 105(a)(12), (14) and (19))
 - 8) Business Financial Assistance (§ 5305 (a)(17))
 - 9) Microenterprise Assistance (§ 5305 (a)(22))
 - 10) Homeownership (§ 5305 (a)(24))
- B. "Activity Budget" means the budget included in Exhibit E, Section VI, Project Budget, as referenced by Exhibit B, Budget Detail, and Payment Provisions.
- C. "Activity Delivery" (AD) means any reasonable and necessary costs that are not directly related to labor and/or direct construction and/or direct activity implementation costs. The Grantee may expend up to the indicated AD as identified in the NOFA that is associated with this Agreement or any relevant CDBG Management Memo. CDBG funds for AD cannot be drawn down unless CDBG

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activity costs have previously been drawn down or are being drawn down on the same funds request.

- D. "Activity Reports" are the activity reports that must be submitted at least quarterly that describe program or project progress and/or beneficiaries served during a given reporting period.
- E. "Department" means the California Department of Housing and Community Development.
- F. "Funds Request" is also identified as a Financial Report and refers to the forms and processes required to request the drawdown of CDBG funds. Funds disbursements must be completed no less than quarterly for each open activity, including Program Income funded activities.
- G. "General Administration" refers to eligible administrative expenses as provided in 42 U.S.C. 5305(a)(13).
- H. "Grantee" means the jurisdiction that applied for CDBG funding and has legal authority to sign this Agreement and commit to compliance with all federal requirements regarding the administration of federal funds, as identified in 2 CFR 200.
- I. "Pre-Agreement Costs" are pre-award costs as defined at 2 CFR 200.458 and 24 CFR 570.489(p) and are costs that are eligible per 2 CFR 200.400 et.seq. that have been itemized on the approved activity budget as identified in Exhibit E, Section VI, Project Budget, as referenced by Exhibit B, Budget Detail and Payment Provisions.
- J. "Program" means an eligible activity that provides direct assistance to eligible participants within a defined service area. Programs include public services, housing assistance to households, and instances where an eligible person, household, or area is directly assisted with a unit of service.
- K. "Program Guidelines" means the CDBG Program Guidelines adopted in October 2019 that replaced the California state regulations regarding the operation of the State CDBG program, as per Health and Safety Code 50826.1(a) that states that the regulations are repealed upon adoption of guidelines.

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- L. "Program Income", as defined in 24 CFR 570.489(e), means gross income received by the Grantee that is directly generated from the use of CDBG funds. When such income is generated by an activity that is only partially assisted with CDBG funds, the income shall be prorated to reflect the percentage of CDBG funds used.
- M. "Project" means eligible capital improvements to public facilities, infrastructure, assets, and right-of-way. Projects may also include eligible capital improvements to privately owned facilities, infrastructure, and assets that serve the public or that provide a public good, including shelters, community-based facilities, and utilities.

2. **Eligible Activities**

Grantee will only use funds under this Agreement for the activity identified in Exhibit E. All activities must be eligible CDBG activities as authorized under 42 U.S.C. 5305 and 24 CFR 570.482.

3. **National Objectives**

Grantee will only use funds in support of the National Objective identified in in Section I of Exhibit E. All CDBG funded grant activities must meet a National Objective as defined in 42 U.S.C. 5304(b)(3), as amended, and 24 CFR Part 570.483.

Real Property acquired in whole or in part with CDBG funds must be used to meet the same National Objective for which it was purchased for no less than five years from the date of acquisition. The Department may require a Use Restriction Agreement be recorded against real property acquired or improved in whole or in part with CDBG funds.

4. **Termination and Remedies for Noncompliance**

Awards as secured by this Agreement may be terminated by the Department in whole or in part as per federal regulation at 2 CFR 200.339. All terminations shall include written notification setting forth the reason(s) for such termination, the effective date, and the portion to be terminated in the case of partial terminations and will follow termination notification requirements identified in 2 CFR 200.340.

- A. Termination without Cause: Agreements may be terminated without cause in

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whole or in part by the Department **only** with the consent of the Grantee. In the case of a whole agreement termination, the two parties shall agree upon termination conditions, including the effective date. In the case of partial termination, the two parties shall agree upon termination conditions, including the portion to be terminated and the effective date.

B. Noncompliance and Termination with Cause: The Department may terminate this Agreement for Grantee's failure to comply with the terms and conditions of this Agreement. Terminations for material failure to comply with the Agreement terms and conditions must be reported by the Department to the appropriate federal program integrity and performance system accessible through the System for Award Management (SAM) as per 2 CFR 200.339(b).

- 1) The Department may initiate remedies for noncompliance as identified in 2 CFR 200.338 at any time it has been determined that the Grantee is no longer meeting the terms and conditions of this Agreement. Remedies for noncompliance may be required in addition to, in lieu of, or prior to termination.
- 2) Prior to terminating this Agreement for cause or noncompliance, the Department shall submit written notice specifying noncompliance and/or specifying the event or events that if not cured would constitute an event of default. The Department's written notice shall identify remedies for cure. Grantee shall have thirty (30) calendar days from receipt of notice to fully cure. This period may be extended at the Department's discretion for a reasonable period of time if the Grantee is acting in good faith to cure the noncompliance or cause. Any extension of the cure period must be communicated in writing by the Department.
- 3) The Department's remedies for Grantee's noncompliance with a federal statute or regulation, a state statute or regulation, an assurance, in a State plan or application, a notice of award, or elsewhere may include, as appropriate:
 - a) Temporarily withhold cash payments pending correction of the deficiency by the Grantee.
 - b) Disallow (that is, deny both use of funds and matching credit for) all or part of the cost of the activity or action not in compliance.

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- c) Wholly or partly suspend or terminate the current award for the Grantee's program or project, as applicable.
 - d) Withhold further and/or future awards of CDBG funds.
 - e) Request that HUD initiate federal suspension debarment proceedings.
 - f) Take other remedies that may be legally available, including, but not limited to:
 - (g) In the case of costs incurred without meeting a National Objective, require repayment of all funds reimbursed, including General Administration, Activity Delivery, and any and all Program Income, as appropriate.
- 4) In taking an action to remedy noncompliance, the Department will provide the Grantee an opportunity for such hearing, appeal, or other administrative proceeding to which the Grantee is entitled under any statute or regulation applicable to the action involved as per 2 CFR 200.341.
- C. Effects of Suspension and Termination: Grantee costs resulting from obligations incurred by the Grantee or any of the Grantee's contractors, subrecipients, or subgrantees during a suspension or after termination of an Agreement are not allowable unless otherwise authorized by the Department in written notice or as allowable in 2 CFR 200.342. Termination and remedies for noncompliance identified in this Section do not preclude a Grantee or any of the Grantee's contractors, subrecipients, or subgrantees from being subject to non-procurement debarment and suspension requirements at 2 CFR 2424. CDBG funds may not be provided to excluded or disqualified persons pursuant to 24 CFR 570.489(l).
- D. Remedies: All remedies of the Department hereunder are cumulative and not exclusive.

5. **Severability**

- A. If any provision of this Agreement, or an underlying obligation, is held invalid by a court of competent jurisdiction, such invalidity, at the sole discretion of the

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Department, shall not affect any other provisions of this Agreement and the remainder of this Agreement shall remain in full force and effect. Therefore, the provisions of this Agreement are, and shall be, deemed severable.

- B. The Grantee shall notify the Department immediately of any claim or action undertaken by or against it which affects or may affect this Agreement or the Department and shall take such action with respect to the claim or action as is consistent with the terms of this Agreement and the interests of the Department.

6. Waivers

No waiver or any breach of this Agreement shall be held to be a waiver of any prior or subsequent breach. The failure of the Department to enforce, at any time, the provisions of this Agreement or to require, at any time, performance by the Grantee of these provisions shall in no way be construed to be a waiver of such provisions nor to affect the validity of this Agreement or the right of the Department to enforce these provisions.

7. Uniform Administrative Requirements

The Grantee, its agencies or instrumentalities, and Subgrantees shall comply with the policies, guidelines and Administrative Requirements of 2 CFR Part 200 et seq., as applicable, as they relate to the cost principles, audit requirements, acceptance and use of federal funds.

- A. Single Audit Compliance: Funds will not be disbursed to any Grantee identified by the State Controller's Office (SCO) as non-compliant with the Federal Single Audit Act, as described in the Uniform Administrative Requirements, Cost Principles, And Audit Requirements for Federal Awards at 2 CFR 200 Sub-Part F. No funds may be disbursed until compliance with the Uniform Administrative Requirements is demonstrated to the satisfaction of the Department.
- B. Accounting Standards: Grantee agrees to comply with, and administer the activity in conformance with, 2 CFR Part 200.300 et seq, and agrees to adhere to the accounting principles and procedures required therein, utilize adequate internal controls, and maintain necessary source documentation for all costs incurred.

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- C. Suspension and Debarment: By executing this Agreement, Grantee verifies and affirms that it has not been suspended or debarred from participating in or receiving federal government contracts, subcontracts, loans, grants or other assistance programs.

8. Compliance with State and Federal Laws and Regulations

- A. Grantee, its agencies or instrumentalities, contractors, sub-grantees, and subrecipients shall comply with all local, state, and federal laws, statutes, and regulations, as well as policies and guidelines established by the Department for the administration of the CDBG program.
- B. Grantee shall comply with the requirements of the Housing and Community Development act of 1974 (HCDA) as amended and codified at Title 42 United States Code (U.S.C.) §5301 et. seq., and Subpart 1 of the Federal CDBG Regulations, found at Title 24 Code of Federal Regulations (CFR) 570.480 et seq., the Housing and Urban Development (HUD) regulations concerning State administered Community Development Block Grants, 2 CFR 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, Final Guidance, as adopted by HUD at 2 CFR 200, and all federal regulations and policies issued pursuant to these regulations. The Grantee further agrees to utilize funds available under this Agreement to supplement rather than supplant funds otherwise available.

9. Affirmatively Furthering Fair Housing

Grantee shall affirmatively further fair housing, in accordance with the Civil Rights Act of 1964 (42 U.S.C 2000a, et seq.), and the Fair Housing Act (42 U.S.C. 3601, et seq.), according to 42 U.S.C. 5306, et seq. and in compliance with California statute (Gov. Code sections 65583, et seq.). Grantee shall comply with the Fair Housing Amendment Act of 1988 (Public Law 100-430).

10. Equal Opportunity Requirements and Responsibilities

Grantee agrees that it undertakes hereby the same obligations to the Department that the Department has undertaken to HUD pursuant to the Department's CDBG certifications. The obligations undertaken by Grantee include, but are not limited to, the obligation to comply with all applicable federal laws and regulations described in Subpart K of 24 CFR Part 570 and specifically with each of the following:

Program Name: Community Development Block Grant (CDBG)
NOFA Date: 01/29/2021; Amended on 05/17/2021 and on 12/27/2021
Approved Date: 02/02/2022
Prep. Date: 07/27/2022

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- A. The Housing and Community Development Act of 1974 (Public Law 93-383) that authorized the CDBG program, as amended, and legislative changes contained in the Housing and Urban-Rural Recovery Act of 1983 that authorized the state administered CDBG program for non-entitlement communities, and the Architectural Barriers Act of 1968 (42 U.S.C. Section 4151) that requires publicly funded facilities be accessible to the public;
- B. Title VI of the Civil Rights Act of 1964 (Public Law 88-352) prohibiting discrimination based on protected class, as amended, Title VIII of the Civil Rights Act of 1968 (Public Law 90-284) prohibiting discrimination in housing, as amended; the Civil Rights Restoration Act of 1987 (Public Law 100-259) requiring expanded compliance with civil rights laws for jurisdictions receiving federal funding; Section 104(d) regarding relocation and displacement and Section 109 of Title 1 of the Housing and Community Development Act of 1974 prohibiting discrimination in CDBG funded programs, as amended; Section 504 of the Rehabilitation Act of 1973 prohibiting recipients of federal funds from discrimination against persons with disability; the Americans With Disabilities Act of 1990 prohibiting all public discrimination against persons with disabilities; the Age Discrimination Act of 1975 prohibiting age-based discrimination in federally funded activities; Executive Order 11063 prohibiting discrimination in disposition of properties owned or financed with federal funds, as amended by Executive Order 12259; and Executive Order 11246 regarding fair employment, as amended by Executive Orders 11375, 11478 and 12086; and HUD regulations heretofore issued or to be issued to implement these authorities relating to civil rights;
- C. The Equal Employment Opportunity Act of 1972 that created the Equal Employment Opportunity Commission, Equal Employment Opportunity and Affirmative Action requirement (EEO/AA); Grantee shall, in all solicitations or advertisements for employees placed by or on behalf of the Grantee, state that it is an Equal Opportunity or Affirmative Action employer.

11. **Relocation, Displacement, and Acquisition**

Grantee shall comply with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, in 24 CFR Part 42, 49 CFR Part 24, and 42 U.S. §5304(d) as they apply to the performance of this Agreement. Grantee agrees to comply with 24 CFR 570.606 relating to the acquisition and disposition of all

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real property utilizing grant funds and to the displacement of persons, businesses, non-profit organizations and farms occurring as a direct result of any acquisition of real property utilizing grant funds.

12. The Training, Employment, and Contracting Opportunities for Business and Lower Income Persons Assurance of Compliance (Section 3):

The Grantee and any of its Subrecipients and/or Contractors shall comply with Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u), and implementing regulation at 24 CFR, Part 75. The responsibilities outlined in 24 CFR Part 75.19 include:

- A. Implementing procedures designed to notify Section 3 workers about training and employment opportunities generated by Section 3 covered assistance and Section 3 business concerns about contracting opportunities generated by Section 3 covered assistance.
- B. Notifying potential Contractors for Section 3 covered projects of the requirements of Part 75, Subpart C and incorporating the Section 3 clause set forth below in all solicitations and contracts in excess of \$100,000 as required at 24 CFR 75.27.

Section 3 Clause

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

The parties to this contract agree to comply with HUD's regulations in 24 CFR. Part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 75 regulations.

The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments

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under this Section 3 clause and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 75 and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 75.

The contractor acknowledges that subrecipients, contractors, and subcontractors are required to meet the employment, training, and contraction requirements of 24 CFR 75.19, regardless of whether Section 3 language is included in recipient or subrecipient agreements, program regulatory agreements, or contracts.

The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 75.

Noncompliance with HUD's regulations in 24 CFR Part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

The contractor agrees to submit, and shall require its subcontractors to submit to them, annual reports detailing the total number of labor hours worked on the Section 3 Project, the total number of labor hours worked by Section 3 Workers, and the total number of hours worked by Targeted Section 3 Workers, and any affirmative efforts made during the quarter to direct hiring efforts to low- and very low-income persons, particularly persons who are Section 3 workers and Targeted Section 3 workers.

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- C. Facilitating the training and employment of Section 3 workers and the award of contracts to Section 3 business concerns by undertaking activities such as described in 24 CFR Part 75.25(b), as appropriate, to reach the goals set forth in 24 CFR Part 75.23 and in Federal Register Vol. 85, No. 189, page 60909, until superseded by HUD in a subsequent publication. As of September 29, 2020, the minimum Section 3 benchmark is twenty-five (25) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Section 3 workers; and five (5) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Targeted Section 3 workers.
- D. Documenting actions taken to comply with the foregoing requirements, the results of those actions taken and impediments, if any.

13. Environmental Compliance

- A. Grantee shall comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000, et seq.) requirements as they apply to this project. CEQA reviews and determinations are the responsibility of local agencies and shall be administered by the Grantee as applicable.
- B. Grantee shall comply with the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251, *et seq.*, as amended, and 33 U.S.C. § 1318 relating to inspection, monitoring, entry, reports, and information, and all regulations and guidelines issued thereunder.
- C. Grantee shall comply with the requirements of the Clean Air Act, as amended, 42 U.S.C. 7401, et seq.
- D. Grantee shall comply with Environmental Protection Agency (EPA) regulations pursuant to 40 CFR Part 50 regarding air quality protections, as amended.
- E. Grantee shall comply with the requirements of the Flood Disaster Protection Act of 1973 (42 U.S.C. 4001). Grantee shall assure that for activities located in an area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards, that flood insurance under the National Flood Insurance Program is obtained and maintained as a condition of financial assistance for acquisition or construction purposes (including rehabilitation).
- F. Grantee shall comply with the requirements of the Residential Lead-Based Paint

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- Hazard Reduction Act of 1992 and Section 401(b) of the Lead-Based Paint Poisoning Prevention Act of 1971. Grantee agrees that any construction or rehabilitation of residential structures with assistance provided under this Agreement shall be subject to HUD Lead-Based Paint Regulations at 24 CFR 570.608, and 24 CFR Part 35, Subpart B. Such regulations pertain to all CDBG-assisted housing and require that all owners, prospective owners, and tenants of properties constructed prior to 1978 be properly notified that such properties may include lead-based paint. Such notification shall point out the hazards of lead-based paint and explain the symptoms, treatment and precautions that should be taken when dealing with lead-based paint poisoning and the advisability and availability of blood lead level screening for children under seven. The notice should also point out that if lead-based paint is found on the property, abatement measures may be required.
- G. Grantee shall comply with the Historic Preservation requirements set forth in the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), the Archaeological and Historical Preservation Act of 1974 (Public Law 93-291), and the procedures set forth in 36 CFR Part 800, Advisory Council on Historic Preservation Procedures for Protection of Historic Properties, insofar as they apply to the performance of this agreement. Grantee shall also comply with federal Executive Order 11593 on the protection and enhancement of the cultural environment. In general, this requires concurrence from the State Historic Preservation Officer for all rehabilitation and demolition of historic properties that are fifty years old or older or that are included on a federal, state, or local historic property list.
- H. Grantee shall comply with all National Environmental Protection Act (NEPA) requirements as applicable to the performance of this Agreement as found in 24 CFR Part 50, 24 CFR Part 58, as applicable, and 40 CFR 1500 – 1508. Grantee shall not receive authority to incur activity costs until they have successfully documented compliance with the applicable NEPA requirements, including public noticing and publishing.
- I. This Agreement does not constitute a commitment of funds or site approval, and the commitment of funds or approval may occur only upon satisfactory completion of environmental review and receipt by the Grantee of an approval of the request for release of funds and certification from the Department under 24 CFR Part 50, 24 CFR Part 58, and 40 CFR 1500 - 1508. The provision of any

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funds to the project is conditioned on the Grantee's determination to proceed with, modify or cancel the project based on the results of the environmental review. The Grantee will not receive appropriate notice to proceed until they have successfully documented compliance with the applicable NEPA requirements, including public noticing and publishing.

14. **Procurement**

The Grantee shall comply with the procurement provisions in 2 CFR Part 200.317 – 200.326, Procurement Standards, as well as all other Administrative Requirements for Grants and Cooperative Agreements to state, local and federally recognized Indian tribal governments as set forth in 2 CFR 200, et al, as applicable.

15. **Procurement of Recovered Materials**

- A. Grantee and the Grantee's contractors shall comply with Section 6002 of the Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act. The Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, unless the Contractor determines that such items:
 - 1) are not reasonably available in a reasonable period of time;
 - 2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or
 - 3) are only available at an unreasonable price.
- B. This clause shall apply to items purchased under this Agreement or subsequent contract where:
 - 1) the Contractor purchases in excess of \$10,000.00 of the item under this Agreement; or
 - 2) during the preceding federal fiscal year, the Contractor:
 - a) purchased any amount of the items for use under a contract that

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was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and

- b) purchased a total of in excess of \$10,000.00 of the item both under and outside that contract.

16. Contracting and Labor Standards

- A. Grantee shall comply with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) and 29 CFR Subtitle A, Parts 1, 3 and 5, as applicable, to construction, alteration, and repair contracts over \$2,000.00.
- B. Grantee shall ensure that all contracts comply with the Anti-Kickback Act of 1986 (41 U.S.C. §§ 51-58) that prohibits attempted as well as completed "kickbacks," which include any money, fees, commission, credit, gift, gratuity, thing of value, or compensation of any kind.
- C. Grantee shall ensure all contracts comply with the Contract Work Hours and Safety Standards Act of 1962 (40 U.S.C. § 3702) which requires that workers receive overtime compensation at a rate of one and one-half (1-1/2) times their regular hourly wage after they have worked forty (40) hours in one week.
- D. Grantee shall maintain documentation that demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to the Department for review upon request.

17. Prevailing Wages

- A. Where funds provided through this Agreement are used for construction work, or in support of construction work, the Grantee shall ensure that the requirements of California Labor Code, Chapter 1, commencing with Section 1720, Part 7 [California Labor Code Sections 1720-1743] (pertaining to the payment of prevailing wages and administered by the California Department of Industrial Relations) are met.
- B. Where funds provided through this Agreement are used for construction work or in support of construction work, the Grantee shall also ensure that the federal requirements of the Davis Bacon Act codified at 40 U.S.C. 3141, et seq. (as

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amended), pertaining to federal labor standards and compliance, are met and documented. Grantee recognizes that multiple labor standards (both state prevailing wage and federal Davis-Bacon Act) may apply to the project and both standards must be satisfied.

- C. For the purposes of this requirement "construction work" includes, but is not limited to, rehabilitation, alteration, demolition, installation or repair done under contract and paid for, in whole or in part, through this Agreement. All construction work shall be done through the use of a written contract with a properly licensed building contractor incorporating these requirements (the "construction contract"). Where the construction contract will be between the Grantee and a licensed building contractor, the Grantee shall serve as the "awarding body" as that term is defined in the California Labor Code. Where the Grantee will provide funds to a third party that will enter into the construction contract with a licensed building contractor, the third party shall serve as the "awarding body." Prior to any disbursement of funds, including but not limited to release of any final retention payment, the Department may require a certification from the awarding body that prevailing wages have been or will be paid.
- D. The applicable wage rate determination on construction work will be the more restrictive of the rate prescribed in the California Labor Code Sections 1770-1784, or the Davis-Bacon Wage Determination.

18. **Contractors and Subrecipients**

- A. Grantee shall comply with 24 CFR Part 2424 and shall not enter into any agreement, written or oral, with any contractor or subrecipient without the prior determination that the contractor or subrecipient is eligible to receive CDBG funds and is not listed on the Federal Consolidated List of Debarred, Suspended, and Ineligible Contractors.
- B. Any agreement between the Grantee and any contractor or subrecipient shall include the terms and conditions in Appendix II of 2 CFR 200.
- C. Grantee shall ensure that any contract or subrecipient agreement includes clauses requiring the maintenance of workers' compensation insurance, as applicable, as well as general liability insurance. Contract or subrecipient agreements must require that the Grantee is notified in the event that any required insurance is canceled, expired, or otherwise invalidated during the

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performance period of the contract or subrecipient agreement.

- D. Grantee shall require that contractors and subrecipients comply with the Drug-Free Workplace Act of 1988.

19. **Requirements for Economic Development Activities**

- A. Public Benefit Standards for Economic Development Activities: Per 24 CFR 570.482 (e) (f), (g) and 570.483(b)(4), the Grantee must comply with federal underwriting standards and must meet the public benefit standards for all CDBG Economic Development activities under 42 U.S. §5305(a)(17). The use of public benefit standards is mandatory.
- B. Anti-Job Pirating Certification: Pursuant to 24 CFR 570.482(h) CDBG funds may not be used to directly assist a business, including a business expansion, in the relocation of a plant, facility, or operation from one labor market area to another labor market area if the relocation is likely to result in a significant loss of jobs in the labor market area from which the relocation occurs. Job loss of more than 500 employees is always considered significant. Job loss of 25 or fewer positions is never considered significant.

20. **Rights to Inventions Made Under a Contract or Agreement**

Grantee shall comply with and require the following in contracts and subrecipient agreements: If a Federal award meets the definition of "funding agreement" under 37 CFR 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of recipient or subrecipient must comply with requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulation issued by the awarding agency.

21. **Prohibition Against Payments of Bonus or Commission**

The assistance provided under this Agreement shall not be used in the payment of any bonus or commission for the purpose of:

- A. Obtaining the Department's approval of the Application for such assistance or additional assistance; or,

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- B. Securing any other approval or concurrence of the Department required under this Agreement, Title I of the Housing and Community Development Act of 1974, or the State regulations or Program Guidelines with respect thereto; provided, however, that reasonable fees for bona fide technical, consultant, managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as program costs.

22. **Reporting Requirements**

- A. Requirements: During the term of this Agreement, the Grantee must submit all CDBG program reports required by the Department, including quarterly activity, financial, and Program Income reports, semi-annual labor and compliance reports, annual performance reports, and other reports required by the Department or HUD. The Department reserves the right to request additional detail and support for any report made. Reports must be made according to the dates identified, unless otherwise specified at the discretion of the Department. The Grantee's performance under this Agreement will be evaluated in part on whether it has submitted the reports on a timely basis.
- B. Reporting Period: Grantee shall submit reports quarterly, and as required for semi-annual and annual reports, and shall continue to submit reports until such time that the activity is complete, a National Objective has been met and beneficiaries have been identified. The reporting period for this activity may extend beyond the Expenditure Deadline as defined in Exhibit A.
- C. Final Reporting Deadline: Grantee shall complete all required reporting for this activity no later than thirty (30) days after the Expenditure Deadline, unless the nature of the activity requires more than thirty (30) days as indicated in Exhibit E. Extensions for final reporting must be approved in writing by the Department. Grantee shall complete all required reporting for this activity no later than five (5) years from the execution date of this Agreement as identified on the STD 213.
- D. Asset Reporting: Grantee shall report annually on the status of all assets (real and personal property, equipment, and vehicles) purchased in whole or in part with CDBG funds for no less than five years from the completion of the activity that generated the asset. Reporting shall continue until the property is disposed, fully depreciated, or, in the event of real property, the five-year commitment to a

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National Objective has been completed.

23. **Fiscal Controls**

Grantee shall be responsible for the internal control and monitoring of fiscal and programmatic/operational goals and procedures. The Grantee shall establish and maintain such fiscal controls and fund accounting procedures as required by federal regulations, or as may be deemed necessary by the Department to ensure the proper disbursement of, and accounting for, funds paid to the Grantee under this Agreement.

- A. **Deposit of Funds:** Grantee shall maintain separate accounts within established bookkeeping systems for the deposit of CDBG funds. All cash advances must be deposited in an interest-bearing account; any interest earned in excess of \$100.00 per year (which may be retained for related administrative expenses) must be returned at least quarterly to HUD via the Department. Deposits in minority banks are encouraged.
- B. **Fund Management:** Grantee shall deposit funds in an account requiring two signatures for disbursement and shall submit to the Department specimen signatures for all authorized signatories prior to receipt of funds;
- C. **Fiscal Liability:** Grantee shall be liable for all amounts which are determined to be due by the Department including, but not limited to, disallowed costs which are the result of Grantee's or its contractor's conduct under this Agreement. Grantee shall be notified in writing and shall be permitted to respond regarding any controversy or proceeding between the Department and HUD arising from this Agreement.
- D. **Fiscal Records:** All financial transactions must be supported by complete and verifiable source documents. Records shall provide a clear audit trail and shall be maintained as specified in Section 25 of this Agreement.
- E. **Program Income:** Any and all Program Income received by Grantee during the administration of this Agreement must be receipted and deposited into a separate Program Income account. Program Income funds may not be comingled with CDBG grant funds in a single account.

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24. Reversion of Assets

Upon expiration of this Agreement, Grantee shall transfer to the Department any CDBG funds, excluding Program Income, in Grantee's control at the time of expiration. Further, any real property under Grantee's control that was acquired and/or improved in whole or in part with CDBG funds (including CDBG funds provided to the Grantee in the form of a loan and Program Income) in excess of \$25,000.00 shall be either:

- A. Used to meet one of the National Objectives in 24 CFR Part 570 until five (5) years after expiration or closure of this Agreement, the length of time to be further prescribed by mutual agreement of the parties.
- B. Disposed of in such manner that Grantee is reimbursed in the amount of the fair market value of the property at the time of disposition of the property less any portion of the value attributable to expenditures of non-CDBG funds for acquisition and/or improvement of such property. The proceeds from such disposition is Program Income.

If the Grantee provides funds for the purchase or improvement of real property to a subrecipient that is a private non-profit organization, that subrecipient must further agree to a voluntary lien on above-referenced real property as to any CDBG funds received and that such lien will be notarized and recorded in the Office of the County Recorder where the real property is located.

25. Monitoring Requirements

The Department shall perform a program and/or fiscal monitoring of the CDBG grant no less than once during the thirty-six (36) month expenditure period of this Agreement. The Grantee shall be required to resolve any monitoring findings to the Department's satisfaction by the deadlines set by the Department to maintain program eligibility.

Grantees and applicable subrecipients shall retain all books, records, accounts, documentation, and all other materials relevant to this Agreement for a minimum period of five (5) years after the Department notifies the Grantee that the HCD contract has been closed according to the record retention requirements at 2 CFR 200.333.

Grantees and applicable subrecipients shall permit the State, federal government, the state Bureau of State Audits, the Department, and/or their representatives, upon reasonable notice, unrestricted access to any or all books, records, accounts,

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documentation, and all other materials relevant to this Agreement for the purpose of monitoring, auditing, or otherwise examining said materials.

26. Inspections of Grant Activity

The Department reserves the right to inspect any grant activity(ies) performed hereunder to verify that the grant activity(ies) is being and/or has been performed in accordance with the applicable federal, state and/or local requirements and this Agreement.

- A. The Grantee shall inspect any grant activity performed by contractors and subrecipients hereunder to ensure that the grant activity(ies) is being and has been performed in accordance with the applicable federal, state and/or local requirements and this Agreement.
- B. The Grantee agrees to require that all grant activity(ies) found by such inspections not to conform to the applicable requirements be corrected, and to withhold payment to its contractor or subcontractor, respectively, until it is so corrected.

27. Signs

If the Grantee places signs stating that the activity is funded with private or public dollars and the Department is also providing financing, it shall indicate in a typeface and size commensurate with the Department's funding portion of the project that the Department is a source of financing through the CDBG Program.

28. Insurance

- A. The Grantee shall have and maintain in full force and effect prior to the start of work, and at all times during the term of this Agreement such forms of insurance, at such levels as may be determined by the Grantee and the Department to be necessary for specific components of the grant activity(ies) described in Exhibit E. Prior to the commencement of any work, Grantee shall provide to the Department acceptable proof(s) of insurance confirming the required insurance coverages are in effect and naming the Department as an additional insured, where applicable. No insurance policy may be cancellable on less than thirty (30) calendar days prior notice to the insured and the Department. Grantees are responsible for requiring sufficient insurance, including but not limited to liability

EXHIBIT D

and workers compensation insurance, from all contractors and subrecipients. Grantees are recommended to be listed as an additional insured on policies held by contractors or subrecipients for the implementation of this award. Where a Grantee insurance policy is required to be purchased specifically for the execution or implementation of the activity funded through this award, the Department must be listed as an additional insured on the declarations page of the policy.

- B. Additional Coverages. In the event that Grantee, and/or any of its Subrecipients or Contractors, will be engaging in any Hazardous Activity as part of the Collective Work contemplated by this Agreement, then the party(ies) engaging in any Hazard Activity(ies) shall provide to the Department, prior to commencement of any such activity(ies), such insurance coverages in such forms and in such amounts as the Department may require in its sole discretion. Such coverages are in addition to all other insurance coverages required by this Agreement and shall be imposed on any Subrecipient and/or Contractor pursuant to the Subrecipient Agreement or Contract. For purposes of the provision, the term "Hazardous Activity" includes the following: (a) the removal, storage, and/or transportation of any "hazardous material", as such term is defined under federal, state, or local law, ordinance, regulation, or guideline, (b) the removal, storage, or transportation of lead-based paint, (c) blasting, (d) any activity which by its nature is abnormally dangerous, and (d) any "ultrahazardous activity" as defined in California case law. In addition to providing proof of such required coverages, the party(ies) engaging in the Hazardous Activity(ies) shall procure, at its expense prior to the commencement of any work, all required permits, licenses, consents, and approvals that are required for the lawful conduct of such activities and shall provide adequate written proof thereof to the Department. No Hazardous Activity work may be commenced, or contracted for, prior to the provision of the required insurance coverages and licensure proof to the Department.

29. Anti-Lobbying Certification

Grantee shall comply with and require that the language of this certification be included in all contracts or subcontracts entered into in connection with this grant activity(ies) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making

EXHIBIT D

or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000.00 and no more than \$100,000.00 for such failure.

- A. No federally appropriated funds have been paid or will be paid, by or on behalf of it, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal contract, the cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- B. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, it will complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

30. **Conflict of Interest**

Pursuant to 24 CFR 570.489(h), no member, officer, or employee of the Grantee, or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercise or have exercised any functions or responsibilities with respect to CDBG activities assisted under this part, or who are in a position to participate in a decision-making process or gain inside information with regard to such activities, including members and delegates to the Congress of the United States may obtain a financial interest or benefit from a CDBG-assisted activity, or have a financial interest in any contract, subcontract or agreement with respect to a CDBG-assisted activity or its proceeds, either for themselves or those with whom they have business or immediate family ties, during their tenure, or for one (1) year thereafter. The Grantee shall incorporate, or cause to be incorporated, in all such contracts or subcontracts a provision prohibiting such interest pursuant to the purposes of this section.

31. **Obligations of Grantee with Respect to Certain Third-Party Relationships**

Grantee shall remain fully obligated under the provisions of this Agreement notwithstanding its designation of any third party or parties for the undertaking of all or

EXHIBIT D

any part of the Program with respect to which assistance is being provided under this Agreement to the Grantee. The Grantee shall comply with all lawful requirements of the Department necessary to ensure that the Program, with respect to which assistance is being provided under this Agreement to the Grantee, is carried out in accordance with the Department's Assurance and Certifications, including those with respect to the assumption of environmental responsibilities of the Department under Section 104(g) of the Housing and Community Development Act of 1974 [42 U.S.C. 5304(g)]. **Energy Policy and Conservation Act**

32. This Agreement is subject to mandatory standards and policies relating to energy efficiency which are contained in the State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871). **State Contract Manual Requirements (Section 3.11, Federally Funded Contracts (Rev. 3/03):**

- A. All contracts, except for State construction projects that are funded in whole or in part by the Federal government, must contain a thirty (30)-day cancellation clause and the following provisions:
- 1) It is mutually understood between the parties that this contract may have been written for the mutual benefit of both parties before ascertaining the availability of congressional appropriation of funds to avoid program and fiscal delays that would occur if the contract were executed after that determination was made.
 - 2) This Agreement is valid and enforceable only if sufficient funds are made available to the State by the United States Government for the purpose of this Program. In addition, this contract is subject to any additional restrictions, limitations, or conditions enacted by the Congress or to any statute enacted by the Congress that may affect the provisions, terms, or funding of this contract in any manner.
 - 3) The parties mutually agree that if the Congress does not appropriate sufficient funds for the program, this contract shall be amended to reflect any reduction in funds.
 - 4) The Department has the option to invalidate the contract under the thirty (30) day cancellation clause or to amend the contract to reflect any reduction in funds.

Program Name: Community Development Block Grant (CDBG)
NOFA Date: 01/29/2021; Amended on 05/17/2021 and on 12/27/2021
Approved Date: 02/02/2022
Prep. Date: 07/27/2022

EXHIBIT D

- B. Exemptions from provisions A.1 through A.4 above may be granted by the Department of Finance provided that the director of the State agency can certify in writing that Federal funds are available for the term of the contract.
- C. California Government Code § 8546.4(e) provides that State agencies receiving federal funds shall be primarily responsible for arranging for federally required financial and compliance audits, and shall immediately notify the Director of Finance, the State Auditor, and the State Controller when they are required to obtain federally required financial and compliance audits.

Applications: City of Ukiah Code Enforcement Services Program

EXHIBIT E

Award Number

21-CDBG-NH-20004

PO Number**Profile**

cschlatter@cityofukiah.com

Section I

Activity Category

Programs

Activity (Programs)

15 Code Enforcement

Activity (Projects)**National Objective (PS)**

(LMA) Low/Mod Area Benefit

Check this box if the activity is in support of housing

This activity supports housing

Section II

Measure Indicator (P)**Measure Indicator (PS)**

Choose the measure indicator from the list. Detailed information on performance measurements can be located in HUD's Basically CDBG manual, Chapter 13. <https://files.hudexchange.info/resources/documents/Basically-CDBG-Chapter-13-Performance-Measurement.pdf>

Number of Beneficiaries

7,765

Please indicate the proposed number of beneficiaries of this activity.

LMA - Number of LMI persons in service area that will benefit.

LMC - Number of LMI persons that will benefit

LMH - Number of households that will benefit

LMJ - Number of jobs created/retained

Presumed Benefit Types

Abused Children, Battered Spouses, Persons with living AIDS, Elderly Persons, Homeless Person, Migrant Farm Workers, Adults Meeting Bureau of Census' Definition of Severly Disabled Persons

Additional Benefit Types

Youths, Single Adults, Single Men, Single Women, Families, Mentally Ill, Veterans, Substance Abusers, Victims of Domestic Violence

Section III

Enter your legal jurisdiction name and activity title. Example: City of Los Angeles Community Food Bank. You MUST follow the required formatting. Applications not including a jurisdiction name will be disqualified.

Program Title

City of Ukiah Code Enforcement Services Program

Organization Name

City of Ukiah

Organization Street Address

300

Organization Street Name

Seminary Avenue

Organization Suite #**Organization City**

Ukiah

Organization State

California

Organization Zip Code

95,482

Program Census Location

The Census information in this section will be used for legislative and congressional district tracking. Please use the Census information of your primary facility or the designated address of the responsible organization. If you are doing a LMA activity, you will be asked to provide additional Census information specific to your service area. It is ok if the information is duplicative.

Use the HUD LMSI mapping tool located at <https://hud.maps.arcgis.com/apps/webappviewer/index.html?id=ffd0597e8af24f88b501b7e7f326bedd> to gather the required census tract information as identified by the address below. For instructions on using the mapping tool visit: <https://hud.maps.arcgis.com/home/item.html?id=ffd0597e8af24f88b501b7e7f326bedd>

Identify the census location data for the administrative entity of this application (if this is a county use the County Administration building, if this is a city use City Hall or an administrative facility).

County Code

045

Census Tract

115

Census Block Group(s)

01, 02, 04

Does this activity occur on more than one Census Tract and Block Group?**Are you using an income survey?**

No

Upload survey findings**Low Mod percentage**

61

Please upload the LMA service area map for your activity

City of Ukiah Code Enforcement LMA service area mapping.pdf

Section IV

Activity Address

300

Activity Street Name

Seminary Avenue

Activity City

Ukiah

Activity State

California

Activity Zip Code

95,482

Enter a detailed description of your activity which should include at a minimum: what the activity is, why it is needed, who the beneficiaries will be, where will it take place, how it will be done and when it will be complete. This should be a similar description provided for the NEPA. Additionally, please indicate if this will be a new activity, a modification to an existing activity, or if a new type of assistance will be added to an existing activity.

By completing the narratives below the applicant is demonstrating a knowledge of need for the activity and the steps needed to achieve the desired outcome.

Activity Description

The City of Ukiah proposes \$500,000 for a new CDBG Code Enforcement Services program to fully restore code enforcement services in deteriorating City incorporated areas, improve living conditions for low and moderate income (LMI) households and individuals, and address escalating hazards to the community. \$465,000 of a possible CDBG grant award would be used to deliver targeted code enforcement services for the benefit of up to 7,765 LMI persons in two census tracts and six different block groups throughout the City. \$35,000 would be utilized by City Community Development Department staff for general administration activities including program compliance, reporting, and monitoring of the program activity.

The code enforcement program would involve inspection of properties within Census Tract 115/Block Groups 1, 2, and 4 and Census Tract 116/Block Groups 1, 2, and 3 (the LMA service area); and working with property owners within those six deteriorating areas to correct code deficiencies, violations, and/or other health and safety violations. The City is also proposing a new Housing Rehabilitation in response to the 2021 CDBG NOFA, and if both programs are funded, the code enforcement program is expected to be especially effective at improving living conditions for LMI persons. Those presumed to benefit under a new CDBG code enforcement program include abused children, battered spouses, persons living with AIDS, elderly persons, homeless persons, migrant farm workers, and adults meeting the Bureau of Census' Definition of Severely Disabled Persons. Youths, single adults, single men/women, families, mentally ill, veterans, substance abusers, and victims of domestic violence are also expected to benefit.

The program is anticipated to begin by October 2021 and conclude by July 2024 or earlier. Code enforcement services will be implemented by staff within the Community Development Department's Building/Code Enforcement Services Division, with additional support from the Ukiah Police Department as needed. If awarded CDBG funding, the City expects to hire one full-time code enforcement position to implement the program within the six targeted areas and fully restore the capacity of the code enforcement services division, which was all but eliminated 10 years ago. As compliance increases in the six deteriorating areas, and it becomes known throughout the community that the City has a proactive code enforcement division, the need for future CDBG funding to continue these services is expected to be reduced. CDBG funds are needed to start up the City's code enforcement services program and address critical needs in these six deteriorating areas.

Provide a detailed narrative describing the steps to be taken to complete the activity. (i.e.: Task 1- create marketing plan; Task 2- hold a town hall meeting; Task 3- analyze feedback... etc.). This task narrative should indicate your knowledge of the steps and actions necessary to complete your activity. Narrative should include all actions taken to reach readiness through actions necessary for closeout.

Detailed Scope of Work - Task Narrative

Task 1- Execute standard agreement with HCD.

Task 2- Develop and post full-time code enforcement services position. Recruit for and fill position.

Task 3- Concurrent to Task 2, Building Official and Building Inspector to attend training through the California Association of Code Enforcement Officers. Note: Non-CDBG funding has already been identified for this training.

Task 4- Concurrent to Tasks 2 and 3, Building Official to work with City Attorney's Office to create uniform code enforcement procedures.

Task 5- Deploy code enforcement services through field inspections in six deteriorating census tracts/block groups. Start with back log of complaints.

Task 6- Enter non-compliant owner and land information into code enforcement tracking tools.

Task 7- Resolve code compliance issues through letters, court action, police action, etc. Deploy Housing Rehabilitation program funding (if awarded) to qualified owner-occupants and owner-investors.

Task 8- Close out code enforcement cases with After Action Report and implement tracking of code enforcement cases to demonstrate progress.

Task 9- Produce report on final accomplishments and present to City Council for review and approval.

Task 10- Complete closeout procedures for standard agreement; submit closeout package to HCD.

The City expects to submit monthly funds requests, annual performance reports, and other required reports from execution of the standard agreement to close-out for the code enforcement services program activity.

Provide a detailed narrative describing the deliverables that will be completed as part of this activity. (i.e.: Deliverable 1- marketing plan; Deliverable 2- town hall meeting minutes; Deliverable 3- labor compliance files... etc.). This deliverable narrative should indicate your knowledge of the documentation necessary to monitor and evaluate activity compliance. These documents should be part of your project file and will be reviewed as part of your onsite monitoring.

Detailed Scope of Work - Deliverable Narrative

Deliverable 1- Standard agreement executed with HCD.

Deliverable 2- New code enforcement services position filled.

Deliverable 3- Building Official and Building Inspector complete training and receive completion certificates from the California Association of Code Enforcement Officers.

Deliverable 4- Complete uniform code enforcement procedures.

Deliverable 5- Complete code enforcement inspections in Census Tract 115, Block Groups 1, 2, and 4; and Census Tract 116, Block Groups 1, 2, and 3.

Deliverable 6- Upload all identified code enforcement issues into code enforcement tracking system.

Deliverable 7- Complete letters and follow-up code enforcement actions to fully address and resolve code compliance and health and safety issues in six deteriorating areas.

Deliverable 8- Identify and refer code compliance cases for Housing Rehabilitation program assistance.

Deliverable 9- Complete After Action Reports for resolved code enforcement cases.

Deliverable 10- Complete report on final accomplishments; present report to City Council.

Deliverable 11- Complete closeout requirements per the standard agreement.

Deliverable 12- Submit closeout package to HCD.

Section V

Will you need more than 30 days after the expenditure deadlines to complete your activity reporting?

No

Will you need more than 30 days after the expenditure deadline to complete your beneficiary reporting, for example; reporting for activities that are in support of housing or economic development where it is likely that there will be a time gap between completion of the activity and reportable beneficiaries.

Do you want to add additional optional milestones?

Yes

If you selected YES, please provide each milestone for the program as well as the anticipated completion date. There are spaces for 10 milestones, however only the first and last are mandatory. The first milestone is the proposed activity start date and the last milestone is the proposed notice of completion or completion date of the activity. Additional milestones are optional. Milestones provided in this section will become part of the Standard Agreement.

Milestone #1

Code Enforcement Services program activity start date: no later than 60 days after execution of the STD 213.

Milestone #1 must be completed no later than 60 days after execution of the STD 213

Milestone #2 (optional)

25% expenditure

Milestone #3 (optional)

50% expenditure

Milestone #4 (optional)

75% expenditure

Milestone #5 (optional)

100% expenditure

Milestone #6 (optional)

Milestone #7 (optional)

Milestone #8 (optional)

Milestone #9 (optional)

Confirmation of Closeout - Milestone #10

Confirmation of closeout: no later than 90 days after expenditure deadline of STD 213.

Milestone #10 must be completed no later than 90 days after confirmation of closeout

Readiness Criteria

Is this a Code Enforcement Program?

Yes

Population to Enforcement officer ratio

16035 to 0.50

Narrative regarding current code enforcement needs

Currently, the City is facing a situation of extremely limited staffing and resources to respond to and address escalating code enforcement needs. Code enforcement services are performed approximately one quarter of the time by two Building Division personnel in the Community Development Department (CDD), resulting in a population to code enforcement officer ratio of 16,035 to 0.5. Building Division personnel, although trained in building code and health and safety compliance, do not have current training through the California Association of Code Enforcement Officers. Lack of training, funding, and time results in current code enforcement services being limited to addressing complaints about the most severe health and safety concerns.

Approximately 10 years ago, a full-time code enforcement services position was eliminated from the Community Development Department due to budget issues and most of these services transferred to the Ukiah Police Department (UPD). Over time, and especially as calls for service related to law enforcement issues and nuisances have increased throughout Ukiah, it has not been possible for UPD to proactively respond to and prioritize code enforcement. In the past 14 months, for example, UPD received over 430 calls regarding Ukiah City Code issues, over 300 reports of abandoned vehicles, and over 50 complaints about graffiti.

Consequently, and after collaborative discussions between UPD and CDD, in 2020 most code enforcement services were transferred back to CDD, which created a new Code Enforcement Services Division under the purview of the Building Division and Building Official. Although the framework is now in place to proactively address code enforcement issues throughout the City of Ukiah and especially in deteriorating Census Tracts/Block Groups, funding and staffing resources are still limited. CDBG funding for a new code enforcement services division would essentially triple the size of staff to address code enforcement issues, to a population to code enforcement ratio of 16,035 to 1.5, while also designing uniform code enforcement procedures to standardize and increase efficiencies for delivering code enforcement services. Besides improving responsiveness and effectiveness of code enforcement services, a more intentional and proactive enforcement services model will reduce the impact to the Ukiah Police Department, increasing safety Citywide.

Provide a detailed narrative about the need for code enforcement in your community. Reference documentation regarding needs for code enforcement.

Need for code enforcement documentation, check all that apply.

Photos documenting need

Code Enforcement Need document upload

City of Ukiah CE Program- code enforcement need doc- photos.pdf

Code Enforcement Need additional document upload

Code Enforcement Need additional document upload

Code Enforcement Need additional document upload

Narrative regarding how the age of the housing impacts enforcement needs

The age of the housing stock in Ukiah has a significant impact on the needs of code enforcement in the areas of capacity, safety, and resources. According to the 2019-2027 City of Ukiah Housing Element, the majority of the housing stock in the City of Ukiah, nearly 70%, was built in the 1950s – 1980s with many of these homes having few improvements since their construction. Deferred maintenance on these homes attribute to issues like leaky roofs, lack of egress, architectural barriers to ADA accessibility, deteriorated stairways and landings, plumbing issues, failing structural systems, unsightly and broken concrete driveways, lack of painting/waterproofing that leads to dry rot/pest and fungus issues, mold intrusion, etc. The sheer scale of deteriorating housing stock, especially in the six deteriorating Census Tracts/Block Groups (the LMA service area), poses an increased urgency to proactively address code enforcement issues in these areas, particularly for safety purposes.

The age of the housing stock in Ukiah thus increases the burden on code enforcement resources and capacity, reducing code enforcement personnel effectiveness. In the short term, this shifts the focus of code enforcement services to only the most severe health and safety issues. In the long term, and without additional resources or funding, this situation poses a safety hazard for the entire community.

How old is the housing stock?

30-60 years old average; over 90% of housing stock over 25 years of age (2019-2027 City of Ukiah Housing Element)

Provide a narrative describing property nuisances in your community

As with age of the housing stock and impacts to service delivery, the increase in the number of property nuisances over the past few years has further reduced the effectiveness of code enforcement services to sustainably address code enforcement needs throughout the community. Illegal dumping on public and private property is one major concern, and there are multiple properties in Ukiah where access is restricted by garbage and debris to the point one cannot walk through the yard, home, or parking lot (see attached photo documentation). This poses access and safety issues for first responders entering the property to respond to emergencies.

There are multiple instances of graffiti throughout the City. Abandoned vehicles are also a concern and usually located in larger public parking lots, often with wheels missing and temporary makeshift living areas built into the vehicles. Removing the vehicles and assisting individuals with accessing housing poses a significant challenge and often involves coordination with several community partners. Finally, vacant properties, while the least reported code enforcement issue, pose safety and health issues to community residents. Over the last 14 months alone, the Ukiah Police Department has documented over 1,500 calls related to public nuisances and code complaints (see attached documentation). Public nuisances deteriorate and jeopardize the entire community, as well as the safety of first responders.

A public nuisance property is one that has the potential to affect the health, safety, welfare and/or comfort of the general public. Provide a detailed narrative of public nuisance properties in the program's service area impact the community and code enforcement activities.

Property nuisance type (select all that apply)

Graffiti, Dumping, Abandoned Vehicles, Vacant Property problems, Other

Property nuisance type document upload

City of Ukiah CE Program- public nuisance doc- police calls.pdf

Property nuisance type additional document upload

City of Ukiah CE Program- public nuisance doc- photos.pdf

Property nuisance type additional document upload

Property nuisance type additional document upload

Property nuisance type additional document upload

Do you have rental housing protection?

No

Rental housing protection document upload

City of Ukiah CE Program- rental housing protection doc.pdf

Rental housing protection additional document upload

Rental housing protection additional document upload

Rental housing protection additional document upload

Indicate the number of grants managed in the last 48 months

4 or more grants

List the grants managed in the last 48 months.

City of Ukiah 16-HOME-11376 and HOME Program Income: Tenant Based Rental Assistance and First Time Homebuyer Assistance
City of Ukiah 16-CDBG-11147 and CDBG Program Income: Business Assistance Program and Microenterprise Technical Assistance Program
City of Ukiah 18-HOME-12560: Rental New Construction Project for Ukiah Senior Apartments
City of Ukiah 19-PGP-13298: SB2 Planning Grant Program for Housing Element program implementation
City of Ukiah 20-CDBG-12036 ADA Design Planning Study at a City of Ukiah Municipal Services Facility
City of Ukiah 20-LEAP-15456 for Housing Planning activities

Provide a narrative listing your partners and collaborators

Code enforcement services will be implemented by the City of Ukiah's Building and Code Enforcement Services Division, a Division of the Community Development Department. The Division frequently collaborates with police officers within the Ukiah Police Department, especially on code enforcement cases involving potential law enforcement issues. The Division also collaborates with the Ukiah Valley Fire Authority for violations of fire code and other fire-related health and safety issues.

Although these are existing longstanding partnerships for service delivery, the City does not have formal recognition of the partnership through a resolution by the City Council so does not meet the definition of supporting documentation requested within the application instructions. Instead, the City has submitted letters of support documenting these partnerships with signatures of the Chiefs of Police and the Ukiah Valley Fire Authority as documentation.

List of collaborators/partners

Other local government agency (county or city)

For documentation please upload adopted Memorandum of Understanding, Agreements, Contracts, Resolutions, Board Motions, or other formally approved documentation showing that the governing bodies of the different partner agencies have acknowledged the partnership/collaboration and are engaged in the effort. A signed letter of partnership/collaboration is NOT sufficient evidence of partnership unless it is signed by all parties in the collaboration/partnership, and has been recognized by the governing body of the responsible organization.

Partners/Collaborators Supporting Documentation

Ukiah CE Program- Letters of Support.pdf

Readiness

Are you looking to start a new program, modify an ongoing program, or add a new type of assistance to an existing program?

Modify ongoing

Can you confirm that the funding requested is gap funding?

Yes

Upload proof of certification

Ukiah CE Program- gap funding certification.pdf

Additional proof of certification

Have you enacted limitations on residential construction other than establishing agricultural preserves or limitations based on health and safety needs?

No

Please include a narrative describing your staff and/or contractor/subrecipient expertise:

The CDBG code enforcement services program is proposed to be delivered by existing City of Ukiah Building/Code Enforcement Services staff and a newly hired code enforcement officer. Matthew Keizer, Building Official for the City of Ukiah, will be the lead for the code enforcement services activity, focusing on development of uniform code enforcement procedures with the City Attorney's Office, coordination of code inspections including the schedule, tracking of progress and resolution of code enforcement cases, recruiting/hiring/training the new code enforcement officer, and the deployment of resources for rehabilitation assistance, such as through a future Housing Rehabilitation program. Mr. Keizer has over 20 years' experience in the construction industry as a licensed general contractor and currently holds a General B license in good standing with the CSLB. As a building inspector, Mr. Keizer has completed over 40 International Code Council (ICC) certifications and recently achieved the designation as a Master Code Professional from the ICC, considered the "gold standard" for demonstrating proficiency in the building code profession.

Code Enforcement Officer for the City of Ukiah, to be hired if awarded CDBG funding, will be the principle implementer of code enforcement services in the six deteriorating areas (the LMA service area) of the City of Ukiah. It is proposed that CDBG code enforcement services funding pay for a large portion of the code enforcement officer's time, potentially up to 80 percent, with the remaining funding for the position coming from the City General Fund (the General Fund-portion of the funding would pay for the code enforcement officer's time when not in the LMA service area).

The code enforcement officer will conduct investigations, document violations, send letters regarding compliance issues and perform follow-up inspections, attend court appointments, and write citations. He/she will also work with owners to achieve compliance, answer questions from the public, and enter tracking information into the City's electronic code enforcement tracking system. The position will be expected to work with other agencies and departments, assist with community outreach, and connect residential code compliance violations to a future funded City housing rehabilitation program.

Steven Oropeza, Building Inspector II for the City of Ukiah, will assist the code enforcement officer and Mr. Keizer in performing the duties of the code enforcement services program. Mr. Oropeza holds 5 building inspection certificates, having recently achieved his "R5" Residential Combination Inspector certification. Mr. Oropeza will also assist with community outreach and connecting housing code compliance issues to a future City housing rehabilitation program.

Craig Schlatter, Community Development Director for the City of Ukiah, will administer the CDBG Code Enforcement Services Program, including coordination, compliance monitoring, the completion of semi-annual and annual reports, and drawdown requests. He will be assisted by Mr. Jesse Davis, Planning Manager and Mary Horger, Financial Services Manager. Although this will be his first administration of a Code Enforcement Program, Mr. Schlatter has 15 years' experience with the California CDBG non-entitlement program and has designed and implemented other Public Services programs, Planning and Technical Assistance studies, and Homeownership Assistance, Housing Rehabilitation, and Business Assistance programs through CDBG, as well as Owner Occupied Rehabilitation, Tenant Based Rental Assistance, First Time Homebuyer programs, and Rental New Construction projects through the HOME Investment Partnerships Program. Mr. Schlatter has also designed and implemented CDBG multi-family housing rehabilitation and reconstruction projects, infrastructure and public improvement projects, economic development and housing debt restructuring projects, and public facility improvement projects. Mr. Schlatter has training and experience in State and Federal Davis Bacon and Related Acts prevailing wage monitoring, as well as training through HUD in NEPA compliance and environmental reviews, and serves as the NEPA Certifying Officer for CDBG and HOME for the City of Ukiah.

Mr. Jesse Davis, Planning Manager for the City of Ukiah, will assist Mr. Schlatter in CDBG program administration and reporting. Mr. Davis has experience in federal grants management and environmental analysis, including work oversees as a Peace Corps volunteer, work as a regional grants officer for the Rotary Foundation, and significant work experience in community planning.

Mary Horger, Financial Services Manager for the City of Ukiah, will assist in the processing of funds requests and documentation of eligible expenses. Ms. Horger has approximately 20 years' experience in all aspects of procurement, budgeting, and vendor management, for both private and public organizations. Ms. Horger also has experience with CDBG and HOME financial management, including accounting and tracking.

The Subrecipient Agreements must meet the requirements of 24 CFR §570.503: <https://www.law.cornell.edu/cfr/text/24/570.503> Contracts must be in compliance with 2 CFR §§200.317-200.326: <https://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1.4.31&rgn=div7> Contracts should include language required in Appendix 2 of 2 CFR 200: https://www.law.cornell.edu/cfr/text/2/appendix-II/200part_200

Do you have a draft/signed agreement with a contractor/subrecipient?

No

Upload draft/signed agreement(s)

City of Ukiah CE Program- contractor agreement doc- in-house.pdf

View Budget Worksheet

<https://portal.ecivis.com/#/peerBudget/5B06AEAE-FF81-4393-A830-19FC588CCD75>

View Application Goals

<https://portal.ecivis.com/#/peerGoals/EBC8A0B0-7C68-41A8-95E0-D4AAF3B840D1>

of Reviews

4

of Denials

0

Original Submission Date (for re-submissions)

Average Score

250.00

Applications: File Attachments

Please upload the LMA service area map for your activity

City of Ukiah Code Enforcement LMA service area mapping.pdf

Code Enforcement Need document upload

City of Ukiah CE Program- code enforcement need doc- photos.pdf

Property nuisance type document upload

City of Ukiah CE Program- public nuisance doc- police calls.pdf

Property nuisance type additional document upload

City of Ukiah CE Program- public nuisance doc- photos.pdf

Rental housing protection document upload

City of Ukiah CE Program- rental housing protection doc.pdf

Partners/Collaborators Supporting Documentation

Ukiah CE Program- Letters of Support.pdf

Upload proof of certification

Ukiah CE Program- gap funding certification.pdf

Upload draft/signed agreement(s)

City of Ukiah CE Program- contractor agreement doc- in-house.pdf

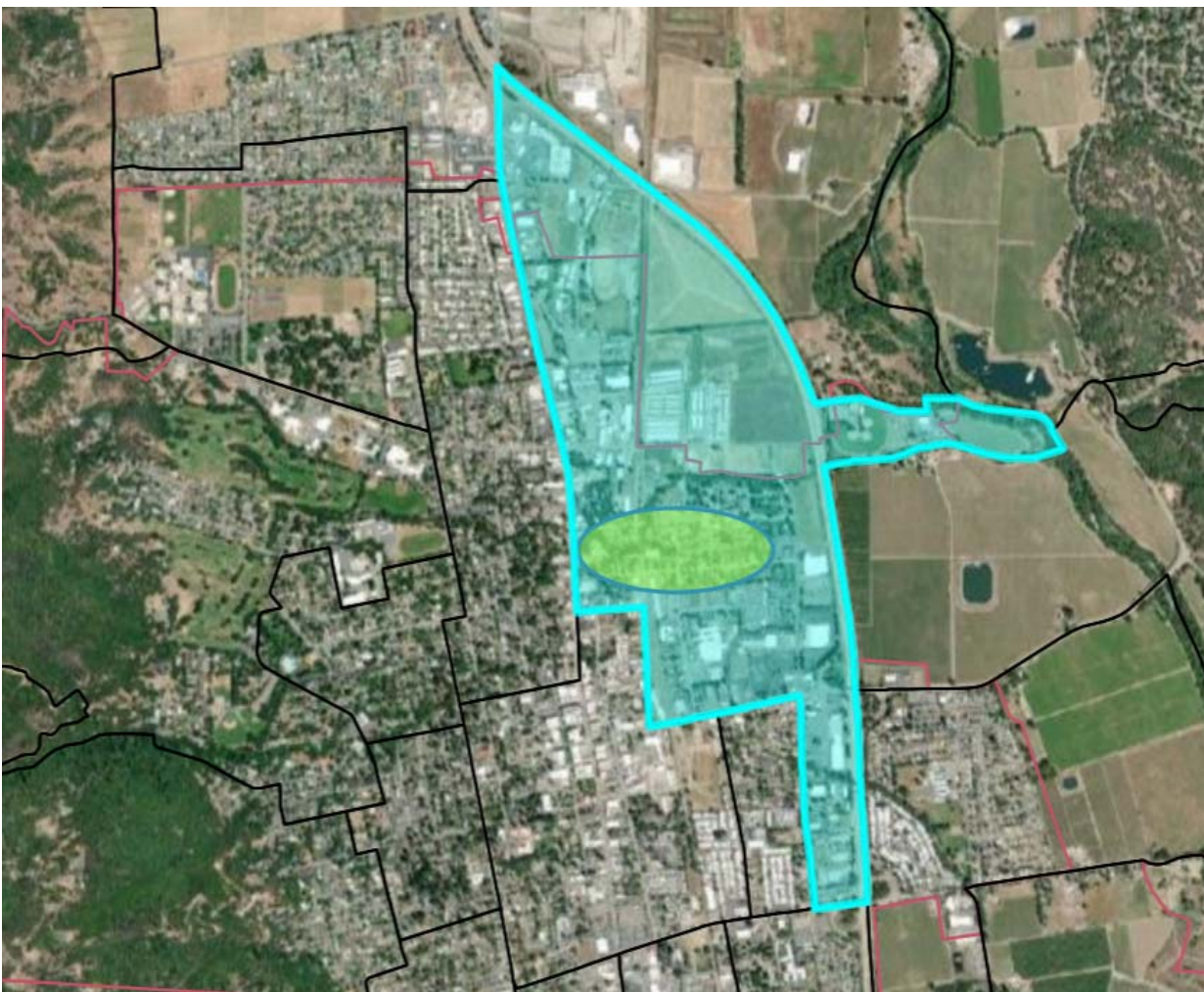


CDBG CODE ENFORCEMENT SERVICES PROGRAM
LMA SERVICE MAPPING

Description

The City of Ukiah CDBG Code Enforcement Services program is proposed to be conducted in the most blighted areas of the city. These areas comprise three Block Groups in Census Tract 115 and three Block Groups in Census Tract 116, for a total of six areas identified within the maps below. Area benefit for low and moderate income persons (LMA) ranges from 51.94% in Census Tract 116/Block Group 1 to 72.70% in Census Tract 116/Block Group 2, and at an average of roughly 61% LMA for the six areas. According to the HUD low-mod mapping tool, these six areas have area benefit for 7,765 LMI beneficiaries.

Area #1: Census Tract 115 / Block Group 1



Area with greater need for code enforcement services highlighted in yellow

LMA = 64.96%; low and moderate income beneficiaries = 1,170

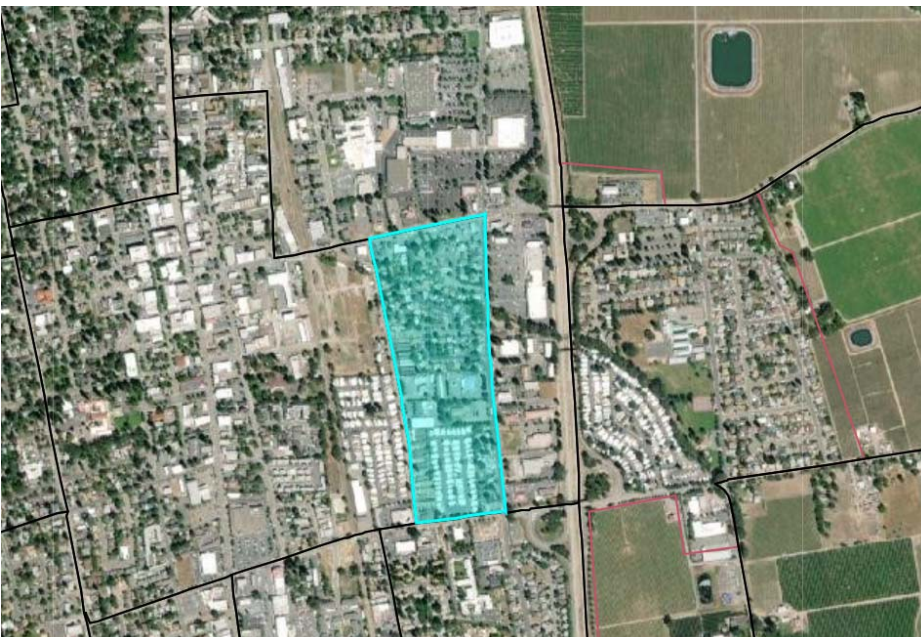
Area #2: Census Tract 115 / Block Group 2



Areas with greater need for code enforcement services highlighted in yellow

LMA = 50.24%; low and moderate income beneficiaries = 2,080

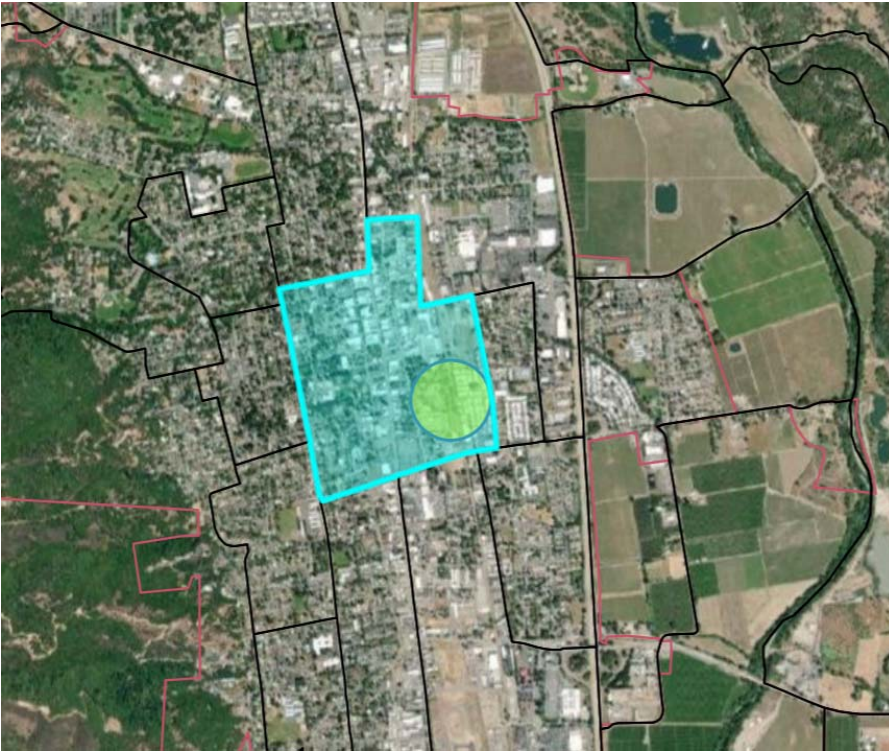
Area #3: Census Tract 115 / Block Group 4



The entire Census Tract 115 / Block Group 4 has a greater need for code enforcement services

LMA = 56.94%; low and moderate income beneficiaries = 360

Area #4: Census Tract 116 / Block Group 1



Area with greater need for code enforcement services highlighted in yellow

LMA = 51.94%; low and moderate income beneficiaries = 1,030

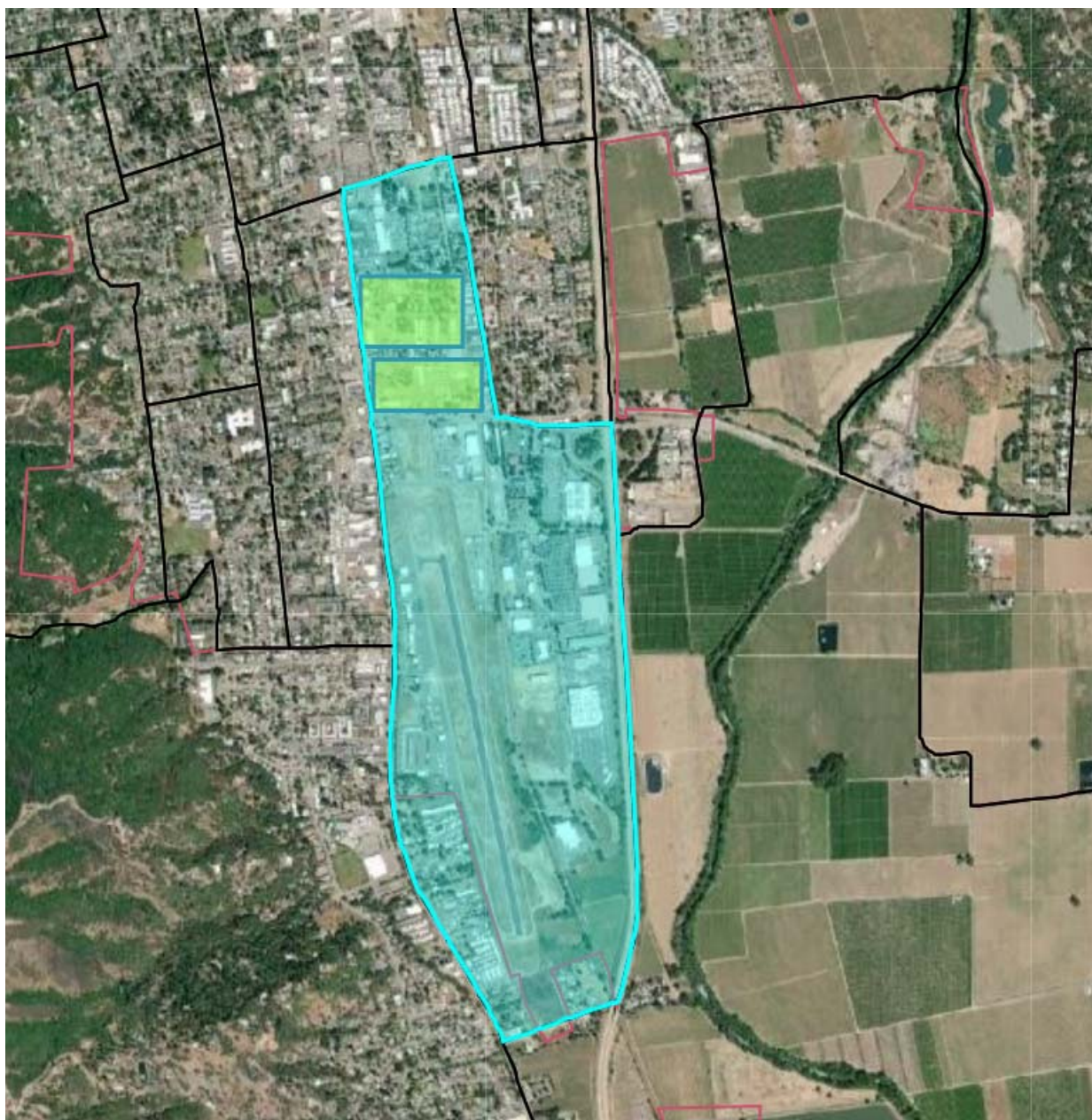
Area #5: Census Tract 116 / Block Group 2



The entire Census Tract 116 / Block Group 2 has a greater need for code enforcement services

LMA = 72.70%; low and moderate income beneficiaries = 1,905

Area #6: Census Tract 116 / Block Group 3



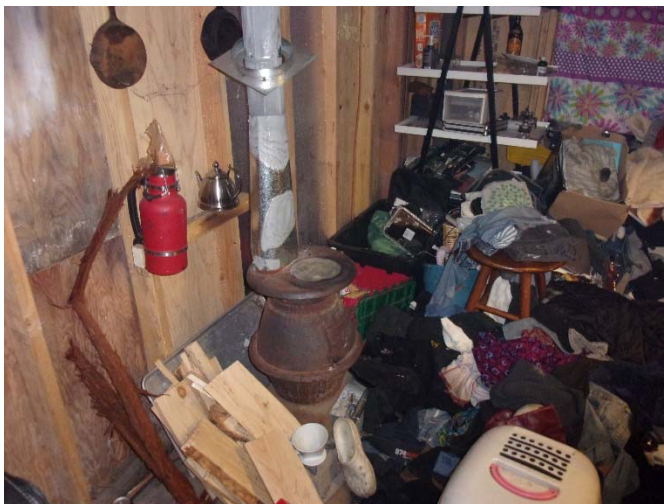
Areas with greater need for code enforcement services highlighted in yellow

LMA = 70.90%; low and moderate income beneficiaries = 1,220



CDBG CODE ENFORCEMENT SERVICES PROGRAM
CODE ENFORCEMENT NEED DOCUMENTATION – PHOTOS

Included below are photos from code enforcement calls for service, including illegal structures, unsafe living conditions, and building code violations. Captions are provided where appropriate.



Unpermitted structure; unsafe living conditions



Code violations and illegal structures, posing unsafe environment.



Living conditions posing unsafe living conditions.



CDBG CODE ENFORCEMENT SERVICES PROGRAM

PROPERTY NUISANCE DOCUMENTATION – CALLS FOR POLICE SERVICE

The City of Ukiah has attached the first page of reports documenting calls for police service over the last 14 months. Calls for police service included graffiti, complaints related to Ukiah City Code or violations of City Code, abandoned vehicles, and other public nuisance issues.

UKIAH POLICE DEPARTMENT Call Log Report Abandon Vehicles

City of Ukiah
21-CDBG-NH-20004
Page 19 of 105

First Date: 01/01/2020

Total Calls

309

Last Date: 04/20/2021

Call Number	Disposition	Complaint/Date	Address	Unit
200100067	108A	AVA	01/01/2020 1250 MARWEN DR, UKIAH	
		UPD		*4C7
200100163	108A	AVA	01/02/2020 1205 AIRPORT PARK BL, UKIAH	
		UPD		*4C7
200100194	108A	AVA	01/02/2020 125 COURT ST, UKIAH	
		UPD		*4C16
200100279	108A	AVA	01/03/2020 189 WABASH AV, UKIAH S/A A	
		UPD		*4C16
200100300	108A	AVA	01/03/2020 1200-BLK S STATE ST, UKIAH	
		UPD		*4C16
200100930	108A	AVA	01/08/2020 1100-BLK HELEN AV, UKIAH	
		UPD		*4C16
200101018	108A	AVA	01/09/2020 751 E GOBBI ST, UKIAH	
		UPD		*4C16
		UPD		4C7
200101031	108A	AVA	01/09/2020 400 OBSERVATORY AV, UKIAH	
		UPD		*4C16
200101066	108A	AVA	01/09/2020 1000 S STATE ST, UKIAH	
		UPD		*4C16
200101276				

UKIAH POLICE DEPARTMENT Call Log Report Graffiti

City of Ukiah
21-CDBG-NH-20004
Page 20 of 105

First Date: 01/08/2020

Total Calls

58

Last Date: 04/19/2021

Call Number	Disposition	Complaint/Date	Address	Unit
200100897	594G	VAN	01/08/2020 WASHINGTON AV // S DORA ST, UKIAH	
		UPD		*4C7
200201940	594G	VAN	02/17/2020 499 LESLIE ST, UKIAH	
		UPD		*4C7
200201979	594G	VAN	02/17/2020 555 LESLIE ST, UKIAH	
		UPD		*4C7
200202696	594G	VAN	02/22/2020 377 WARREN DR, UKIAH S/A A	
		UPD		*4C16
200203045	594G	VAN	02/25/2020 377 PEACH ST, UKIAH S/A A	
		UPD		*4C7
200300091	594G	R594	03/01/2020 141 GIBSON ST, UKIAH	
		UPD		*4B86
		UPD		4B73
		UPD		4S27
200300167	594G	VAN	03/02/2020 676 MYRON ST, UKIAH	
		UPD		*4C7
200300549	594G	VAN	03/05/2020 900 N OAK ST, UKIAH	
		UPD		*4C16
200300560	594G	VAN	03/05/2020 740 N SPRING ST, UKIAH	
		UPD		*4C16

UKIAH POLICE DEPARTMENT Call Log Report UCC Complaints

City of Ukiah
21-CDBG-NH-20004
Page 21 of 105

First Date: 01/23/2020

Total Calls

432

Last Date: 04/13/2021

Jurisdiction: UKIAH

Call Number	Disposition	Complaint/Date	Address	Unit
200102822	750C	UCC	01/23/2020 825 N STATE ST, UKIAH	
		UPD		*4B76
200102990	415T	UCC	01/25/2020 1240 AIRPORT PARK BL, UKIAH	
		UPD		*4B101
		UPD		4C16
200103051	750A	UCC	01/26/2020 390 W CLAY ST, UKIAH S/A 2	
		UPD		*4B98
200103397	750B	UCC	01/29/2020 1205 AIRPORT PARK BL, UKIAH	
		UPD		*4B90
		UPD		4B84
200103594	415N	UCC	01/30/2020 260 S SCHOOL ST, UKIAH	
		UPD		*4B90
200103736	415T	UCC	01/31/2020 410 W SMITH ST, UKIAH	
		UPD		*4B87
200200221	415T	UCC	02/03/2020 1116 AIRPORT PARK BL, UKIAH	
		UPD		*4B100
		UPD		4C7

UKIAH POLICE DEPARTMENT Call Log Report UCC Violations

City of Ukiah
21-CDBG-NH-20004
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01/01/2020

03/21/2021

Total Calls

46

Call Number	Disposition	Complaint/Date	Address	Unit
200100002	620F	FIREWORKS		
		01/01/2020	613 EMPIRE DR, UKIAH	
	UPD			*4B98
200100007	620F	FIREWORKS		
		01/01/2020	280 BURLINGTON DR, UKIAH	
	UPD			*4S27
200100189	620F	829		
		01/02/2020	501 S STATE ST, UKIAH	
	UPD			*4B100
200200374	620F	D17		
	415T	D17		
	808	D17	LEWIS LN, UKIAH	
	808	D17		
	UPD			*4B100
	UPD			4B84
	UPD			D17
	UPD			L3
200200377	620F	L3		
	415T	L3		
	808	L3	LEWIS LN, UKIAH	
	UPD			*L3
200200378	620F	4B84		
	415T	4B84		
	148P	4B84	LEWIS LN, UKIAH	
	808	4B84		
	UPD			*4B84
200200379	620F	4B100		
	415T	4B100		
	808	4B100	LEWIS LN, UKIAH	
	UPD			*4B100
200200475	415T	TRANSIENT		

UKIAH POLICE DEPARTMENT Call Log Report Marijuana Grows

City of Ukiah
21-CDBG-NH-20004
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First Date: 06/29/2020
Last Date: 10/07/2020

Total Calls
6

Call Number	Disposition	Complaint/Date	Address	Unit
200603168	113G	UCC		
		06/29/2020	220 FORD ST, UKIAH	
		UPD		*4B76
		UPD		4B100
200700992		UPD		4S26
	820	820		
	113G	4B88		
		07/09/2020	1101 N OAK ST, UKIAH	
200703100		UPD		*4B88
		UPD		4B101
	113G	HS		
		07/27/2020	780 APPLE AV, UKIAH	
200802837		UPD		*4B76
		UPD		4B100
	113G	817		
		08/25/2020	1084 HELEN AV, UKIAH	
200902520		UPD		*4B100
		UPD		4B76
		UPD		4B88
		UPD		4B90
		UPD		4B98
		UPD		L3
		UPD		L4
	113G	4B76		
201000751		09/22/2020	203 S HORTENSE ST, UKIAH	
		UPD		*4B76
201000751	822	822		
	113G			
		10/07/2020	350 S HIGHLAND AV, UKIAH	
		UPD		*4B88
		UPD		4S30
		UPD		L3

UKIAH POLICE DEPARTMENT Call Log Report Type All Unit Times and Location

21-CDBG-NH-20004

Page 24 of 105

First Date: 01/01/2020
Last Date: 04/20/2021

Total Calls
760

Call Number	Disposition	Complaint/Date	Address	Unit
200100052	597F	Animal	01/01/2020 WASHINGTON ST // S STATE ST, UKIAH	
	UPD			*4C7
200100060	597B	Animal	01/01/2020 404 PLUM DR, UKIAH S/A B	
	UPD			*4C7
200100083	597I	Animal	01/01/2020 884 S STATE ST, UKIAH	
	UPD			*4B100
200100084	597G	Animal	01/01/2020 298 PLANT RD, UKIAH	
	UPD			*4C7
200100288	597H	Animal	01/03/2020 411 MENDOCINO DR, UKIAH	
	UPD			*4C16
200100310	597F	Animal	01/03/2020 680 S STATE ST, UKIAH	
	UPD			*4C16
200100323	597F	Animal	01/03/2020 1027 N PINE ST, UKIAH	
	597I			
200100342	597F	Animal	01/03/2020 300-BLK PLUM ST, UKIAH	
	UPD			*4C16
200100425	597G	Animal	01/04/2020 400-BLK N BUSH ST, UKIAH	
	UPD			*4B101
	UPD			4B69



CDBG CODE ENFORCEMENT SERVICES PROGRAM
PROPERTY NUISANCE DOCUMENTATION – PHOTOS

Included below are photos from code enforcement calls for service, including illegal dumping, graffiti, garbage and debris, and abandoned vehicles. Captions are provided where appropriate.



Illegal dumping and graffiti at abandoned, vacant property.



Garbage, debris, and abandoned vehicles in backyards of single-family homes



Abandoned vehicles



**CDBG CODE ENFORCEMENT SERVICES PROGRAM
RENTAL HOUSING PROTECTION DOCUMENTATION**

Through this 2021 CDBG application for a code enforcement services program, the City of Ukiah is proposing to redesign and rebuild the capacity of the Code Enforcement Division to respond to escalating enforcement and compliance issues in the six deteriorating areas of the City (the LMA service area). One of the needs of a City code enforcement program is to design and implement a Rental Housing Protection program through Ordinance.

The City does not yet have this Ordinance established, as the City has not had the capacity to enforce such an Ordinance. If CDBG funding is received for the City's proposed Code Enforcement Services program, the City intends to explore design and adoption of such an ordinance with the Ukiah City Council.



"Safety, Professionalism & Community Service"

Justin Wyatt
Chief of Police

April 26, 2021

Department of Housing and Community Development
Division of Financial Assistance, Attn: CDBG NOFA Unit
2020 W. El Camino Avenue, Suite 670
Sacramento, CA 95833

Re: City of Ukiah's Application to the Community Development Block Grant Program 2021
NOFA for Code Enforcement Services Program

To Whom It May Concern:

The Ukiah Police Department was pleased to learn of the City of Ukiah's application to the Community Development Block Grant Program to fund a City of Ukiah Code Enforcement Services program in deteriorating areas of the City of Ukiah. The Police Department routinely responds to or observes quality of life issues within the City of Ukiah, and fully supports the application. The Police Department will continue to partner with the City of Ukiah Community Development Department to assist in delivering these program services.

Respectfully,

A handwritten signature in blue ink, appearing to read "Justin Wyatt".

Justin Wyatt
Chief of Police
Ukiah Police Department



UKIAH VALLEY FIRE AUTHORITY

1500 SOUTH STATE STREET
UKIAH, CA 95482-6709

Phone: (707)462-7921 ♦ Fax: (707)462-2938 ♦ Email: uvfd@sonic.net

April 26, 2021

Department of Housing and Community Development
Division of Financial Assistance, Attn: CDBG NOFA Unit
2020 W. El Camino Avenue, Suite 670
Sacramento, CA 95833

Re: City of Ukiah's Application to the Community Development Block Grant Program 2021 NOFA for Code Enforcement Services Program

To Whom It May Concern:

As the Fire Chief for the Ukiah Valley Fire Authority (UVFA), I was pleased to learn of the City of Ukiah's application to the Community Development Block Grant Program to fund a City of Ukiah Code Enforcement Services program in deteriorating areas of the City of Ukiah. The UVFA fully supports the application and intends to partner with the City of Ukiah Community Development Department to assist in delivering these program services.

Respectfully,

Douglas P. Hutchison

Doug Hutchison
Fire Chief/EMT-P



April 28, 2021

Department of Housing and Community Development
Attn: Roxann Kuhnert, CDBG Program Manager
Division of Financial Assistance, CDBG NOFA Unit
2020 W. El Camino Avenue, Suite 200
Sacramento, CA 95833

Re: Certification of Gap Funding – City of Ukiah Code Enforcement Services Program

Dear Ms. Kuhnert:

This letter is to certify that the CDBG funds requested for the City of Ukiah Code Enforcement Services Program constitute gap funding for the overall activity. The total activity project cost is anticipated to be \$554,026, consisting of \$500,000 in CDBG funds and \$54,026 in funding from the City of Ukiah General Fund.

Please contact me at (707) 463-6219 with any questions regarding this application.

Sincerely,

A handwritten signature in blue ink, appearing to read "Craig Schlatter", is written over the printed name.

Craig Schlatter
Director of Community Development



**CDBG CODE ENFORCEMENT SERVICES PROGRAM
CONTRACTOR / SUBRECIPIENT DOCUMENTATION**

The City of Ukiah intends to implement and administer a CDBG-funded Code Enforcement Services Program and associated Standard Agreement “in-house” with City of Ukiah staff within the Community Development Department. Draft and/or signed agreements with a contractor or subrecipient will not be needed and thus are not applicable for the City’s application.

Profile: cschlatter@cityofukiah.com

Applicant Information

Linked Applicant

cschlatter@cityofukiah.com

Tell us about you.

First name

Craig

Last name

Schlatter

Phone Number

7074636219

Email

cschlatter@cityofukiah.com

Title

Community Development Director

Company/Organization

City of Ukiah

Company Website

www.cityofukiah.com

City

Ukiah

State

California

Organization Information

Tell us about your organization.

Organization Name

City of Ukiah

Employer Identification Number (EIN)

946000446

DUNS #

074642893

Authorized Representative Per Resolution

Sage Sangiacomo

Business/Finance Representative

Daniel Buffalo

Organization Address

Address

300 Seminary Avenue

Address 2

City

Ukiah

State

California

County

Mendocino

Congressional District/Region

2

Zip

95482

Phone

7074636221

Phone Extension

Fax

7074636204

Is or will there be a consultant on this activity/application?

No

Employer Identification Number (EIN)

946000446

DUNS #

074642893

Business/Finance Contact (if required)

Name

Title

Email

Phone

Are you applying on behalf of an additional Jurisdiction?

No

Racial Equity: 26371564

Name	Attachments
26371564	No

Applications

City of Ukiah Code Enforcement Services Program

Racial Equity

It is a Department priority to ensure all eligible persons receive equitable access to services, and are served with dignity, respect and compassion regardless of circumstance, ability or identity. This includes marginalized populations, including but not limited to, Black, Native and Indigenous, Latinx, Asian, Pacific Islanders and other People of Color, immigrants, people with criminal records, people with disabilities, people with mental health and substance use vulnerabilities, people with limited English proficiency, people who identify as transgender, people who identify as LGBTQ+, and other individuals that may not traditionally access mainstream support. The following list of questions highlight items that you as the Grantee might be doing to address racial equity. If you have not started to address racial equity in your housing and community development projects and programs, this is an opportunity to describe your plans for how this funding will reduce disparities and increase racial equity in your communities. Answers in this section will not serve to qualify or disqualify applicants but rather will serve as a baseline measure of the current state of each applicant's disparities, efforts and outcomes.

Please select your application type:

Public Services

Has your jurisdiction completed an analysis of racial disparities in its programs that address housing insecurity, homelessness and economic insecurity?

No

How will you capture and analyze data to determine if you have disproportionate outcomes in your CDBG funded project or program for people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color who have been historically marginalized and are disproportionately impacted by housing segregation, poverty, and homelessness?

The City of Ukiah will primarily capture and analyze data regarding disproportionate outcomes in CDBG-CV through the use of community-engagement forums, equity surveys, and personal communication from members of the City's newly-formed Equity and Diversity Committee. The 11-person Equity and Diversity Committee includes two City Council members and nine individuals who identify with or are members of organizations that represent the following demographic groups: Persons with lived experience of poverty (currently or formerly living at or below the poverty level, Persons with physical or mental disabilities, Persons from the LGBTQA community, Native American tribes and communities in Mendocino County, Persons from the Hispanic/Latino community, Persons of color, Persons whose primary language is not English, Youth 21 years and younger, and Seniors 65 years or older.

The Committee, seated on February 17, 2021, has been tasked with developing an action plan to foster diversity and equity in the organization and our community. The committee will review policies, practices, and procedures to promote and enhance equal participation and access to services. The Equity and Diversity committee serves in an advisory capacity to the City Council and City Manager.

How will you respond to identified disparities and use this funding to work toward racial equity in your CDBG funded project or program?

The City of Ukiah will evaluate and respond to identified disparities through the goals, objectives, and strategies identified in the City-wide comprehensive equity action plan developed by the City of Ukiah's Equity and Diversity Committee. Ongoing progress to meet racial equity goals will be evaluated during the committee's annual review process.

Does your organization have requirements for all subrecipients to look at data to determine racial disparities in its programs?

No

Does your organization have requirements for all subrecipients to put a plan in place to address racial disparities if they exist?

No

Identify and describe how people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color will access your CDBG funded project or program.

Do you have Formal partnerships such as MOUs or subrecipient agreements with organizations serving people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color?

Yes

Please provide a narrative about the Formal Partnerships you have:

The City of Ukiah has a Memorandum of Understanding with the Coyote Valley Band of Pomo Indians to use the Pomo Indians Band's gym for the City's league youth and adult basketball activities. In exchange for this use, tribal members and their children are provided free registration into all City youth and adult sports leagues, swim lessons, and other recreation activities.

Do you have Informal partnerships with organizations serving people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color?

Yes

Please provide a narrative about the Informal Partnerships you have:

The City partners with the local Community Action Agency North Coast Opportunities, Mendocino County Continuum of Care, Mendocino Latinx, and other organizations.

Do you have Materials in multiple language and accessible on jurisdiction website?

Yes

Please provide a list and links to the materials in multiple languages:

Although not all the City's materials are available in multiple languages, the City has made significant progress over recent years to improve access to multiple language materials. The City maintains a contract with LanguageLine to provide interpretation services. The City also employs several bilingual English-Spanish speaking staff in its customer service department to assist monolingual Spanish-speaking residents with access to City services. Advertising for major events hosted by the City is usually in English and Spanish, including posts on the City's Facebook page.

Do you have Communications campaigns on social media, radio, television or flyers targeted to people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color?

Yes

Please provide a narrative and any applicable links for the communications campaigns:

The City regularly participates in communication campaigns on social media, radio, television, and flyers to target persons of protected classes. Recent efforts include: media campaigns to share vaccination/COVID-19 information to the Latino/Latina/Latinx community, partnering with numerous other agencies to share multilingual U.S. Census information to targeted communities, and recruitment for the City's Equity and Diversity Committee. Other efforts include the City Council adopting a resolution to recognize February as Black History Month and a recent partnership with California Listos and other nonprofits and local artists to create a public art project promoting culturally thoughtful emergency preparedness messaging in the City's downtown Alex Thomas Plaza.

Do you have any 'other' means not listed for people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color accessing your CDBG-CV funded project or program?

No

How are the voices of people in protected classes, including but not limited to Black, Native and Indigenous, Latino/Latina/Latinx, Asian, Pacific Islanders and other people of color and those with lived experience of housing insecurity, homelessness and economic insecurity being centered in a meaningful, sustained way in creating effective approaches to addressing disproportionate outcomes in local projects and programs?

Does your jurisdiction have an advisory body for community level planning and decision making (e.g. Housing Advisory Committee, Community Planning Advisory Committee)?

No

Has your organization taken steps to ensure these funds are accessible to smaller and non-traditional organizations that have historically been serving communities of color but may not have previously participated formally in government grant programs?

No

Will your organization use these funds to address the organizational capacity of organizations that are led by Black, Latinx, Asian, Pacific Islander, and Native and Indigenous people?

No

List your partner organizations that are addressing racial equity in the housing and homelessness response system, the economic development sector and the health care sector and how do you partner with them.

Organization Name:

Mendocino Latinx

Partnership Type:

Informal

Number of years in this type of partnership:

2

Group(s) Served:

Latinx

Do you have additional partners to list?

Yes

Organization Name #2:

Coyote Valley Band of Pomo Indians

Number of years in this type of partnership:

15

Partnership Type:

Formal

Group(s) Served:

Native American

Will your organization or chosen subrecipient be hiring staff for the CDBG funded project or program?

No

Threshold: 26400790

Name	Attachments
26400790	Yes

Applications

City of Ukiah Code Enforcement Services Program

All applications are required to pass threshold requirements. Failure to meet threshold will result in immediate disqualification. Applications that do not meet threshold will not move on to scoring, or in the case of OTC, review for award.

Threshold

Activity Type

Programs

Are you looking to start a new program, modify an ongoing program, or add a new type of assistance to an existing program?

New

Were you required to submit a Single Audit to the State Controllers Office?

No - we were exempt from filing a Single Audit Report

Are all single audit findings cleared or in remediation?

N/A - Exempt from Single Audit Requirements

Some activities require proof of physical site control while others require proof of control of the resources necessary to complete the activity. For example, a service that provides delivered meals will need to have "control" of a vehicle for deliveries. In the narrative box, explain what type of site control will be necessary for your activity. Upload the applicable proof of site control such as: lease, deed, vehicle registration, etc.

Do you have site control?

Yes

Description of site control of the facility or means to conduct the services:

City of Ukiah Code Enforcement services will be administered and implemented out of the offices of the Community Development Department, located at the Civic Administration Center of the City of Ukiah at 300 Seminary Avenue, Ukiah, CA 95482. City of Ukiah owns and operates the Civic Administration Center.

Programmatic site control is not applicable. As code enforcement activities are performed and units inspected, site control will be documented and verified.

Upload your Site Control Supporting Documentation

Site Control Doc- Ukiah code enforcement.pdf

Upload an executed Statement of Assurances and Compliance. The template is found in the [Files tab](#) under the program solicitation. Please make sure the statement is completed with your jurisdiction's information and that the document has the specific CDBG-CV2 designation in the footer. The Statement of Assurances and Compliance is a legally binding document.

Upload your signed Statement of Assurances and Compliance with 2 CFR Part 200 (Appendix J)

2021 CDBG- Ukiah Certifications.Statement of Assurances.pdf

Per 24 CFR §570.486 <https://www.law.cornell.edu/cfr/text/24/570.486> the public notice should contain at the minimum, the amount of CDBG funds being requested, the amount of PI funds being used (if applicable), the range of activities that will be performed, the address, phone number, and times of the meeting.

Citizen Participation - Have you met all Public Hearings/Citizen Participation requirements?

Yes

Upload Citizen Participation Proof of Public Notice

Ukiah Citizen Participation- Proofs of Publication.pdf

Upload Public Meeting/Hearing Presentation/Handout Materials

11a.2021CDBGAppsPublicHearing.Handouts.Minutes.pdf

Did you use the HCD Approved Resolution Template in Content and Form from the Files Section of this Application?

Yes

Upload Approved Resolution for Application

CC Reso 2021-12 - 2021 CDBG Application Submittal.pdf

Upload Printout of Authorized Signatory as Identified in the Approved Resolution from Jurisdiction Website

Download the FI\$CAL TIN from the Files tab in the Solicitation. Do not use P.O. Box addresses on the TIN. Make sure the TIN includes the official name of your jurisdiction.[FI\\$CAL TIN FORM](#)

Upload CA FI\$CAL TIN Verification form

Ukiah CA Fiscal TIN Form.pdf

Budgets and Sources & Uses

Total Number of New Grant Dollars Applied For and Requested in eCivis Budget Template:

\$500,000.00

Do you have 100% of funds necessary to complete the activity?

Yes

Do you have program income not already included and committed in a CDBG activity?

No

You are expected to provide two activity budgets. There is a CDBG specific budget that you will complete as part of your application in the eCivis Grants Network. That budget is linked below and must be completed before you submit your application. You ALSO need to complete a full activity budget. Your full activity budget should use the sources and uses Excel template included in the Files tab in the Solicitation. You may use your own excel budget, provided it includes all of the sources and uses that will be included in your activity. Include line items for each component of your activity. Identify all funding sources that will be used to fund your activity including other federal and state funding, local funding, foundation or non-profit funding, donations and any other cash resources. Do not include in-kind donations or volunteer time.#####This template will also be used to evaluate your duplication of benefits. Indicate in the template where you project increased utilization of your public services if you are proposing a public service activity.##### Your complete activity budget narrative should include information about how the activity will be funded and whether or not the activity is viable if other funding sources are not available and the activity is only partially funded. For instance can the project scope be reduced the number of beneficiaries be reduced, can the project be scaled to the amount of funding available. Make sure the budget narrative has a relationship to the tasks and deliverables described above. The narrative should include information about how the CDBG funding will only be used to support a new activity, a modified existing activity, or an addition of a new type activity.

Have you completed and submitted your CDBG budget worksheet in eCivis?

Yes

Have you completed your activity sources and uses documentation (template)?

Yes

Upload activity sources and uses documentation (template):

City of Ukiah CE - activity sources and uses budget.xlsx

Budget narrative should include information about activity viability if the project is only partially funded. For instance can the project scope be reduced the number of beneficiaries be reduced, can the project be scaled to the amount of funding available. Include budget information that describes your activity budget as uploaded. Make sure the budget narrative has a relationship to the tasks and deliverables described in the application.

Have you completed your activity CDBG budget worksheet narrative in eCivis?

Yes

Upload other budget documentation

Have you expended at least 50 percent of open CDBG funds in the same activity type?

N/A

Debarment Check must be performed on the non-entitlement jurisdiction (Grantee), as well as any contractors or subrecipients involved in the activity. Please go to SAM.gov and perform a debarment check on the appropriate parties, and upload the results to demonstrate no active exclusions exist. Note that No Records Found is not a valid search result. Please upload in PDF format.

Federal funds may not be used to pay contractors, non-profits, or agencies that are federally debarred. Provide a proof of no-debarment for each agency, contractor, non-profit, or company that will receive funding or be paid out of this grant. Individuals that are not a business do not need to be checked.

Use <https://www.sam.gov/SAM/> to check for excluded parties and upload proof that contractors etc. are not debarred.

If you do not yet know who your contractors or subrecipients will be, you do not need to show proof of debarment check at application. However you will be required to check for debarment prior to contract or subrecipient agreement execution.

Debarment checks that do not show results will not be accepted. All parties must be registered in [SAM.Gov](#). Unregistered: consultants, contractors, partners, or subrecipients will not be eligible for reimbursement.

Upload Debarment Check(s)

City of Ukiah SAM reg- no debarment.pdf

Have you met the state objective for Fair Housing - Access to Opportunity per the Criteria on the State Objective form??

Yes

Have you met the state objective for Disaster Resiliency Long-Term Planning per the Criteria on the State Objective form?

Yes

Are you claiming General Administration for this activity?

Yes

Upload Activity NEPA Compliance

NEPA ER- CENST.Exempt- Ukiah Code Enforcement Program (Rev.Pg2).pdf

Upload General Administration NEPA Compliance

NEPA ER- Exempt.CENST- GA Code Enforcement (Rev.Pg2).pdf

Upload the Environmental Review form(s) and essential supporting documentation including consultation letters, mitigations conditions of approval or other documents. Please do not upload the entire environmental review record if it is more than 50 pages. Do upload any noticing FONSI/RRROF or NOI/RRROF and Authorization to Use Funds if available that corresponds with the activity's appropriate level of review. Acceptable formats of these forms can be located at <https://www.hudexchange.info/programs/environmental-review/>. To determine the correct level of review go to HUD's environmental review overview page <https://www.hudexchange.info/programs/environmental-review/orientation-to-environmental-reviews/#overview>. Please make sure your Environmental Review is definitive in findings and that the project description matches the project description in this application. Environmental Reviews with qualified findings that do not adequately or correctly identify mitigations that did not complete required consultations, or that have other material deficiencies may result in disqualification.

Upload Environmental Review form(s) and essential supporting documentation

Upload Environmental Review form(s) and essential supporting documentation

Initial Requirements

All applications must comply with HUD's federal cross cutting requirements found at 24 CFR §570.600

et seq, and summarized in section XX of this NOFA. Failure to comply with federal cross cutting may result in disqualification of the application. In addition, applications must provide documentation of compliance with state overlays as follows:

Has your housing element been submitted to HCD?

Yes

Modification of Activities - Applicants must provide documentation of modifications affecting National Objectives 24 CFR 570.483 et seq., beneficiary count, participation in the urban county entitlement defined in 42 U.S.C. 5302(A)(6), and changes in the eligibility of the overall activity 42 U.S.C. §5305

Please select a check box to certify with Modification of Activities Compliance as listed above

No

Have any Department of Housing and Community Development monitoring findings been resolved or is there an approved remediation plan in effect? If you have not been monitored in the last five years, select N/A. If you are unsure if your prior findings have been resolved please contact your program representative.

Have funds due to the state for repayment of non-compliance items have been repaid? Or have you entered into a satisfactory repayment agreement, and payments are current?

N/A (no funds due for re-payment)

Are you in compliance with all existing HCD award agreements?

N/A - No Other Agreements in Place

Do you have any overdue semi-annual or annual grant reports?

No

Are all HCD Monitoring Findings Cleared or in Remediation?

N/A - No monitoring findings at most recent HCD monitoring

Additional Requirements

By typing my name in the field below, I hereby certify that this application is true, correct, and complete to the best of my knowledge.:

Craig Schlatter

Threshold: 26400790 File Attachments

Upload activity sources and uses documentation (template):

City of Ukiah CE - activity sources and uses budget.xlsx

City of Ukiah		Code Enforcement Services Program						City of Ukiah Community Development Department						
Duplication of Benefits Tracking		Sources												Budget Gap/
Uses (line item budget)	Total Activity Costs	CDBG	CITY GF	[Source 3]	[Source 4]	[Source 5]	[Source 6]	[Source 7]	[Source 8]	[Source 9]	City General Fund	CDBG	Duplication of Benefits	
[Activity Costs Category 1 (i.e. Activity Delivery, Materials, Labor)]														
City Staff - Building Official	\$ 109,995.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000.00	\$ 99,995.00	\$ -	
City Staff - Building Inspector II	\$ 25,104.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,026.00	\$ 6,078.00	\$ -	
City Staff - Code Enforcement Off	\$ 351,427.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 351,427.00	\$ -	
Legal costs- City Attorney Office	\$ 7,500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,500.00	\$ -	
Code Enforcement Training	\$ 25,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000.00	\$ -	\$ -	
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Instructions: Fill out the above line item budget with you projected activity costs. You may identify the line items by category, such as activity delivery, activity, and admin, or by any other activity categories that apply to your activity. Do keep you administration costs categorized under the General Administration category. Fill in the jurisdiction and activity information at the top of the form, and identify the specific resources (funds) that will be used to pay for each line item in each category. If you do not have CDBG-PI, please leave those fields blank. If your budget

City of Town			Food Bank					Helping Hands Mission						Budget Gap/
Duplication of Benefits Tracking		Sources												Budget Gap/
Uses (line item budget)	Total Activity Costs	CARES Act	Donations	Mission Fndn.	DHSS	FEMA	General Fund	[Source 7]	[Source 8]	[Source 9]	CDBG-CV1	CDBG PI	Duplication of Benefits	
Food and Delivery Costs														
Canned Food	\$ 25,000.00	\$ -	\$ 1,500.00	\$ 5,000.00	\$ 15,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,500.00	\$ -	\$ -	
Perishable Food	\$ 50,000.00	\$ -	\$ 2,500.00	\$ 5,000.00	\$ 35,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,500.00	\$ -	\$ -	
Boxes/Bags	\$ 1,500.00	\$ -	\$ -	\$ 1,500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Delivery Fuel	\$ 7,500.00	\$ -	\$ -	\$ 1,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,500.00	\$ 1,000.00	
Vehicle Costs	\$ 9,000.00	\$ -	\$ 500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,000.00	\$ -	\$ (500.00)	
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Instructions: Fill out the above line item budget with you projected activity costs. You may identify the line items by category, such as activity delivery, activity, and admin, or by any other activity categories that apply to your activity. Do keep you administration costs categorized under the General Administration category. Fill in the jurisdiction and activity information at the top of the form, and identify the specific resources (funds) that will be used to pay for each line item in each category. If you do not have CDBG-PI, please leave those fields blank. If your budget

Legislative: 26371584

Name	Attachments
26371584	No

Applications

City of Ukiah Code Enforcement Services Program

Legislative Data

Is this activity/project city wide or county wide?

Yes - City Wide

Does this activity/project cross legislative boundaries?

No

Indicate the number Congressperson(s) are in the boundaries of this activity/project?

1

Congressperson #1 Name:

Jared

Congressperson #1 Last Name:

Huffman

Congressperson #1 District Number:

2

Congressperson #1 Street Address:

200 South School Street, Ukiah, CA

Indicate the number of State Senator(s) are in the boundaries of this activity/project?

1

State Senator #1 Name:

Mike

State Senator #1 Last Name:

McGuire

State Senator #1 District Number:

2

State Senator #1 Room Number:

5,061

Indicate the number of State Assembly Member(s) are in the boundaries of this activity/project?

1

State Assembly Member #1 Name:

Jim

State Assembly Member #1 Last Name:

Wood

State Assembly Member #1 District Number:

2

State Assembly Member #1 Room Number:
6,005

State Assembly Member #2 Name:
N/A

State Objectives: 26371579

Name	Attachments
26371579	Yes

Applications

City of Ukiah Code Enforcement Services Program

State Objectives Criteria

Instructions

All applicants are required to demonstrate, to the satisfaction of the Department, that state objectives criteria are met. These criteria include: (1) Affirmatively Furthering Fair Housing and (2) Disaster Resiliency. Each criterion includes sub-categories and applicants must demonstrate at least one option under each sub-category is met. Sub-categories include:

Affirmatively Furthering Fair Housing:

1. Housing Mobility Strategies;
2. Development of Housing Choices and Affordability in High Opportunity Areas; and
3. Place-based Strategies to Encourage Community Conservation and Revitalization, including Preservation and Displacement Protection

Disaster Resiliency:

1. Building Standards, Zoning and Site Planning; and
2. Long Term Planning

Applicants must fill out the following form, including a short description of documentation and relevant document links and the form must be certified by the delegate or sub-delegate for the application. Documentation must be minimal in volume and demonstrate the completion or approval of the action. Examples include resolutions, project approvals or other proof of adoption, approval or completion. The Department may consider other forms of verification on a case by case basis.

AFFIRMATIVELY FURTHERING FAIR HOUSING

Applicants must select a "yes" answer to at least one option under each sub-category to demonstrate meeting the affirmatively furthering fair housing (AFFH) state objectives. Sub-categories include: 1. Housing Mobility Strategies; 2. Development of Housing Choices and Affordability in Highest and High Resource Opportunity Areas; and 3. Place-based Strategies to Encourage Community Conservation and Revitalization, including Preservation and Displacement Protection for Lower Income Households or in Moderate and Low Resource Opportunity Areas or Areas of High Segregation and Poverty

Housing Mobility Strategies

Affirmative marketing strategies or plans targeting nearby neighborhoods

No

Use, affirmatively market or take other actions to promote use of housing voucher mobility throughout the community (e.g., proof of vouchers by census tract or other area indicator, landlord outreach programs, efforts to support landlord participation, and subsidizing security deposits

No

Housing mobility counseling

No

Assistance with security deposits and moving expenses

No

City-wide affordable housing registries

No

Regional coordination and/or administration of vouchers (such as shared waiting lists)

No

Accessibility programs focus on improving access to housing, public buildings and facilities, sidewalks, pedestrian crossings, and businesses

Yes

Please describe and include relevant links that demonstrate the action was completed:

In June 2020, the City started the Downtown Streetscape Improvement Project. The project, which is expected to be completed in 2021, provides streetscape improvements in downtown Ukiah on State Street, Perkins Street, and Standley Street, including sidewalk widening, curb ramps and bulb outs, street lights, street furniture and tree planting. The project also includes a "road diet" between Henry Street and Mill Street that is transforming the existing four-lane cross section into a three-lane cross section. The Streetscape Project will improve accessibility to businesses in the downtown, public buildings and facilities, sidewalks, and pedestrian crossings. See link for more information: <http://www.cityofukiah.com/streetscape/>

In addition to the Streetscape project, in October 2019 the City Council adopted the 2019-2027 Housing Element. The City's updated Housing Element includes as an Implementing Program 1a, which reads as follows: "Implement a residential rehabilitation program. Emphasize rehabilitation of mobile homes, detached single-family dwelling units, and lower-income multifamily housing projects. Prioritize funding for health and safety repairs, energy efficiency improvements, and ADA accommodations. Assist in completing the rehabilitation of at least 25 lower income housing units in the planning period." The City is submitting an application to HCD for funding of a housing rehabilitation program under the 2021 CDBG NOFA, and if awarded, this would further the City's efforts to increase accessibility to housing. See Page 65 of the Housing Element at this link: <http://www.cityofukiah.com/NewWeb/wp-content/uploads/2019/12/City-of-Ukiah-2019-2027-Housing-Element-Update-full-CERTIFIED-120519.pdf>

Finally, the City currently is actively redesigning a recently purchased municipal services building with a 2020 CDBG planning grant to remove architectural barriers to accessibility for the public's future use of the building.

Please upload proof of completed actions:

Ukiah Downtown Streetscape Project April 2021 update.pdf

High performing school districts to improve a diversity of students and staff to serve lower income students

No

Other strategies not identified above

No

Housing Choices, Affordability and Other Actions to Promote Access in Highest and High Opportunity Resource Areas

For Information on Opportunity Areas, Please see TCAC/HCD Opportunity Maps at <https://www.treasurer.ca.gov/ctcac/opportunity.asp>

Applicant does not have highest or high resource opportunity areas

No

Rezoned multifamily sites in highest or high resource opportunity neighborhoods in the last five years

No

Approved or completed affordable housing in highest or high resource opportunity neighborhood in the last five years

No

Expand permitted residential uses (e.g., duplexes, triplexes, four-plexes) in zoning districts in highest or high resource opportunity areas

No

Modify land use policies or development standards to facilitate housing choices and affordability in highest or high resource opportunity areas such as minimum lot sizes, reduced parking requirements, parking maximums, multifamily height requirements, housing overlay zones

Yes

Please describe and include relevant links that demonstrate the action was completed:

In adopting its newly updated 2019-2027 Housing Element, the City of Ukiah adopted the implementation of programs that will and are currently modifying land use policies or development standards to facilitate housing choices and affordability in highest or high resource opportunity areas.

Three of the implementing objectives included the following:

- Update C1 and C2 Zones to allow by-right housing development, with objective design and development standards. Units allowed by-right will include multifamily, SROs, duplexes, triplexes, and fourplexes.
- Update the C-N Zone to increase residential density and allow similar housing types as those allowed in R-2.
- By-right housing program for select parcels. Specific to APNs 00304077, 00304078, and 00304079, rezone these parcels at the default density of 15 du/ac. Also rezone these parcels to allow residential use by-right for developments with at least 20% of the units affordable to lower income households."

Towards these implementation objectives, the City has accomplished the following:

- Complete objective design and development standards. The Ukiah City Council approved the standards on November 20, 2020.
- By-right housing program for select parcels. On March 17, 2021, the Ukiah City Council adopted an ordinance adopting the City's first Housing Overlay Zone for the three parcels mentioned above. This is expected to lead to the construction of an affordable housing project at that location.

The following are in progress with expected introduction for adoption by City Council in June 2021:

- Update C1 and C2 Zones to allow by-right housing development.
- Update the C-N (Neighborhood Commercial) Zone to increase residential density and allow similar housing types as those allowed in R-2 (medium density) residential.

An example of the impact the change to the C-N Zone will have in highest resource and high resource opportunity areas in Ukiah is attached below.

Please upload proof of completed actions:

Ukiah- actions to promote access- mapping and description.pdf

Use mixed income strategies in highest or high resource opportunity areas (e.g., funding, incentives, policies and programs, density bonuses, land banks, housing trust funds)

No

Update development review processes in highest or high resource opportunity areas such as eliminating conditional use permit process requirements for multifamily, maximizing by-right approvals, minimizing discretionary review opportunities, shortening review timelines, by right processes for community care facilities over seven persons

No

Reduce, defer or mitigate development fees to support housing choices and affordability in highest or high resource opportunity areas (e.g., assess fees based on square footage, type and location)

No

Scattered site project approvals or programs in highest or high resource opportunity areas

No

Inclusionary requirements or similar policies, programs or procedures

No

Other targeted investment and programs in affordability housing in highest or high resource opportunity areas (e.g., sweat equity, down payment assistance, new rental construction)

Yes

Please describe and include relevant links that demonstrate the action was completed:

The City of Ukiah has operated a Downpayment Assistance Program (DAP) or First Time Homebuyer Program (FTHB) since approximately 2011. Most recently, the City applied for and was awarded funding for a FTHB program through the HOME Investment Partnerships Program, contract #16-HOME-11376. The City expended 97% of FTHB program funds related to this award, as well as approximately \$120,000 in HOME Program Income.

The City operates the DAP/FTHB program on a continual basis throughout the City of Ukiah incorporated area, including High or Highest Resource Opportunity Areas, with HOME open contracts or HOME PI. Two of the homes purchased by borrowers, for example, were located in Highest and High Resource Opportunity Areas. Deeds of trust (with borrowers' names redacted) and maps are attached to demonstrate the action was completed.

Please upload proof of completed actions:

Proof of action- housing choices.access- Ukiah FTHB program.pdf

Accessibility modification projects or programs in in highest or high resource opportunity areas

No

In-home or community-based support services in in highest or high resource opportunity areas

No

Implement a campaign or similar actions to combat local opposition to affordable housing in highest or high resource opportunity areas

No

Other (describe how this meets subarea objective):

No

Place-based Strategies to Encourage Community Conservation and Revitalization, including Preservation and Displacement Protection for Lower Income Households or in Moderate and Low Resource Areas and Areas of High Segregation and Poverty

(For Information on Opportunity Areas, Please see TCAC/HCD Opportunity Maps at <https://www.treasurer.ca.gov/ctcac/opportunity.asp>)

Applicant does not have moderate or low resource opportunity areas or areas of high segregation and poverty

No

Utilized or supported funding for acquisition and/or rehabilitation of housing for lower income households or in moderate and low resource opportunity areas or areas of high segregation and poverty

No

Utilized or supported funding for the preservation of units at-risk of conversion to market rate uses

No

Adopt general plan, zoning or other land use policies and procedures to conserve existing housing stock for lower income households or in moderate and low resource opportunity areas or areas of high segregation and poverty (e.g., general plan or specific plan replacement policies, rent control or stabilization ordinance or overlays)

No

Utilize or support funding for community conservation and revitalization for lower income households or in moderate and low resource opportunity areas or areas of high segregation and poverty (e.g., infrastructure, active transportation, safe routes to school, parks, schools, other neighborhood improvements)

No

Adoption of a General Plan Environmental Justice element (i.e., SB 1000 for jurisdictions containing disadvantaged communities) that includes equitable investment strategies for affordable housing, infrastructure and other improvements, and other actions that address disproportionate health burdens.

No

Code enforcement and rehabilitation programs that target lower income households or in moderate and low resource opportunity areas or areas of high segregation and poverty

No

Utilize or support funding for basic infrastructure improvements (e.g., water, sewer) in disadvantaged communities while mitigating displacement and increased costs to vulnerable populations (e.g., seniors, persons with disabilities and farmworkers)

No

Target acquisition and rehabilitation to vacant and blighted properties in moderate and low resource opportunity areas or areas of high segregation and poverty

No

Prioritize capital improvement programs in moderate and low resource opportunity areas, areas of high segregation and poverty or disadvantaged communities pursuant to SB 1000 or SB 244.

No

First right of return policies, ordinances or other procedures for existing residents in acquisition and rehabilitation projects, including moving expenses

No

Multi-lingual tenant counseling or foreclosure assistance

No

Just cause eviction or other efforts improving tenant stability

No

Policies, ordinances, procedures or investment to preserve single room occupancy, mobile home home parks, condominiums or housing types other than single family uses

No

Economic development or other policies, ordinances, investment or other efforts to preserve existing small or other business in moderate and low resource opportunity areas or areas of high segregation and poverty

Yes

Please describe and include relevant links that demonstrate the action was completed:

The City of Ukiah has operated a Business Assistance program with CDBG open grants and Program Income since receiving a CDBG grant in 2010, 10-EDEF-7261, to initiate the program. This investment has preserved existing small businesses in moderate and low resource opportunity areas, most of which are located in the City's downtown.

Maps with the locations of businesses assisted through the City's economic development programs are attached.

Please upload proof of completed actions:

Ukiah- proof- place-based- ED.pdf

Other (describe how this meets subarea objective)

No

DISASTER RESILIENCY

Applicants must select a "yes" answer to at least one option under each sub-category to demonstrate meeting the disaster resiliency state objectives. Sub-categories include 1. Building Standards, Zoning and Site Planning; and 2. Long Term Planning. Select an option by marking the "yes" answer. For each completed action, include a description of the documentation type (e.g., resolution), relevant links and additional description, if necessary. Relevant links includes links to planning documents, zoning codes and other documents that represent the actual action taken. For example, if the action taken was adoption of a planning

document then the link would be to the actual planning document. Additional description should be added only if necessary and provides additional information about the completed action. For example, additional description may include description of a code document or detail about a policy type such as general plan policy number.

Building Standards, Zoning and Site Planning

Building Standards: Consistency with Chapter 7a of the California Building Code (i.e., the “Wildland Urban Interface [WUI] Code”) or Other Pertinent Hazard Mitigation Building Codes.

Yes

Please describe and include relevant links that demonstrate the action was completed:

The City has adopted the Fire Prevention Code, including designation of a Very High Fire Hazard Severity Area and enforcement/mitigation implementation responsibilities, as a part of Ukiah City Code (UCC). The link is below with a PDF of the code attached.

<https://www.codepublishing.com/CA/Ukiah/html/Ukiah06/Ukiah0603-0200.html>

Please upload proof of completed actions:

Proof- hazard mitigation code- UCC Div. 6, Ch. 3, Art. 2.pdf

Zoning and Site Planning: Consistency with Government Code Section 66474.02 and applicable regulations for fire safety and defensible space adopted by the State Board of Forestry and Fire Protection pursuant to Sections 4290 and 4291 of the Public Resources Code.

No

Certified Local Ordinances: Local ordinances certified as meeting or exceeding Title 14 SRA Fire Safe Regulations, pursuant to 14 CCR 1270.01 and 1270.03.

No

Fire Protection Plan: Local development review procedures that require project-specific fire protection plan (FPP) or equivalent for all new development projects in high fire hazard severity areas and require that such projects incorporate all recommended risk reduction measures from the FPP or equivalent into project designs or conditions of approval.

No

Hazard Overlay Zones: Update local zoning to designate hazard overlay zones and associated conditional use, site development standards, and design criteria to mitigate hazards and reduce risks to new development within the overlay zones

No

Wildland Urban Interface (WUI) Risk Reduction Program: Comprehensive WUI risk reduction program and associated funding/financing for existing development to improve defensible space, increase home and structural hardening, and increase vegetation and fuels management in wildland areas adjacent to existing development.?

No

Other (describe how this meets subarea objective)

No

Long Term Planning

For Additional Information, see the Governor’s Office of Planning and Research Website at <https://www.opr.ca.gov/planning/general-plan/>

Safety Element for Wildfire: Recent Amendment (post 2014) pursuant to Government Code 65302(g)(3) and 65302.5.

No

Safety and Conservation Element for Flood: Recent Amendment (Post 2009) pursuant to Government Code Section 65302(d)(1) and (g)(1).

No

Land Use Element for Disadvantaged Unincorporated Communities: Recent Amendment (Post 2013) pursuant to Government Code Section 65302.10.

Yes

Please describe and include relevant links that demonstrate the action was completed:

In 2019 through Resolution No. 2019-48, the City of Ukiah City Council amended the Land Use Element of its General Plan to incorporate the SB 244 Analysis related to Disadvantaged Unincorporated Communities, pursuant to Government Code Section 65300. This Amendment is Appendix A to the Land Use Element and found at this link: http://www.cityofukiah.com/NewWeb/wp-content/uploads/2012/12/Land-Use-Element-1995_Amended-2019.pdf

A copy of the Amendment is attached.

Please upload proof of completed actions:

SB 244 DUC proof- Ukiah Land Use Element.pdf

Safety Element for Climate Adaptation and Resiliency: Recent or Planned Amendment (post 2017) pursuant to Government Code 65302(g)(4). (may also include adoption of a separate climate change adaptation plan or resilience plan incorporated by reference into the safety element that meets minimum requirements in Gov Code 65302(g)(4))

No

Local Hazard Mitigation Update: Adoption with or incorporation by reference into the safety element, pursuant to Government Code 8685.9, and consistent with safety element requirements pursuant to Government Code 65302(g).

No

Community Wildfire Protection Plan: Collaboratively developed plan which identifies and prioritizes areas for fuel reduction treatment and recommends measures for homeowners and communities to reduce ignitability of structures pursuant to the Healthy Forests Restoration Act.

No

Other (describe how this meets subarea objective)

No

SELF-CERTIFICATION OF FORM

By checking the box below, I certify under penalty of perjury that all of the information contained in the below forms (including all supporting documentation) is true and correct. I understand and acknowledge that making false statements on this document, including any documents submitted in support of it, may negatively impact the current or future application and award of state funding.

Yes, I certify

Certifying Official's Name:

Craig Schlatter

Certifying Official Title:

Director of Community Development

Certification Date:

04/10/2021

State Objectives: 26371579 File Attachments

Please upload proof of completed actions:

Ukiah Downtown Streetscape Project April 2021 update.pdf

Please upload proof of completed actions:

Ukiah- actions to promote access- mapping and description.pdf

Please upload proof of completed actions:

Proof of action- housing choices.access- Ukiah FTHB program.pdf

Please upload proof of completed actions:

Ukiah- proof- place-based- ED.pdf

Please upload proof of completed actions:

Proof- hazard mitigation code- UCC Div. 6, Ch. 3, Art. 2.pdf

Please upload proof of completed actions:

SB 244 DUC proof- Ukiah Land Use Element.pdf

Downtown Streetscape Project

April 2, 2021



We bet you're wondering when this will be done! July-August is our best estimate right now, which—believe it or not—is right on schedule. Here's what we anticipate the progression of work will look like over the next couple of months:

- Now through mid-April: Constructing new sidewalks on the east side of State Street.
- Mid-April through mid-May: Constructing new sidewalks on the west side of State Street, working from Mill to Perkins.
- Third week of May: Sidewalk construction on the south side of the 100 block of West Perkins Street.
- End of May-beginning of June: Sidewalk construction on the north side of the 100 block of West Standley Street.
- Beginning of June: Sidewalk construction on the south side of the 100 block of West Church Street.
- Starting in May, installation of the new lighting will likely begin throughout the project area...then landscaping.
- Last but not least, new paving and striping throughout the project!

Construction Overview, Week of March 29

Wahlund Construction (West Clay Street):

- Monday-Friday: Sewer work will occur on West Clay Street between School and Oak Streets. This process can be noisy and a bit messy, and will include trenching and other underground work.
- There will be intermittent street and/or lane closures at the intersections of Clay and Oak while manhole work is underway. School Street will remain open.
- Construction hours: 7am – 5pm

Ghilotti Construction (Henry – Mill): Continued work on the east side of State Street between Perkins and Mill Streets, including excavating, forming and pouring new curbs, gutters, and bioretention facilities. Pouring of new sidewalks continues next week.

Monday-Tuesday: Completion of new sidewalks and curb ramps and Perkins and State Streets.

Tuesday/Wednesday-Friday: Begin pouring new sidewalks at the SE corner of State and Clay, heading south toward Mill Street.

Monday-Friday: Also, crews will begin demolishing sidewalks on the west side of State, starting at Mill and heading north to Perkins.

- East Stephensen Street may be closed to through traffic for the next week or so – Community Care and The Maple will have access to their parking lots from Main Street.
- East Church may be closed intermittently during this phase.
- Construction hours: 7am – 5pm

North State Street between Perkins and Henry: In between their work on other parts of the project, contractors will continue working on North State Street on the decorative brick band and landscaping areas.

Streetscape Project Contact Information

More information can be found online on the City's website at ukiahstreetscape.com, or follow our Facebook page for updates and photos at facebook.com/UkiahStreetscape/.

Would you like to receive these updates by email? Call or send an email to Traci Boyl; contact info below.

Shannon Riley, Deputy City Manager: 707-467-5793 or sriley@cityofukiah.com

Traci Boyl, Management Analyst to the City Manager's Office: 707-467-5720 or tboyl@cityofukiah.com



Streeterie: Eatery in the Street

As Spring approaches, we would like to bring back the Streeterie. This is the closure of School Street between Standley and Perkins Streets to allow for expanded outdoor dining. This is a safe and sanitized picnic area where the community can bring takeout food and beverages from our local restaurants. We are currently planning for April and May on Friday and Saturday evenings between 5:30p-7p and a Food Truck one Sunday a month planned for 4/25/21 and 5/23/21, and a youth band performing live music on the “First Friday” May 7th. This is a great opportunity for restaurants to be able to offer more meals than the capacity that they have on site and for retail businesses to stay open later (and one Sunday if they aren’t already open) and encourage more foot traffic (Covid safe restrictions in place of course). As the summer progresses hours and days can expand.

This is a volunteer partnership between Ukiah Valley Networking Agency, Ukiah Main Street Program, Greater Ukiah Business & Tourism Alliance, Love Local Mendo, City of Ukiah, Visit Mendocino and all the businesses that participate.

Frequently Asked Questions

As a restaurant, do I need to send servers over to the Streeterie?

No, you offer your customers a to-go order for their food and drinks and let them know that there is an outdoor dining area on School Street weekend evenings.

What time are you closing the street and where will I park?

Our plan is to close the street starting at 5pm and you/your customers can park anywhere else on School Street or in the parking district for free every weekend.

Why don't you offer more hours?

We would love to, but we want to make sure that this run is a success and that it helps restaurants and retail businesses before we expand the hours.

How can we help?

You can get the word out that this is an option for outdoor dining, you can volunteer your time to set-up, sanitize, or clean up. Most importantly you can keep your doors open a little longer to create an atmosphere that Downtown Ukiah is OPEN for business!

There is an event posted on Facebook that you can share. www.Facebook.com/UkiahValleyNetworking

Have more questions or want to make sure you are a listed participant?

Call, email, text, carrier pigeon: Mo Mulheren, ukiahvalleynetworking@gmail.com; 707-391-3664; 104 N School Street



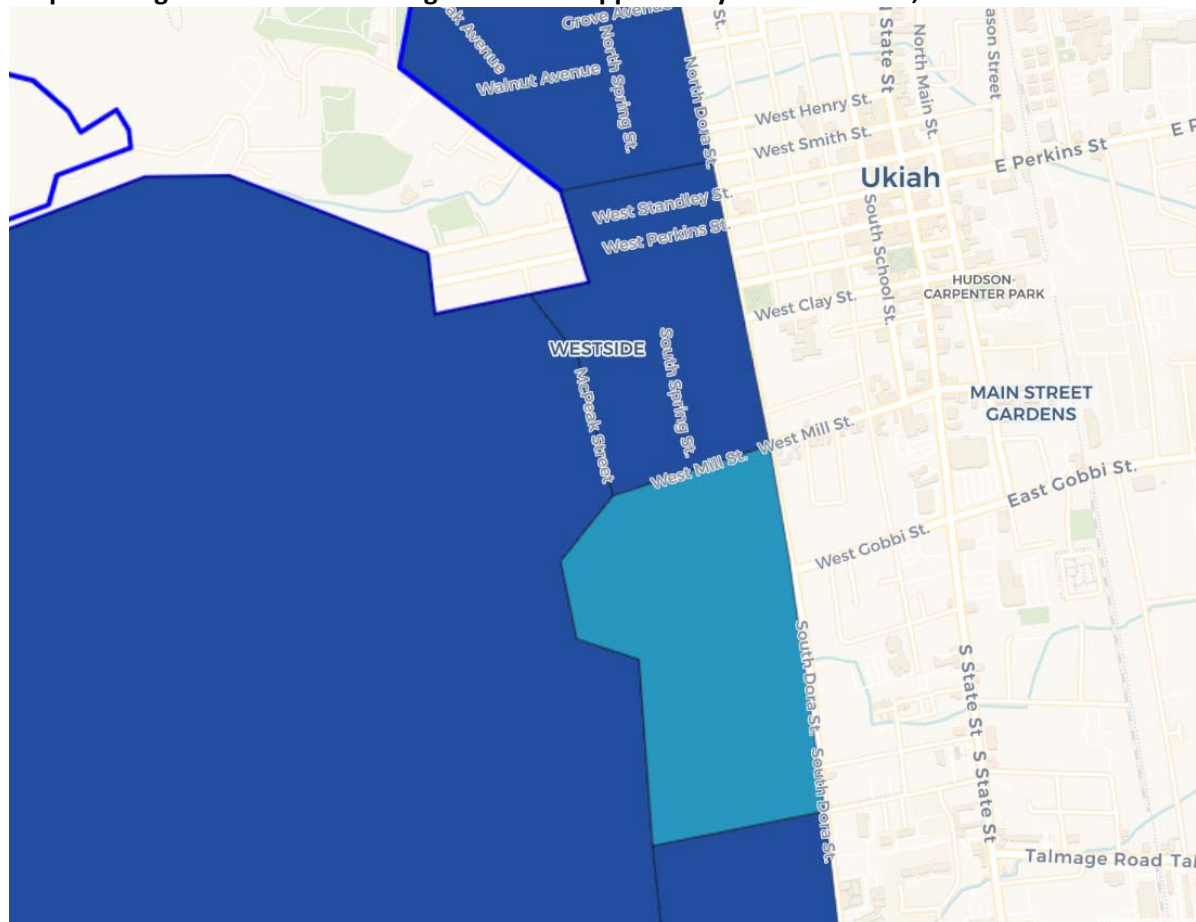
STATE OBJECTIVES – FAIR HOUSING MAPPING AND DESCRIPTION

Description: the two maps below demonstrate the facilitation of housing choices and affordability in highest or high resource opportunity areas in Ukiah. Map #1 is a snapshot of the Highest Resource and High Resource opportunity areas in Ukiah.

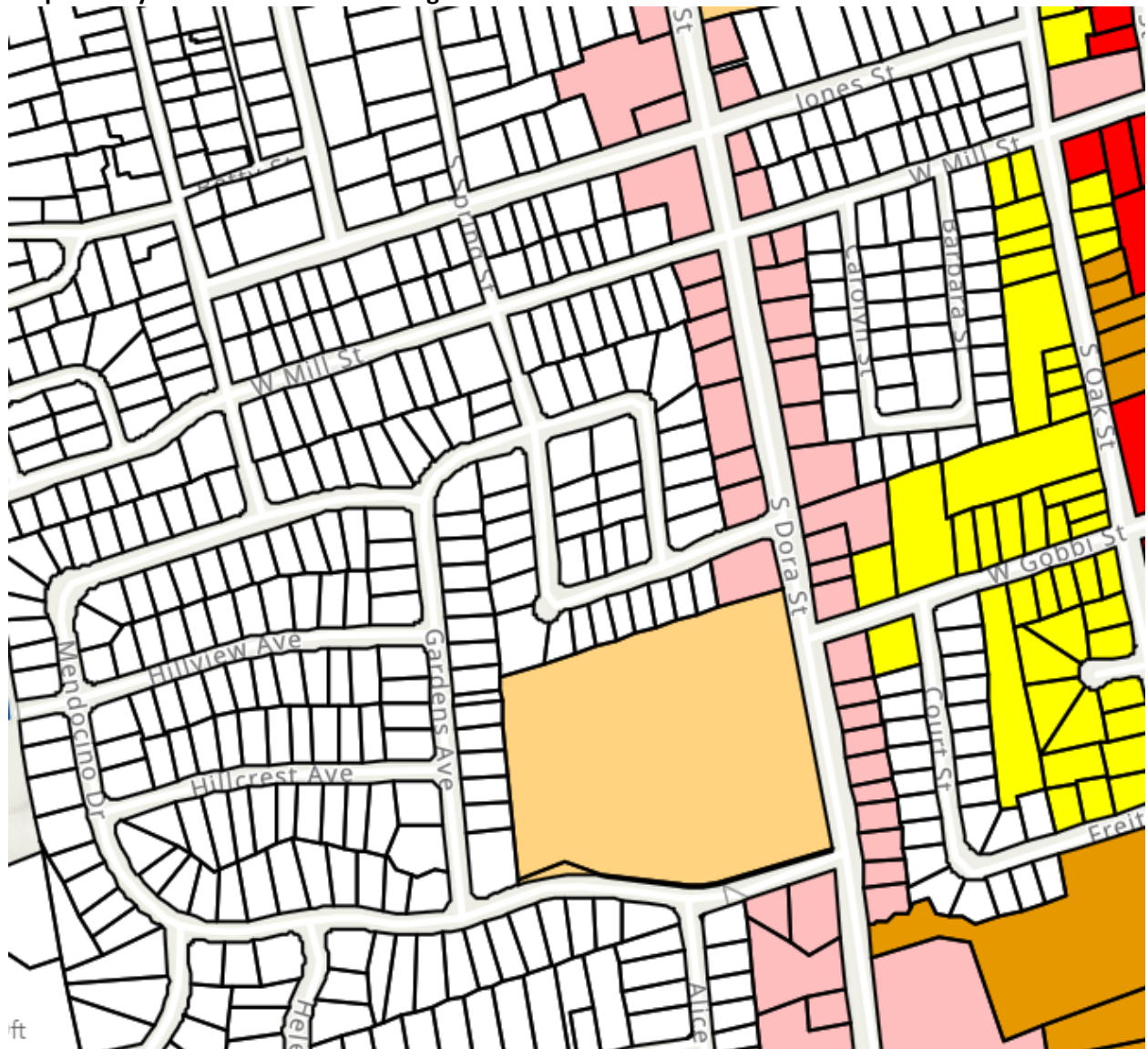
Map #2 is a snapshot of these same areas shown from the perspective of the City's zoning districts. Areas shaded white denote the City's single-family residential (R-1) zoning district, and areas shaded salmon/pink denote the City's neighborhood commercial (C-N) zoning district.

Within the C-N zoning district, the City is in the process of adopting a by-right housing overlay ordinance to make “by-right” new housing construction projects meeting the density criteria for the medium density (R-2) residential zoning district. This would eliminate the need for a discretionary permitting process for construction of new townhomes, multifamily residential apartments, and duplexes, and instead only require a building permit with the project meeting objective standards.

Map #1 – Highest Resource and High Resource Opportunity Areas in Ukiah, CA



Map #2- City of Ukiah west side Zoning Districts



"PUBLIC AGENCY BUSINESS FREE"

This document is presented for recording pursuant to Gov. Code
RECORDING REQUESTED BY: GOV CODE 27383
City of Ukiah



WHEN RECORDED MAIL TO:

City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482

**CITY OF UKIAH
HOME INVESTMENT PARTNERSHIPS PROGRAM (HOME)
DEED OF TRUST**

**THIS DEED OF TRUST CONTAINS PROVISIONS RESTRICTING ASSUMPTIONS RESALE
AND RECAPTURE FEATURES**

- 1 ☒ Exempt from fee per GC27388.1 due to being recorded in connection with concurrent transfer that is subject to the imposition of documentary transfer tax, or,
- 2 ☐ Exempt from fee per GC27388.1 due to being recorded in connection with a transfer that was subject to documentary transfer tax which was paid on document recorded previously on _____ (date) as document number _____ of Official Records, or,
- 3 ☐ Exempt from fee per GC27388.1 due to the maximum fees being paid on documents in this transaction, or,
- 4 ☐ Exempt from fee per GC27388.1 due to the maximum fees having been paid on documents in the transaction(s) recorded previously on _____ (date) as document number(s) _____ of Official Records, or
- 5 ☐ Exempt from fee per GC27388.1; document transfers real property that is a residential dwelling to an owner-occupier, or,
- 6 ☐ Exempt from fee per GC27388.1 due to being recorded in connection with concurrent transfer that is a residential dwelling to an owner-occupier, or,
- 7 ☐ Exempt from fee per GC27388.1 due to it being recorded in connection with a transfer of real property that is a residential dwelling to an owner-occupier. The recorded document transferring the dwelling to the owner-occupier was recorded on _____ (date) as document number(s) _____, or,
- 8 ☐ Exempt from the fee per GC 27388.1 (a) (1); Not related to real property, or,
- 9 ☐ Exempt from fee under GC27388.1 for the following reasons:

THIS PAGE ADDED TO PROVIDE SENATE BILL 2 EXEMPTION INFORMATION
(Additional recording fee applies)

"PUBLIC AGENCY BUSINESS FREE"

This document is presented for recording pursuant to Gov. Code 6103.

RECORDING REQUESTED BY:

City of Ukiah

WHEN RECORDED MAIL TO:

City of Ukiah

300 Seminary Avenue

Ukiah, CA 95482

**CITY OF UKIAH
HOME INVESTMENT PARTNERSHIPS PROGRAM (HOME)
DEED OF TRUST**

**THIS DEED OF TRUST CONTAINS PROVISIONS RESTRICTING ASSUMPTIONS RESALE
AND RECAPTURE FEATURES**

THIS DEED OF TRUST is made on this 29th day of April, 2020 between [REDACTED]
[REDACTED] as Trustor; Fidelity National Title Company of California as Trustee, and with the CITY
OF UKIAH, as Beneficiary.

TRUSTOR, in consideration of the indebtedness recited and the trust created in this Deed of Trust, irrevocably grants and conveys to Trustee, in trust, with the power of the sale, the following described property located in the State of California, City of Ukiah and is described as follows:

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF UKIAH, COUNTY OF MENDOCINO, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

A PARCEL OF LAND IN LOT 7 OF THE CHARLES LUCE SUBDIVISION OF LOT 85 OF HEALEY'S SURVEY AND MAP OF YOKAYO RANCHO, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTH BOUNDARY OF OBSERVATORY AVENUE FROM WHICH THE SOUTHWEST CORNER OF LOT 7 OF THE CHARLES LUCE SUBDIVISION BEARS SOUTH 78° 57' WEST, A DISTANCE OF 159.75 FEET; THENCE SOUTH 78° 57' WEST, ALONG SAID NORTH BOUNDARY 10.00 FEET; THENCE NORTH 6° 47' 19" WEST, 134.01 FEET; THENCE NORTH 78° 57' EAST, 59.47 FEET TO THE EASTERLY BOUNDARY LINE OF THE WEST HALF OF LOT 7 OF THE CHARLES LUCE SUBDIVISION; THENCE FOLLOWING SAID EASTERLY BOUNDARY LINE OF THE WEST HALF OF LOT 7, SOUTH 6° 43' 38" EAST, 134.01 FEET TO THE NORTHERLY BOUNDARY LINE OF OBSERVATORY AVENUE; THENCE LEAVING SAID EASTERLY BOUNDARY LINE OF THE WEST HALF OF LOT 7 AND FOLLOWING THE NORTHERLY BOUNDARY LINE OF OBSERVATORY AVENUE, SOUTH 78° 57' WEST, 49.32 FEET TO THE POINT OF BEGINNING.

APN: 003-061-10-00

"This Deed of Trust is Junior and Subordinate to the Deed of Trust recording concurrently herewith for the benefit of Redwood Credit Union (the Beneficiary)."

Together with all the improvements now or hereafter erected on the property, which has the address of 476 Observatory Avenue, Ukiah, CA 95482 and all the easements, rights, appurtenances, rents, (subject, however, to the rights and authorities given in this Deed of Trust to Lender to collect and apply such rents), royalties, mineral, oil and gas rights and profits, water, water rights, and water stock, and all fixtures now or hereafter attached to the property, all of which, including replacements and additions thereto, shall be deemed to be and remain a part of the property covered by this deed if trust; and all of the foregoing, together with said property, are referred to in this Deed of Trust as the "Property."

The loan evidenced by the Note and secured by this Security Instrument (the "Loan") is being made pursuant to the Home Investment Partnerships Program and the regulations issued thereunder (Title II, the Cranston-Gonzalez National Affordable Housing Act, Public Law No. 101-625, 104 Stat. 4079 (1990), 24 C.F.R. Part 92) (the "HOME Program").

TO SECURE to Lender (a) the repayment of the indebtedness evidenced by Borrower's note dated, and incorporated by reference in this Deed of Trust (the "Note") in the principal sum of One Hundred Thirty Four Thousand Dollars (\$134,000.00) plus contingent interest on the principal sum in the amount and on the terms described in the Note; the payment of all other sums, with interest thereon, advanced to protect the security of this Deed of Trust; and the performance of the covenants and agreements of the Borrower contained in this Deed of Trust and the Note.

Borrower covenants that Borrower is lawfully seized of the estate conveyed by this Deed of Trust and has the right to grant and convey the Property, that, with the exception of a prior Deed of Trust securing a loan in the principal amount of \$134,000.00 the Property is unencumbered, and that Borrower will warrant and defend generally the title to the Property against all claims and demands, subject to any declarations, easements or restrictions listed in the schedule of exceptions to coverage in any title insurance policy insuring Lender's interest in the Property,

Borrower and Lender covenant and agree as follows:

1. Payment of Principal and Interest. Borrower shall promptly pay when due the principal of and interest on the indebtedness evidenced by the Note.
2. Occupancy. Borrower or his or her immediate family shall be the sole occupants of the Property conveyed by this Deed of Trust. This restriction includes but not limited to, prohibition of Borrower's renting or otherwise leasing the property.
3. Sale or Transfer of Property. Before sale or transfer of title, the Borrower, or the Borrower's representative, shall notify the Lender of his or her intention to sell or otherwise transfer title. Except as otherwise provided in this Deed of Trust, when Borrower transfers title, the entire Loan which is evidenced by the Note shall be immediately due and payable. Where title is transferred to or otherwise altered to include or favor a spouse or person signing the Note, and such spouse or person resides on the property conveyed in this Deed of Trust and is independently eligible for assistance under the Program, the transfer or alteration in title shall not result in acceleration of the Loan evidenced by the Note.

Similarly, when a spouse or person signing the Note takes title to the Property which secures this Deed of Trust by devise, descent or by operation of law upon the death of a joint tenant and such spouse or person resides on the Property and is independently eligible for assistance under the Program, the transfer of the title shall not result in acceleration of the loan evidenced by the Note.

"PUBLIC AGENCY BUSINESS: FREE."

This document is presented for recording pursuant to Gov. Code 6103. RECORDING REQUESTED BY:
Community Development Commission
of Mendocino County

**WE HEREBY CERTIFY THIS TO BE A
TRUE AND CORRECT COPY OF THE
ORIGINAL DOCUMENT**

By: 

WHEN RECORDED MAIL TO:
Community Development Commission
of Mendocino County
1076 North State Street
Ukiah, CA 95482
201 302471

**CITY OF UKIAH
HOME INVESTMENT PARTNERSHIPS PROGRAM (HOME)
FIRST TIME HOMEBUYER (FTHB) PROGRAM
DEED OF TRUST**

**THIS DEED OF TRUST CONTAINS PROVISIONS RESTRICTING ASSUMPTIONS RESALE AND
RECAPTURE FEATURES**

THIS DEED OF TRUST is made this 3rd day of May, 2013 between [REDACTED]
[REDACTED] as Trustor; Redwood Empire Title Company of Mendocino County as Trustee, and with the
CITY OF UKIAH, as Beneficiary.

TRUSTOR, in consideration of the indebtedness recited and the trust created in this Deed of Trust, irrevocably grants and conveys to Trustee, in trust, with power of sale, the following described property located in the State of California, City of Ukiah and is described as follows:

LEGAL DESCRIPTION:

Parcel 1, as numbered and designated upon Parcel Map file July 31, 1974 in Map Case, 2, Drawer 24, Page 54, Mendocino County Records.

APN: 003-110-60

"This Deed of Trust is Junior and Subordinate to the Deed of Trust recording concurrently herewith for the benefit of Mission Hills Mortgage Bankers (the Beneficiary)."

Together with all the improvements now or hereafter erected on the property, which has the address of 1060 Helen Avenue, Ukiah, CA 95482 and all easements, rights, appurtenances, rents (subject, however, to the rights and authorities given in this Deed of Trust to Lender to collect and apply such rents), royalties, mineral, oil and gas rights and profits, water, water rights, and water stock, and all fixtures now or hereafter attached to the property, all of which, including replacements and additions thereto, shall be deemed to be and remain a part of the property covered by this Deed of Trust; and all of the foregoing, together with said property, are referred to in this Deed of Trust as the "Property."

The loan evidenced by the Note and secured by this Security Instrument (the "Loan") is being made pursuant to (the Home Investment Partnerships Program and the regulations issued thereunder (Title II, the Cranston-Gonzalez National Affordable Housing Act, Public Law No. 101-625, 104 Stat. 4079 (1990), 24 C.F.R. Part 92) (the "Home Program")).

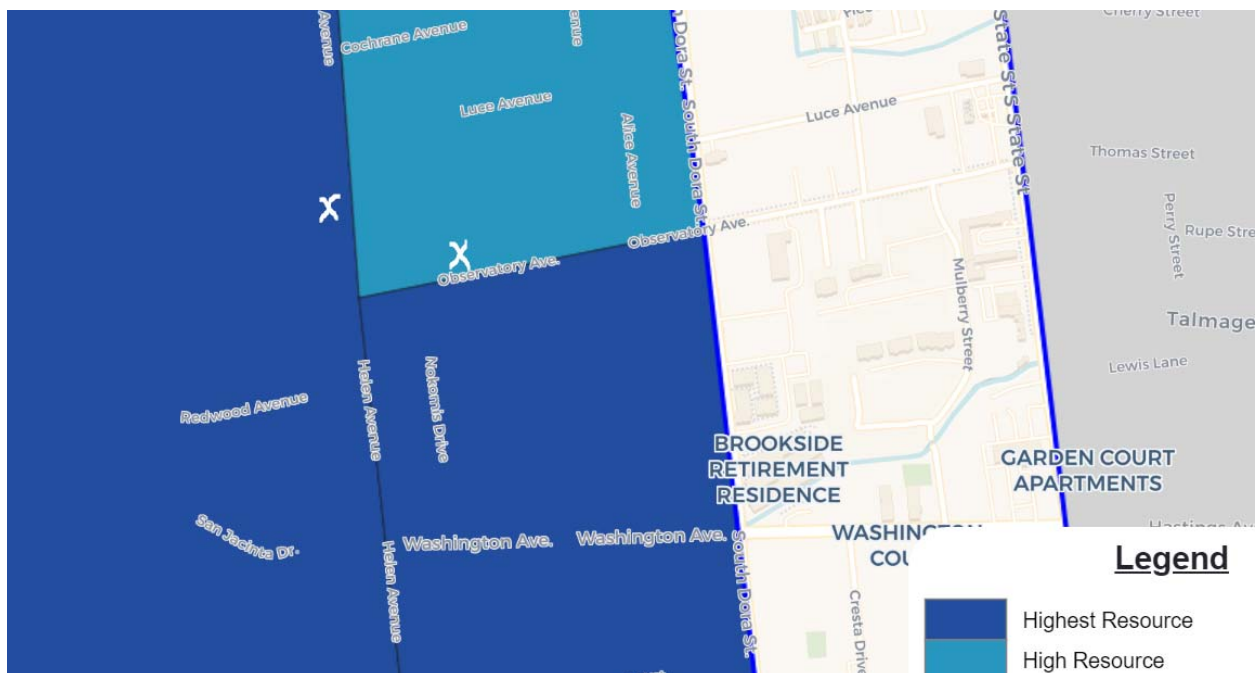
TO SECURE to Lender (a) the repayment of the indebtedness evidenced by Borrower's note dated, and incorporated by reference in this Deed of Trust (the "Note") in the principal sum of One Hundred Thousand Six Hundred Forty Dollars (\$100,640) plus contingent interest on the principal sum in the



STATE OBJECTIVES – FAIR HOUSING MAPPING

Description: the map below demonstrates Fair Housing- Other Targeted Investment and Programs in Affordability Housing in Highest or High Resource Opportunity Areas (First Time Homebuyer / Downpayment Assistance Program).

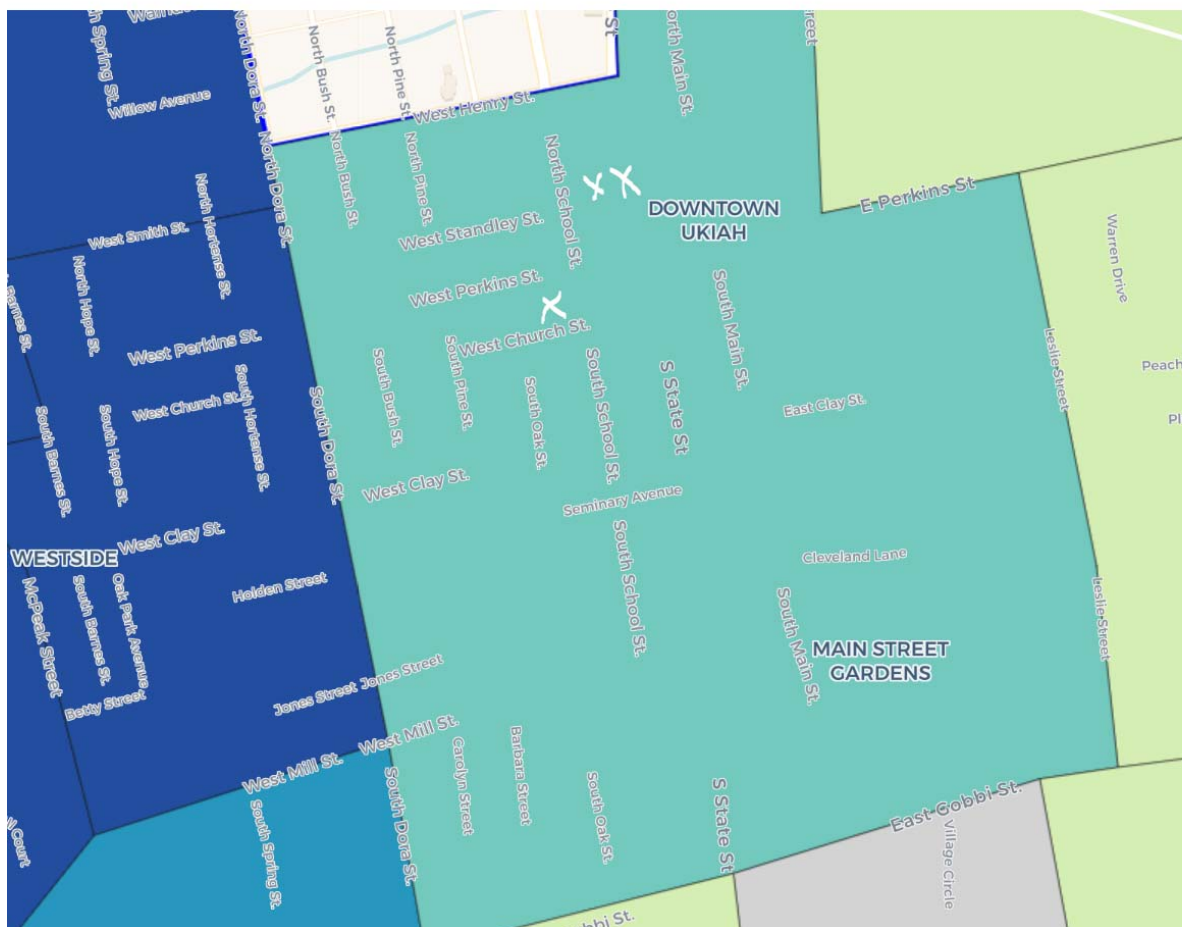
Highest Resource and High Resource Opportunity Areas – City of Ukiah FTHB Program – Home Locations (1060 Helen Avenue, 476 Observatory Avenue)

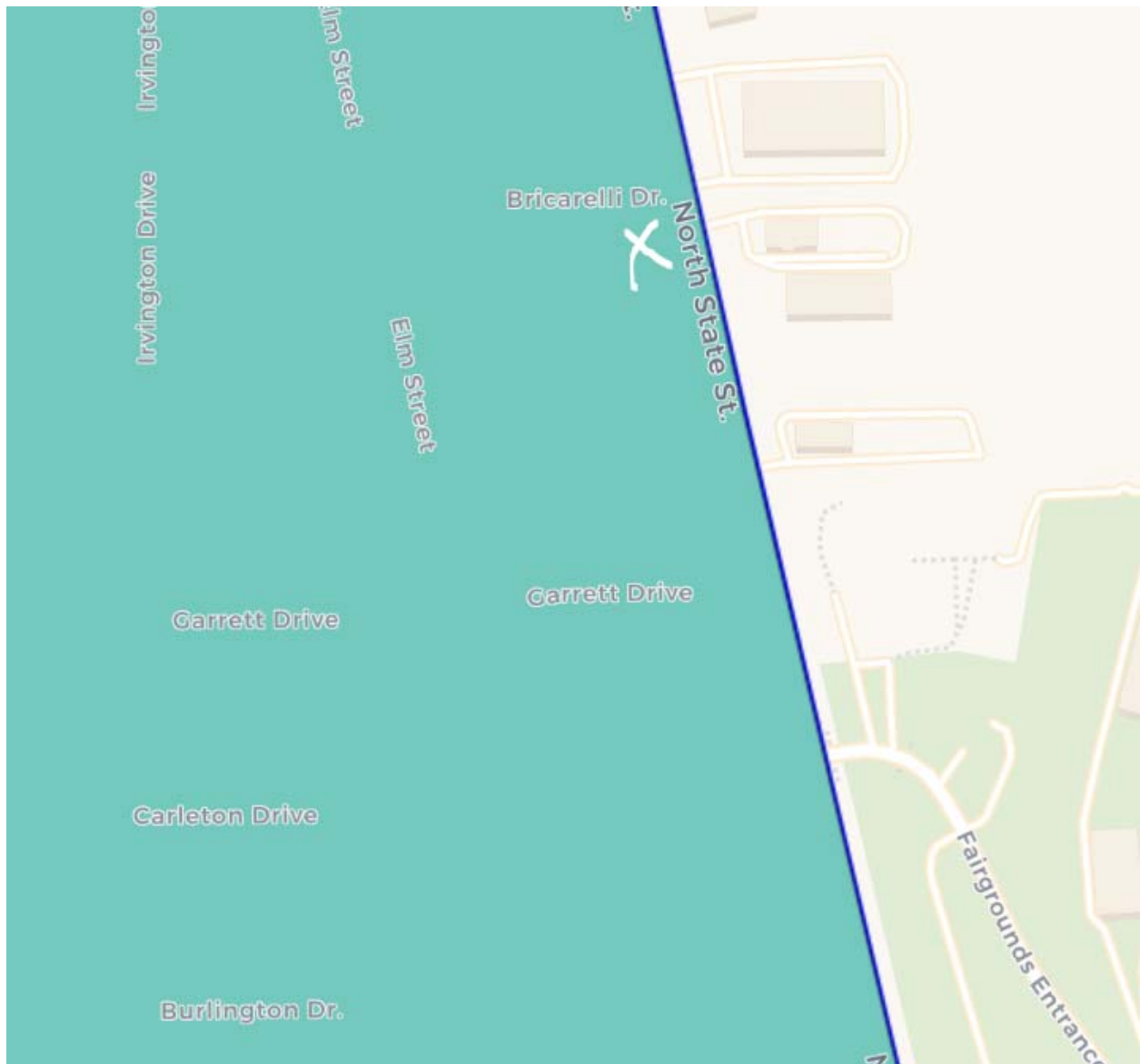




Description: the maps below demonstrate Place-based Strategies to Encourage Community Conservation and Revitalization, including Preservation and Displacement Protection for Lower Income Households or in Moderate and Low Resource Areas and Areas of High Segregation and Poverty. This is in relation to the “Economic development or other policies, ordinances, investment or other efforts to preserve existing small or other business in moderate and low resource opportunity areas or areas of high segregation and poverty” strategy.

Highest Resource and High Resource Opportunity Areas – City of Ukiah CDBG BA Program– Locations of Assisted Businesses





CHAPTER 3 FIRE PREVENTION CODE

ARTICLE 2. DESIGNATION OF VERY HIGH FIRE HAZARD SEVERITY ZONES

SECTION:

§5205: Statement Of Purpose

§5206: Adoption Of Map Designating The Very High Fire Hazard Severity Zone

§5207: Enforcement

§5205 STATEMENT OF PURPOSE

California Government Code sections [51175-51189](#) requires the city of Ukiah ("city") to designate and adopt fire hazard zones.

Under the 2008 California building code adopted in the city new construction in the very high fire hazard severity zones must consist of noncombustible exterior materials and comply with other requirements to address the high fire hazard in those zones.

The California department of forestry and fire protection forwarded a map identifying the very high fire hazard severity zones in the city of Ukiah.

Government Code section [51179](#) requires the city to adopt the map by ordinance within one hundred twenty (120) days of receipt of the map from the department of forestry and fire protection.

The purpose of this article is to comply with state law by adopting the map from the department of forestry and fire protection as the very high fire hazard severity zones in the city of Ukiah. (Ord. 1122, §1, adopted 2010)

§5206 ADOPTION OF MAP DESIGNATING THE VERY HIGH FIRE HAZARD SEVERITY ZONE

This section shall be known as the very high fire hazard severity zone ("VHFHSZ") regulations and is adopted pursuant to the requirements of Government Code section [51175](#). The area described as a VHFHSZ has been recommended by the director of the California department of forestry and fire protection. The city of Ukiah VHFHSZ is designated on the map titled: city of Ukiah VHFHSZ, dated March 3, 2010, and retained on file at the city of Ukiah and which shall also be retained on file at the office of the state fire marshal. (Ord. 1122, §1, adopted 2010)

§5207 ENFORCEMENT

The building official and the fire marshal shall enforce the provisions of chapter 47 in 24 CCR, part 9 (California fire code), and chapter 7A in 24 CCR, part 2 (California building code) in all very high fire hazard severity zones. (Ord. 1122, §1, adopted 2010)

The Ukiah City Code is current through Ordinance 1211, passed February 17, 2021.

Disclaimer: The City Clerk's office has the official version of the Ukiah City Code. Users should contact the City Clerk's office for ordinances passed subsequent to the ordinance cited above.

City Website: <http://www.cityofukiah.com/>

City Telephone: (707) 463-6217

[Code Publishing Company](#)

RESOLUTION NO. 2019-48

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING THE LAND USE ELEMENT OF THE UKIAH GENERAL PLAN TO INCORPORATE THE SB 244 ANALYSIS RELATED TO DISADVANTAGED UNINCORPORATED COMMUNITIES

WHEREAS, Government Code Section 65300 requires each legislative body and planning agency to prepare and adopt a comprehensive, long-term general plan for the physical development of the city; and

WHEREAS, the City of Ukiah General Plan was adopted on December 6, 1995; and

WHEREAS, Senate Bill (SB) 244, codified in Government Code Section 65302.10, requires that on or before the next revision of a city or county housing element, and each revision thereafter, a city or county to review and update its general plan, as necessary to address the presence of Disadvantaged Unincorporated Communities, as defined, within its sphere of influence or outside but surrounded by City territory, and would require the updated general plan to include specified information; and

WHEREAS, on September 27, 2019, the City of Ukiah completed this analysis, entitled, "City of Ukiah SB 244 Analysis," and made a copy available to the public; and

WHEREAS, the City has prepared an amendment to the Land Use Element of the Ukiah General Plan in compliance with Government Code Section 65302.10 by insertion of the City of Ukiah SB 244 Analysis into the Land Use Element as "Appendix A," and

WHEREAS, under California Environmental Quality Act (CEQA) Guidelines §15306 and §15183 the proposed General Plan Land Use Element amendment is exempt from environmental review because the proposed amendment consists exclusively of data collection and does not propose amendments to the Land Use Map or land use policies, nor does it propose a change in density, or growth within the City limits or sphere of influence, and it can be seen with certainty that there is not a possibility that the activity may have a significant effect on the environment; and

WHEREAS, the Planning Commission considered the matter on October 9, 2019, and found that the proposed General Plan Amendment supported the purpose of SB 244, and is consistent with the Ukiah General Plan; and

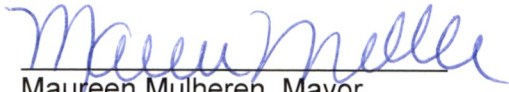
WHEREAS, it is deemed in the interest of orderly development and important to the protection of health, safety, and general welfare of the residents to amend the Ukiah General Plan by incorporating the SB 244 Analysis into the Land Use Element of the General Plan.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Ukiah as follows:

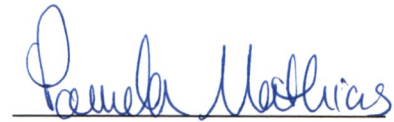
The Land Use Element of the Ukiah General Plan is hereby amended to incorporate "City of Ukiah SB 244 Analysis," dated September 27, 2019, as "Appendix A" of the Ukiah General Plan, based on the Findings in Attachment 1.

PASSED AND ADOPTED on this 23rd day of October, 2019, by the following roll call vote:

AYES: Councilmembers Orozco, Brown, Scalmanini, Crane, and Mayor Mulheren
NOES: None
ABSENT: None
ABSTAIN: None


Maureen Mulheren, Mayor

ATTEST:


Pam Mathias, Deputy City Clerk

ATTACHMENT 1

FINDINGS

GENERAL PLAN AMENDMENT #2019-01

AMENDING THE LAND USE ELEMENT OF THE UKIAH GENERAL PLAN TO INCORPORATE AS APPENDIX A THE "CITY OF UKIAH SB 244 ANALYSIS" RELATED TO DISADVANTAGED UNINCORPORATED COMMUNITIES

The following findings are supported by and based upon information contained in the Staff Report, General Plan, other supporting documentation, and the public record:

1. The proposed amendment is deemed to be in the public interest.
2. The proposed General Plan Amendment is consistent and compatible with the General Plan.
3. The potential impacts of the proposed amendment have been assessed and have been determined not to be detrimental to the public health, safety, or welfare.
4. The proposed Amendment has been processed in accordance with the applicable provisions of the California Government Code and the California Environmental Quality Act (CEQA).

DISADVANTAGED UNINCORPORATED COMMUNITIES

INTRODUCTION

Senate Bill 244 (SB 244) requires cities to identify and describe disadvantaged unincorporated communities (DUCs) inside or near its boundaries. The purpose of this legislation is to begin to address the lack of access to basic community infrastructure, such as sidewalks, clean drinking water, and adequate waste processing in unincorporated communities. This lack of investment threatens health and safety, and results in further economic, social, and educational inequality. SB 244 requires cities and counties to include DUCs in long-range planning to produce a more efficient delivery system of services and infrastructure. One of the core aims of SB 244 is to address the complex legal, financial, and political barriers that contribute to regional inequity and infrastructure deficiencies.

This paper is organized into the following sections:

Introduction 1

DUC Identification Methodology 4

Communities Identified 7

Infrastructure Deficiency Analysis 10

Key Terms 33

References 34



Based on the requirements of SB 244, this analysis includes an assessment of infrastructure, covering water, wastewater, storm drainage, and structural fire protection facilities and services; infrastructure needs or deficiencies for each of the identified DUCs; and potential funding mechanisms that could resolve any identified infrastructure deficiencies. SB 244 defines a DUC as a fringe, island, or legacy community that meets the following criteria:

- Contains 10 or more dwelling units in close proximity to one another;
- Is either within a city sphere of influence (SOI), is an island within a city boundary, or is geographically isolated and has existed for more than 50 years; and
- Has a median household income that is 80 percent or less than the statewide median household income (MHI).

SB 244 distinguishes three types of DUCs based on the following definitions:

- **“Island community”** means any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary or the Pacific Ocean.
- **“Fringe community”** means any inhabited and unincorporated territory that is within a city’s sphere of influence.
- **“Legacy community”** means a geographically isolated community that is inhabited and has existed for at least 50 years.

As demonstrated in the following sections, all of the DUCs identified in this analysis match the definition of a fringe community.

Table 1 summarizes the findings from this DUC analysis, which is described in depth in the following sections. As shown in the table, there are no infrastructure deficiencies for water, wastewater, or stormwater drainage in Ukiah DUCs. However, based on information from the Ukiah Valley Fire Authority (UVFA), the identified DUCs have structural fire protection deficiencies due to the water infrastructure for fire connection in these areas: the majority of the fire connections in the identified DUCs are standpipes or wharf hydrants, which do not produce the normal fire flows of a standard hydrant.

TABLE 1 INFRASTRUCTURE IN DISADVANTAGED UNINCORPORATED COMMUNITIES UKIAH 2019				
DUC Identifier	Water*	Wastewater	Stormwater Drainage	Structural Fire Protection
South of the City of Ukiah City Limits				
DUC #1	■	■	■	□
DUC #2	■	■	■	□
DUC #3	■	■	■	□
DUC #4	■	■	■	□
DUC #5	■	■	■	□
North of the City of Ukiah City Limits				
DUC #6	■	■	■	□
DUC #7	■	■	■	□
DUC #8	■	■	■	□
DUC #9	■	■	■	□
DUC #10	■	■	■	□
DUC #11	■	■	■	□
KEY: ■ No Deficiencies □ Deficient *Although the most recent data available indicates overall water capacity may be sufficient in these areas, the existing water infrastructure does not provide adequate water access for fire suppression protection in any of the identified DUCs. For this reason, all identified DUCs have fire suppression and safety services deficiencies.				

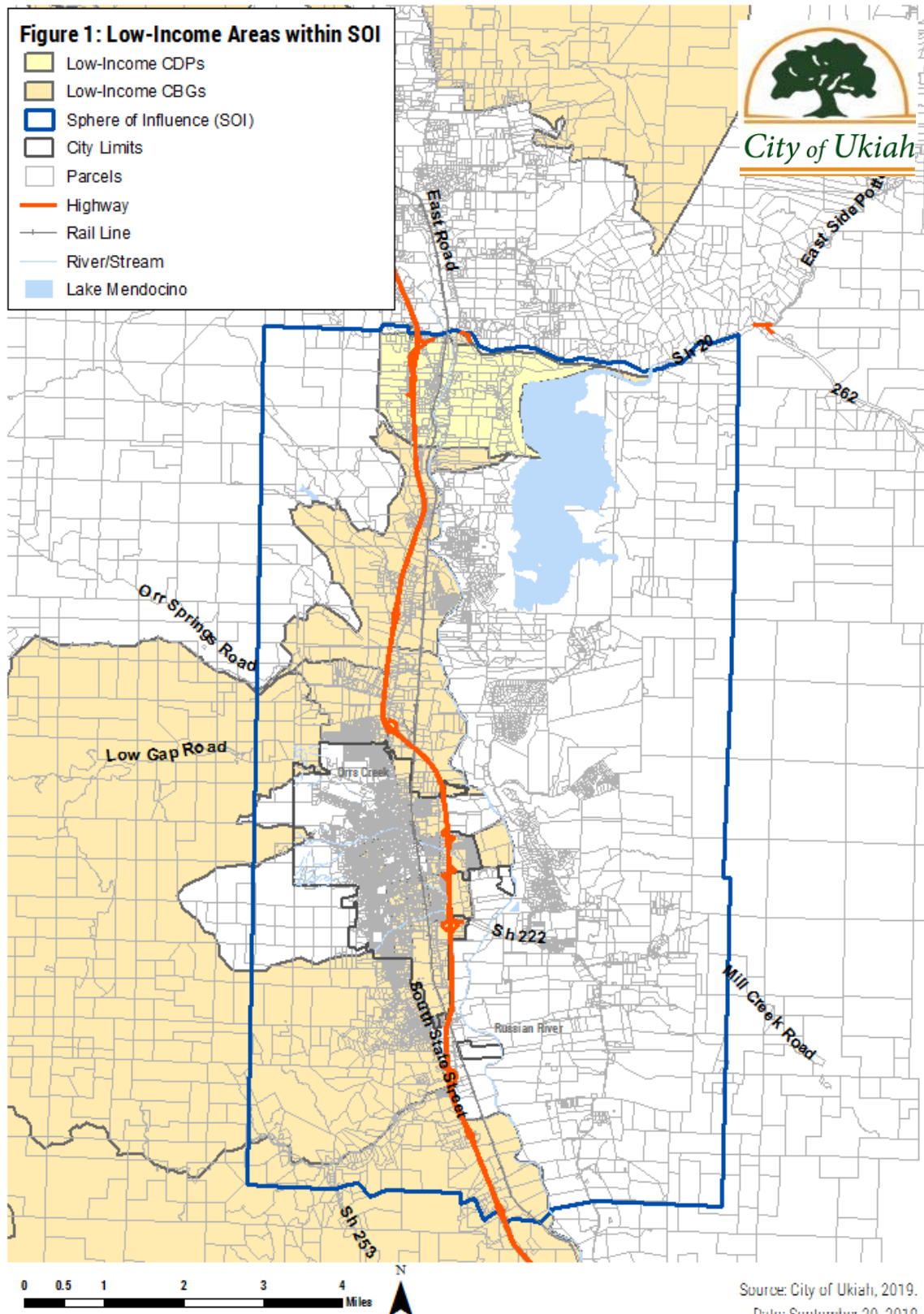


DUC IDENTIFICATION METHODOLOGY

While SB 244 describes the general characteristics of DUCs, it does not provide specific guidance on how to identify them. To assist local governments in addressing the requirements of SB 244, the Governor's Office of Planning and Research (OPR) published a technical advisory memo in February 2013 titled: Senate Bill 244: Land Use, General Plans, and Disadvantaged Communities. The memo recommends data sources for identifying income status and mapping resources for identifying "communities" as defined by SB 244. Based on the guidance provided by OPR, the City identified DUCs in the Ukiah area by following the steps described below.

STEP 1. LOW-INCOME STATUS

- First, the City identified unincorporated areas between the City limits and SOI that had a MHI that was 80 percent or less than the statewide MHI. This was done by looking at Census Block Groups (CBGs) and Census Designated Places (CDPs) that met the low-income threshold using income data from the 2013-2017 American Community Survey (ACS). From 2013-2017, the statewide MHI was \$67,169, which set the low-income threshold of 80 percent or less than the statewide average, was \$53,735. Figure 1 shows the areas that had MHI at or below \$53,735.





STEP 2. RESIDENTIAL PROXIMITY

- Next, within the areas identified as having a MHI of \$53,735 or less, the City identified groupings of dwelling units that were in close proximity to each other and that were also similar in form to the density of residential areas typically located in suburban and urban communities. This was done using satellite imagery from Google Earth to locate areas with more than 10 dwellings in close proximity to each other.

STEP 3. GROUND TRUTHING

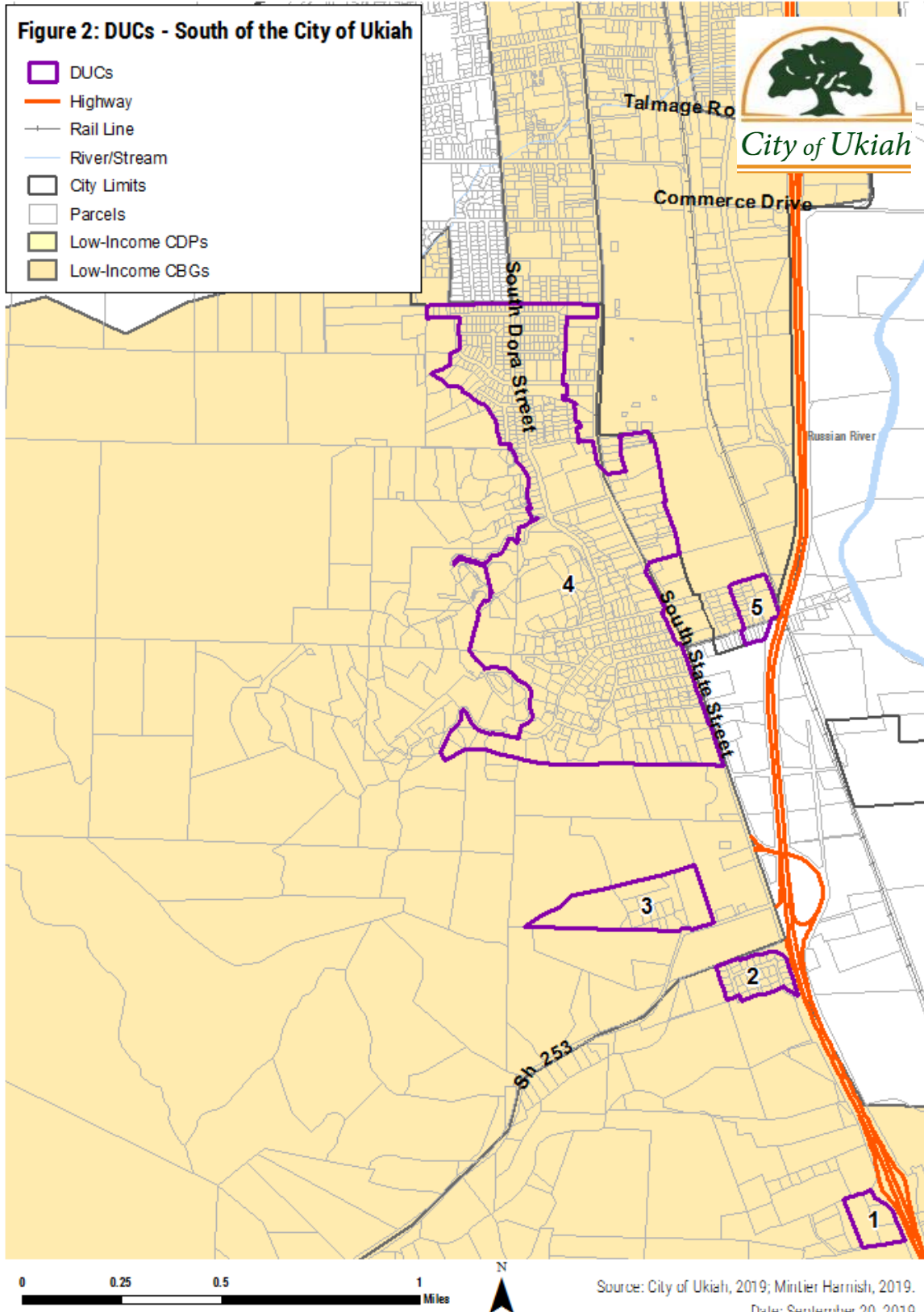
- After identifying potential DUCs based on the thresholds described in SB 244 and the most recent data available, the City reviewed the identified communities to confirm they matched the intent of the SB 244 analysis and that the digital data sources used match current realities. City staff concluded that the 11 DUCs identified through the above process were valid and appropriate as defined under State law.

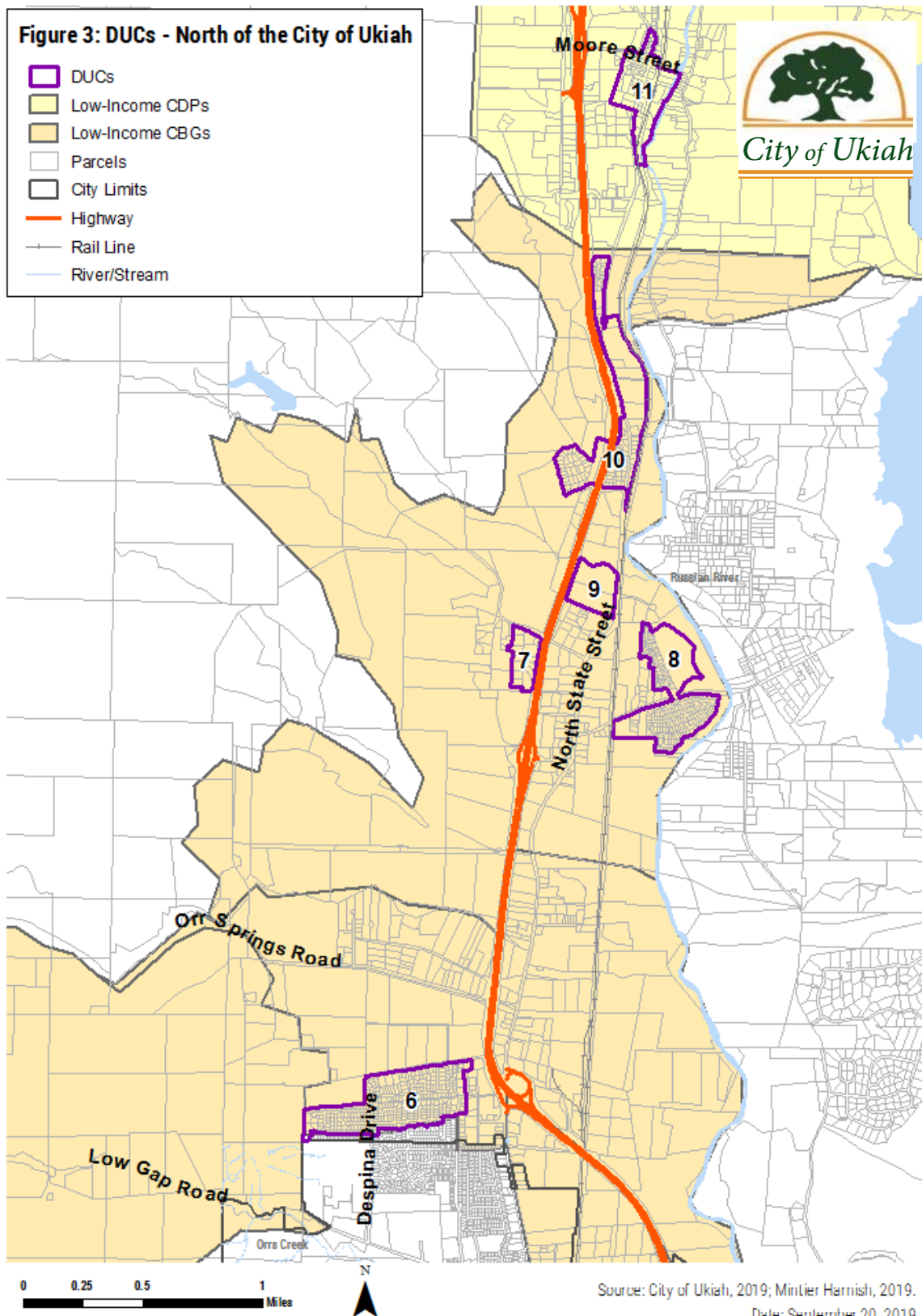


COMMUNITIES IDENTIFIED

The DUCs that the City identified are “Fringe Communities,” as defined by SB 244. Table 2 lists the DUCs in the Ukiah SOI by size (in acres), the approximate number of dwelling units for each DUC, and the number of parcels in each community. Figure 2 shows the DUCs that are south of city limits, and Figure 3 shows the DUCs north of city limits.

TABLE 2 IDENTIFIED DISADVANTAGED UNINCORPORATED COMMUNITIES UKIAH 2019			
DUC Identifier	DUC Size (acres)	# of Dwelling Units (approximate)	# of Parcels
South of the City of Ukiah City Limits			
DUC #1	8.4	15	4
DUC #2	8.8	30	32
DUC #3	29.0	15	16
DUC #4	255.0	680	578
DUC #5	8.5	25	26
North of the City of Ukiah City Limits			
DUC #6	66.1	330	295
DUC #7	16.7	25	17
DUC #8	59.7	270	213
DUC #9	22.9	150	2
DUC #10	72.0	200	108
DUC #11	32.7	35	61
TOTAL	579.8	1,775	1,352







INFRASTRUCTURE DEFICIENCY ANALYSIS

SB 244 requires an analysis of infrastructure services for each DUC. This section first provides an overview of service providers in the Ukiah SOI that provide infrastructure facilities or services in the DUCs. The subsequent section describes the services provided by each provider within each DUC consistent with the requirements of SB 244.

OVERVIEW OF SERVICE PROVIDERS WITHIN THE UKIAH SOI

SB 244 calls for “an analysis of water, wastewater, stormwater drainage, and structural fire protection needs or deficiencies” for all identified DUCs. Within the Ukiah SOI, public water and wastewater services are provided by special districts. Where public water and wastewater services are not provided, onsite systems (e.g., private wells and septic systems) are used. Private wells and septic systems were not evaluated in this report. The following is an overview of how services are provided within the DUCs in the Ukiah area.

WATER

Potable water service within DUCs in Ukiah SOI is provided primarily by special districts, although several DUCs are reliant on individual wells. Special districts that provide water services include:

- Calpella County Water District (DUC #11)
- Mendocino County Russian River Flood Control and Water Conservation Improvement District (DUCs #1, #2, #3, #5, #6, #7, #8, #9, #10, and #11)
- Millview County Water District (DUCs #6, #7, #8, #9, and #10)
- Willow County Water District (DUCs #1, #2, #3, and #5, and approximately 95 percent of DUC #4)

A small portion (approximately 5 percent of the total area) of DUC #4 relies on private wells.

WASTEWATER

Wastewater collection and treatment services are provided to DUCs in the Ukiah SOI through a combination of onsite septic systems (both individual septic and community septic systems) and special districts. Special districts that provide wastewater services include:

- Calpella County Water District (DUC #11)
- Millview County Water District (DUC #8)
- Ukiah Valley Sanitation District (DUCs #2, #3, #4, #5, and #6)

DUCs #1 and #7, #9, #10 rely on septic tanks.

STORMWATER DRAINAGE

Nearly half of the Ukiah DUCs are provided with stormwater drainage services by Mendocino County (County). The other DUCs rely on roadside ditches to collect stormwater runoff. Services are provided as the following:

- Mendocino County (DUCs #4, #6, #10, and #11)



- DUCs #1, #2, #3, #5, #7, #8, and #9 rely on roadside ditches.

STRUCTURAL FIRE PROTECTION

Fire protection services within the Ukiah SOI are provided by Ukiah Valley Fire Authority and the Redwood Valley-Calpella Fire District. The Ukiah Valley Fire Authority (UVFA) jointly manages, equips, maintains and operates all-risk fire, emergency medical and rescue services to the City and Fire District. Services are provided as the following:

- Redwood Valley-Calpella Fire District (DUC #11)
- Ukiah Valley Fire Authority (DUCs #1, #2, #3, #4, #5, #6, #7, #8, #9, and #10)



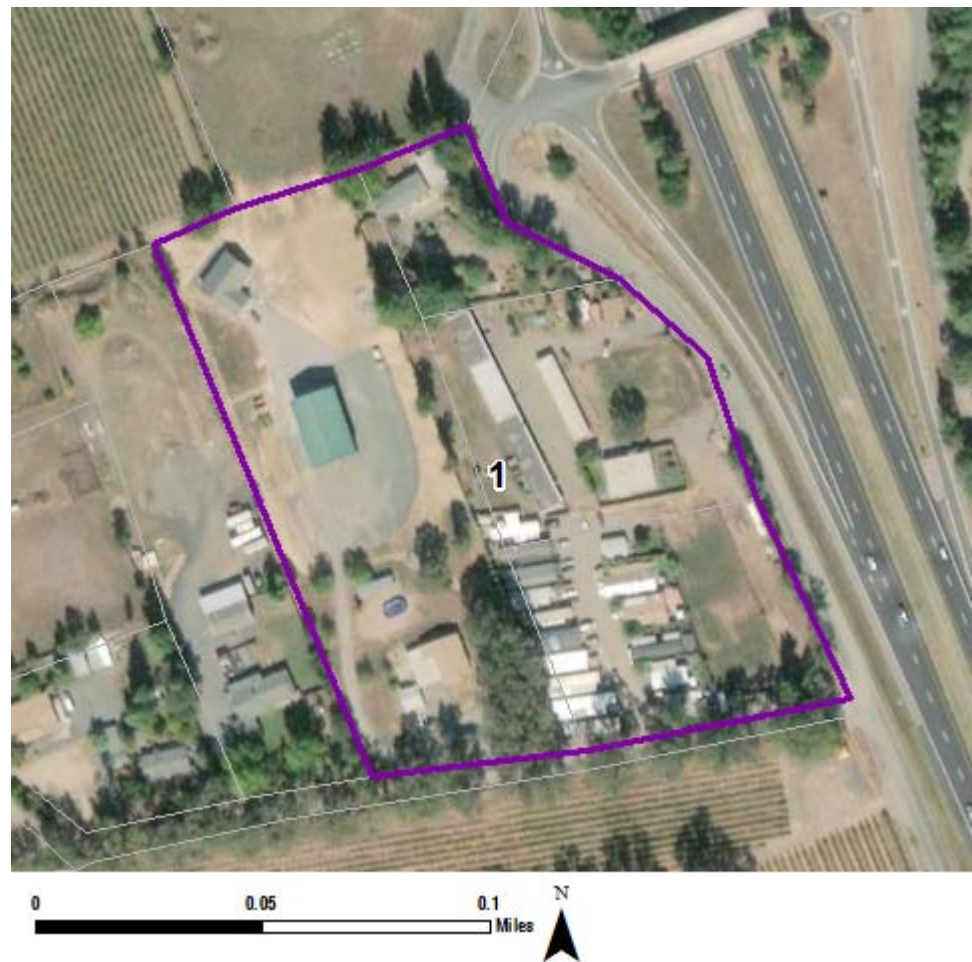
DUC SERVICE PROFILES

For each of the 11 identified DUCs in the Ukiah SOI, the City consulted with the Mendocino Local Agency Formation Commission (LAFCo) and researched available data and reports to determine how water, wastewater, stormwater drainage, and structural fire protection services are provided. The Mendocino LAFCo information was derived primarily from published Municipal Service Reviews (MSRs) and SOI update reports. The following are analyses of how each DUC is being served.

DUC #1

DUC #1 is located at the northwest corner of Burke Hill Road and Bisby Avenue, west of Redwood Highway. This area includes 4 parcels totaling approximately 8 acres, with approximately 15 mobile homes. This area is commonly known as Ukiah Mobile Estates.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provide raw water for irrigation and to municipal water purveyors within this area.



The Willow County Water District (WCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the WCWD distributes approximately 1,200 acre-feet of water per year for domestic and landscape and agricultural irrigation uses. Water usage is about 20 percent residential and 80 percent commercial/industrial. The WCWD maintains a storage capacity of 1.348 million gallons in nine storage tanks strategically located throughout the WCWD. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the WCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.



Wastewater – There is no community wastewater system in place for this community. Septic tanks are used by residents for wastewater disposal. Because no data has been recently presented suggesting the septic capacity is not sufficient for this community, there appear to be no wastewater deficiencies in this community.

Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches that are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of stormwater runoff capture and transport through roadside ditches, there appear to be no stormwater drainage deficiencies in this community.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, and tenant changes that are within its service area and require a building permit. UVFA Station 1 (South Station), located at 1500 S. State Street, is the closest station to DUC #1. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season, CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational, can assist UVFA during large fire incidents.

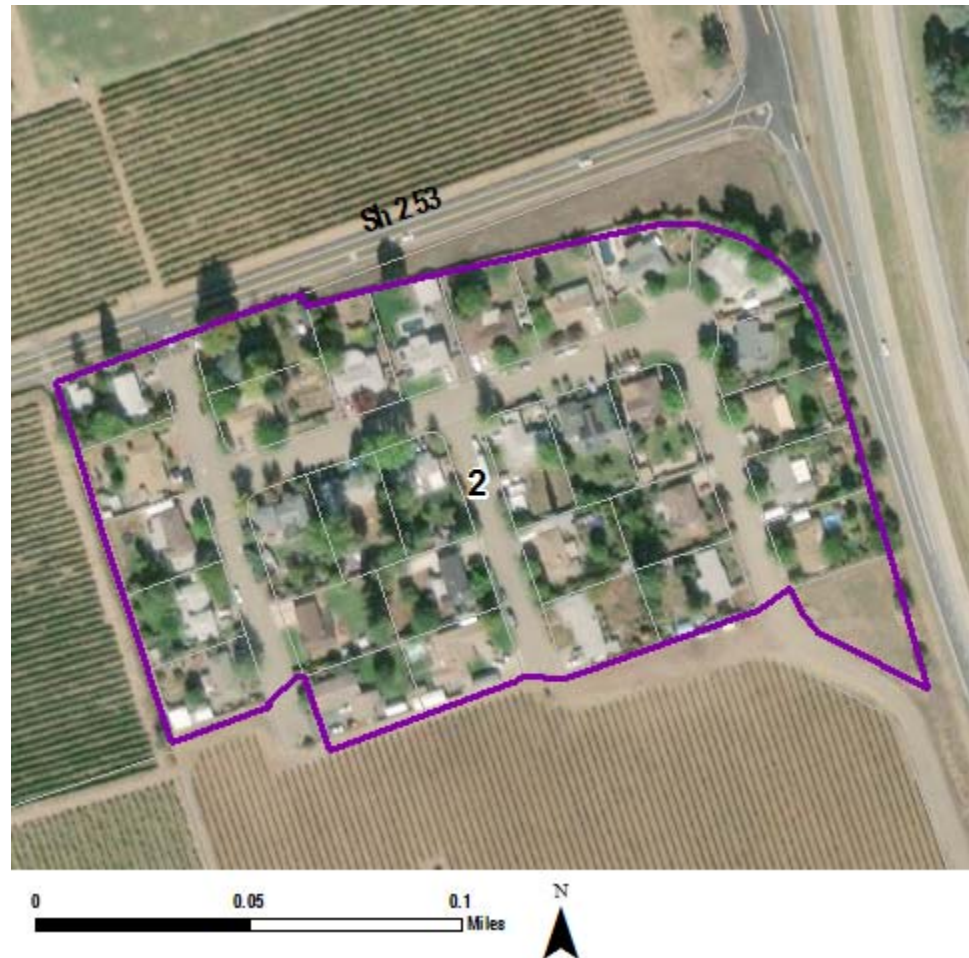
Water infrastructure for fire connections is inadequate in this area (there are no fire hydrants), limiting availability to adequate fire suppression systems. In lieu of an adequate fire suppression system and existing water serving infrastructure, all UVFA fire trucks are required to carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



DUC #2

DUC #2 is located at the southwest corner of Boonville Road (Highway 253) and South State Street, west of Redwood Highway. This area includes 32 parcels totaling nearly 9 acres, with approximately 30 single-family homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Willow County Water District (WCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the WCWD distributes approximately 1,200 acre-feet of water per year for domestic and irrigation uses. Water usage is about 20 percent residential and 80 percent commercial/industrial. The WCWD maintains a storage capacity of 1.348 million gallons in nine storage tanks strategically located throughout the WCWD. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the WCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – The Ukiah Valley Sanitation District (UVSD) provides wastewater service to this community. The City owns the collection system and a Wastewater Treatment Plant (WWTP), while the UVSD owns the collection system within its jurisdictional boundaries. The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the City-owned WWTP and for maintenance of its collection system. Based on the most recent data available from the Ukiah Valley Sanitation District and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.



Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches which are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of stormwater runoff capture and transport through roadside ditches, there do not appear to be stormwater drainage deficiencies in this community.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 1 (South Station), located at 1500 S. State Street, is the closest station to DUC #2. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

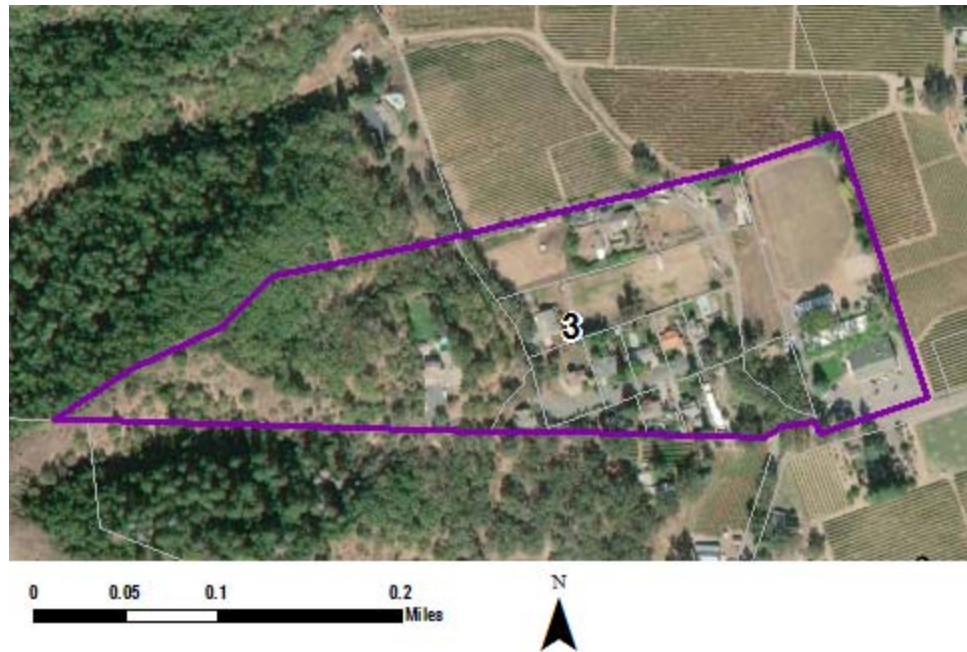
The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



DUC #3

DUC #3 is located north of Zaina Lane and South Stipp Lane, west of Redwood Highway, near Stipp Ranch. This area includes 16 parcels totaling approximately 29 acres with approximately 15 homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Willow County Water District (WCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the WCWD distributes approximately 1,200 acre-feet of water per year for domestic and irrigation uses. Water usage is about 20 percent residential and 80 percent commercial/industrial. The WCWD maintains a storage capacity of 1.348 million gallons in nine storage tanks strategically located throughout the WCWD. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the WCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – The Ukiah Valley Sanitation District (UVSD) provides wastewater service to this community. The City owns the collection system and a Wastewater Treatment Plant (WWTP), while the UVSD owns the collection system within its jurisdictional boundaries. The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the City-owned WWTP and for maintenance of its collection system. Based on the most recent data available from the Ukiah Valley Sanitation District and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.

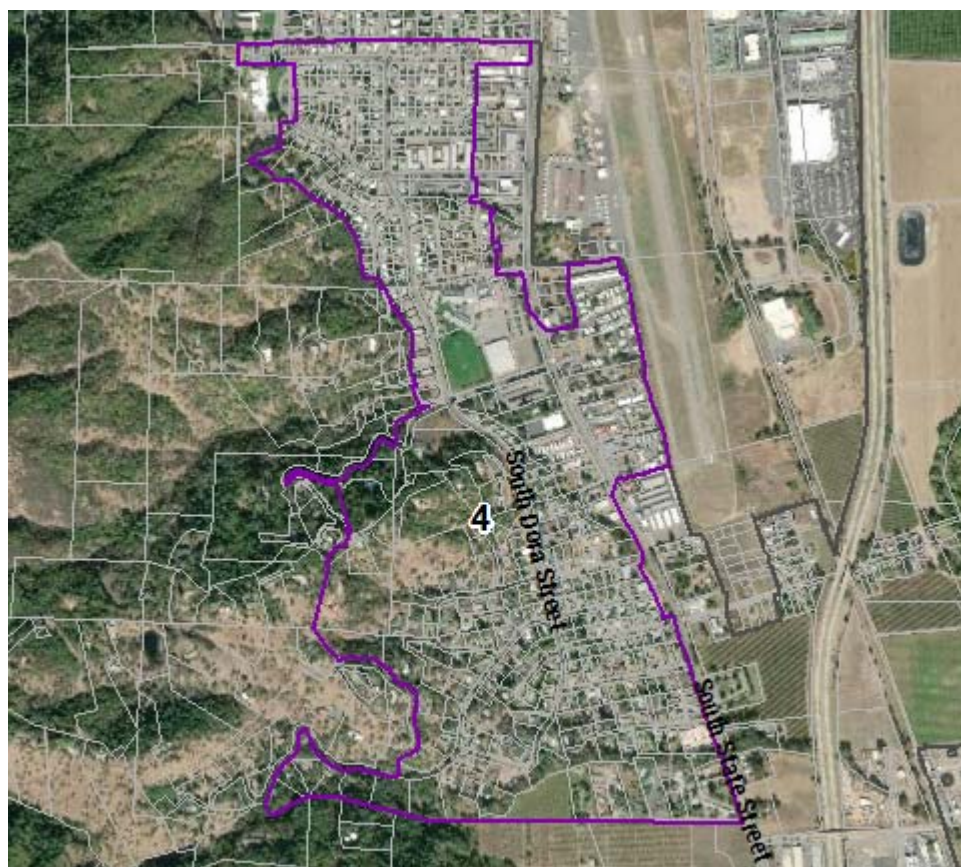
Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches which are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of stormwater runoff capture and transport through roadside ditches, there do not appear to be stormwater drainage deficiencies in this community.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 1 (South Station), located at 1500 S. State Street, is the closest station to DUC #3. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.

DUC #4

DUC #4 is located adjacent to the southwestern part of the city limits. This area spans from Jefferson Lane to the north and Gobalet Lane to the south and includes 578 parcels totaling 255 acres with approximately 680 single-family and multifamily (i.e., apartments, townhomes) homes.



Water – The Mendocino County Russian

River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area. DUC #4 is served by both a



water district and private wells. Approximately 95 percent of the area is served by the Willow County Water District (WCWD), while the remaining 5 percent, located on the far southwest point of the community, rely on individual wells.

The Willow County Water District (WCWD) receives water from the RRFC, then treats and distributes the water to most of DUC #4. During a normal year, the WCWD distributes approximately 1,200 acre-feet of water per year for domestic and irrigation uses. Water usage is about 20 percent residential and 80 percent commercial/industrial. The WCWD maintains a storage capacity of 1.348 million gallons in nine storage tanks strategically located throughout the WCWD. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the WCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – The Ukiah Valley Sanitation District provides wastewater service to this community. The City owns the collection system and a Wastewater Treatment Plant (WWTP), while the UVSD owns the collection system within its jurisdictional boundaries. The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the City-owned WWTP and for maintenance of its collection system. Based on the most recent data available from the Ukiah Valley Sanitation District and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.

Stormwater Drainage – The County manages a storm drain collection system for this community. Based on data from the most recent MSR, for this area does not appear to have infrastructure deficiencies related to stormwater drainage.

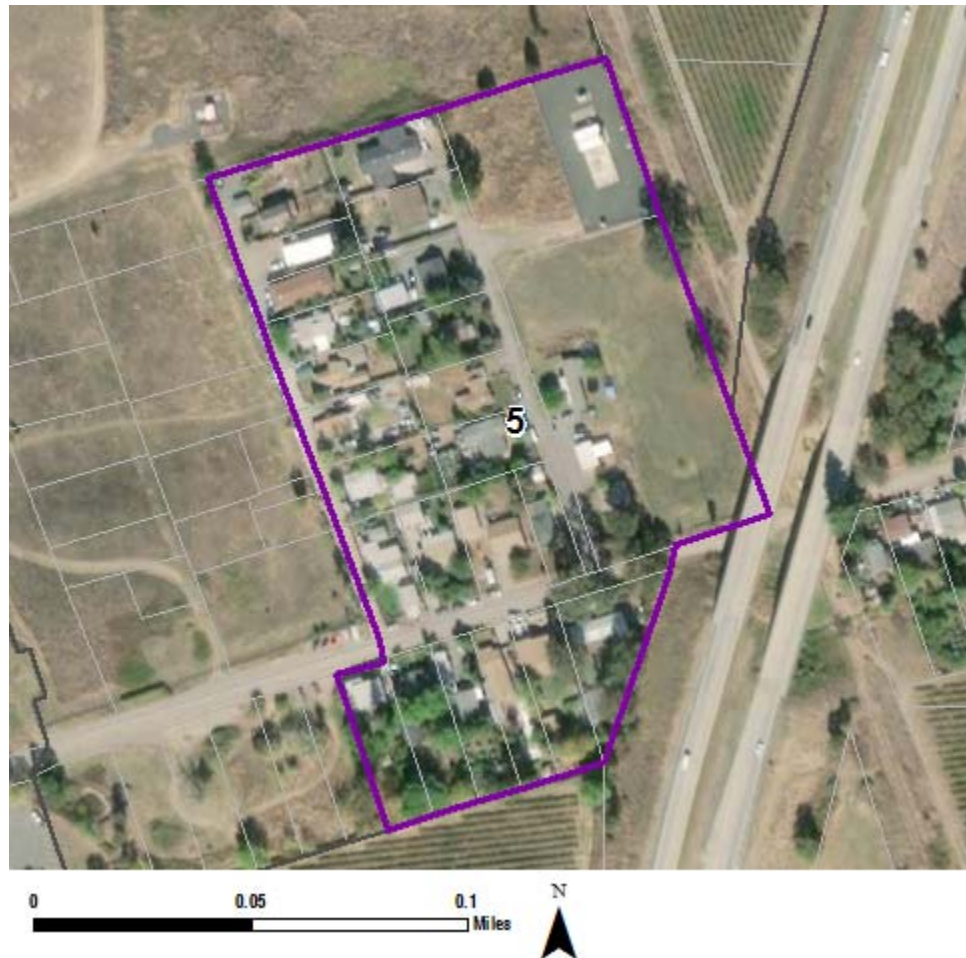
Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 1 (South Station), located at 1500 S. State Street, is the closest station to DUC #4. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.

DUC #5

DUC #5 is located adjacent to the southern part of the city limits along Pomo Lane and Townsend Lane to the north of Norgard Lane. This area includes 26 parcels totaling nearly 9 acres with approximately 25 single-family homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Willow County Water District (WCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the WCWD distributes approximately 1,200 acre-feet of water per year for domestic and irrigation uses. Water usage is about 20 percent residential and 80 percent commercial/industrial. The WCWD maintains a storage capacity of 1.348 million gallons in nine storage tanks strategically located throughout the WCWD. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the WCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – The Ukiah Valley Sanitation District provides wastewater service to this community. The City owns the collection system and a Wastewater Treatment Plant (WWTP), while the UVSD owns the collection system within its jurisdictional boundaries. The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the City-owned WWTP and for maintenance of its collection system. Based on the most recent data available from the Ukiah Valley Sanitation District and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.



Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches which are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of stormwater runoff capture and transport through roadside ditches, there do not appear to be stormwater drainage deficiencies in this community.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 1 (South Station), located at 1500 S. State Street, is the closest station to DUC #5. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.

DUC #6

DUC #6 is located between the northern part of the city limits to Lovers Lane, to the west of Millview Road and Kuki Road. This area includes 295 parcels spanning approximately 66 acres with approximately 330 single-family and multifamily (i.e., apartments) homes.





Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.

The Millview County Water District (MCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the MCWD distributes approximately 1,460 acre-feet of water per year. Water usage is approximately 75 percent for residential purposes, while commercial uses account for approximately 15 percent and the remaining 10 percent for industrial and miscellaneous purposes. The MCWD has a storage capacity of 3.24 million gallons. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the MCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – The Ukiah Valley Sanitation District provides wastewater service to this community. The City owns the collection system and a Wastewater Treatment Plant (WWTP), while the UVSD owns the collection system within its jurisdictional boundaries. The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the City-owned WWTP and for maintenance of its collection system. Based on the most recent data available from the Ukiah Valley Sanitation District and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.

Stormwater Drainage – The County manages a storm drain collection system for this community. Based on data from the most recent MSR, for this area does not appear to have infrastructure deficiencies related to stormwater drainage.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 2 (North Station), located at 1800 N. State Street, is the closest station to DUC #6. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

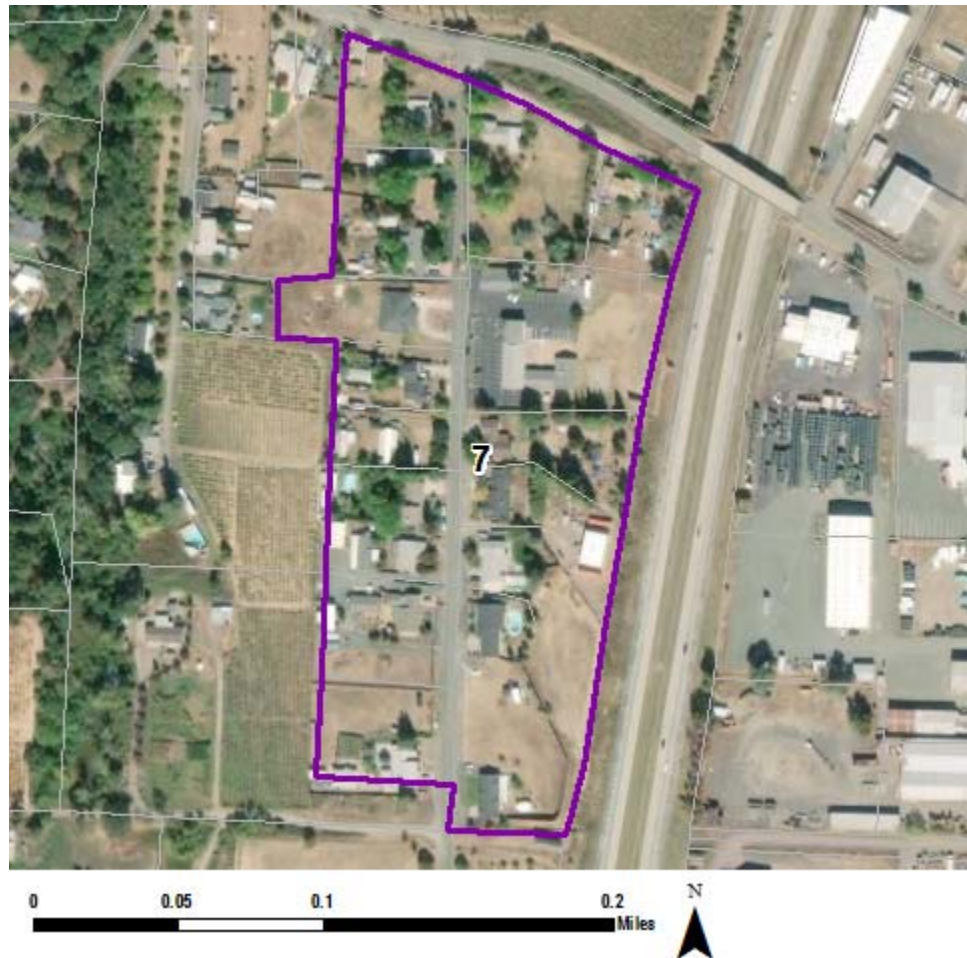
The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



DUC #7

DUC #7 is located between Parducci Road to the north, Redwood Highway to the east, Ben Road to the south, and Aldo Lane to the west. This area includes 17 parcels spanning nearly 17 acres with approximately 25 single-family homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Millview County Water District (MCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the MCWD distributes approximately 1,460 acre-feet of water per year. Water usage is approximately 75 percent for residential purposes, while commercial uses account for approximately 15 percent and the remaining 10 percent for industrial and miscellaneous purposes. The MCWD has a storage capacity of 3.24 million gallons. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the MCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – There is no community wastewater system in place for this community. Septic tanks are used by residents for wastewater disposal. Because no data has been recently presented suggesting the septic capacity is not sufficient for this community, there appear to be no wastewater deficiencies in this community.

Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches which are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of



stormwater runoff capture and transport through roadside ditches, there do not appear to be stormwater drainage deficiencies in this community.

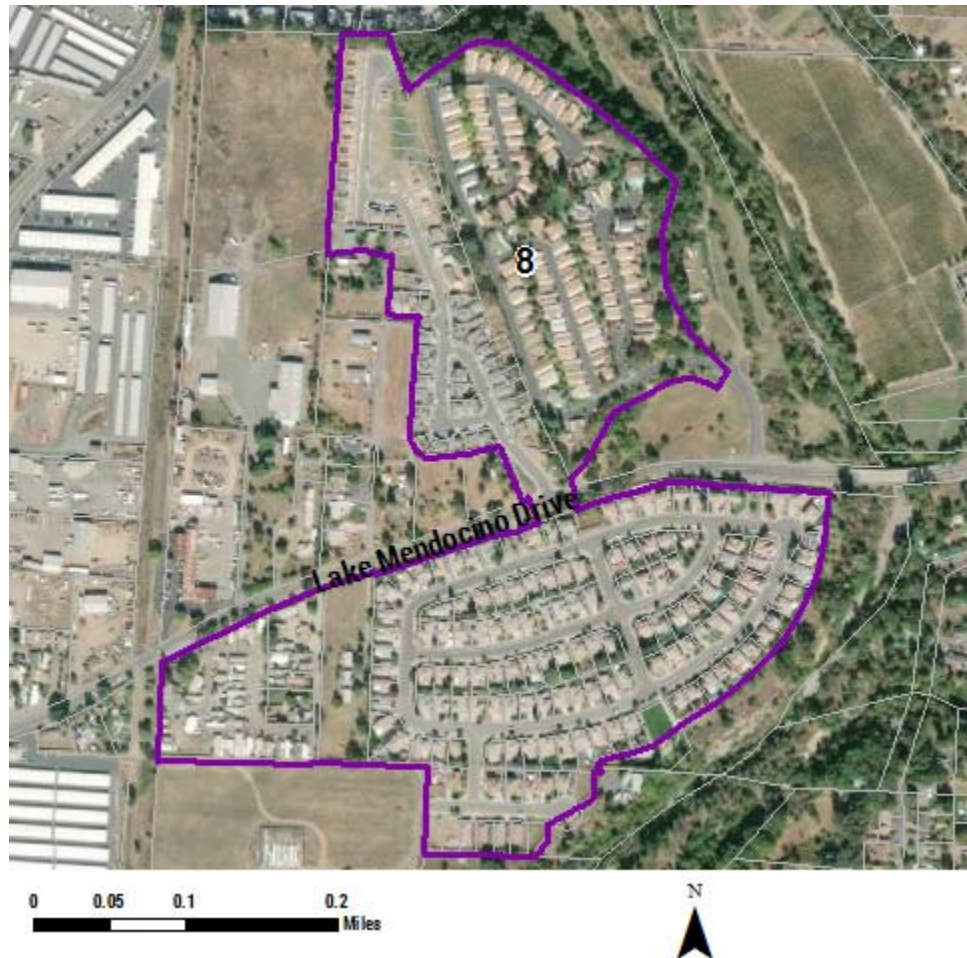
Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 2 (North Station), located at 1800 N. State Street, is the closest station to DUC #7. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.

DUC #8

DUC #8 is located between Estrella Court and Malaga Court to the north, the Russian River to the east, Riverview Drive to the south, and Redwood Highway to the west. This area includes 213 parcels spanning nearly 60 acres with approximately 270 single-family and mobile homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Millview County Water District (MCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the MCWD distributes approximately 1,460 acre-feet of water per year. Water usage is approximately 75 percent for residential purposes, while commercial uses account for approximately 15 percent and the remaining 10 percent for industrial and miscellaneous purposes. The MCWD has a storage capacity of 3.24 million gallons. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the MCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – There is no community wastewater system in place for this community. Septic tanks are used by residents for wastewater disposal. Because no data has been recently presented suggesting the septic capacity is not sufficient for this community, there appear to be no wastewater deficiencies in this community.



Stormwater Drainage – The County manages a storm drain collection system for this community. Based on data from the most recent MSR, for this area does not appear to have infrastructure deficiencies related to stormwater drainage.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 2 (North Station), located at 1800 N. State Street, is the closest station to DUC #8. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



DUC #9

DUC #9 is located between York Creek to the north, N. State Street to the east, 3rd Street to the south, and Redwood Highway to the west. This area covers 2 parcels spanning nearly 23 acres with approximately 150 mobile homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Millview County Water District (MCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the MCWD distributes approximately 1,460 acre-feet of water per year. Water usage is approximately 75 percent for residential purposes, while commercial uses account for approximately 15 percent and the remaining 10 percent for industrial and miscellaneous purposes. The MCWD has a storage capacity of 3.24 million gallons. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the MCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – There is no community wastewater system in place for this community. Septic tanks are used by residents for wastewater disposal. Because no data has been recently presented suggesting the septic capacity is not sufficient for this community, there appear to be no wastewater deficiencies in this community.

Stormwater Drainage – Storm drainage capture and transport is limited since there is no community storm drain system in place for this community. In lieu of a storm drain system, there are roadside ditches which are used to manage and transport stormwater runoff for the area. The use of roadside ditches have led to less ponding and localized flooding, but during large rain events, localized flooding and ponding may still occur. Based on the availability of



stormwater runoff capture and transport through roadside ditches, there do not appear to be stormwater drainage deficiencies in this community.

Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 2 (North Station), located at 1800 N. State Street, is the closest station to DUC #9. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

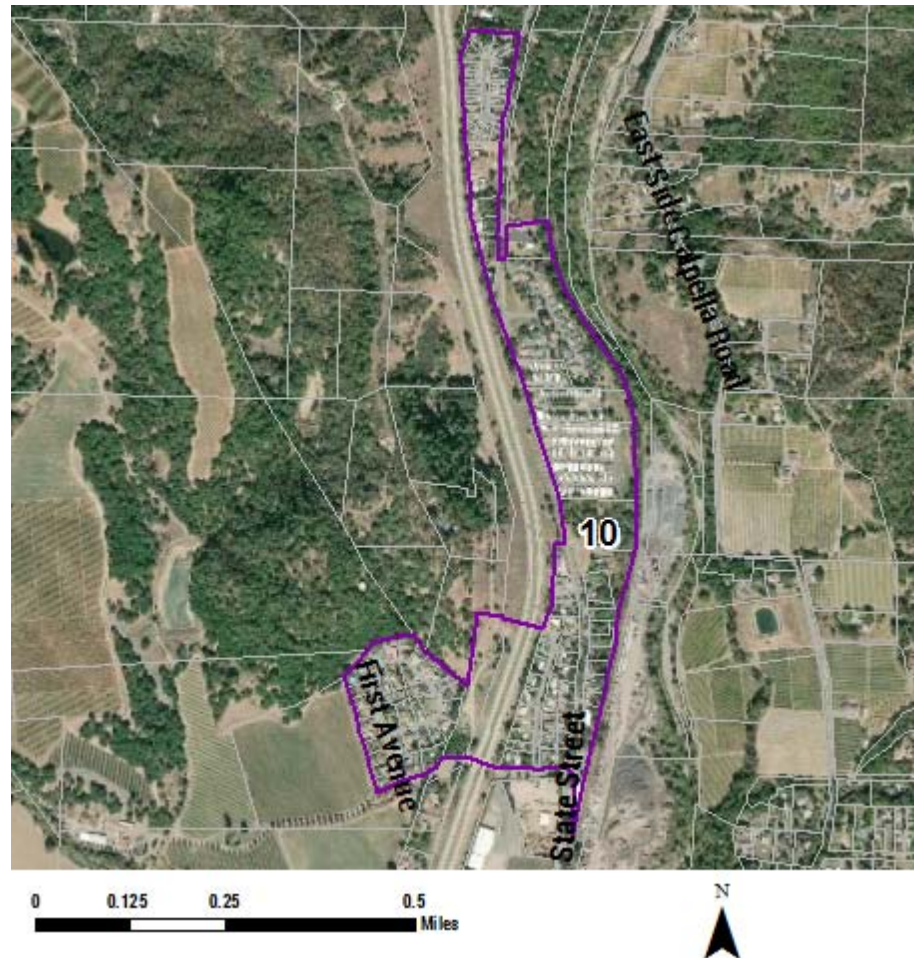
The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



DUC #10

DUC #10 includes a community west of Redwood Highway that is around 1st Avenue, and residences along N. State Street to the east of Redwood Highway that span from Agnes Lane to the north, Russian River to the east, and Pomo Lane to the south. This area covers 108 parcels spanning approximately 72 acres with approximately 200 single- family and mobile homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.



The Millview County Water District (MCWD) receives water from the RRFC, then treats and distributes the water to this area. During a normal year, the MCWD distributes approximately 1,460 acre-feet of water per year. Water usage is approximately 75 percent for residential purposes, while commercial uses account for approximately 15 percent and the remaining 10 percent for industrial and miscellaneous purposes. The MCWD has a storage capacity of 3.24 million gallons. Based on data contained in the 2013 Ukiah Valley Special Districts MSR, the MCWD would have sufficient capacity to meet anticipated demand- and consequently, it does not appear there are water deficiencies.

Wastewater – There is no community wastewater system in place for this community. Septic tanks are used by residents for wastewater disposal. Because no data has been recently presented suggesting the septic capacity is not sufficient for this community, there appear to be no wastewater deficiencies in this community.

Stormwater Drainage – The County manages a storm drain collection system for this community. Based on data from the most recent MSR, for this area does not appear to have infrastructure deficiencies related to stormwater drainage.

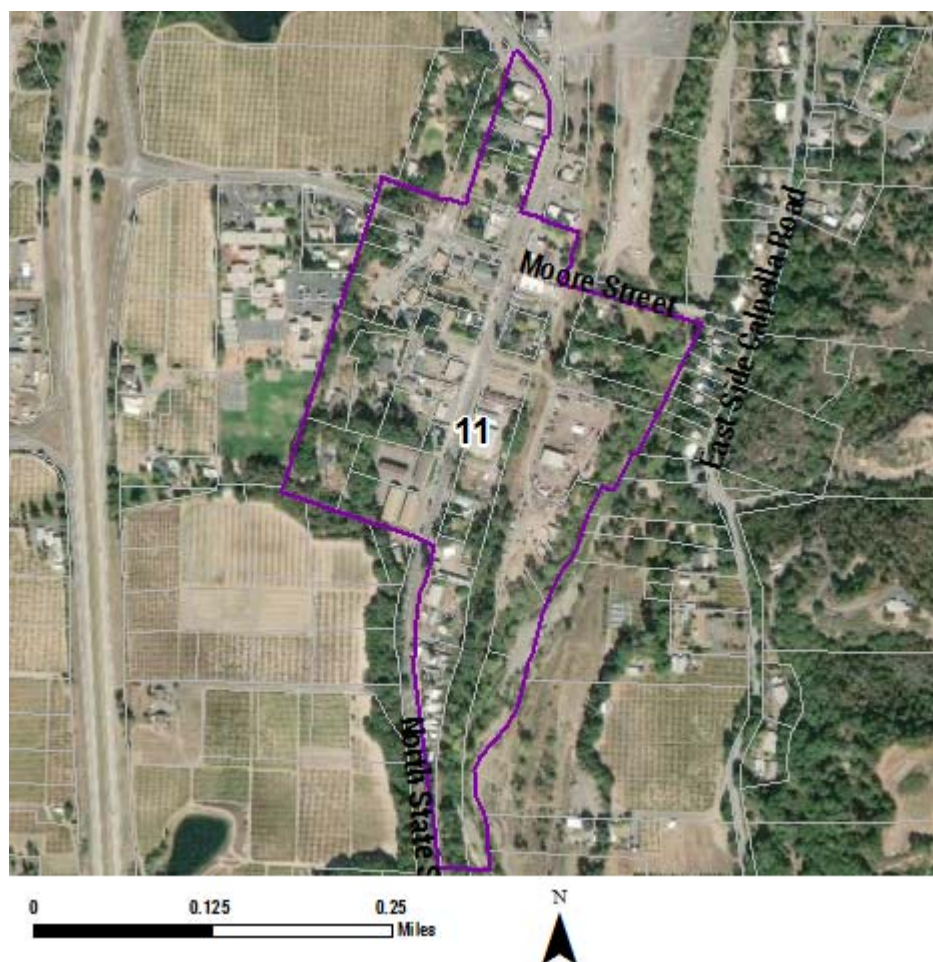
Structural Fire Protection – Fire protection is provided to this community by Ukiah Valley Fire Authority (UVFA). The UVFA provides structural, wildland fire suppression, and emergency medical services. UVFA staff are trained to provide emergency medical service at the Basic Life Support (BLS) level and are the first responders to these types of calls. The UVFA reviews all applications for new commercial construction, multi-unit housing, occupancy changes, or tenant changes that are within its service area and require a building permit. UVFA Station 2 (North Station), located at 1800 N. State Street, is the closest station to DUC #10. This station is staffed full time, 24 hours a day, seven days a week, 365 days a year. During peak fire season CalFire operates CalFire Station Ukiah, part of the Mendocino Unit, located at 2690 N. State Street. This station is not staffed full-time, but when operational can assist UVFA during large fire incidents.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.

DUC #11

DUC #11 is the center of Calpella and includes residences along N. State Street that span from the intersection of N. State Street and 3rd Street to the north, Russian River to the east, and portions of Moore Street and Hopkins Street. This area includes 61 parcels spanning nearly 33 acres with approximately 35 single-family homes.

Water – The Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC) provides raw water for irrigation and to municipal water purveyors within this area.





The Calpella County Water District receives water from the RRFC, then treats and distributes the water to this area. Based on the 2013 Ukiah Valley Special Districts Municipal Service Review (MSR), the water infrastructure capacity is sufficient, but the District overall lacks additional water capacity. The lack of water supply leads to a potential of meeting future demands without purchasing water from other sources. There are no reported changes since the 2013 MSR.

Wastewater –The Calpella County Water District serves over 100 sewer connections and operates a wastewater treatment plant. The capacity of the plant was increased to 80,000 gpd. In 2007, the average daily flow rate was estimated at 32,000 gallons. The CCWD has additional treatment capacity and can accommodate up to 1,000 residents, which is about 300 more than the current population within the CCWD service area. Based on the most recent data available from the CCWD and Mendocino LAFCo, there do not appear to be wastewater deficiencies in this community.

Stormwater Drainage – The County manages a storm drain collection system for this community. Based on data from the most recent MSR, for this area does not appear to have infrastructure deficiencies related to stormwater drainage.

Structural Fire Protection – The Redwood Valley-Calpella Fire District (RVCFD) provides structural fire protection, wildland fire protection, emergency medical services, rescue, hazardous materials response, and fire prevention for Calpella. The District is dispatched by CALFire. RVCFD operates one fire station in Redwood Valley at 8481 East Road in Redwood Valley. Within Calpella and the outlying area, The District relies on its 2,000-gallon water tender, agricultural irrigation ponds, and cisterns constructed by property owners as part of a residential building permit. In 2016, water supply for firefighting in the outlying areas is considered “marginally adequate,” especially during time of drought. RVCFD is exploring other means to augment its existing water supplies, either through mutual aid tanker support from other fire agencies; or through acquisition of additional water tenders. The core of capital improvement needs for RVCFD are generally planned in the budget and are underway, which includes a 10-year program to replace its vehicles.

The area has access to fire hydrants. However, the majority of fire connections are standpipes or wharf hydrants, which do not produce the fire flows of a standard hydrant. The fire connections are sufficient for small isolated fires, but for major fires, UVFA must use water tenders. All fire trucks also carry water onboard for fire suppression. Based on these water infrastructure issues, there are fire protection service deficiencies in this community.



POTENTIAL INFRASTRUCTURE FUNDING SOURCES

There are Federal and State programs that could potentially help address existing deficiencies identified in the communities discussed above. Table 3 provides a brief summary of programs that could provide funding to address infrastructure deficiencies in DUCs.

TABLE 3 POTENTIAL INFRASTRUCTURE FUNDING SOURCES		
Program Name	Agency	Program Description
Community Development Block Grants (CDBG)	United States Housing and Urban Development Department (HUD)	These grants can fund the construction of projects such as water and sewer facilities, street maintenance, as well as other public work projects.
Community Facilities Direct Loan and Grant Program	United States Department of Agriculture and Rural Development	This program provides funding to develop essential community facilities in rural areas.
Impact Fees	Local Governments	Development Impact Fees can be imposed for new development, in order to acquire funding to construct capital facilities. Applying development impact fees to projects does have substantial limitations under The Mitigation Fee Act, sections 66000.
Taxation	Local Governments and Public Agencies	In 1982 the California State Legislature enacted the Community Facilities Act, commonly referred to as Mello-Roos. This act authorized local jurisdictions to establish community facility districts, which would directly serve as another funding mechanism for financing public work projects, and even public services. This method of revenue generation potentially could be used to finance projects that will make the necessary improvements to the deficiencies in these communities.
Clean Water State Revolving Fund (CWSRF)	The State Water Resources Control Board	CWSRF provides financial assistance for a wide range of water infrastructure projects. It is a partnership between the US EPA and states governments. States have the flexibility to fund a range of projects that address their highest priority water quality needs. Using a combination of federal and state funds, CWSRF provides loans to eligible recipients to construct municipal wastewater facilities and decentralized wastewater treatment systems, among other projects.
Emergency Community Water Assistance Grants	United States Department of Agriculture Rural Development	This program helps eligible communities prepare for, or recover from, an emergency that threatens the availability of safe, reliable drinking water for households and businesses.
Safe Drinking Water State Revolving Fund	California Department of Public Health	The Drinking Water State Revolving Fund (DWRSF) program assists public water systems in financing the cost of drinking water infrastructure projects needed to achieve or maintain compliance with Safe Drinking Water Act (SDWA) requirements.

TABLE 3
POTENTIAL INFRASTRUCTURE FUNDING SOURCES

Program Name	Agency	Program Description
Bonds	Local Governments	Bonding is a funding mechanism that can be used specifically to fund large infrastructure projects in disadvantaged communities. There are three bond types: revenue bonds, lease revenue bonds, and obligations bonds. - Revenue bonds are typically ensured by the project that is being constructed. A common revenue bond infrastructure project would be a water treatment facility. Once the bond is paid, the facility operation and ownership is turned over to the jurisdiction. - Lease revenue bonds are secured by either a non-profit or privately financed group, that constructs the infrastructure project, then leases the completed facility back to the jurisdiction, until the costs of the bond have been paid for. Once the bond is paid, the facility operation and ownership is turned over to the jurisdiction. - General obligation bonds are issued for the improvement and enhancement of real property. Local governments have the ability to raise property taxes in order to cover the costs of the bond and infrastructure project. Unlike the previous two types of bonding methods, the general obligation bond, does require voter approval.
Household and Small Water System Drought Assistance Program	State Water Resources Control Board	The State Water Resources Control Board authorized \$5 million to assist individual households and small water systems to address drought-related drinking water emergencies. Funding is available as low interest loans and/or grant based on recipient's income and affordability.
Integrated Regional Water Management	California Department of Water Resources	The IRWM Grant Programs include funding for planning, community involvement, implementation, and companion grant programs that support sustainable groundwater planning and water-energy programs and projects.
Proposition 84	State Water Resources Control Board	The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act (Prop 84) provides funding for capital costs on projects addressing excessive stormwater runoff, including projects related to the collection of stormwater, and treatment of water to reduce contamination.
State Water Quality Control Fund: Cleanup and Abatement Account	State Water Resources Control Board	The Cleanup and Abatement Account (CAA) was created to provide public agencies with grants for the cleanup or abatement of pollution when there are no viable responsible parties available to undertake the work. Eligible entities include public agencies, as well as certain not-for-profit organizations and tribal governments that serve a disadvantaged community and that have the authority to clean up or abate the effects of a waste.



KEY TERMS

Community. An inhabited area within a city or county that is comprised of no less than 10 dwelling units adjacent or in close proximity to one another.

Disadvantaged Unincorporated Community (DUC). A fringe, island, or legacy community in which the median household income is 80 percent or less than the statewide median household income.

Island Community. Any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary or the Pacific Ocean.

Fringe Community. Any inhabited and unincorporated territory that is within a city sphere of influence.

Legacy Community. A geographically isolated community that is inhabited and has existed for at least 50 years.

Local Agency Formation Commission (LAFCo). The commission designated by the State Legislature within each county to provide for the orderly growth and development within said county, including the review and evaluation of proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each LAFCo is empowered to approve, disapprove, or conditionally approve such proposals.

Municipal Service Review (MSR). A comprehensive study designed to better inform LAFCo, local agencies, and the community examining the provision of municipal services for the area.

Sphere of Influence (SOI). A plan for the probable physical boundaries and service area of a local agency, as determined by the Local Agency Formation Commission (LAFCo).



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Mendocino County. <http://www.co.mendocino.ca.us>. September 2019.

Mendocino LAFCo. <http://mendolafco.org>. September 2019.

Ukiah Valley Sanitation District. www.uvsd.org. September 2019.

DATA

U.S. Census Bureau. 2013-2017 American Community Survey (ACS) data.

Budget: 26371515

Application

City of Ukiah Code Enforcement Services Program

Please use the following link to view the application budget. This link will open in a new window.

<https://portal.ecivis.com/#/peerBudget/5B06AEAE-FF81-4393-A830-19FC588CCD75>

Budget Status

Not Approved

Budget Report

Passthrough Agency: California Department of Housing and Community Development
Program: CDBG - Non-Housing 2021
Stage: Pre-Award

Report Date: 07/27/2022
Requested By: Craig Schlatter
cschlatter@cityofukiah.com

Budget Items

Category	Title	Description	Units	Unit Cost	Extended Cost	Direct Cost	Indirect Cost	GL Account	Cost Share	Type
Activity										
	Code enforcement program activity	City code enforcement staff costs	0	\$0.00	\$0.00	\$465,000.00	\$0.00		\$0.00	Direct Cost
Activity Total			0	\$0.00	\$0.00	\$465,000.00	\$0.00		\$0.00	
General Administration										
	General administration	City staff costs	0	\$0.00	\$0.00	\$35,000.00	\$0.00		\$0.00	Direct Cost
General Administration Total			0	\$0.00	\$0.00	\$35,000.00	\$0.00		\$0.00	
Activity Delivery										
Activity Delivery Total			0	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
Other										
Other										
Other Total			0	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
Grant Total			0	\$0.00	\$0.00	\$500,000.00	\$0.00		\$0.00	

Budget Report, Created by Craig Schlatter, cschlatter@cityofukiah.com, 07/27/2022
Source: eCivis™ Portal
<http://www.ecivis.com/>



CITY OF UKIAH

CODE ENFORCEMENT POLICIES AND PROCEDURES

Statement of Code Enforcement Policies

[Last Updated: September 28, 2024]

The City of Ukiah sets forth the following policies for the enforcement of its laws and regulations, as contained in the City Code and Zoning Ordinance. These policies are provided to guide staff in the identification and abatement of code violations, and to educate the public about the City's code enforcement procedures.

The City respects the desire of all residents and business owners to enjoy their property. The City also believes that responsible use of private property includes respect for community values, as contained in the City Code and Zoning Ordinance. In order to ensure that these values are upheld, the City Code and Zoning Ordinance will be enforced according to the following principles.

1. The City will enforce its ordinances based on the violation, not the violator. The focus of our code enforcement is on the nuisance activity or structure, without regard to the source of the complaint or the nature or character of the violator.
2. The City will maintain the confidentiality of the source of any complaint. The City will enforce confirmed violations based on the idea that they are violations against the City, not against a neighbor or other individual parties.
3. The City will accept anonymous reports of violations when the violation can be observed from the public right-of-way. Reports concerning violations inside a building or not visible from the public right-of-way will require a written complaint with the reporting party's name and phone number included.
4. The City seeks compliance first and foremost. Enforcement efforts are directed at providing opportunities for solving problems and eliminating violations, not punishing people.

5. When sufficient opportunity for eliminating the nuisance has been provided, but no significant results obtained, the City will aggressively pursue relief in the courts, including civil and criminal remedies.
6. The City is aware that old age or infirmity may hamper the violator's ability to effect corrections according to a rigid schedule. A flexible approach to obtaining compliance will be considered when these conditions are present.
7. Health & safety violations are given the highest priority so that human life and property are protected without delay. Violations of 'general welfare' rules such as zoning will be addressed at a second level of attention, allowing reasonable solutions to be implemented in reasonable time.

PREAMBLE:

Ukiah City Code Enforcement plays an important role in ensuring that properties within the city are maintained in a safe and healthy manner. One of the most significant issues that Code Enforcement deals with is public nuisances, which can have a negative impact on the quality of life for residents and visitors alike. In order to address this issue effectively, it is important to establish a policy for Ukiah City Code Enforcement that declares public nuisances and outlines the procedures for addressing them.

POLICY STATEMENT:

It is the policy of Ukiah City Code Enforcement to declare public nuisances and take action to abate them in accordance with **Ukiah City Code Section §3452: Declaration of Nuisances**. A public nuisance is any condition that is likely to injure the health, safety, or welfare of the public or interfere with the reasonable use and enjoyment of property. Examples of public nuisances include, but are not limited to:

- Accumulations of garbage, trash, or debris on private property that create a health hazard or attract rodents or other pests.
- Abandoned or inoperable vehicles that are stored on private property in a manner that is visible from a public street or sidewalk.
- Overgrown vegetation or weeds that create a fire hazard or obstruct public rights-of-way.
- Unsecured or abandoned buildings that pose a danger to public safety.
- Noise, vibration, or odor emissions that are excessive and interfere with the reasonable use and enjoyment of adjacent properties.
- Any other condition that is determined by Ukiah City Code Enforcement to be a public nuisance.

PROCEDURES:

When Ukiah City Code Enforcement receives a complaint or otherwise becomes aware of a potential public nuisance, the following procedures will be followed:

Investigation: Ukiah City Code Enforcement will investigate the alleged public nuisance to determine whether it exists and whether it violates any city ordinances or state laws.

Documentation: Ukiah City Code Enforcement will document violations from the public right-of-way utilizing photographs and/or videos. Documentation will be added to the case file as well as added to the CITIZENSERVE record for violations of City Code.

Notice: If a public nuisance is found to exist, Ukiah City Code Enforcement will provide notice to the property owner or responsible party, informing them of the nature of the violation and the steps that must be taken to abate it. The notice will also inform the property owner of their right to a hearing to contest the determination of the public nuisance.

Abatement: If the property owner fails to abate the public nuisance within the time period specified in the notice, Ukiah City Code Enforcement will take action to abate the nuisance. This may include hiring contractors or city staff to remove trash or debris, mow overgrown vegetation, board up unsecured buildings, or take other necessary steps to eliminate the public nuisance.

Review: This policy and procedure will be reviewed periodically to ensure compliance with current city codes and ordinances and to make any necessary updates.

Cost Recovery: The property owner will be responsible for all costs associated with abating the public nuisance, including any administrative fees, contractor costs, and legal fees. Ukiah City Code Enforcement will take appropriate steps to recover these costs from the property owner, including placing liens on the property if necessary.

Review: This policy and procedure will be reviewed periodically to ensure compliance with current city codes and ordinances and to make any necessary updates.

INTRODUCTION:

In order to effectively manage Code Enforcement cases, the City of Ukiah uses the CITIZENSERVE software system. The purpose of this policy is to establish the procedures for establishing a Code Enforcement cases in CitizenSERVE for the City of Ukiah.

POLICY STATEMENT:

It is the policy of the City of Ukiah to establish Code Enforcement cases in CitizenSERVE for all potential violations of municipal codes and ordinances. This includes, but is not limited to, violations related to building and construction, land use and zoning, health and safety, and public nuisances. Code Enforcement cases will be established in CitizenSERVE according to the following procedures.

PROCEDURES:

Complaint Receipt: Code Enforcement cases may be initiated in response to complaints received from the public, as well as through inspections and other proactive measures by Code Enforcement staff.

Case Creation: When a potential violation is identified, Code Enforcement staff will create a new case in CitizenServe. This will involve entering the relevant information into the system, including the date of the violation, the location of the violation, and a description of the violation.

Assigning Staff: The Code Enforcement staff will assign a staff member to the case. This staff member will be responsible for conducting the necessary investigations, communicating with property owners and other stakeholders, and taking any necessary enforcement actions.

Case Tracking: The CitizenSERVE system will be used to track the progress of the Code Enforcement case. This will include recording all communications with property owners and other stakeholders, documenting any enforcement actions taken, and recording the outcome of the case.

Compliance: The goal of Code Enforcement cases is to achieve compliance with municipal codes and ordinances. Code Enforcement staff will work with property owners and other stakeholders to achieve voluntary compliance whenever possible. If voluntary compliance cannot be achieved, Code Enforcement staff will take necessary enforcement actions, including issuing fines, issuing orders to correct violations, and pursuing legal action if necessary.

Review: This policy and procedure will be reviewed periodically to ensure compliance with current city codes and ordinances and to make any necessary updates.

INTRODUCTION

In order to conduct inspections in a fair, effective, and transparent manner, it is important to establish a clear policy for Code Enforcement inspections. This policy outlines the procedures for Code Enforcement inspections within the City of Ukiah.

POLICY STATEMENT

It is the policy of the City of Ukiah Code Enforcement to conduct inspections of properties within the City to ensure compliance with municipal codes and ordinances. These inspections will be conducted in accordance with the following procedures.

PROCEDURES

Inspection Priorities: Code Enforcement staff will prioritize inspections based on the severity of the potential violations and the level of risk to public health and safety. High priority inspections will be conducted immediately, while lower priority inspections may be scheduled at a later date.

Notification: Prior to conducting an inspection, Code Enforcement staff will notify the property owner or responsible party of the date and time of the inspection. In cases where a violation poses an immediate threat to public health and safety, an inspection may be conducted without prior notification.

Identification: Code Enforcement staff will identify themselves and provide identification upon arriving at the property for the inspection.

Scope of Inspection: Code Enforcement staff will inspect the property for potential violations of municipal codes and ordinances. The scope of the inspection will be based on the specific allegations or complaints received, as well as any other potential violations that may be observed during the inspection.

Documentation: Code Enforcement staff will document the results of the inspection, including any potential violations observed and any communication with the property owner or responsible party.

Compliance: If potential violations are observed during the inspection, Code Enforcement staff will work with the property owner or responsible party to achieve compliance with municipal codes and ordinances. This may involve issuing orders to correct violations, issuing fines, or pursuing legal action if necessary.

Follow-Up: Code Enforcement staff will conduct follow-up inspections as necessary to ensure compliance with municipal codes and ordinances.

Review: This policy and procedure will be reviewed periodically to ensure compliance with current city codes and ordinances and to make any necessary updates.

ABANDONED VEHICLE ABATEMENT

Code Enforcement vehicle towing policy and procedure.

Definitions:

- **AVA:** Abandoned Vehicle Abatement
 - **72Hr:** A violation of city code sections 22669 (D), 22651 (K), 3452 (C)
 - **CEO:** Code Enforcement Officer
 - **CSO:** Customer Service Officer
 - **Patrol Officer:** Unit assigned to patrol duties
-

AVA/72Hr Program Schedule:

- **Monday AM:** The vehicle will be tagged/marked with a green warning notice.
 - **Monday PM:** Vehicle will be towed if marked on Thursday.
 - **Thursday AM:** Vehicle will be towed if marked on Monday.
 - **Thursday PM:** The vehicle will be tagged/marked with a green warning notice.
-

Procedure for Tagging/Marking:

- All vehicles in violation will be tagged with a green sticker, whether they are occupied or not, based on the schedule above.
 - The Code Enforcement Officer (CEO) may request the presence of a Customer Service Officer (CSO) or Patrol Officer if assistance is needed for tagging.
 - The CEO has the authority to approve a tag or tow outside of the established schedule when deemed necessary or if requested by a supervisor.
-

Procedure for Towing:

- All vehicles in violation that have been tagged for a minimum of 72 hours will be revisited and towed.
- If the CEO identifies that the vehicle has an occupant, the CEO will contact a CSO or Patrol Officer.
- Upon arrival, the CSO or Patrol Officer will decide whether the vehicle will be towed and whether the occupants will be removed.
- The CEO will assist with the tow process as necessary.
- After the CEO initiates the tow order, they may be released by the CSO or Patrol Officer.

Review: This policy and procedure will be reviewed periodically to ensure compliance with current city codes and ordinances and to make any necessary updates.

Agenda Item No: 13.b.MEETING DATE/TIME: 3/20/2024ITEM NO: 2024-1609

AGENDA SUMMARY REPORT

SUBJECT: Receive 2023 Annual Report on General Code Enforcement Activities and Provide Direction to Staff as Necessary.

DEPARTMENT: Community Development

PREPARED BY: Sean Connell

PRESENTER: Sean Connell, Code Enforcement Inspector; Matt Keizer, Chief Building Official/Code Enforcement Official

ATTACHMENTS:

1. Code Enforcement Annual Report 2023
2. Annual Report Pictures

Summary: Council will receive the 2023 annual report and update from the Code Enforcement Division and provide direction to Staff as necessary.

Background: On April 7, 2021, Council adopted Resolution No. 2021-12, authorizing submittal of a \$1 million State Community Development Block Grant (CDBG) to the California Department of Housing and Community Development (HCD) for a housing rehabilitation program and code enforcement program. The grant was awarded by HCD in 2022, enabling the standing up of the Community Development Department's new Code Enforcement Division and filling of a full-time Code Enforcement Inspector position (January 2023) to proactively enforce code enforcement issues within the six (6) identified census tract/block group areas (CDBG funding can only be used for the reimbursement of the code enforcement inspector's time in primary residential areas where at least 51% of residents have incomes less than 80% Area Median Income).

This is the first calendar year annual report (2023) submitted by Staff related to activities of this new Division. See Attachment 1 for an overview.

Discussion: In 2023, 300 inspections were conducted by the Code Enforcement Division with an average case time of 60 days. The Division issued seven (7) Notices of Violation and had one (1) project declared a public nuisance by the City Council (September 2023). The Division also completed multiple rental unit inspections, identifying health and safety violations and ensuring proper cleanup had occurred. Addressing these issues has produced positive impacts for both the affected parcels and surrounding neighborhood(s), as demonstrated by the Before and After photos of code enforcement remediation activities in Attachment 2.

For calendar year 2024, the Code Enforcement Division intends to expand its role in partnership with the Ukiah Police Department to assume non-criminal abatement responsibilities related to the City's Abandoned Vehicle Abatement program. The Division also plans to expand educational and training offerings to help administer the City Code of Ordinances. Trainings identified are: Mold Inspector/ Remediation Certification, Residential Building Inspector Certifications in plumbing, mechanical, and electrical specifications, Rental Housing Inspector, Commercial Building Inspector, as well as International Code Council certified training in the Code Enforcement areas.

Recommended Action: Receive 2023 annual report on general code enforcement activities and provide direction to Staff as necessary.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Matt Keizer, Chief Building Official/Code Enforcement Official

DIVERSITY-EQUITY INITIATIVES (DEI): Goal 4 – Identify and actively engage underrepresented communities in which to retain, expand, develop, and implement programs.

CLIMATE INITIATIVES (CI): 10a – Protect from dangerous emission by preventing fires.

GENERAL PLAN ELEMENTS (GP):PFS-4 To enforce Citywide codes and ordinances, with special attention regarding private property maintenance, abandoned vehicles, rubbish/weeds, and public nuisances.

Approved: 
Sage Sangiacomo, City Manager

Code Enforcement Annual Report 2023

Code Compliance Division (232)

YEAR-SEQUENCE	OBJECTIVES	COMPLETION NOTES	COMPLETION DATE
2023-1 (Near Term)	Building Official and Inspectors to attend training through the California Association of Code Enforcement Officers (CACEO).	Matt Keizer Waylon Hockemier Sean Connell	06/19/2023
2023-2 (Near Term)	Develop and post full-time code enforcement services position. Recruit for and fill position.	Hired Sean Connell, Code Enforcement Inspector II	01/04/2023
2023-3 (Near Term)	Send new recruit to attend training through the California Association of Code Enforcement Officers.	Completed training 06/19/2023 <i>Certified Code Enforcement Officer 10/4/2023</i>	06/19/2023
2023-4 (Near Term)	Work with Building Division and Ukiah PD to identify Code Compliance issues, investigate, and help owners come into compliance with the applicable codes.	- Acquire <i>Abandoned Vehicle Abatement</i> from U.P.D. - Coordinated enforcement of Business License Ordinance - Code Enforcement Graffiti Referral Program	01/03/2024 02/01/2024 02/13/2024
2023-5 (Intermediate Term)	Focus on repeat offenders and properties with multiple violations to bring them into compliance.	- Secure/ Process 725 Porzio to Cost Recovery - Alleviate continued violator in Empire Gardens - Identify longstanding violations that are in need of additional assistance to come into compliance. Due to the willing/ unable scale.	04/09/2023 02/29/2024 Ongoing
2023-6 (Intermediate Term)	Focus on motels being used as permanent residences, and help owners bring buildings up to current code standards for extended stay use.	- Internal City Hotels in the construction process getting regular inspection. - Provide information to hotel owners/ managers of City rights and rules.	ONGOING EFFORT
2023-7 (Long Term)	Deploy customer service survey; create and implement systems, programs, and processes from best practices and survey input to develop a sustainable code enforcement program with limited impact to the General Fund.	- Developing for circulation critical input - Dump Fee wavier program/ Bi-annual large dump day via C&S Waste solutions - Implement diversion of violation fee's to Code Enforcement budget	ONGOING EFFORT
2024-2 (Near Term)	Work with Fire Prevention Division to identify code enforcement issues within the city limits, investigate and help owners come into compliance with applicable codes.	- Follow up on Annual balcony inspections. - Coordinate commercial inspections for compliance with city/ state codes - Identify hydrants without fire lane marking or reflective identifier.	ONGOING EFFORT
2024-3 (Near Term)	Work with other divisions and departments to institute an online public interface for code enforcement complaints and communication.	- Citizen Serve online platform 09/01/2023. - Online Reporting activated 03/01/2024	Completed

2024-6 (Intermediate Term)	Attend MOLD Inspector Specialist training.	Scheduled to attend 04/01/2024	
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CLOSE TIME REPORTING

Days to Closure	Number of Cases Closed
<i>Same Day</i>	<i>14</i>
<i>1 Day</i>	<i>4</i>
<i>2-7 Days</i>	<i>9</i>
<i>8-14 Days</i>	<i>8</i>
<i>15-30 Days</i>	<i>26</i>
<i>31-60 Days</i>	<i>9</i>
<i>61-90 Days</i>	<i>3</i>
<i>91-120 Days</i>	<i>4</i>
<i>120+ Days</i>	<i>3</i>

ACTIVITY BY TYPE

Activity	Number Completed
Initial Investigation	104
Inspections	44
Reinspection's	79
TOTAL	228

INTERDEPARTMENTAL COLLABORATIONS

Department	Activities
Ukiah Police Department	- Abandoned Vehicle Abatement - Business Operating w/out License
Ukiah Electric Billing	- Communication for power removal. - Assistance in review of abnormal safety situations
Ukiah Streets Division	Redzone painting for Fire, Life, Safety access
Ukiah Fire Authority	Oversight of required construction due to annual inspections

ATTACHMENT 2



Initial Investigation: Violation of U.C.C. §3452 (B)(D)(J)



Compliance Inspection: CASE CLOSED 3/13/2023



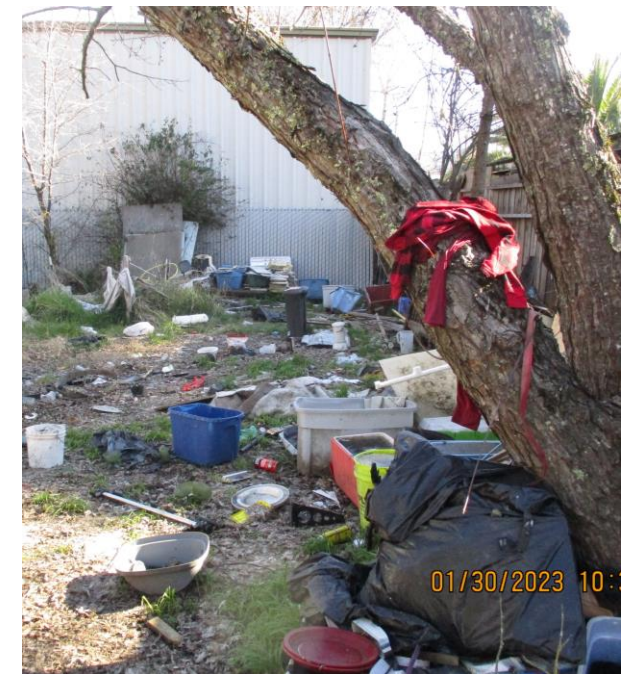


Compliance Inspection: CASE CLOSED 3/07/2023





Compliance Inspection: CASE CLOSED 3/01/2023







AGENDA SUMMARY REPORT

SUBJECT: Receive 2024 Annual Report on Code Enforcement Activities.

DEPARTMENT: Community
Development

PREPARED BY: Sean Connell, Code Enforcement Inspector II, Matt
Keizer, Chief Building Official / Fire Code Official
UVFD

PRESENTER: Sean Connell, Code Enforcement Inspector II

ATTACHMENTS:

1. 2024 Code Enforcement Annual Report
2. 13a Presentation given at Meeting

Summary: The Council will receive the 2024 annual report and update from the Code Enforcement Division and provide direction to Staff as necessary.

Background: On April 7, 2021, the City Council adopted Resolution No. 2021-12, authorizing the Grants Management Division to submit a \$1 million application for State Community Development Block Grant (CDBG) funding to the California Department of Housing and Community Development (HCD) for a Housing Rehabilitation Program and a Code Enforcement Program. The grant was awarded by HCD in 2022, enabling the standing up of the Community Development Department's new Code Compliance (Enforcement) Division and filling of a full-time Code Enforcement Inspector position (January 2023) to proactively enforce code enforcement issues within the six (6) identified census tract/block group areas (CDBG funding can only be used for the reimbursement of the code enforcement inspector's time in primarily residential areas where at least 51% of residents have incomes less than 80% Area Median Income).

The first (2023) Code Enforcement Report was presented by Staff to Council on March 20, 2024. This 2024 report (Attachment 1) is the second consecutive annual report submitted by Staff and covers the period January 1, 2024, to December 31, 2024. For this 2024 report, other ordinances for which code enforcement services are utilized are also summarized. These include Shopping Carts, Tobacco and Nitrous Oxide, and Cannabis.

Discussion: The Code Enforcement Division completed over 350 inspections in 2024, with an average case length of 23 days. Below are summaries related to code enforcement efforts for specific programs, campaigns, and ordinances.

Abandoned Vehicle Abatement (AVA):

The Division, as discussed in 2023, assumed responsibility for the City's Abandoned Vehicle Abatement program, removing 25 vehicles as "junk". A total of 52 abandoned vehicles were removed from the public streets of Ukiah.

Nuisance Abatement:

The Division issued six (6) Notices of Violation for properties with egregious violations that could not go through the standard courtesy noticing process. The Code Enforcement Inspector also completed Mold Inspector/ Remediation Certification (April 2024) with immediate improvements across multiple rental unit inspections, identifying health and safety violations and ensuring proper cleanup had occurred. Addressing

these issues has produced positive impacts for both the affected parcels and surrounding neighborhoods.

Tobacco and Nitrous Oxide:

The Division completed the required annual Tobacco and Nitrous Oxide inspections for all 23 listed retailers within the City. To date, Staff has issued no fines, suspensions, or revocations of tobacco licenses. Staff has found that education to retailers has been the most effective method of securing compliance. No retailers were found to be in violation, through multiple inspections completed in 2024.

Abandoned Shopping Carts:

While abandoned shopping carts remain a priority for Staff, the complaints received are sporadic and promptly addressed. Additionally, when abandoned carts are collected, trends or geographic clusters are quickly identified. To address shopping cart-related issues moving forward, City Staff will continue to rely upon Ordinance No. 1222, State Law (Business and Professions Code), as well as the identification of trends or patterns that necessitate more nuanced and effective enforcement, and then follow-up with the business to determine site-specific solutions. For example, in 2024, Staff identified that a cluster of carts from a single store were accumulating in the Corporation Yard. Upon closer examination, Staff worked to return carts to the purveyor, and reviewed their operational policies and improvements to reduce the number of removed carts moving forward. In this instance, the store adopted more stringent storage and usage policies (limiting carts to the interior of the store), as well as equipping them with RFID tags to restrict their removal.

Cannabis Businesses:

Currently, there are six active cannabis-related businesses operating within Ukiah. Of these, five are cannabis commercial-retail establishments, and one is engaged in manufacturing, processing, and distribution. Additionally, one approved cannabis distribution business has obtained the necessary entitlements but is not yet operational. At present, one business has an active cannabis consumption area (Heritage Mendocino), while two others have received approval for amendments to their Use Permits to include on-site cannabis consumption (Vibe Ukiah and Emerald Sun Manufacturing, LLC), though they are not yet operational.

Overall, the standards set forth in the City's cannabis regulations are functioning as intended, in line with the expectations and efforts of the cannabis ad-hoc committee, Planning Commission, and City Council. The discretionary review procedures for both minor and major use permits provide the necessary level of oversight, and the cost recovery process is sufficient to cover the workload and Staff time associated with application processing. For example, the City processed a handful of discretionary cannabis permits in 2024, including modifications and renewals. Recent amendments aimed at streamlining and clarifying cannabis regulations have been beneficial, particularly the ability to administratively withdraw applications and reduce the frequency of required renewals.

Since 2022, no reports of nuisance-related impacts have been received from the Ukiah Police Department, Code Compliance Division, or neighboring property owners. Throughout the year, Planning Division Staff work closely with other departments, particularly the Ukiah Police Department, to process background checks and ensure that cannabis businesses are in compliance with local regulations and their approved discretionary permits. In 2024, one cannabis related business was evaluated by the Department of Cannabis Control (DCC) via an unannounced inspection. This was considered a routine compliance inspection, and Planning Staff supported the review by providing associated materials and information. Staff is presently awaiting a final report from the DCC.

For calendar year 2025, the Code Enforcement Division intends to expand its role in residential rental housing inspections, and vacant building registration and tracking. The Division also plans to expand educational and training offerings to help administer the City Code of Ordinances to both Staff and the public.

Recommended Action: Receive the 2024 annual report on Code Enforcement activities and provide direction to Staff as necessary.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: N/A

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Matt Keizer, Chief Building Official; Jesse Davis Chief Planning Manager; Katherine Schaefer, Planning Manager

STRATEGIC PLAN (SP):**SP 1A** - Build neighborhoods that provide access for all to a compatible balance of housing, employment, commercial, medical, education, and recreational resources; **SP 1B** - Provide services that support a high quality of life for all residents, including fostering diverse, inclusive, sustainable, and accessible neighborhoods.

CLIMATE INITIATIVES (CI):**5a** – Update zoning ordinance; **10a** – Protect from dangerous emission by preventing fires.

GENERAL PLAN ELEMENTS (GP):GP-A6 - Safety Element

Approved: 
Sage Sangiacomo, City Manager

CODE ENFORCEMENT ANNUAL REPORT 2024

Code Compliance Division (232)

DIVISION ACCOMPLISHMENTS AT A GLANCE

YEAR-SEQUENCE	OBJECTIVES	COMPLETION NOTES	COMPLETION DATE
2024-2	Work with Fire Prevention Division to identify code enforcement issues within the city limits, investigate and help owners come into compliance with applicable codes.	- Follow up on Annual balcony inspections. - Identify hydrants without fire lane marking or reflective identifier.	CONTINUAL EFFORT
2024-3	Work with other divisions and departments to institute an online public interface for code enforcement complaints and communication.	Citizen Serve online platform 09/01/2023. Online Reporting activated 03/01/2024	COMPLETED
2024-4	Provide an annual code enforcement report to City Council	Annual Completion	COMPLETED
2025-1	Attend MOLD Inspector Specialist training.	Completed 04/01/2024	COMPLETED
2025-2	Build out and implement a residential rental inspection program	- Rough Draft has been drafted for review - Community Meetings for stakeholder feedback - Pending Agenda Calendar date	Prior to May 2025
2025-3	Focus on motels being used as permanent residences, and help owners bring buildings up to current code standards for extended stay use.	- Internal City Hotels in the construction process getting regular inspection. - Provide information to hotel owners/managers of City rights and rules.	ONGOING EFFORT
2023-7	- Deploy customer service survey; - Create and implement systems, programs, and processes from best practices and survey input to develop a sustainable code enforcement program with limited impact to the General Fund.	- Survey is active and collecting data for Division review 1/1/2025 - Compiling information, data, BMP from other jurisdictions	12/1/2023

CASE CLOSURE TIMES

Days to Closure	Number of Cases Closed	Percentage increase from 2023
<i>Same Day</i>	22	57%
<i>1 Day</i>	16	300%
<i>2-7 Days</i>	57	533%
<i>8-14 Days</i>	48	500%
<i>15-30 Days</i>	48	85%
<i>31-60 Days</i>	28	211%
<i>61-90 Days</i>	14	366%
<i>91-120 Days</i>	5	25%
<i>120+ Days</i>	16	433%

MAJOR ACTIVITY BY TYPE

Activity	Number Completed
Abandoned Vehicle Abatement	25
Attractive Nuisance	12
Dangerous, Unsightly	9
Overgrown Vegetation	9
Construction w/out Permit	9
Public Nuisance	7
Substandard Building	6
Abandoned Household Items	5
Existence of household garbage	5
Lack of Property Maintenance	5
Unauthorized trash accumulation	4
Entitlement Deviation	4
Disturbing the Peace	3
RV as living Space	3
Outdoor Storage of Personal Property	2
General Dilapidated	2
Illegal outdoor sales	2
Illegal public nuisance	2
Commercially zoned violations	2
Other	18
Annual Tobacco Inspection	23

INTERDEPARTMENTAL COLLABORATIONS

Department	Activities
UKIAH POLICE DEPARTMENT	• Collaborative Enforcement
UKIAH ELECTRIC BILLING	• Communication for power removal.
UKIAH STREETS DIVISION	• Redzone painting / Fire Hydrant painting • Public space clean-up
UKIAH FIRE AUTHORITY	• Balcony Inspection follow-up • Fire hydrant identification

TOBACCO & NITROUS OXIDE INSPECTION	
NUMBER OF INSPECTIONS	23
NUMBER OF VIOLATIONS	0

NITROUS OXIDE & TOBACCO

Nitrous Oxide - Ordinance No. 1220; Tobacco - Ordinance No. 1232

Since the adoption of the prohibition of Nitrous Oxide Sales [Ord No. 1220] at the Ukiah City Council's regular meeting on February 16, 2022, enforcement of the Ordinance has been delegated to the Code Enforcement Division of the Community Development Department. In addition, Ukiah City Council adopted the Flavored Tobacco Sales ban [Ord. No. 1232] at the May 3, 2023, meeting. In 2024, the Code Enforcement Division conducted 23 inspections for Tobacco and Nitrous Oxide compliance across all active retailers, spread throughout the year. No violations were found within the City. The Code Enforcement Division continually responds to citizen complaints, as well as coordinate enforcement efforts with supporting departments like the Police and/or County enforcement teams.

SHOPPING CARTS

Ordinance No. 1222

In 2024, the number of abandoned shopping carts collected in the City of Ukiah's corporation yard remained consistent with previous years. Staff has observed that the carts collected within the corporation yard are influenced by geographic factors, which may give the impression that certain offenders are more problematic than others. Specifically, stores located closer to the corporation yard tend to contribute a higher proportion of abandoned carts, as City Staff can more efficiently collect and deposit them at the yard. In contrast, carts from stores located farther away are typically returned directly to the store, rather than being transported to the corporation yard.

Additionally, in 2024, the number of citations issued by the Ukiah Police Department increased slightly compared to 2023. Under UCC §6096, the unauthorized removal, alteration, or possession of a shopping cart is classified as a public nuisance and subject to citation. The following outlines the number of shopping cart-related violations from 2020 to 2024, as reported by the Ukiah Police Department:

Shopping Cart Citations by Year	
2024	62
2023	56
2022	55
2021	9
2020	40

During the year, one business was instructed to collect the carts or face a punitive fee and the potential destruction of their abandoned carts. As a result of Staff correspondence, the carts were promptly retrieved.

In general, abandoned shopping carts remain a sporadic yet visible nuisance. However, the issue is being effectively managed through the coordinated efforts of multiple divisions within the City organization, including: *Planning Division, Public Works - Streets Division, Community Services Department, and the City Attorney's Office.*

CANNABIS OPERATIONS

Ordinance Nos. 1176; 1182; 1186; 1190; 1226; 1230

Currently, there are **six** (6) active cannabis-related businesses operating within Ukiah. Of these, five are cannabis commercial-retail establishments, and one micro-business engaged in manufacturing, processing, and distribution. Additionally, one approved cannabis distribution business has obtained the necessary entitlements but is not yet operational. At present, one business has an active cannabis consumption area, while two others have received approval for amendments to their Use Permits to include on-site cannabis consumption, though they are not yet operational.

Overall, the standards set forth in the City's cannabis regulations are functioning in line with the expectations and efforts of the cannabis ad-hoc committee, Planning Commission, and City Council. The discretionary review procedures for both minor and major use permits provide the necessary level of oversight, and the cost recovery process is sufficient to cover the workload and Staff time associated with application processing. For example, the City processed a handful of discretionary cannabis permits in 2024, including modifications and renewals. Recent amendments aimed at streamlining and clarifying cannabis regulations have been beneficial, particularly the ability to administratively withdraw applications and reduce the frequency of required renewals.

Since 2022, no reports of nuisance-related impacts have been received from the Ukiah Police Department, Code Enforcement Division, or neighboring property owners. Throughout the year, Planning Division Staff work closely with other departments, particularly the Ukiah Police Department, to process background checks and ensure that cannabis businesses are in compliance with local regulations and their approved discretionary permits. In 2024, one cannabis related business was evaluated by the Department of Cannabis Control (DCC) via an unannounced inspection. This was considered a routine compliance inspection, and Planning Staff supported the review by providing associated materials and information. Staff is presently awaiting a final report from the DCC.



City of Ukiah

COMMUNITY DEVELOPMENT DEPARTMENT

**ANNUAL REPORT ON CODE ENFORCEMENT DIVISION
ACTIVITIES AND PROGRESSION**

CALENDAR YEAR: 2024

ABANDONED VEHICLE ABATEMENT



ABANDONED VEHICLE ABATEMENT



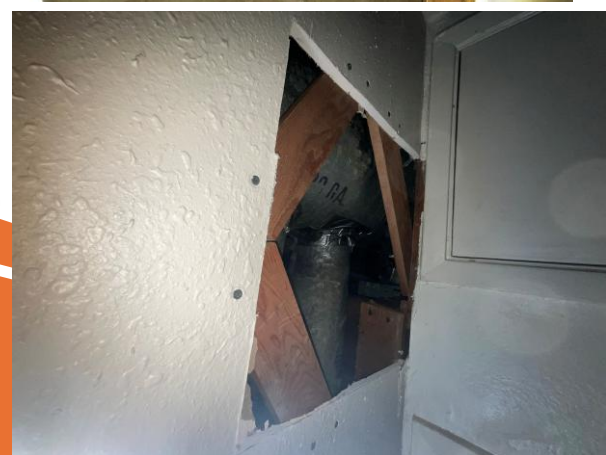
RENTAL HOUSING VIOLATIONS



RENTAL HOUSING VIOLATIONS



CONSTRUCTION W/OUT PERMIT



OVER GROWN VEGETATION



NEIGHBORHOOD BLIGHT



NEIGHBORHOOD BLIGHT



ONLINE COMPLAINT SUBMISSION

Building, Code Enforcement, and Fire Prevention Services

The Building, Code Enforcement, and Fire Prevention Services Divisions are responsible for reviewing plans, issuing building and fire permits, and performing field inspections to ensure compliance with local and state mandated regulations related to building construction, fire code, maintenance, rehabilitation, and accessibility. The Divisions partner with the **Ukiah Police Department** for code enforcement activities and the **Ukiah Valley Fire Authority** for fire prevention activities.

The primary goal of the three Divisions is to provide quality services to the community in a manner that is comprehensive, efficient, knowledgeable, and helpful to the public. Further assistance related to the permitting of your construction project is available on the Apps & Handouts, and More Help tabs below.

1

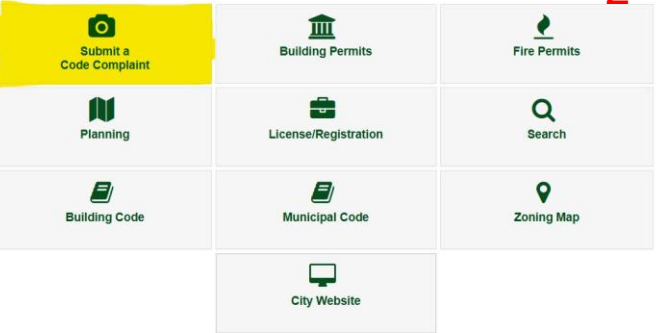
Citizenserve Login

1. Located on the Building Services website, look for the **CITIZENSERVE LOGIN** interactive button.

Online Submission Portal

The City of Ukiah offers residents the convenience of accessing municipal services online. Please select a link below to get started.

2



2. Click the **“SUBMIT CODE COMPLAINT”** to direct report a violation of city code.

3

SUBMIT A COMPLAINT

Home / Services / Code Complaints / Submit a complaint

Describe your complaint:

Indicates a required field

Type:

Code Complaint

Address or Parcel #:

Ukiah

CA

95482

FIND ADDRESS

3. Follow the prompts; if the address is outside of City jurisdiction the system will not allow the submission.

ONLINE COMPLAINT: STAFF VIEW

Online Complaint	25-000159	02/21/2025	300 Seminary AVE	community blight	
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This appears in the *My Tasks* list of the CitizenServe program. Allowing Code Enforcement officers to respond to complaints in a timely manner. When submitting an online complaint, there is no intermediary between complainant and code officer. Meaning a more effective and efficient process to compliance.

PLEASE NOTE:

The City of Ukiah **WILL NOT** release the names of complainants for any reason without the request of a legal court order. All personal data will be, and remain, redacted from public requests to protect citizens from unexpected retaliation from submitting a complaint.

The City’s Code Enforcement Division will go through the effort to protect a complainant's identity, to prevent any unintended harm from our citizens.

A large, dark evergreen tree stands prominently in the center of the frame. The background shows a park-like setting with other trees, a grassy field, and several houses. A playground structure is visible on the right side. The sky is overcast with grey clouds. The text "THANK YOU FOR YOUR TIME AND RECEIVING THIS REPORT" is overlaid in a bold, red, serif font across the middle of the image.

**THANK YOU FOR YOUR TIME AND RECEIVING
THIS REPORT**

RESOLUTION NO. 2025-__

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH ACKNOWLEDGING ACOMPLISHMENTS AND CONFIRMING ACTIVITY COMPLETION OF COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) ECONOMIC DEVELOPMENT ACTIVITY: CITY OF UKIAH BUSINESS ASSISTANCE PROGRAM

WHEREAS, on April 7, 2021, the City Council adopted Resolution 2021-12 authorizing the submittal of a State Community Development Block Grant (CDBG) application in response to the 2021 CDBG Notice of Funding Availability (NOFA) issued by the State Department of Housing and Community Development (HCD); and

WHEREAS, the City was awarded \$500,000 in State CDBG funds for Standard Agreement 21-CDBG-NH-20004 for the “City of Ukiah Code Enforcement Services Program” and executed the Standard Agreement on September 9, 2022; and

WHEREAS, the project has been completed, grant activity funds have been expended, and the City has been approved for reimbursement of \$465,000 by HCD for all project Activity expenses, as well as \$35,000 in in General Administration expenses; and

WHEREAS, the State CDBG program requires that City staff present a report on project accomplishments and performance after the project has been completed; and

WHEREAS, the State CDBG program requires the City Council to conduct a public hearing to receive public comment and adopt a Resolution acknowledging accomplishments, confirming activity completion, and confirming approval of reimbursement of all grant funds from HCD requested by the City through Standard Agreement 21-CDBG-NH-2004.

NOW, THEREFORE, BE IT RESOLOVED as follows:

1. The City Council of the City of Ukiah has reviewed the activity staff report and acknowledges the project accomplishments, which include the completion of the “City of Ukiah Code Enforcement Services Program”;
2. The City Council confirms activity completion;
3. The City Council confirms that the City has been approved for reimbursement of the grant-related funds from the State and is ready to close out standard agreement 21-CDBG-NH-20004.

THE FOREGOING RESOLUTION WAS ADOPTED at a regular meeting of the City Council of the City of Ukiah held on the 17th day of September, 2025, by the following roll call vote.

AYES:

NOES:

ABSTAIN:

ABSENT:

Douglas F. Crane, Mayor

STATE OF CALIFORNIA

City of Ukiah

ATTEST:

I, Kristine Lawler, City Clerk of the City of Ukiah, State of California, hereby certify the above and foregoing to be a full, true, and correct copy of a resolution adopted by said City Council on this 17th day of September, 2025.

Kristine Lawler, City Clerk
of the City of Ukiah of the State of California

By: _____



AGENDA SUMMARY REPORT

SUBJECT: Continue Hearing to Resolve Bid Protests Received for Specification No. 25-04 for the Remodel of 501 South State Street, and Approve Final Award.

DEPARTMENT: Finance

PREPARED BY: Myles Fisette, Purchasing Manager

PRESENTER: Myles Fisette, Purchasing Manager

ATTACHMENTS:

1. Spec 25-04 Remodel of 501 South State Street
2. Bid Tabulation Spec 25-04 Remodel of 501 South State Street
3. Bid Protest- Remodel BofA
4. Bid Protest Response BofA
5. Cortlandt Roofing Ukiah Bank of America Proposal -
6. Memo re proposed decision
7. Written Decision 1 Denying Protest
8. Written Decision 2 Upholding Bid Protest
9. DMR Bid
10. Cupples Bid
11. BofA Specs Sections 5 & 7

Summary: Council will continue the hearing commenced at its regular meeting on September 3, 2025, to consider the bid protest from the second-lowest bidder, Cupples and Sons Construction Inc., to the apparent lowest bid from DMR Builders, and make a final determination based on evidence and argument presented during the hearing, including the bid protest and Staff's recommendation to award a contract to DMR Builders in the amount of \$3,487,850 for Specification No. 25-04, Remodel of 501 South State Street.

Background: In 2020, the City acquired the property located at 501 S. State Street with the intention of utilizing it as a centralized location for providing municipal services. In May 2021, a contract was awarded to The KPA Group to develop plans and specifications for barrier removal at the site, a task that was successfully completed in October 2021. A State Community Development Block Grant (CDBG) in the amount of \$50,000 was applied for and awarded to the City to complete the accessibility improvements design portion of the project. Following completion of the CDBG-funded phase of the project, in January 2023, The KPA Group was awarded a contract for Phase 2 Design services. These services included project management coordination, schematic design, design development, construction documents, and bidding services. On July 16, 2025, Council approved the design and directed Staff to proceed with a Request for Bid (Attachment 1) for the construction phase.

Discussion: On July 17, 2025, a request for bids notice for the project was released to contractors from the City's Qualified Bidders list and Northern California Builders Exchanges and posted to the City's website. Bids were opened on August 19, 2025, with six (6) bidders responding. A copy of the bid tabulation is provided as Attachment 2. The bid from the apparent low bidder, DMR Builders (Attachment 9), was totaled incorrectly. The bid was submitted with a total of \$3,487,490 but was calculated through the line item pricing to be \$3,487,850. Similarly, the bid from the apparent second lowest bidder, Cupples and Sons Construction Inc. (Attachment 10), was submitted with a total of \$3,781,632, while the corrected total based on line item pricing is \$3,730,932. Staff recommends that the City Council waive these irregularities, as they do not affect the bid

outcome or the determination of the lowest responsible bidder.

On August 22, 2025, Cupples and Sons Construction Inc., the second lowest bidder, submitted a bid protest (Attachment 3) against the bid presented by the apparent low bidder, DMR Builders. Cupples and Sons Construction's protest claims that DMR's bid violates California Public Contract Code ("PRC") Section 4104, which requires bids for public works projects to list all subcontractors who the bidder intends to use for work in excess of one-half of 1 percent of the prime contractor's total bid. Section 4101 is part of the Subletting and Subcontracting Fair Practices Ac. [PRC Sections 4100 - 4114.] The bidder must include in its bid the name, the location of the place of business, the California contractor license number, and public works contractor registration number for each listed subcontractor. Cupples and Sons Construction's bid protest alleges that DMR Builders' failed to name a subcontractor for the roofing and painting, as required by the project's technical specifications sections 08-41-13 and 08-51-13. (Attachment 11 contains an excerpt from the bid specifications outlining the scope of work in question.) Both the protest and DMR Builder's response are timely under the City's bid protest procedure.

On August 25, 2025, DMR Builders responded to the protest (Attachment 4). DMR Builders contend that they intend to self-perform the painting and that the proposal from their roofing subcontractor was \$15,578.00. This amount is under the one-half of 1 percent requirement to be listed with the prime contractor's bid. DMR Builders provided the estimate from Cortlandt Roofing (Attachment 5) confirming the proposed \$15,578 for the roofing portion. DMR Builders have also confirmed that they will self-perform the work listed on the Cortlandt Roofing estimate not included as part of the TPO roof system and roof patching. As a Class B licensed contractor, DMR Builders are authorized to self-perform the scope of work proposed, which falls within the limits permitted by their license classification.

Based on its review of the bid protest, Staff recommends rejecting the bid protest received from Cupples and Sons Construction Inc., waiving the irregularity in their bid, and awarding the bid to DMR Builders, for \$3,487,850. The City Council should make its decision based on the evidence and argument presented during the hearing, including the staff recommendation.

As noted in the July 16, 2025, Agenda Summary Report related to this item, the engineer's estimate for the work was \$3,776,071, which included a 10% contingency.

Funding for this remodeling project will primarily come from the Series 2020A Lease Revenue Bonds, with an available balance of approximately \$1.3 million. The remaining funds will be sourced from the Series 2022 Lease Revenue Bonds, a \$15 million general fund obligation bond originally issued to support the Corporation Yard capital project.

A memorandum (Attachment 6) from the City Attorney has been included, outlining two optional courses of action for the Council's consideration: to deny the bid protest (Attachment 7) or to uphold the bid protest (Attachment 8).

Recommended Action: Continue hearing to resolve the bid protest submitted by Cupples and Sons Construction Inc., reject the protest, accept the counterprotest from DMR Builders, waive the irregularity in DMR Builder's bid, and award the contract to the lowest responsible bidder, DMR Builders, in the amount of \$3,487,850 for Specification No. 25-04, Remodel of 501 South State Street.

BUDGET AMENDMENT REQUIRED: No

CURRENT BUDGET AMOUNT: 20824700.80220.18176: \$4,500,000

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: Series 2020A Lease Revenue Bond (Community Facilities Improvement Project) and Series 2022 Lease Revenue Bond (Capital Projects)

REVENUE: Yes / No **GRANT:** Yes / No N/A

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Matt Keizer, Chief Building Official; Mary Horger, Assistant Finance Director

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): GP-A4 - Public Facilities, Services, and Infrastructure Element, Implementation Programs PFS-6.4 Energy Efficient Municipal Buildings and PFS-8.2 Sustainable Design and Energy Efficiency.

Approved:


Sage Sangiacomo, City Manager

CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA

**SPECIAL PROVISIONS
FOR
REMODEL OF 501 SOUTH STATE STREET
SPECIFICATION NO. 25-04**

MANDATORY PRE-BID MEETING
10:00 A.M., AUGUST 5, 2025
501 SOUTH STATE STREET
UKIAH, CALIFORNIA 95482

CITY OF UKIAH
DEPARTMENT OF COMMUNITY DEVELOPMENT
300 Seminary Avenue
Ukiah, California 95482-5400

**Bids Open: August 19, 2025
 2:00 p.m.
 Office of City Clerk**

CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA

CITY COUNCIL:

DOUGLAS CRANE – MAYOR
SUSAN SHER – VICE-MAYOR
JUAN OROZCO – COUNCIL MEMBER
HEATHER CRISS – COUNCIL MEMBER
MARI RODIN– COUNCIL MEMBER

SAGE SANGIACOMO – CITY MANAGER
TIM ERIKSEN - DIRECTOR OF PUBLIC WORKS / CITY ENGINEER
KRISTINE LAWLER – CITY CLERK
R. ALLEN CARTER - CITY TREASURER

CITY OF UKIAH
DEPARTMENT OF COMMUNITY DEVELOPMENT
JULY 2025

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ATTACHMENT A – PROJECT DRAWINGS

**CITY OF UKIAH, MENDOCINO COUNTY, CALIFORNIA
NOTICE TO BIDDERS FOR
REMODEL OF 501 SOUTH STATE STREET SPECIFICATION NO. 25-04**

NOTICE IS HEREBY GIVEN that sealed standard proposals for REMODEL OF 501 SOUTH STATE STREET will be received at the Office of the City Clerk, Ukiah Civic Center, 300 Seminary Avenue, Ukiah California until 2:00 p.m. on Tuesday, August 19, 2025. Bids shall be addressed to the City Clerk and shall be endorsed "REMODEL OF 501 SOUTH STATE STREET" Bids are required for the entire work described herein. No fax bids will be accepted. As soon thereafter as possible, the bids will be publicly opened and read in the Council Chambers at 300 Seminary Avenue, Ukiah. The bid opening will also be visible via live streaming at <http://www.cityofukiah.com/meetings/>.

ENGINEER'S ESTIMATE OF QUANTITIES

Item No.	Description	Quantity	Unit of Measure
1	Temporary Controls, Fencing & Signage	1	LS
2	Mobilization	1	LS
3	Div 02 - Demolition	1	LS
4	Div 03 - Concrete	1	LS
5	Div 05 - Metal Fabrications	1	LS
6	Div 06 - Wood	1	LS
7	Div 07 - Insulation & Waterproofing	1	LS
8	Div 08 - Doors & Windows	1	LS
9	Div 09 - Finishes	1	LS
10	Div 10 - Signage & Accessories	1	LS
11	Div 13 - Non-Structural Seismic Restraints	1	LS
12	Div 14 - Elevator	1	LS
13	Div 21 - Wet Pipe Sprinkler Systems	1	LS
14	Div 22 - Plumbing	1	LS
15	Div 23 - Mechanical	1	LS
16	Div 26 - Electrical	1	LS
17	Div 28 - Access Control	1	LS
18	Div 31 - Earthwork	1	LS
19	Div 32 - Site Improvements	1	LS
20	Div 33 - Sanitary Sewer	1	LS

BID ALTERNATES

Item No.	Description	Quantity	Unit of Measure
A1	New Transformer - including Demo of Existing Transformer & Site Work	1	LS

The Engineer's Estimate for this project is \$3,776,071. The City provides this information for reference purposes only and does not guarantee its accuracy or completeness. Actual bids may vary based on market conditions and project-specific factors. However, staff believes that actual project costs will likely be lower than the engineer's estimate. Bidders are encouraged to conduct independent evaluations of the project requirements and relevant factors. The City is not responsible for reliance on the estimate, and bidders are responsible for determining the scope and costs in preparing their bids.

Plans and Special Provisions may be inspected and/or copies obtained from the City's website at www.cityofukiah.com/purchasing. No bid will be considered unless it is made on the forms furnished by the City and is made in accordance with the details of the Special Provisions. Each bidder must be licensed as required by law. Further information regarding the work or these specifications can be obtained by calling Myles Fisette, Purchasing Manager at (707) 463-6225 or by email at mfisette@cityofukiah.com.

MANDATORY PRE-BID MEETING will be held at 10:00 a.m., August 5, 2025 at 501 South State Street, Ukiah, California 95482.

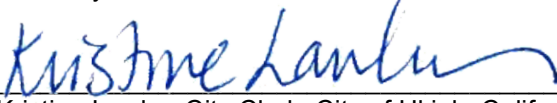
The City Council reserves the right to reject any or all bids and to determine which proposal is, in its opinion, the lowest responsive bid by a responsible bidder and which it deems in the best interest of the City to accept. The City Council also reserves the right, but not the obligation, to waive any irregularity or failure to strictly comply with the bidding requirements, that the City determines in the reasonable exercise of its discretion does not provide the bidder with a competitive advantage over other bidders.

No contractor or subcontractor may be listed on a bid proposal for a public works unless registered with the Department of Industrial Relations ("DIR") pursuant to Labor Code section 1725.5 except as allowed. under Labor Code section 1771.1(a). The prime contractor shall be responsible for posting job site notices as prescribed by regulation. This project is subject to compliance monitoring and enforcement by the DIR.

Pursuant to provisions of Section 1770, including amendments thereof, of the Labor Code of the State of California, the DIR Director has ascertained the general prevailing rate of wages for straight time, overtime, Saturdays, Sundays and Holidays including employer payment for health and welfare, vacation, pension and similar purposes for the City of Ukiah. Copies of his General Prevailing Wage Determination are available on the Internet at web address: <http://www.dir.ca.gov/DLSR/PWD/> The prime contractor for the work herein shall possess a current, valid State of California, Class B - General Building Contractor's License. Pursuant to California Public Contract Code §22300, this contract includes provisions that allow substitutions of certain types of securities in lieu of the City withholding a portion of the partial payments due the Contractor to insure performance under this contract.

By order of the City Council, City of Ukiah, County of Mendocino, State of California.

Dated: 7/17/25



Kristine Lawler, City Clerk, City of Ukiah, California

PUBLISH ONE TIME: JULY 24, 2025

INSTRUCTIONS TO BIDDERS

REMODEL OF 501 SOUTH STATE STREET shall be performed in accordance with the Plans and Special Provisions therefore adopted, to which special reference is hereby made.

Each bidder must supply all the information required by the bid documents and Special Provisions.

Minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color or national origin in consideration for an award of any contract entered into pursuant to this advertisement. Women will be afforded equal opportunity in all areas of employment. However, the employment of women shall not diminish the standards or requirements for the employment of minorities.

All proposals or bids shall be accompanied by a cashier's check or certified check payable to the order of the City of Ukiah amounting to 10 percent of the bid, or by a bond in said amount and signed by the bidder and a corporate surety, payable to said City. Said check shall be forfeited, or said bond shall become payable to said City in case the bidder depositing the same does not, within fifteen (15) days after written notice that the contract has been awarded to him: (a) enter into a contract with the City and (b) furnish certificates of insurance and endorsements, a bond of faithful performance and a payment bond as described in the Special Provisions.

No bidder shall withdraw his or her bid for a period of thirty (30) calendar days after the date set by the City for the opening thereof.

The Contractor and any subcontractors shall each possess a valid City of Ukiah Business License prior to the start of any work.

The Contractor shall furnish a project schedule to the Engineer prior to the start of any work and start work as scheduled.

The work is to be completed within TWO HUNDRED AND FORTY (240) working days. The Contractor will pay to the City the sum of five hundred (\$500.00) dollars per day for each and every calendar day's delay beyond the time prescribed.

The staff shall notify a bidder by telephone, email or fax, if it intends to recommend the rejection of the bidder's bid. Any bid protest must be filed with the City Clerk not more than five calendar days following the bid opening, or 2 calendar days following notice that staff is recommending the rejection of a bid. If any such timely written protest is filed, all bidders shall be provided a copy of the protest within 2 calendar days of its receipt, which may be delivered to the bidders as an email attachment or by fax. All such bidders may file with the City Manager a written objection or other response to the protest.

All objections or responses filed not more than 5 days after receipt of the written protest will be presented to the City Council at its next regular meeting occurring not less than 12 calendar days following the bid opening. The City Council will resolve the bid protest at that meeting based on the written protest, any staff recommendation and all timely written objections and responses. In accordance with the Brown Act, any person may address the City Council on this item during the meeting. The City Council action on the protest shall represent a final decision by the City on the protest.

Examination of Site, Drawings, Etc.

Each bidder shall visit the site of the proposed work and fully acquaint himself with local conditions, construction and labor required so that he or she may fully understand the facilities, difficulties and restrictions attending the execution of the work under the Contract. Bidders shall thoroughly examine and be familiar with the Plans and Special Provisions. The failure of any bidder to receive or examine any form, instrument, addendum, or other document, or to visit the site and acquaint himself with conditions there existing, shall in no way relieve the bidder from any obligation with respect to his or her proposal or to the contract. The drawings for the work show conditions as they are supposed or believed by the Engineer to exist; but, it is neither intended nor shall it be inferred that the conditions as shown thereon constitute a representation by the Engineer, the City or its officers that such conditions are actually existent, nor shall the City, the Engineer or any of their officers or representatives

be liable for any loss sustained by the Contractor as a result of a variance between the conditions shown on the drawings and the conditions actually revealed during the progress of the work or otherwise.

The bidder's attention is directed to the possible existence of obstructions and public improvements within the limits of the work or adjacent thereto, which may or may not be shown on the Drawings. Any bid shall take into consideration that conditions may exist underground or otherwise that are not known to the City or easily detected during a site inspection that could impact the time or cost of completing the project. The City expects the bids to anticipate such conditions so that it can know for budgeting and other purposes the total cost to complete the project before accepting a bid and undertaking the legal obligation to construct the project. In awarding the contract the City relies on the contractor's representation that its bid anticipates differing site conditions and the additional time or cost that such conditions may necessitate.

The bidder shall investigate to his or her satisfaction the conditions to be encountered, the character, quality and quantities of work to be performed and materials to be furnished and the requirements of the Plans, Special Provisions, Standard Specifications, Standard Plans, and Contract Documents. The submission of a proposal shall be considered conclusive evidence that the bidder has made such examination and has accepted the project workplace as a safe workplace to perform the work of the Contract.

Bidder Inquiries and Questions

Inquiries and questions must be submitted in writing via email to the following designated contact person:

Myles Fisette, Purchasing Manager
Email: mfisette@cityofukiah.com

The City reserves the right to not respond to inquiries or questions submitted within 3 business days of the bid opening.

Location of the Work

All of the work to be performed is within the City of Ukiah. Project is located at 501 South State Street Ukiah, CA 95482.

GENERAL CONDITIONS

SECTION 1. PROPOSAL REQUIREMENTS AND GENERAL CONDITIONS

1-01. Definitions. Whenever any word or expression defined in this section, or pronoun used in its stead, occurs in these contract documents, it shall have and is mutually understood to have the meaning given:

- a. "City of Ukiah" or "City" shall mean the City of Ukiah, Mendocino County, California, acting through its City Council or any other board, body, official or officials to which or to whom the power belonging to the Council shall by virtue of any act or acts, hereafter pass or be held to appertain.
- b. "Engineer" shall mean the Engineer duly and officially appointed by the City to supervise and direct the work of construction under this contract, acting personally or through agents or assistants duly authorized by him, such agents or assistants acting within the scope of the particular duties entrusted to them.
- c. "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized or appointed by the Engineer, limited to the particular duties entrusted to him or her or them.
- d. "Contractor" shall mean the party entering into contract with the City of Ukiah for the performance of work covered by this contract and his or her authorized agents or legal representatives.
- e. "Date of signing of contract" or words equivalent thereto, shall mean the date upon which this contract, with the signature of the Contractor affixed, together with the prescribed bonds, shall be or shall have been delivered to the City or its duly authorized representatives.
- f. "Day" or "days", unless herein otherwise expressly defined, shall mean a calendar day or days of twenty-four hours each.
- g. "The work" shall mean and include all the work specified, indicated, shown or contemplated in the contract to construct the improvement, including all alterations, amendments or extensions thereto made by contract change order or other written orders of the Engineer.
- h. "Contract drawings", "drawings", "plans" shall mean and include 1) all drawings or plans which may have been prepared by or on behalf of the City, as a basis for proposals, when duly signed and made a part of this contract by incorporation or reference, 2) all drawings submitted in pursuance of the terms of this contract by the successful bidder with his or her proposal and by the Contractor to the City if and when approved by the Engineer and 3) all drawings submitted by the Engineer to the Contractor during the progress of the work as provided for herein.
- i. Where "as shown", "as indicated", "as detailed" or words of similar import are used, it shall be understood that reference to the drawings accompanying these Special Provisions is made unless stated otherwise.

Where "as directed", "as permitted", "approved" or words of similar import are used, it shall be understood that the direction, requirements, permission, approval or acceptance of the Engineer is intended unless stated otherwise.

As used herein, "provide" or "install" shall be understood to mean "provide or install complete in place", that is, "furnish and install". "Shall" is mandatory; "may" is permissive.

1-02. Examination of Plans, Special Provisions and Site of Work. The bidder shall examine carefully the Proposal, Plans, Special Provisions, Contract forms and the site of the work contemplated therefor. It will be assumed that the bidder has investigated to his or her satisfaction the conditions to be encountered and the character, quality and requirements of all Plans, Special Provisions, Standard Specifications, and Standard Plans involved.

1-03. Proposal. Bids shall be made on the blank forms prepared by the City. All bids shall give the prices bid, both in writing and in figures and shall be signed by the bidder or his or her authorized representative, with his or

her address. If the bid is made by an individual or partner, his or her name and the post office address of his or her business or partnership, along with his or her signature or the signature of one or more partners must be shown; if made by a corporation, the bid shall show the name of the state under the laws of which the corporation is chartered, the name of the corporation and the title of the person who signs on behalf of the corporation.

Each proposal shall be enclosed in a sealed envelope, endorsed as specified in the notice to bidders. Bidders are warned against making erasures or alterations of any kind and proposals which contain omissions, erasures, conditions, alterations, additions not called for, additional proposals or irregularities of any kind may be rejected.

1-04. Withdrawal of Bids. Any bid may be withdrawn at any time prior to the hour fixed in the notice to bidders for the openings of bids, provided that a request in writing, executed by the bidder or his or her duly authorized representative, for the withdrawal of such bid is filed with the City. The withdrawal of a bid will not prejudice the right of a bidder to file a new bid.

1-05. Public Opening of Bids. Bids will be opened and read publicly at the time and place indicated in the notice to bidders. Bidders or their agents are invited to be present.

1-06. Bid Guaranty. Each bid must be accompanied by a certified check, cashier's check or bidder's bond executed by an admitted surety insurer, payable to the order of the City of Ukiah in an amount not less than 10 percent of the bid as a guarantee that the bidder will enter into a contract, if awarded the work.

1-07. Qualification of Bidders. No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)]. No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. The prime contractor shall be responsible for posting job site notices as prescribed by regulation. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Each bidder shall be licensed under the provisions of Chapter 9, Division 3 of the Business and Professions Code and shall be skilled and regularly engaged in the general class or type of work called for under this contract. A statement setting forth this experience and business standing shall be submitted by each bidder on the form provided herewith. It is the intention of the City to award a contract only to a bidder who furnishes satisfactory evidence that he or she has the requisite experience and ability and that he or she has sufficient capital, facilities and equipment to enable him or her to prosecute the work successfully and promptly within the time and in the manner agreed.

In determining the degree of responsibility to be credited to a bidder, the City may weigh evidence that the bidder or his or her personnel charged with the responsibility in the work, has performed satisfactorily other contracts of like nature and magnitude or comparable difficulty at similar rates of progress.

1-08. Disqualification of Bidders. More than one bid from an individual business, partnership, corporation or association, under the same or different names, will not be considered. Reasonable grounds for believing that any bidder is financially interested in more than one bid for the work will cause the rejection of all bids in which he or she is so interested. If there is reason to believe that collusion exists among the bidders, none of the participants in such collusion will be considered. Bids in which the prices obviously are unbalanced may be rejected.

1-09. Identification of Subcontractors. All bids shall comply with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 and following) and shall set forth:

(a) The name and the location of the place of business of each subcontractor who will perform work or labor, or render service to the prime contractor in or about the construction of the work, or to a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work according to detailed drawings contained in the plans and Special Provisions, in an amount in excess of one-half of 1 percent of the prime contractor's total bid.

(b) The portion of the work which will be done by each such subcontractor. The prime contractor shall list only one subcontractor for each such portion defined by the prime contractor in his or her bid.

1-10. General Provisions of the Standard Specifications. All provisions of the General Provisions, Sections 1 through 11, of the Standard Specifications, shall be applicable to the contract except as modified by these Special Provisions. The Standard Specifications are set forth in Section 12-06 of these Special Provisions.

1-11. Addenda. If it becomes necessary to revise any part of these plans and specifications after they have been released, the City will issue an addendum containing the revision. All addenda will be posted on the City's website at www.cityofukiah.com/purchasing with the rest of the bid documents. Anyone who intends to submit a bid in response to this Request for Bid must check the website frequently for any posted addenda. Anyone submitting a bid will be deemed to have seen and agreed to be bound by the posted addenda.

SECTION 2. AWARD AND EXECUTION OF CONTRACT

2-01. Award of Contract. Award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the specified requirements. The award, if made, will be made within thirty (30) days after opening of the bids. The City reserves the right to reject any and all bids and to waive any irregularity in the proposal not pertaining to cost.

2-02. Return of Proposal Guaranties. All bid guaranties will be held until the contract has been fully executed, after which they will be returned upon request to the respective bidders whose bids they accompany.

2-03. Execution of Contract. The contract agreement shall be executed in duplicate by the successful bidder and returned, together with the contract bonds, insurance certificates and endorsements, within fifteen (15) days after written notice of the award of the contract. After execution by the City; one copy shall be filed with the City and one copy shall be returned to the Contractor. If the bidder fails or refuses to enter into the contract agreement within the required time, then the bid guaranty accompanying the bid shall be forfeited to the City.

SECTION 3. SCOPE AND INTENT OF CONTRACT

3-01. Effect of Inspection and Payments. Neither the inspection by the Engineer or an inspector, nor any order, measurement or approved modification, nor certificate or payment of money, nor acceptance of any part or whole of the work, nor any extension of time, nor any possession by the City or its agents, shall operate as a waiver of any provision of this contract or of any power reserved therein to the City, or of any right to damages thereunder; nor shall any breach of this contract be held to be a waiver of any subsequent breach. All remedies shall be construed as cumulative.

3-02. Effect of Extension of Time. The granting of any extension of time on account of delays which, in the judgement of the City, are avoidable delays shall in no way operate as a waiver on the part of the City of its rights under this contract.

3-03. Extra Work. If extra work orders are given in accordance with provisions of this contract, such work shall be considered a part hereof and shall be subject to each and all of its terms and requirements.

3-04. Assignment of Contract. The contract may be assigned or sublet in whole or in part only upon the written consent of the City acting through its authorized agents. Consent will not be given to any proposed assignment which would relieve the original contractor or its surety of their responsibilities under the contract nor will the Engineer consent to any assignment of a part of the work under the contract.

3-05. Subcontractors. The Contractor shall be as fully responsible for the acts and omissions of his or her subcontractors and of persons either directly or indirectly employed by them, as he or she is for the acts and omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the terms of this Contract which are applicable to the work of subcontractors.

Nothing contained in this contract shall be construed to create or shall be relied upon to create any contractual relationship between any subcontractor and the City and no action may be brought by any subcontractor against the City based on this contract.

3-06. Interpretation of Special Provisions and Drawings. The Special Provisions and the Contract Drawings are intended to be explanatory of each other. Any work indicated in the Contract Drawings and not in the Special Provisions, or vice versa, is to be executed as if indicated in both. In case of a discrepancy or conflict between the Technical Specifications and Contract Plans, the Technical Specifications shall govern. All work shown on the Contract Drawings, the dimensions of which are not figured, shall be accurately followed to the scale to which the drawings are made, but figured dimensions are in all cases to be followed, where given, though they differ from scaled measurements. Large scale drawings shall be followed in preference to small scale drawings. Should it appear that the work to be done, or any of the matters relative thereto, are not sufficiently detailed or explained in these contract documents, including the contract drawings, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform thereto as part of this contract, so far as may be consistent with the terms of this contract. In the event of any doubt or questions arising respecting the true meaning of the Special Provisions, reference shall be made to the Engineer and his or her decision thereon shall be final. If the Contractor believes that a clarification or interpretation justifies an increase in the contract price or contract time, the Contractor must comply with the written notice provisions of Sections 9-05 and 10-07 of these Special Provisions. Contractor's attention is directed to Section 12-06 of the Technical Specifications regarding the Standard Specifications and Standard Plans.

3-07. Addenda. If it becomes necessary to revise any part of these plans and specifications after they have been released, the City will issue an addendum containing the revision. All addenda will be posted on the City's website at www.cityofukiah.com/purchasing with the rest of the bid documents. Anyone who intends to submit a bid in response to this Request for Bid must check the website frequently for any posted addenda. Anyone submitting a bid will be deemed to have seen and agreed to be bound by the posted addenda.

3-08. Liability of City Officials. No city official, nor the Engineer, nor any authorized assistant of any of them, shall be personally responsible for any liability arising under this contract.

3-09. Dispute Resolution. Claims of \$375,000 or less by the Contractor that arise under this Contract are subject to the mandatory dispute resolutions provisions in Public Contract Code Sections 20104-20104.6.

SECTION 4. BONDS

4-01. Faithful Performance Bond. As a part of the execution of this contract, the Contractor shall furnish a bond of a surety company or other securities providing equivalent protection such as cash, letter of credit, or certificates of deposit, acceptable to the City, conditioned upon the faithful performance of all covenants and stipulations under this contract. The amount of the bond shall be 100 percent of the total contract price, as this sum is set forth in the agreement.

4-02. Material and Labor Bond. As a part of the execution of this contract, the Contractor shall furnish a bond of a surety company or other securities providing equivalent protection such as cash, letter of credit or certificates of deposit acceptable to the City in a sum not less than 50 percent of the total contract price, as this sum is set forth in the agreement for the payment in full of all persons, companies or corporations who perform labor upon or furnish materials to be used in the work under this contract, in accordance with the provisions of Sections 3247 through 3252 inclusive of the Civil Code of the State of California and any acts amendatory thereof.

4-03. Defective Material and Workmanship Bond. As a condition precedent to the completion of this contract, the Contractor shall furnish a bond of a surety company acceptable to the City in an amount not less than 5 percent (5%) of the final contract price, to hold good for a period of one (1) year after the completion and acceptance of the work, to protect the City against the results of defective materials, workmanship and equipment during that time. This bond shall be delivered to the City before the final payment under this contract will be made.

4-04. Notification of Surety Companies. The surety companies shall familiarize themselves with all of the conditions and provisions of this contract and they waive the right of special notification of any change or modification of this contract or of extension of time, or decreased or increased work, or of the cancellation of the contract, or of any other act or acts by the City or its authorized agents, under the terms of this contract; and failure to so notify the aforesaid surety companies of changes shall in no way relieve the surety companies of their obligation under this contract.

SECTION 5. INSURANCE REQUIREMENTS FOR CONTRACTORS (WITH CONSTRUCTION RISKS)

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his or her agents, representatives, employees or subcontractors.

5-01. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial Liability Coverage (occurrence form CG 0001).
2. Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).
3. Worker's Compensation insurance as required by the State of California and Employer's Liability Insurance.
4. Course of Construction insurance covering for "all risks" of loss.

5-02. Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage including operations, products and completed operations. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: \$2,000,000 per accident for bodily injury and property damage.
3. Employer's Liability: \$1,000,000 per accident for bodily injury and property damage.
4. Course of Construction: Completed value of the project with no co-insurance penalty provisions.

5-03. Deductibles and Self-insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

5-04. Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The City, its officers, officials, employees and volunteers are to be covered as Additional Insured with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance, or as a separate owner's policy.
2. The workers' compensation policy is to be endorsed with a waiver of subrogation. The insurance company, in its endorsement, agrees to waive all rights of subrogation against the City, its officers,

officials, employees and volunteers for losses paid under the terms of this policy which arises from the work performed by the named insured for the City.

3. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees or volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
4. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.
5. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of Civil Code.
6. Course of Construction policies shall contain the following provisions:
 - a.) The City shall be named as loss payee.
 - b.) The insurer shall waive all rights of subrogation against the City.

5-05. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than the following:

A++ VII	A- VIII
A+ VII	B++ X
A VII	B+ X

5-06. Verification of Coverage. Contractor shall furnish the City with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements shall be on forms provided by the City or on other than the City's forms, provided those endorsements or policies conform to the requirements. All certificates and endorsements are to be received within 15 days from written notice of contract award, and the work shall not commence until the certificates and endorsements have been approved by the City. The City reserves the right to require complete certified copies of all required insurance policies, including endorsements affecting the coverage required by these Special Provisions at any time.

5-07. Subcontractors. Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

SECTION 6. RESPONSIBILITIES AND RIGHTS OF CONTRACTOR

6-01. Legal Address of Contractor. Both the address given in the proposal and the Contractor's office in the vicinity of the work are hereby designated as places to either of which drawings, samples, notices, letters or other articles or communications to the Contractor may be mailed or delivered. The delivery at either of these places of any such thing from the City or its agents to the Contractor shall be deemed sufficient service thereof upon the Contractor and the date of such service shall be the date of such delivery. The address named in the proposal may be changed at any time by notice in writing from the Contractor to the City. Nothing herein contained shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter or other article or communication to or upon the Contractor personally.

6-02. Office of Contractor at Site. During the performance of this contract, the Contractor shall maintain a suitable office at the site of the work which shall be the headquarters of a representative authorized to receive drawings and any such thing given to the said representatives or delivered at the Contractor's office at the site of work in his or her absence shall be deemed to have been given to the Contractor.

6-03. Attention to Work. The Contractor shall give his or her personal attention to and shall supervise the work to the end that it shall be prosecuted faithfully and when he or she is not personally present on the work, he or she shall at all reasonable times be represented by a competent superintendent or foreman who shall receive and obey all instructions or orders given under this contract and who shall have full authority to execute the same and to supply materials, tools and labor without delay and who shall be the legal representative of the Contractor. The Contractor shall be liable for the faithful observance of any instructions delivered to him or her or to his or her authorized representative.

6-04. Liability of Contractor. The Contractor shall do all of the work and furnish all labor, materials, tools and appliances, except as otherwise herein expressly stipulated, necessary or proper for performing and completing the work herein required in the manner and within the time herein specified. The mention of any specific duty or liability imposed upon the Contractor shall not be construed as a limitation or restriction of any general liability or duty imposed upon the Contractor by this contract, said reference to any specific duty or liability being made herein merely for the purpose of explanation.

The right of general supervision by the City shall not make the Contractor an agent of the City and the liability of the Contractor for all damages to persons or to public or private property, arising from the Contractor's execution of the work, shall not be lessened because of such general supervision.

Until the completion and final acceptance by the City of all the work under and implied by this contract, the work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections and repairs, occasioned or rendered necessary by causes of any nature whatsoever, excepting only acts of God and none other, to all or any portions of the work, except as otherwise stipulated.

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the City and its officers, directors, agents and employees from and against all claims, damages, losses and expenses including but not limited to attorneys' fees, costs of suit, expert witness fees and expenses and fees and costs of any necessary private investigators arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, other than the work itself, including the loss of use resulting therefrom and (2) is caused in whole or in part by any act or omission of the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder, or by the negligence or omission of a party indemnified herein.

In any and all claims against the City or any of its agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts. The obligation to indemnify shall extend to and include acts of the indemnified party which may be negligent or omissions which may cause negligence.

The City shall have the right to estimate the amount of such damage and to cause the City to pay the same and the amount so paid for such damage shall be deducted from the money due the Contractor under this contract; or the whole or so much of the money due or to become due the Contractor under this contract as may be considered necessary by the City, shall be retained by the City until such suits or claims for damages shall have been settled or otherwise disposed of and satisfactory evidence to that effect furnished to the City.

6-05. Protection of Persons and Property. The Contractor shall furnish such watchman, guards, fences, warning signs, walks and lights as shall be necessary and shall take all other necessary precautions to prevent damage or injury to persons or property.

All property line fences and improvements in the vicinity of the work shall be protected by the Contractor and, if they are injured or destroyed, they and any other property injured by the Contractor, his or her employees or agents, shall be restored to a condition as good as when he or she entered upon the work.

6-06. Protection of City Against Patent Claims. All fees, royalties or claims for any patented invention, article or method that may be used upon or in any manner connected with the work under this contract shall be included in the price bid for the work and the Contractor and his or her sureties shall protect and hold the City, together with all of its officers, agents, servants and employees, harmless against any and all demands made for such fees or claims brought or made on account of this contract. The Contractor shall, if requested by the Engineer, furnish acceptable proof of a proper release from all such fees or classes.

Should the Contractor, his or her agents, servants or employees, or any of them be enjoined from furnishing or using any invention, article, material or appliance supplied or required to be supplied or used under this contract, the Contractor shall promptly substitute other articles, materials or appliance, in lieu thereof, of equal efficiency, quality, finish, suitability and market value and satisfactory in all respects to the Engineer. Or, in the event that the Engineer elects, in lieu of such substitution, to have supplied and to retain and use, any such invention, article, material or appliance, as may by this contract be required to be supplied, in that event the Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for the City, its officers, agents, servants and employees, or any of them, to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the Contractor neglect or refuse to make the substitution promptly, or to pay such royalties and secure such licenses as may be necessary, then in that event the Engineer shall have the right to make such substitution, or the City may pay such royalties and secure such licenses and charge the cost thereof against any money due to the Contractor from the City or recover the amount thereof from him or her and his or her sureties notwithstanding final payment under this contract may have been made.

6-07. Protection of Contractor's Work Property. The Contractor shall protect his or her work, supplies and materials from damage due to the nature of the work, the action of the elements, trespassers, or any cause whatsoever under his or her control, until the completion and acceptance of the work. Neither the City nor any of its agents assumes any responsibility for collecting indemnity from any person or persons causing damage to the work of the Contractor.

6-08. Regulations and Permits. The Contractor shall secure and pay for all permits, give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Plans and Special Provisions are at variance therewith, he or she shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the contract for changes in the work. The contractor and any subcontractors shall each secure and maintain a valid City of Ukiah Business License. The City of Ukiah will issue a no fee encroachment permit to the Contractor allowing him or her to perform work within City right of way or within City property after the Contract Documents have been executed and insurance certificates and endorsements have been approved by the City.

6-09. Construction Utilities. The Contractor shall be responsible for providing for and in behalf of his or her work under this contract, all necessary utilities, such as special connection to water supply, telephones, power lines, fences, roads, watchmen, suitable storage places, etc.

6-10. Approval of Contractor's Plans. The approval by the Engineer of any drawing or any method of work proposed by the Contractor in accordance with paragraph 8-06 shall not relieve the Contractor of any of his or her responsibility for his or her errors therein and shall not be regarded as any assumption of risk or liability by the City or any officer or employee thereof and the Contractor shall have no claim under this contract on account of the failure or partial failure or inefficiency of any plan or method so approved. Such approval shall be considered to mean merely that the Engineer has no objection to the Contractor's using, upon his or her own full responsibility the plan or method approved.

6-11. Suggestions to the Contractor. Any plan or method of work suggested by the Engineer to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the City shall assume no responsibility thereof.

6-12. Termination of Unsatisfactory Subcontracts. Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, such subcontract shall be terminated immediately by the Contractor upon notice from the Engineer.

6-13. Preservation of Stakes and Marks. The Contractor shall preserve carefully bench marks, reference points and stakes and in case of destruction he or she shall replace his or her stakes, reference points and bench marks

and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance. Contractor's attention is directed to Section 7-03 of these Special Provisions.

6-14. Assistance to Engineer. At the request of the Engineer the Contractor shall provide men from his or her force and tools, stakes and other materials to assist the Engineer temporarily in making measurements and surveys and in establishing temporary or permanent reference marks. Payment for such materials and assistance will be made as provided for under the caption "Extra Work," provided, however, that the cost of setting stakes and marks carelessly lost or destroyed by the Contractor's employees will be assessed to the Contractor.

6-15. Removal of Condemned Materials and Structures. The Contractor shall remove from the site of the work, without delay, all rejected and condemned materials or structures of any kind brought to or incorporated in the work and upon his or her failure to do so, or to make satisfactory progress in so doing, within forty-eight (48) hours after the service of a written notice from the Engineer, the condemned material or work may be removed by the City and the cost of such removal shall be taken out of the money that may be due or may become due the Contractor on account of or by virtue of this contract. No such rejected or condemned material shall again be offered for use by the Contractor under this Contract.

6-16. Proof of Compliance with Contract. In order that the Engineer may determine whether the Contractor has complied with the requirements of this contract, not readily enforceable through inspection and tests of the work and materials, the Contractor shall, at any time when requested, submit to the Engineer properly authenticated documents or other satisfactory proofs as to his or her compliance with such requirements.

6-17. Errors and Omissions. If the Contractor, in the course of the work, finds any errors or omissions in plans or in the layout as given by survey points and instruction, or if he or she finds any discrepancy between the plans and the physical conditions of the locality, he or she shall immediately inform the Engineer, in writing and the Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

6-18. Cooperation. The Contractor shall cooperate with all other contractors who may be performing work in behalf of the City and workmen who may be employed by the City on any work in the vicinity of the work to be done under this contract with the work of such contractors or workmen. he or she shall make good promptly, at his or her own expense, any injury or damage that may be sustained by other contractors or employees of the City at his or her hands.

Any difference or conflict which may arise between the Contractor and other contractors, or between the contractor and workmen of the City in regard to their work shall be adjusted and determined by the Engineer. If the work of the Contractor is delayed because of any acts or omissions of any other contractor or of the City, the Contractor shall on that account have no claim against the City other than for an extension of time.

6-19. Right of Contractor to Stop Work. Under the following conditions the Contractor shall have the right, if he or she so desires, to stop the work and terminate the contract upon ten (10) days written notice to the Engineer and recover from the City payment for all work actually performed and for all satisfactory materials actually delivered to the site of the work for permanent incorporation therein, all as may be shown by the estimate of the Engineer.

- (1) If the work is stopped under an order of any court or other competent public authority for a period of time of three (3) months through no act or fault of the Contractor or of anyone employed by him.
- (2) If the Engineer fails to issue the monthly certificate for payment in accordance with the terms of this contract.
- (3) If the City fails to pay the Contractor within sixty (60) days after it shall have become due, as provided by the terms of this contract, any sum certified by the Engineer or awarded by the City.

All provided that if such action to terminate the contract be not instituted by the Contractor within ten (10) days after the alleged existence of such condition and if written notice of such action be not at that time delivered to the City and the Engineer, then such right shall lapse until another occasion arises according to this section.

6-20. Hiring and Dismissal of Employees. The Contractor shall employ only such foremen, mechanics and laborers as are competent and skilled in their respective lines of work and whenever the Engineer shall notify the Contractor that any person on the work is, in his or her opinion, incompetent, unfaithful, intemperate or disorderly, or refuses to carry out the provisions of this contract, or uses threatening or abusive language to any person on the work representing the City, or is otherwise unsatisfactory, such person shall be discharged immediately from the work and shall not be re-employed upon it except with the consent of the Engineer.

6-21. Wage Rates.

1. Contractor shall pay all mechanics and laborers employed or working upon the site of the work unconditionally and without subsequent deductions or rebate on any account the full amounts due at the time of payment at wage rates not less than those contained in the applicable prevailing wage determination, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractors and such laborers and mechanics.
2. Contractor shall comply with the California Labor Code Section 1775. In accordance with said Section 1775, Contractor shall forfeit as a penalty to the Owner, \$50.00 (or the higher minimum penalty as provided in Section 1775(B)(ii) – (iii)) for each calendar day or portion thereof, for each workman paid less than the stipulated prevailing rates for such work or craft in which such workman is employed for any work done under the Contract by him or her or by any subcontractor under him or her in violation of the provisions of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.
3. Pursuant to the provision of Section 1770 of the Labor Code of the State of California, Owner has ascertained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension and similar purposes) applicable to the work to be done, for straight time work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of workmen concerned. Copies of the General Prevailing Wage Determination are available on the Internet at web address: <http://www.dir.ca.gov/DLSR/PWD> The Contractor shall post the wage determination at the site of work in a prominent place where it can easily be seen by the workers.
4. City will not recognize any claim for additional compensation because the Contractor has paid any rate in excess of the prevailing wage rate obtained by the Contractor. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his or her bid and will not in any circumstances be considered as the basis for a claim against the City.
5. The Labor Commissioner through the Division of Labor Standards Enforcement (DLSE) may at any time require contractors and subcontractors to furnish electronic certified payroll records directly to DLSE. Commencing with contracts awarded or after April 1, 2015, all contractors and subcontractors must furnish electronic certified payroll records directly to the DLSE.
6. Travel and Subsistence Payments.

Contractor shall make travel and subsistence payments to each workman needed to execute the work in accordance with the requirements in Section 1773.8 of the Labor Code (Chapter 880, Statutes of 1968).

7. Apprentices.

Attention is directed to the provisions in Sections 1777.5 (Chapter 1411, Statutes of 1968) and 1777.6 of the California Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under him. Contractor and any subcontractor under him or her shall comply with the requirements of said sections in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

6-22. Cleaning Up. The Contractor shall not allow the site of the work to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction period. The Engineer shall have the right to determine what is or is not waste material or rubbish and the place and manner of disposal.

On or before the completion of the work, the Contractor shall without charge therefore carefully clean out all pits, pipes, chambers or conduits and shall tear down and remove all temporary structures built by him or her and shall remove rubbish of all kind from any of the grounds which he or she has occupied and leave them in first class condition.

6-23. Guaranty. All work shall be guarantied for a period of one year from the date of acceptance by the City. The Contractor shall promptly make all needed repairs arising out of defective materials, workmanship and equipment.

The City is hereby authorized to make such repairs if within ten days after the mailing of a notice in writing to the Contractor or his or her agent, the Contractor shall neglect to make or undertake with due diligence the aforesaid repairs, provided, however, that in case of an emergency where, in the opinion of the City delay would cause serious loss or damage, repairs may be made without notice being sent to the Contractor and the Contractor shall pay the costs thereof.

Pursuant to the provisions of Section 4-03 of these Special Provisions, the Contractor shall furnish a Defective Material and Workmanship Bond in an amount not less than 5 percent of the final contract price, which shall be effective for a period of one (1) year after the completion and acceptance of the work.

SECTION 7. RESPONSIBILITIES AND RIGHTS OF CITY

7-01. Authority of the Engineer. All work done under this contract shall be done in a workmanlike manner and shall be performed to the reasonable satisfaction of the Engineer, who shall have general supervision of all work included hereunder. To prevent disputes and litigation, the Engineer (1) shall in all cases determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this contract, (2) shall decide all questions relative to the true construction, meaning and intent of the Special Provisions and Drawings, (3) shall decide all questions which may arise relative to the classifications and measurements of quantities and materials and the fulfillment of this contract and (4) shall have the power to reject or condemn all work or material which does not conform to the terms of this contract. his or her estimate and decision in all matters shall be a condition precedent to an appeal for arbitration, or the right of the Contractor to receive, demand, or claim any money or other compensation under this agreement and a condition precedent to any liability on the part of the City to the Contractor on account of this contract. Whenever the Engineer shall be unable to act, in consequence of absence or other cause, then such engineer as the Engineer or the City shall designate, shall perform any and all of the duties and be vested with any or all of the powers herein given to the Engineer.

7-02. Inspection. The City will provide engineering personnel for the inspection of the work.

The Engineer and his or her representatives shall at all times have access to the work whenever it is in preparation or progress and the Contractor shall provide proper facilities for such access and inspection.

If the Special Provisions, the Engineer's instruction, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection and, if the inspection is by an authority other than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be promptly made at the source of supply where practicable. If any work shall be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Engineer and, if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the contract documents, the City shall pay the cost of

re-examination and replacement. If such work is not in accordance with the contract documents, the Contractor shall pay such cost.

Properly authorized and accredited inspectors shall be considered to be the representatives of the City limited to the duties and powers entrusted to them. It will be their duty to inspect materials and workmanship of those portions of the work to which they are assigned, either individually or collectively, under instructions of the Engineer and to report any and all deviations from the Drawings, Special Provisions and other contract provisions which may come to their notice. Any inspector may be considered to have the right to order the work entrusted to his or her supervision stopped, if in his or her opinion such action becomes necessary, until the Engineer is notified and has determined and ordered that the work may proceed in due fulfillment of all contract requirements.

7-03. Surveys. Contractor shall furnish all land surveys, establish all base lines and bench marks and make sufficient detailed surveys needed for working points, lines and elevations. The Contractor shall develop all slope stakes and batter boards. Contractor shall also develop all additional working points, lines and elevations as he or she may desire to facilitate his or her methods and sequence of construction.

7-04. Rights-of-Way. The City will provide all necessary rights-of-way and easements in or beneath which work will be performed by the Contractor under this contract.

7-05. Retention of Imperfect Work. If any portion of the work done or material furnished under this contract shall prove defective and not in accordance with the Plans and Special Provisions, and if the imperfection in the same shall not be of sufficient magnitude or importance to make the work dangerous or undesirable, the Engineer shall have the right and authority to retain such work instead of requiring the imperfect work to be removed and reconstructed, but he or she shall make such deductions therefor in the payments due or to become due the Contractor as may be just and reasonable.

7-06. Changes in the Work. The Engineer shall have the right, in writing, to order additions to, omissions from, or corrections, alterations and modifications in the line, grade, form, dimensions, plan, or kind or amount of work or materials herein contemplated, or any part thereof, either before or after the beginning of construction. However, the arithmetical sum of the cost to the City of additions and subtractions from the work under this contract shall not exceed 10 percent of original contract amount or \$10,000, whichever is the greater, unless based upon a supplementary agreement to be made therefore.

The order of such additions, omissions, corrections, alterations and modifications shall be in writing and signed by the Engineer and, in order, shall then be binding upon the Contractor. The Contractor shall proceed with the work as changed and the value of such change shall be determined as provided for in section 10-07 of these Special Provisions.

Such alterations shall in no way affect, vitiate, or make void this contract or any part thereof, except that which is necessarily affected by such alterations and is clearly the evident intention of the parties to this contract.

7-07. Additional Drawings by City. The drawings made a part of this contract at the time of its execution are intended to be fairly comprehensive and to indicate in more or less detail the scope of the work. In addition to these drawings, however, the Engineer shall furnish such additional drawings from time to time during the progress of the work as are necessary to make clear or to define in greater detail the intent of the Special Provisions and the contract drawings and the Contractor shall make his or her work conform to all such drawings.

7-08. Additional and Emergency Protection. Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precautions for the safety of the public or the protection of the works to be constructed under this contract, or of adjacent structures or property which may be injured by the processes of construction on account of such neglect and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect public or private, personal or property interest, then and in that event, the Engineer, with or without notice to the Contractor may provide suitable protection to the said interests by causing such work to be done and such material to be furnished as shall provide such protection as the Engineer may consider necessary and adequate.

The cost and expense of such work and material so furnished shall be borne by the Contractor and, if the same shall not be paid on presentation of the bills therefor, then such costs shall be deducted from any amounts due or to become due the Contractor.

The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor from any damages which may occur during or after such precaution has been taken by the Engineer.

7-09. Suspension of Work. The City may at any time suspend the work or any part thereof by giving five (5) days written notice to the Contractor. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the City to the Contractor so to do. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this contract as a result of such suspension.

If the work, or any part thereof, shall be stopped by the notice in writing aforesaid and if the City does not give notice in writing to the Contractor to resume work at a date within ten (10) days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work so suspended and he or she will be entitled to the estimates and payments for all work done on the portions so abandoned, if any, plus 5 percent of the value of the work so abandoned, to compensate for loss of overhead, plant expense and anticipated profit.

7-10. Right of City to Terminate Contract. If the Contractor should be adjudged a bankrupt, or if he or she should make a general assignment for the benefit of his or her creditors, or if a receiver should be appointed on account of his or her insolvency, or if he or she should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply sufficient properly skilled workmen or proper materials, or if he or she should fail to make prompt payments to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the contract, then the City, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances and finish the work by whatever method the City may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the City. The expense incurred by the City as herein provided and the damage incurred through the Contractor's default, shall be certified by the Engineer. In the event that a termination under this section is determined to be improper, such termination shall be deemed a constructive termination for convenience taken pursuant to section 7-12 below.

7-11. Use of Completed Portions. The City shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions which may not have expired; but such taking possession and using shall not be deemed an acceptance of any work not completed in accordance with the contract documents. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time or both, as the Engineer may determine.

7-12. Right of City to Terminate Contract for Convenience. The City may terminate performance of the work called for by the contract documents in whole or, from time to time, in part, if the City determines that a termination is in the City's best interest. The Contractor shall terminate all or any part of the work upon delivery to the Contractor of a notice of termination specifying that the termination is for the convenience of the City, the extent of termination, and the effective date of such termination. After receipt of notice of termination, and except as directed by the Engineer, the Contractor shall, regardless of any delay in determining or adjusting any amounts due under this termination for convenience clause, immediately proceed with the following obligations:

1. Stop work as specified in the notice.
2. Complete any work specified in the notice of termination in a least cost/shortest time manner while still maintaining the quality called for under the contract documents.
3. Leave the property upon which the Contractor was working and upon which the facility (or facilities) forming the basis of the contract documents is situated in a safe and sanitary manner such that it does not pose any threat to the public health or safety.
4. Terminate all subcontracts to the extent that they relate to the portions of the work terminated.
5. Place no further subcontracts or orders, except as necessary to complete the continued portion of the contract.
6. Submit to the Engineer, within ten (10) calendar days from the effective date of the notice of termination, all of the usual documentation called for by the contract documents to substantiate all costs incurred by the Contractor for labor, materials and equipment through the effective date of the notice of termination.

Any documentation substantiating costs incurred by the Contractor solely as a result of the City's exercise of its right to terminate this Contract pursuant to this clause, which costs the contractor is authorized under the contract documents to incur, shall: (1) be submitted to and received by the Engineer no later than 30 calendar days after the effective date of the notice of termination; (2) describe the costs incurred with particularity; and (3) be conspicuously identified as "Termination Costs occasioned by the City's Termination for Convenience."

Termination of the contract shall not relieve Surety of its obligation for any just claims arising out of or relating to the work performed. In the event that the City exercises its right to terminate this contract pursuant to this clause, the City shall pay the Contractor, upon the Contractor's submission of the documentation required by this clause and other applicable provisions of the contract documents, the following amounts:

All actual reimbursable costs incurred according to the provisions of this contract.

1. A reasonable allowance for profit on the cost of the Work performed, provided Contractor establishes to the satisfaction of the Engineer that it is reasonably probable that Contractor would have made a profit had the contract been completed and provided further, that the profit allowed shall in no event exceed fifteen (15%) percent of the costs.
2. A reasonable allowance for Contractor's administrative costs in determining the amount payable due to termination of the contract under this Article.

Notwithstanding any other provision of this Article, when immediate action is necessary to protect life and safety or to reduce significant exposure or liability, the City may immediately order Contractor to cease work on the project until such safety or liability issues are addressed to the satisfaction of the City or the contract is terminated.

SECTION 8. WORKMANSHIP, MATERIALS and EQUIPMENT

8-01. General Quality. Materials and equipment shall be new and of a quality equal to that specified or approved. Work shall be done and completed in a thorough and workmanlike manner.

8-02. Quality in Absence of Detailed Specifications. Whenever under this contract it is provided that the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation, or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required, with due consideration of the use to which they are to be put. In general, the work performed shall be in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

8-03. Materials and Equipment Specified by Name. Whenever any material or equipment is indicated or specified by patent or proprietary name or by the name of the manufacturer, such specification shall be considered as used for the purpose of describing the material or equipment desired and shall be considered as followed by the words "or approved equal". The Contractor may offer any material or equipment which shall be equal in every respect to that specified, provided that written approval first is obtained from the Engineer.

8-04. Source of Materials. Price, fitness and quality being equal, preference shall be given by the Contractor for supplies grown, manufactured or produced in the State of California and, next, for such products partially produced in this State in accordance with Government Code Section 4332.

8-05. Storage of Materials. Materials shall be so stored to ensure the preservation of their quality and fitness for the work. They shall be so located and disposed that prompt and proper inspection thereof may be made.

8-06. Drawings, Samples and Tests. As soon as possible after execution of the contract, the Contractor shall submit to the Engineer, in quintuplicate, sufficient information including, if necessary, assembly and detail drawings to demonstrate fully that the equipment and materials to be furnished comply with the provisions and intent of these Special Provisions and Drawings. If the information thus submitted indicates the equipment or materials is acceptable, the Engineer will return one copy stamped with his or her approval; otherwise, one copy will be returned with an explanation of why the equipment or material is unsatisfactory. The Contractor shall have no claims for damages or for extension of time on account of any delay due to the revision of drawings or rejection of material. Fabrication or other work performed in advance of approval shall be done entirely at the Contractor's risk. After approval of equipment or material, the Contractor shall not deviate in any way from the design and specifications given without the written consent of the Engineer.

When requested by the Engineer, a sample or test specimens of the materials to be used or offered for use in connection with the work shall be prepared at the expense of the Contractor and furnished by him or her in such quantities and sizes as may be required for proper examination and tests, with all freight charges prepaid and with information as to their sources.

All samples shall be submitted before shipment and in ample time to permit the making of proper tests, analyses, or examination before the time at which it is desired to incorporate the material into the work. All tests of materials furnished by the Contractor shall be made by the Engineer. Samples shall be secured and tested whenever necessary to determine the quality of the material.

SECTION 9. PROSECUTION OF WORK

9-01. Equipment and Methods. The work under this contract shall be prosecuted with all materials, tools, machinery, apparatus and labor and by such methods as are necessary to the complete execution of everything described, shown, or reasonably implied. If at any time before the beginning or during the progress of the work, any part of the Contractor's plant or equipment, or any of his or her methods of execution of the work, appear to the Engineer to be unsafe, inefficient, or inadequate to insure the required quality or the rate of progress of the work, he or she may order the Contractor to increase or improve his or her facilities or methods and the Contractor shall comply promptly with such orders; but, neither compliance with such orders nor failure of the Engineer to issue such orders shall relieve the Contractor from his or her obligation to secure the degree of safety, the quality of the work and the rate of progress required of the Contractor. The Contractor alone shall be responsible for the safety, adequacy and efficiency of his or her plant, equipment and methods.

9-02. Time of Completion. The Contractor shall promptly begin the work under this contract and shall complete and make ready for full use all portions of the project made the subject of this contract within the time set forth in the agreement bound herewith.

9-03. Avoidable Delays. Avoidable delays in the prosecution or completion of the work shall include all delays which might have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor. The City will consider as avoidable delays within the meaning of this contract (1) delays in the prosecution of parts of the work, which may in themselves be unavoidable, but do not necessarily prevent or delay the prosecution of other parts of the work nor the completion of the whole work within the time herein specified, (2) reasonable loss of time resulting from the necessity of submitting plans to the Engineer for approval and from the making of surveys, measurements, inspections, and testing and (3) such interruptions as may occur in the prosecution of the work on account of the reasonable interference of other contractors employed by the City which do not necessarily prevent the completion of the whole work within the time herein specified.

9-04. Unavoidable Delays. Unavoidable delays in the prosecution or completion of the work under this contract shall include all delays which may result, through cause beyond the control of the Contractor and which he or she could not have provided against by the exercise of care, prudence, foresight and diligence. Orders issued by the City changing the amount of work to be done, the quantity of material to be furnished or the manner in which the work is to be prosecuted and unforeseen delays in the completion of the work of other contractors under contract with the City will be considered unavoidable delays, so far as they necessarily interfere with the Contractor's completion of the whole of the work. Delays due to normally adverse weather conditions will not be regarded as unavoidable delays. However, truly abnormal amounts of rainfall, temperatures or other weather conditions for the location of the work and time of year may be considered as unavoidable delays if those conditions necessarily cause a delay in the completion of the work.

9-05. Notice of Delays. Whenever the Contractor foresees any delay in the prosecution of the work and, in any event, immediately upon the occurrence of any delay which the contractor regards as an unavoidable delay, he or she shall notify the Engineer in writing of the probability of the occurrence of such delay and its cause, in order that the Engineer may take immediate steps to prevent, if possible, the occurrence or continuance of the delay, or, if this cannot be done, may determine whether the delay is to be considered avoidable or unavoidable, how long it continues and to what extent the prosecution and completion of the work are to be delayed thereby.

9-06. Extension of Time. Should any delays occur which the Engineer may consider unavoidable, as herein defined, the Contractor shall, pursuant to his or her application, be allowed an extension of time proportional to said delay or delays, beyond the time herein set forth, in which to complete this contract; and liquidated damages for delay shall not be charged against the Contractor by the City during an extension of time granted because of unavoidable delay or delays.

Any claim by Contractor for a time extension based on unavoidable delays shall be based on written notice delivered to the Engineer within 15 days of the occurrence of the event giving rise to the claim. Failure to file said written notice within the time specified shall constitute a waiver of said claim. Notice of the full extent of the claim and all supporting data must be delivered to the Engineer within 45 days of the occurrence unless the Engineer specifies in writing a longer period. All claims for a time extension must be approved by the Engineer and incorporated into a written change order.

9-07. Unfavorable Weather and Other Conditions. During unfavorable weather and other conditions, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work whose satisfactory quality or efficiency will be affected by any unfavorable conditions shall be constructed while these conditions remain, unless, by special means or precautions approved by the Engineer, the Contractor shall be able to overcome them.

The Contractor shall be granted a time extension of one day for each unfavorable weather day which prevents him or her from placing concrete forms or placing and finishing concrete or asphalt concrete. Such unfavorable weather day is defined as a rain day where precipitation prevents the contractor from performing the work more than four (4) continuous hours within the authorized work period or a temperature day where the ambient temperature is below that specified for the placement of materials associated with the controlling work item for more than four (4) continuous work hours of the authorized work period.

9-08. Saturday, Sunday, Holiday and Night Work. No work shall be done between the hours of 6 p.m. and 7 a.m., nor on Saturdays, Sundays or legal holidays except such work as is necessary for the proper care and protection of work already performed, or except in cases of absolute necessity and in any case only with the permission of the Engineer.

It is understood, however, that night work may be established as a regular procedure by the Contractor if he or she first obtains the written permission of the Engineer and that such permission may be revoked at any time by the Engineer if the Contractor fails to maintain at night adequate force and equipment for reasonable prosecution and to justify inspection of the work.

9-09. Hours of Labor. Eight (8) hours of labor shall constitute a legal day's work and the Contractor or any subcontractor shall not require or permit more than eight hours of labor in a day from any person employed by him or her in the performance of the work under this contract, unless paying compensation for all hours worked in excess of eight (8) hours per day at not less than 1½ times the basic rate of pay. The Contractor shall forfeit to the City, as a penalty, the sum of twenty-five dollars (\$25.00) for each workman employed in the execution of the contract by him or her or by any subcontractor, for each calendar day during which such laborer, workman, or mechanic is required or permitted to labor more than eight hours in violation of the provisions of Section 1810 to 1816, inclusive, (Article 3, Chapter 1, Part 7, Division 2) of the Labor Code of the State of California and any acts amendatory thereof.

SECTION 10. PAYMENT

10-01. Certification by Engineer. All payments under this contract shall be made upon the presentation of certificates in writing from the Engineer and shall show that the work covered by the payments has been done and the payments thereof are due in accordance with this contract.

10-02. Progress Estimates and Payment. The Engineer shall, within the first seven (7) days of each month, make an estimate of the value of the work performed in accordance with this contract during the previous calendar month.

The first estimate shall be of the value of the work satisfactorily completed in place and meeting the requirements of the contract. And every subsequent estimate, except the final estimate, shall be of the value of the work satisfactorily completed in place since the last preceding estimate was made; provided, however, that should the

Contractor fail to adhere to the program of completion fixed in this contract, the Engineer shall deduct from the next and all subsequent estimates the full calculated accruing amount of the liquidated damages to the date of said estimate, until such time as the compliance with the program has been restored.

The estimate shall be signed by the Engineer and, after approval, the City shall pay or cause to be paid to the Contractor in the manner provided by law, an amount equal to 95 percent of the estimated value of the work satisfactorily performed and complete in place.

10-03. Substitution of Securities.

1. At such times that Pubic Contract Code Section 22300 is in effect Contractor may propose the substitution of securities of at least equal market value for any moneys to be withheld to ensure performance under the Contract. Market value shall be determined as of the day prior to the date such substitution is to take place. Such substitution shall be made at the request and expense of the Contractor. The securities shall be one or more of the following types:

(a) Bonds or interest-bearing notes or obligations of the United States, or those for which the faith and credit of the United States are pledged for the payment of principal and interest.

(b) Bonds or interest-bearing notes on obligations that are guaranteed as to principal and interest by a federal agency of the United States.

(c) Bonds of the State of California, or those for which the faith and credit of the State of California are pledged for the payment of principal and interest.

(d) Bonds or warrants, including, but not limited to, revenue warrants, of any county, city, metropolitan water district, California water district, California water storage district, irrigation district in the State of California, municipal utility district, or school district of the State of California, which are rated by Moody's or Standard and Poor as A or better.

(e) Bonds, consolidated bonds, collateral trust debentures, consolidated debentures, or other obligations issued by federal land banks or federal intermediate credit banks established under the Federal Farm Loan Act, as amended; debentures and consolidated debentures issued by the Central Bank for Cooperatives and banks for cooperatives established under the Farm Credit Act of 1933, as amended; bonds, or debentures of the Federal Home Loan Bank Board established under the Federal Home Loan Bank Act; and stock, bonds, debentures and other obligations of the Federal National Mortgage Association established under the National Housing Act as amended and bonds of any Federal Home Loan Mortgage Corporation.

(f) Commercial paper of "prime" quality as defined by a nationally recognized organization which rates such securities. Eligible paper is further limited to issuing corporations: (1) organized and operating within the United States; (2) having total assets in excess of five hundred million dollars (\$500,000,000); and (3) approved by the Pooled Money Investment Board of the State of California. Purchases of eligible commercial paper may not exceed 180 days' maturity, nor represent more than 10 percent of the outstanding paper of an issuing corporation.

(g) Bills of exchange or time drafts on and accepted by a commercial bank, otherwise known as bankers acceptances, which are eligible for purchase by the Federal Reserve System.

(h) Certificates of deposits issued by a nationally or state-chartered bank or savings and loan association.

(i) The portion of bank loans and obligations guaranteed by the United States Small Business Administration or the United States Farmers Home Administration.

(j) Student loan notes insured under the Guaranteed Student Loan Program established pursuant to the Higher Education Act of 1965, as amended (20 U.S.C. 1001, et seq.) and eligible for resale to the Student Loan Marketing Association established pursuant to Section 133 of the Education Amendments of 1972, as amended (20 U.S.C. 1087-2).

(k) Obligations issued, assumed or guaranteed by International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, or the Government Development Bank of Puerto Rico.

(l) Bonds, debentures and notes issued by corporations organized and operating within the United States. Such securities eligible for substitution shall be within the top three ratings of a nationally recognized rating service.

2. The securities shall be deposited with City or with any commercial bank as escrow agent, who shall arrange for transfer of such securities to the Contractor upon satisfactory completion of the contract. Any interest accrued or paid on such securities shall belong to the Contractor and shall be paid upon satisfactory completion of the contract.

The market value of the securities deposited shall at all times be maintained in an amount at least equal, in the sole judgment of City, to the moneys to be withheld pursuant to the Contract Documents to ensure performance of the Contract. In order to comply with this condition, Contractor shall deposit additional securities as necessary upon request by City or the escrow agent.

3. Upon acceptance of any Proposal that includes substituting securities for amounts withheld to ensure performance, a separate escrow agreement satisfactory in form and substance to City shall be prepared and executed by City, the Contractor and the escrow agent, which may be City. The escrow agreement shall specify, among other matters, value of securities to be deposited; procedures for valuing the securities and for adding or withdrawing securities to maintain the market value of the deposited securities at least equal to the amount of moneys which would otherwise be withheld; the terms and conditions of conversion to cash in case of the default by the Contractor; and terms, conditions and procedure for termination of the escrow. City shall have no obligation to enter any such Agreement that does not provide the City with the unilateral right to convert securities to cash and to gain immediate possession of the cash.

10-04. Acceptance. The work must be accepted by vote of the City Council of the City of Ukiah when the whole shall have been completed satisfactorily. The Contractor shall notify the Engineer, in writing, of the completion of the work, whereupon the Engineer shall promptly, by personal inspection, satisfy himself as to the actual completion of the work in accordance with the terms of the contract and shall thereupon recommend acceptance by the City Council.

10-05. Final Estimate and Payment. The Engineer shall, as soon as practicable after the final acceptance of the work done under this contract, make a final estimate of the amount of work done thereunder and the value thereof.

Such final estimate shall be signed by the Engineer, and after approval, the City shall pay or cause to be paid to the Contractor, in the manner provided by law, the entire sum so found to be due hereunder, after deducting therefrom all previous payments and such other lawful amounts as the terms of this contract prescribe.

In no case will final payment be made in less than thirty-five (35) days after the filing of the notice of completion with the County Recorder.

10-06. Delay Payments. Should any payment due the Contractor or any estimate be delayed, through fault of the City beyond the time stipulated, such delay shall not constitute a breach of contract or be the basis for a claim for damages, but the City shall pay the Contractor interest on the amount of the payment at the rate of 6 percent per annum for the period of such delay. The terms for which interest will be paid shall be reckoned, in the case of any monthly or progress payment, from the twentieth day of the month next succeeding the month in which the work was performed to the date of payment of the estimate; and in the case of the final estimate, from the forty-fifth day after acceptance to the date of payment of the final estimate.

The date of payment of any estimate shall be considered the day on which the payment is offered or mailed as evidenced by the records of the Treasurer of the City. If interest shall become due on any delayed payment, the amount thereof, as determined by the City, shall be added to a succeeding payment. If the interest shall become due on the final payment, it shall be paid on a supplementary voucher to interest or any sum or sums which, by the terms of this contract, the City is authorized to reserve or retain.

10-07. Extra Work and Work Omitted. Whenever corrections, alterations, or modifications of the work under this contract ordered by the Engineer and approved by the City increase the amount of work to be done, such added work shall be known as "extra work"; and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as "work omitted".

When the Contractor considers that any changes ordered involve extra work, he or she shall immediately notify the Engineer in writing and subsequently keep him or her informed as to when and where extra work is to be performed and shall make claim for compensation therefor each month not later than the first day of the month following that in which the work claimed to be extra work was performed and he or she shall submit a daily complete statement of materials and labor used and expenses incurred on account of extra work performed, showing allocation of all materials, labor and expenses.

All such claims shall state the date of the Engineer's written order and the date of approval by the City authorizing the work on account of which claim is made. Unless such notification is made in writing within the time specified and unless complete statements of materials used and expenses incurred on account of such extra work are furnished as above required, the Contractor shall not be entitled to payment on account of extra work and Contractor shall be deemed to have waived the right to make any future claims for compensation for such extra work.

When changes decrease the amount of work to be done, they shall not constitute a claim for damages on account of anticipated profits on the work that may be omitted.

10-08. Compensation for Extra Work or Work Omitted. Whenever corrections, additions, or modifications in the work under this contract change the amount of work to be done or the amount of compensation due the Contractor, excepting increases or decreases in contract items having unit contract prices for each measurable quantity installed in place, and such changes have been ordered in writing by the Engineer and approved by the City prior to the Contractor performing the extra work, then a price may be agreed upon. Failing such an agreement in price, the Contractor shall be compensated for performing extra work pursuant to the provisions of Section 4-1.03 D, "Extra Work", and Section 9-1.03, "Force Account Payment" of the Standard Specifications.

This method of determining the price of work shall not apply to the performance of any work which is required or reasonably implied to be performed or furnished under this contract.

10-09. Compensation to the City for Extension of Time. In case the work called for under this contract is not completed within the time limit stipulated herein, the City shall have the right as provided hereinabove, to extend the time of completion thereof. If the time limit be so extended, the City shall have the right to charge to the Contractor and to deduct from the final payment for the work the actual cost to the City of engineering, inspection, superintendence and other overhead expenses which are directly chargeable to the contract and which accrue during the period of such extension, except that the cost of final unavoidable delays shall not be included in such charges.

10-10. Liquidated Damages for Delay. It is agreed by the parties to the contract that time is of the essence and that, in case all the work is not completed before or upon the expiration of the time limit as set forth, damage, other than those cost items identified in section 10-09, will be sustained by the City and that it is and will be impracticable to determine the actual amount of damage by reason of such delay; and it is therefore agreed that the Contractor will pay to the City the sum of five hundred dollars (\$500.00) per day for each and every calendar day's delay beyond the time prescribed.

In compliance with the provisions of California Public Contract Code § 7102, the Contractor will be compensated for damages incurred due to delays in completing the work due solely to the fault of the City, where such delay is unreasonable under the circumstances and not contemplated by the parties. The Contractor and City agree that determining actual damages is impracticable and extremely difficult. As such, the Contractor shall be entitled to the appropriate time extension and to payment of liquidated damages in the sum of \$250 per day of delay in excess of the time specified for the completion of the work. Such amount shall constitute the only payment allowed and shall necessarily include all overhead (direct or indirect), all profit, all administrative costs, all bond costs, all labor, materials, equipment and rental costs, and any other costs, expenses and fees incurred or sustained as a result of such delay. The Contractor expressly agrees to be limited solely to the liquidated damages for all such delays as defined in this subsection.

SECTION 11. MISCELLANEOUS

11-01. Notice. Whenever any provision of the contract documents requires the giving of written notice, it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. If mailed, the notice shall be deemed received on the date of delivery stated in the return receipt.

11-02. Computation of Time. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

11-03. Claims Procedure

Contractor shall timely comply with all notices and requests for changes to the contract time or contract price, as a prerequisite to filing any claim governed by this Article. The failure to timely submit a notice of delay or notice of change, or to timely request a change to the contract time or contract price, or to timely provide any other notice or request required herein shall constitute a waiver of the right to further pursue the claim under the contract or at law.

- A. **Intent.** Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of \$375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Article is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Article shall be construed to be consistent with said statutes.
- B. **Claims.** For purposes of this Article, "Claim" means a separate demand by the Contractor, for (A) a time extension, (B) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the Contract, or (C) an amount the payment of which is disputed by the District. Claims governed by this Article may not be filed unless and until the Contractor completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order. Claims governed by this Article must be filed no later than the date of final payment. The claim shall be submitted in writing to the District and shall include on its first page the following in 16 point capital font: "THIS IS A CLAIM." Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing herein is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims, including all requirements pertaining to compensation or payment for extra work, disputed work, and/or changed conditions. Failure to follow such contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.
- C. **Supporting Documentation.** The Contractor shall submit all claims in the following format:

Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made

List of documents relating to claim:

Specifications

Drawings

Clarifications (Requests for Information)

Schedules

Other

Chronology of events and correspondence

Analysis of claim merit

Analysis of claim cost

Time impact analysis in CPM format

If Contractor's claim is based in whole or in part on an allegation of errors or omissions in the Drawings or Specifications for the project, Contractor shall provide a summary of the percentage of the claim subject to design errors or omissions and shall obtain a certificate of merit in support of the claim of design errors and omissions.

D. City's Response. Upon receipt of a claim pursuant to this Article, City shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 days after the City issues its written statement.

If the City needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the claim, and the City's governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the City shall have up to three days following the next duly publicly noticed meeting of the City's governing body after the 45-day period, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.

Within 30 days of receipt of a claim, the City may request in writing additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of City and the Contractor. The City's written response to the claim, as further documented, shall be submitted to the Contractor within 30 days (if the claim is less than \$15,000, within 15 days) after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

E. Meet and Confer. If the Contractor disputes the City's written response, or the City fails to respond within the time prescribed, the Contractor may so notify the City, in writing, either within 15 days of receipt of the City's response or within 15 days of the City's failure to respond within the time prescribed, respectively, and demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, the City shall schedule a meet and confer conference within 30 days for settlement of the dispute.

F. Mediation. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the City shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the City issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the City and the Contractor sharing the associated costs equally. The City and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing, unless the parties agree to select a mediator at a later time.

If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

Unless otherwise agreed to by the City and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code Section 20104.4 to mediate after litigation has been commenced.

The mediation shall be held no earlier than the date the Contractor completes the work or the date that the Contractor last performs work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation, unless a new unrelated claim arises after mediation is completed.

G. Procedures After Mediation. If following the mediation, the claim or any portion remains in dispute, the Contractor must file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code prior to initiating

litigation. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference.

H. Civil Actions. The following procedures are established for all civil actions filed to resolve claims of \$375,000 or less:

Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of this Contract. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

I. Government Code Claims. In addition to any and all contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, construction claims and/or changed conditions, the Contractor must comply with the claim procedures set forth in Government Code Sections 900, et seq. prior to filing any lawsuit against the City. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra work, disputed work, construction claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if the prerequisite contractual requirements are not satisfied, no action against the City may be filed. **A Government Code claim must be filed no earlier than the date the work is completed or the date the Contractor last performs work on the project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.**

J. Non-Waiver. The City's failure to respond to a claim from the Contractor within the time periods described in this Article or to otherwise meet the time requirements of this Article shall result in the claim being deemed rejected in its entirety.

11-04. Litigation and Forum Selection. Contractor and City stipulate and agree that any litigation relating to the enforcement or interpretation of this contract, arising out of Contractor's performance or relating in any way to the work shall be brought in Mendocino County and that venue will lie in Mendocino County.

Except as otherwise expressly provided by law, the parties waive any objections they might otherwise have to the propriety of jurisdiction or venue in the state courts in Mendocino County and agree that California law shall govern any such litigation.

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto and, in particular but without limitation, the warranties, guaranties and obligations imposed upon the Contractor and all of the rights and remedies available to the City thereunder, shall be in addition to and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contract, by special warranty or guaranty, or by other provisions of the contract documents and the provisions of this paragraph shall be as effective as if repeated specifically in the

contract documents in connection with each particular duty, obligation, right and remedy to which they apply. All warranties and guaranties made in the contract document shall survive final payment and termination or completion of this contract. The City disclaims an express or implied warranty that the plans and specifications identify all site conditions that could affect the time or cost to complete the Work.

11-05. Waiver. The Contractor shall strictly comply with all notices and other contract requirements. Waiver by the City of any failure of the Contractor to comply with any term of the contract, including the notice provisions, shall not be deemed a waiver of a subsequent breach.

TECHNICAL SPECIFICATIONS

SECTION 12. GENERAL INFORMATION

12-01. Location and Scope of Work. All of the work to be performed is within the City of Ukiah and consists of a comprehensive remodel of the former Bank of America building located at 501 South State Street in Ukiah, California. The remodel will modernize the facility, enhance functionality, and address updates to the interior and exterior spaces. This includes structural improvements, mechanical, electrical, and plumbing upgrades, and refinishing work to ensure the building meets contemporary standards.

The remodel will incorporate the construction of new interior spaces, installation of modern systems, and repair of structural elements to create a functional and aesthetically appealing environment.

The remodel will include the following work:

The existing interior spaces will be upgraded with new restrooms, complete with modern fixtures, partitions, grab bars, and finishes. A new service counter will be installed, designed to enhance customer service and workflow efficiency. Doorways will be reconfigured, with new doors and hardware installed to improve access and functionality throughout the building. The interior will also include a new staff sink in designated areas and the installation of an elevator to provide access between floors. New fire extinguisher cabinets, updated signage throughout the facility, and repairs to interior stairs will ensure compliance with modern standards and improve overall safety. Flooring surfaces throughout the building will be leveled and refinished, providing a smooth and visually appealing result.

Exterior improvements will include upgrades to the site's parking areas and construction of ramps to enhance access. Grading and paving work will be conducted as needed to address slopes and transitions, ensuring a seamless and updated exterior environment.

Mechanical, electrical, and plumbing work will include updates to plumbing systems with the installation of new domestic water piping, sanitary waste systems, and fixtures. The HVAC system will be modified to accommodate the remodeled layout, with adjustments to ductwork and insulation. Electrical upgrades will involve installing new circuits, wiring, and lighting systems for both the interior and exterior, ensuring sufficient power and lighting throughout the building. Internet access will be provided for new building systems, ensuring connectivity and operational efficiency.

Deferred submittals will include detailed plans for review and approval of specific items such as non-structural seismic supports and systems related to the remodel. All work will be conducted per approved plans, specifications, and applicable building codes, ensuring a high standard of construction quality.

Mock-ups will be provided for review and approval of critical finishes, including paint, tile, and other materials. Inspections will be coordinated at key stages to verify compliance with project specifications. Detailed "as-built" drawings will be maintained, and training manuals for new systems will be provided upon completion. A final walkthrough will confirm compliance with all project requirements, addressing any remaining items on the punch list.

At the conclusion of the project, all required documentation, including warranties, maintenance manuals, and final "as-built" drawings, will be submitted. The site will be turned over in a clean and orderly condition, ensuring the building is fully operational and ready for use as specified.

General locations of the work are 501 South State Street, Ukiah CA 95482.

The Contractor should familiarize himself with the local conditions of the project sites. Failure to do so will in no way relieve him of the responsibility for performing any of the work or operations required as a part of this contract. Further information regarding the work or these specifications can be obtained from Myles Fisette at (707) 463-6225.

12-02. Arrangement of Technical Specifications. The Technical Specifications are provided as Appendix A, arranged in sections covering the various phases of work as follows:

DIVISION 0 – PROCUREMENT AND CONTRACTING REQUIREMENTS
DIVISION 1 – GENERAL REQUIREMENTS
DIVISION 2 – EXISTING CONDITIONS
DIVISION 3 – CONCRETE
DIVISION 4 – MASONRY
DIVISION 5 – METALS
DIVISION 6 – WOOD AND PLASTICS
DIVISION 7 – THERMAL AND MOISTURE PROTECTION
DIVISION 8 – DOORS AND WINDOWS
DIVISION 9 – FINISHES
DIVISION 10 – SPECIALTIES
DIVISION 11 – EQUIPMENT
DIVISION 12 – FURNISHINGS
DIVISION 13 – SPECIAL CONSTRUCTION
DIVISION 14 – CONVEYING SYSTEMS
DIVISION 21 – FIRE SUPPRESSION
DIVISION 22 – PLUMBING
DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
DIVISION 26 – ELECTRICAL
DIVISION 28 – ELECTRONIC SAFETY AND SECURITY
DIVISION 31 – EARTHWORK
DIVISION 32 – EXTERIOR IMPROVEMENTS
DIVISION 33 – WATER UTILITIES

12-03. Arrangement of Plans. General locations and linear quantities of the work are shown in Appendix "A". A map will be provided to the successful bidder showing the exact locations of the work to be done.

12-04. Business Licenses. The Contractor and any subcontractors shall each secure and maintain a valid City of Ukiah Business License prior to the start of any portion of the work.

12-05. Permits. The Contractor shall provide, procure, and pay for all permits required to complete this work.

12-06. Standard Specifications and Standard Plans. The Standard Specifications and Standard Plans of the California State Department of Transportation, 2018, are hereby made a part of these Special Provisions and are hereinafter referred to as "California Standard Specifications" and "California Standard Plans."

Whenever in the California Standard Specifications and the California Standard Plans the following terms are used, they shall be understood to mean and refer to the following:

Department of Transportation - The City Council.

Director of Public Works - The City of Ukiah Director of Public Works.

Engineer - The Engineer, designated by the City Council, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

Laboratory - The designated laboratory authorized by the City of Ukiah to test materials and work involved in the contract.

State - The City of Ukiah

Other terms appearing in the California Standard Specifications and the California Standard Plans shall have the intent and meaning specified in Section I, Definition of Terms of the California Standard Specifications.

In case of discrepancy between the contract documents, the order of precedence from the highest to lowest is as follows:

1. (City) Special Provisions
2. (City) Project Plans
3. City Standard Plans and Details
4. California Standard Plans
5. California Standard Specifications

12-07. Temporary Facilities. All temporary facilities are the responsibility of the Contractor. The removal of said facilities shall be the responsibility of the Contractor. The Contractor shall be responsible for any and all damages to existing facilities which are a result of the work.

12-08. Public Convenience and Safety. The Contractor shall conduct operations so as to cause the least possible obstruction and inconvenience to public traffic. The Contractor shall, at his or her expense, furnish such flag persons and furnish, erect, construct and maintain such fences, barriers, lights, signs, detours, pedestrian walkways, driveway ramps and bridging as may be necessary to give adequate warning to the public that work is in progress and that dangerous conditions exist, to provide access to abutting properties and to permit the flow of pedestrian and vehicular traffic to safely and expeditiously pass the work.

12-09. Maintaining Traffic. Attention is directed to Section 7-1.08, "Public Convenience," 7-1.09, "Public Safety," 7-1.092, "Lane Closure," and 7-1.095, "Flagging Costs," of the California Standard Specifications.

Streets shall be open to through vehicular traffic during non-working hours. All public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible.

Full costs for "Maintaining Traffic", including "Flagging Costs", shall be considered as included in the various items of work and no additional compensation will be made.

12-10. Stream Pollution. The Contractor shall exercise every reasonable precaution to prevent muddying or silting of live streams, and the Contractor's attention is called to the fact that the terms of this contract do not relieve him or her of responsibility for compliance with Sections 5650 and 12015 of the Fish and Game Code or other applicable statutes relating to pollution prevention or abatement.

12-11. Warranties. Unless otherwise indicated, the Contractor shall warrant all materials provided and work performed under this contract for a period of one year from the date of final acceptance. He shall replace promptly and at his own expense any materials and/or workmanship which fail during this warranty period.

12-12. Utilities. No water, sewer or electrical services will be provided by the owner. It is the Contractor's sole responsibility to arrange such services as necessary.

12-13. Preconstruction Conference. A preconstruction conference will be held before any work will be allowed to commence. This meeting will cover inspection, schedule for work, and among other items, the responsibilities and procedures of each of the interested parties to assure that the project will be completed in accordance with the contract documents.

12-14. Safety Requirements. The Contractor shall comply with all pertinent provisions of the Department of Labor "Safety and Health Regulations for Construction (29 FCS Part 1518, 36 CFR 7340)", with additions or modifications thereto, in effect during construction of this project.

SECTION 13 - CONSTRUCTION DETAILS

13-01. Technical Specifications. See Appendix A.

13-02. Project Drawings. See Attachment A.

SECTION 14. EXCLUSIONS FROM GENERAL CONDITIONS

14-01. Provisions to be Excluded from General Conditions. The following designated provisions of the General Conditions are hereby determined to be inapplicable to the proposed work and, therefore, are hereby excluded from the terms of the Notice to Bidders, Proposal, Agreement and other contract documents as though entirely omitted from said General Conditions:

- (1) Section 6-02. Office at the Site
- (2) Section 7-03. Surveys

No other exclusions.

SECTION 15. AMENDMENTS TO GENERAL CONDITIONS

15-01. Sections of General Conditions to be Amended.

The following designated sections of the Special Provisions are hereby amended to read as follows:

No amendments.

BID SUBMITTAL CHECKLIST

The following is a checklist to assist you in your submission of your bid documents. Please make sure you include the following when submitting your bid documents to reduce the risk of having your bid rejected:

Did you include?...

- **Proposal** (Page 31)
 - Unit prices filled out clearly.
 - Extended prices filled out clearly and calculated correctly
 - Total bid amount filled out clearly and calculated correctly
 - Sign the proposal, and provide complete information
 - CLSB No. and expiration date
 - Department of Industrial Relations Public Works Contractor Registration Number
- **Fair Employment Practices Certification** (Page 36)
 - Filled out completely per instruction
- **Worker's Compensation Certificate** (Page 37)
 - Filled out completely per instruction
- **Certification of Non-Discrimination in Employment** (Page 38)
 - Filled out completely per instruction
- **List of Proposed Subcontractors** (Page 39)
 - Filled out completely per instruction
- **Statement of Experience** (Page 40)
- **Signature of Bidder** (Page 41)
 - Filled out completely per instruction
 - Authorized signature provided
- **Bidder's Bond** (Page 42)
 - Filled out completely per instruction
- **Non-Collusion Affidavit** (Page 43)
 - Filled out completely per instruction
 - Notarized
- **Addenda Issued**
 - Check the City website for any addenda issued: www.cityofukiah.com/purchasing Please note that actual acknowledgment of addenda is not required to submit with your bid. Refer to Section 1-11 and 3-07 of the General Conditions.

**CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA**

PROPOSAL

**FOR
REMODEL OF 501 SOUTH STATE STREET**

Specification No. 25-04

The undersigned, as bidder,
declares that he or she has examined thoroughly all of the contract documents herein contained, that this proposal is made without collusion with any other person, firm or corporation and that all laws and ordinances relating to the interest of public officers in this contract have been complied with in every respect.

AND he or she proposes and agrees, if this proposal is accepted,

- 1) that he or she will contract with the City of Ukiah, Mendocino County, California, in the form of the copy of the agreement herein contained
 - a) to provide all necessary machinery, tools, apparatus and other means of construction;
 - b) to furnish all materials;
 - c) to provide all superintendence, overhead expenses and all labor and expenses of whatever nature necessary to complete the job in conformity with the specifications and drawings and other contract provisions herein or reasonably implied hereby or as necessary to complete the work in the manner and within the time named herein and according to the requirements and to the reasonable satisfaction of the City Engineer;
 - d) to pay all charges of freight transportation and hauling;
- 2) that he or she indemnifies the City against any loss or damage arising from any act of the undersigned as Contractor; and
- 3) that he or she will accept as full payment therefor the following sums:

BIDDING SCHEDULE

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;
2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the items in the "Total" column. In case of discrepancy between the sum of the items in the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column items shall prevail. The bid comparison will be based on the sum of the items in the "total" column for each bidder.

The Unit prices for the various Construction Items below include all costs associated with the General Conditions, Special Provisions, Requirements of the Construction Contract, and represent the total, complete, in-place cost for each specific Construction Item in accordance with the Construction Documents, including all elements, work components, accessories, and connections, shown in applicable details or required to yield a complete, sound and functional component or system appropriate for its intended function, whether or not such is specifically described or listed in any description of measurement or payment. The total amount of the Construction items below shall represent the total and complete cost of the fully functional Project. All work not specifically listed below be required to complete the work of the various construction items and the cost of such shall be considered as included throughout the various unit prices indicated.

Lowest bid will be based on the lowest Base Bid, not including the add alternate bid item.

NAME OF BIDDER:

SPEC #:

PROJECT NAME:

25-04

REMODEL OF 501 SOUTH STATE STREET

ITEM#	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
1	Temporary Controls, Fencing & Signage	LS	1	\$ _____	\$ _____
2	Mobilization	LS	1	\$ _____	\$ _____
3	Div 02 - Demolition	LS	1	\$ _____	\$ _____
4	Div 03 - Concrete	LS	1	\$ _____	\$ _____
5	Div 05 - Metal Fabrications	LS	1	\$ _____	\$ _____
6	Div 06 - Wood	LS	1	\$ _____	\$ _____
7	Div 07 - Insulation & Waterproofing	LS	1	\$ _____	\$ _____
8	Div 08 - Doors & Windows	LS	1	\$ _____	\$ _____
9	Div 09 - Finishes	LS	1	\$ _____	\$ _____
10	Div 10 - Signage & Accessories	LS	1	\$ _____	\$ _____
11	Div 13 - Non-Structural Seismic Restraints	LS	1	\$ _____	\$ _____
12	Div 14 - Elevator	LS	1	\$ _____	\$ _____
13	Div 21 - Wet Pipe Sprinkler Systems	LS	1	\$ _____	\$ _____
14	Div 22 - Plumbing	LS	1	\$ _____	\$ _____
15	Div 23 - Mechanical	LS	1	\$ _____	\$ _____
16	Div 26 - Electrical	LS	1	\$ _____	\$ _____
17	Div 28 - Access Control	LS	1	\$ _____	\$ _____

18	Div 31 - Earthwork	LS	1	\$ _____	\$ _____
19	Div 32 - Site Improvements	LS	1	\$ _____	\$ _____
20	Div 33 - Sanitary Sewer	LS	1	\$ _____	\$ _____
TOTAL BASE BID ==>>					\$ _____

BID ALTERNATES

Item #	Description	Unit of Measure	Quantity	Unit Price	Total
A1	New Transformer - including Demo of Existing Transformer & Site Work	LS	1	\$ _____	\$ _____
TOTAL ALTERNATE BID →					\$ _____

TOTAL BID: **Items 1 through A1 inclusive: \$ _____**

We, the undersigned, acknowledge that the City Council has reserved the right to reject any or all bids and to determine which proposal is, in its opinion, the lowest responsive bid from a responsible bidder and that which it deems in the best interest of the City to accept. We, the undersigned, further agree, if this proposal shall be accepted, to sign the agreement and to furnish the required bonds with satisfactory surety, or sureties, within fifteen (15) calendar days after written notice that the contract is ready for signature; and, if the undersigned shall fail to contract, as aforesaid, it shall be understood that he or she has abandoned the contract and that, therefore, this proposal shall be null and void and the proposal guaranty accompanying this proposal, or the amount of said guaranty, shall be forfeited to and become the property of the City. Otherwise, the proposal guaranty accompanying this proposal shall be returned to the undersigned.

Witness our hands this day of _____, 20____.

Licensed in accordance with an act providing for the registration of California Contractors License No. _____, expiration date _____.

THE CONTRACTOR'S LICENSE NUMBER AND EXPIRATION DATE STATED HEREIN ARE MADE UNDER PENALTY OF PERJURY.

Department of Industrial Relations Public Works Contractor Registration Number: _____

Signature of bidder or bidders, with business name, address, phone number and fax number:

Notice: In the case of a corporation, give below the addresses of the principal office thereof and names and addresses of the President, Secretary, Treasurer.

FAIR EMPLOYMENT PRACTICES CERTIFICATION

TO: _____

The undersigned, in submitting a bid for performing the following work by Contract, hereby certifies that he or she has or will meet the standards of affirmative compliance with the Fair Employment Practices requirements of the Special Provisions contained herein.

REMODEL OF 501 SOUTH STATE STREET

(Signature of Bidder)

Business Mailing Address:

Business Location:

(The bidder shall execute the certification of this page prior to submitting his or her proposal.)

WORKER'S COMPENSATION CERTIFICATE

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Worker's Compensation or undertake self-insurance in accordance with the provisions of that code and I will comply with such provisions before commencing the performance of the work of this contract.

Witness my hand this _____ day of _____, 200_____

Signature of Bidder, with Business Address:

CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT

The bidder represents that he or she has/has not, participated in a previous contract or subcontract subject to either the equal opportunity clause herein or the clause contained in Section 301 of Executive Order 10925; that he or she has/has not, filed all required compliance reports; and that representations indicating submission of required compliance prior to subcontract awards.

Signature and address of Bidder:

_____ Date _____

(This certification shall be executed by the bidder in accordance with Section 60-1.6 of the Regulations of the President's Committee on Equal Employment Opportunity for implementing Executive Orders 10925 and 11114.)

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4108 of the California Public Contract Code and any amendments thereof, each bidder shall set forth (a) the name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction site or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of 1 percent of the total bid and (b) the California Contractor License Number for each subcontractor, and (c) the portion of the work to be done by each subcontractor. (See General Conditions Section 1-09.) Include with the name of each sub-contractor their Department of Industrial Relations Public Works Contractor Registration Number.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK

The bidder is required to state below what work of similar magnitude or character he or she has done and to give references that will enable the City Council to judge of his or her experience, skill and business standing and his or her ability to conduct work as completely and rapidly as required under the terms of the contract.

[illegible]

SIGNATURE(S) OF BIDDER

Accompanying this proposal is _____
(insert the words "cash (\$)", "cashier's check" or "bidder's bond", as the case may be) in an amount equal to at least 10 percent of the bid.

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If bidder or other interested person is a corporation, provide the legal name of corporation and also the names of the president, secretary, treasurer and manager thereof. If a co-partnership, provide the true name of firm and also the names of all individual co-partners composing the firm. If bidder or other interested person is an individual, provide the first and last names in full.

Licensed in accordance with an act providing for the registration of Contractors:

License No. _____, License Expiration Date _____.

Signature(s) of Bidder: _____

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the co-partnership; and if bidder is an individual, his or her signature shall be placed above. If a member of a partnership, a Power of Attorney must be on file with the Department prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

Business address: _____

Place of residence: _____

Dated: _____

CITY OF UKIAH
Mendocino County, California

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, _____

_____, as PRINCIPAL and

_____, as SURETY,

are held and firmly bound unto the City of Ukiah in the penal sum of 10 PERCENT OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the City of Ukiah, as the case may be, for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, to the City Clerk to which said bid was submitted, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents. In no case shall the liability of the surety hereunder exceed the sum of \$ _____

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above mentioned bid to the City of Ukiah, as aforesaid, for certain construction specifically described as follows, for which bids are to be opened at the Office of the City Clerk, Ukiah Civic Center, Ukiah, California, on AUGUST 19, 2025 for REMODEL OF 501 SOUTH STATE STREET.

NOW, THEREFORE, If the aforesaid Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him or her for signatures, enters into a written contract, in the prescribed form, in accordance with the bid and files two bonds with the City of Ukiah, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, A.D. 20____.

_____(Seal)

_____(Seal)

_____(Seal)

Principal

_____(Seal)

_____(Seal)

_____(Seal)

Surety

Address: _____

NON-COLLUSION AFFIDAVIT

Note: Bidder shall execute the affidavit on this page prior to submitting his or her bid.

To City Council, City of Ukiah:

The undersigned in submitting a bid for performing REMODEL OF 501 SOUTH STATE STREET by contract, being duly sworn, deposes and says:

that he or she has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract.

Signature(s) of Bidder

Business Address: _____

Place of Residence: _____

NOTARIZATION

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public in and for the County of _____, State of California.

My Commission Expires _____, 20 ____.

CITY OF UKIAH
Mendocino County, California

AGREEMENT

FOR

REMODEL OF 501 SOUTH STATE STREET

Specification No. 25-04

THIS AGREEMENT, made this _____ day of _____, 20____, by and between the City of Ukiah, Mendocino County, California, hereinafter called the City and _____ hereinafter called the Contractor,

WITNESSETH:

WHEREAS, the City has caused to be prepared in accordance with law, specifications, drawings and other contract documents for the work herein described and shown and has approved and adopted these contract documents, specifications and drawings and has caused to be published in the manner and for the time required by law a notice to bidders inviting sealed proposals for doing the work in accordance with the terms of this contract and

WHEREAS, the Contractor, in response to the notice to bidders, has submitted to the City a sealed proposal accompanied by a proposal guaranty in an amount of not less than 10 percent of the bid price for the construction of the proposed work in accordance with the terms of this contract and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined and canvassed the proposals submitted and as a result has determined and declared the Contractor to be the lowest and best regular responsible bidder for the work and for the sums named in the proposal,

NOW, THEREFORE, THIS AGREEMENT WITNESSETH:

Article 1. Work to be Done and Contract Days Allowed.

That the Contractor shall provide all necessary machinery, tools, apparatus and other means of construction; shall furnish all materials, superintendence, overhead, expenses, all labor and expenses of whatever nature necessary for completion of the work in conformity with the Special Provisions and other contract documents hereto attached and according to such instructions as may be given by the Engineer. The Contractor shall complete the work within TWO HUNDRED AND FORTY (240) working days. Contract days shall be counted starting with the 10th day following receipt of notice that the contract has been executed by the City. Contractor, at his or her option, may begin work prior to start of counting contract days, however, in no event shall the Contractor start work without giving notification to the Engineer at least 72 hours prior to the start of work, without obtaining an encroachment permit from the City, or without having submitted certificates of insurance that have been accepted and approved by the Engineer

Article II. Contract Prices.

That the City shall pay the Contractor the prices stated in the proposal submitted by the Contractor, for complete performance of the contract by the Contractor. The Contractor hereby agrees to accept the prices as full compensation for all material and appliances necessary to the work, for all labor and use of tools and other implements necessary to execute the work contemplated in this contract; for all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the work; for all risks of every description connected therewith; for all expenses of the work, as herein specified; for all liability and other insurance, for all overhead and other expenses incident to the work; all according to the Contract Drawings, the Special Provisions, the Details, the instructions and the requirements of the City.

Article III. Labor Discrimination.

Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, color, national origin or ancestry, or religion of such persons and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

In connection with the performance of work under this contract, the Contractor agrees as follows:

- (a) The Contractor will not willfully discriminate against any employee or an applicant for employment because of race, color, religion, ancestry, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, ancestry, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the awarding authority setting forth the provisions of this Fair Employment Practice section.
- (b) The Contractor will send to each labor union or representative of workers with which he or she has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the awarding authority, advising the said labor union or worker's representative of the Contractor's commitments under this section, to employees and applicants for employment.
- (c) The Contractor will permit access to his or her records of employment, employment advertisements, application forms and other pertinent data and records by the Fair Employment Practices Commission, City of Ukiah or any other appropriate agency of the State of California designated by the awarding authority, for the purposes of investigation to ascertain compliance with the Fair Employment Practices section of this contract.
- (d) A finding of willful violation of the Fair Employment Practices section of this Contract or of the Fair Employment Practices Act shall be regarded by the awarding authority as a basis for determining the Contractor to be not a "responsible bidder" as to future contracts for which such Contractor may submit bids, for revoking the Contractor's pre-qualification rating, if any and for refusing to establish, reestablish or renew a pre-qualification rating for the Contractor.

The City of Ukiah shall deem a finding of willful receipt of written notice from the Fair Employment Practices Act to have occurred upon that it has investigated and determined that the Contractor has

violated the Fair Employment Practices Act and has issued an order under Labor Code Section 1426 or obtained an injunction under Labor Code Section 1429.

Upon receipt of such written notice from the Fair Employment Practices Commission, the City shall notify the Contractor that unless he or she demonstrates to the satisfaction of the awarding authority within a stated period that the violation has been corrected, his or her pre-qualification rating will be revoked at the expiration of such period.

- (e) The Contractor agrees that should the City determine that the Contractor has not complied with the Fair Employment Practices section of this Contract, then pursuant to Labor Code Section 1735 and 1775 the Contractor shall, as a penalty to the City, forfeit for each calendar day or portion thereof, for each person who was denied employment as a result of such non-compliance, the penalties provided in the Labor Code for violation of prevailing wage rates. Such monies may be recovered from the Contractor. The City may deduct any such damages from any monies due the Contractor.
- (f) Nothing contained in this Fair Employment Practices section shall be construed in any manner of fashion so as to prevent the City or the State of California from pursuing any other remedies that may be available at law.
- (g) Prior to awarding the Contract, the Contractor shall certify to the awarding authority that he or she has or will meet the following standards for affirmative compliance, which shall be evaluated in each case by the awarding authority:
 - (1) The Contractor shall provide evidence, as required by the City that he or she has notified all supervisors, foremen and other personnel officers in writing of the content of the anti-discrimination clause and their responsibilities under it.
 - (2) The Contractor shall provide evidence, as required by the City, that he or she has notified all sources of employees' referrals (including unions, employment agencies, advertisements, Department of Employment) of the content of the anti-discrimination clause.
 - (3) The Contractor shall file a basic compliance report, as required by the City. Willfully false statements made in such reports shall be punishable as provided by law. The compliance report shall also spell out the sources of the work force and who has the responsibility for determining whom to hire, or whether or not to hire.
 - (4) Personally, or through his or her representatives, the Contractor shall, through negotiations with the unions with whom he or she has agreements, attempt to develop an agreement which will:
 - a. Spell out responsibilities for nondiscrimination in hiring, referral, upgrading and training.
 - b. Otherwise implement an affirmative anti-discrimination program in terms of the unions' specific areas of skill and geography to the end that qualified minority workers will be available and given and equal opportunity for employment.
 - (5) The Contractor shall notify the City of opposition to the anti-discrimination clause by individuals, firms or organizations during the period of its pre-qualification.
- (h) The Contractor will include the provisions of the foregoing paragraphs 1 through 5 in every first tier subcontract so that such provisions will be binding upon each such subcontractor.
- (i) The "Fair Employment Practices Certification" must be completed and signed prior to the time of submitting the bid.

Article IV. Parts of the Contract.

That the complete contract consists of the following documents, all of which shall be considered a part of this agreement.

1. Notice to Bidders
2. Wage Rates
3. General Conditions
4. Technical Specifications
5. Proposal
6. Fair Employment Practices Certification
7. Agreement
8. Contract Bonds
9. Contract Drawings and Construction Details
10. Standard Drawings
11. Indemnification Agreement

IN WITNESS WHEREOF, this contract being executed in duplicate and the parties having caused their names to be signed by authority of their duly authorized office this ____ day of _____, 20 ____.

CITY OF UKIAH, MENDOCINO COUNTY, CALIFORNIA

By: _____
CITY MANAGER, CITY OF UKIAH

Attest: _____
CITY CLERK, CITY OF UKIAH

By: _____
CONTRACTOR

Attest: _____

Title: _____

The foregoing contract is approved as to form and legality this ____ day of _____, 20 ____.

CITY ATTORNEY, CITY OF UKIAH

INDEMNIFICATION AGREEMENT

This Indemnification Agreement is made and entered in Ukiah, California, on _____, 20____, by and between the City of Ukiah (Ukiah) and _____ (Contractor).

Contractor is

_____ for Ukiah.

As a condition of issuing the work order, attached hereto, Ukiah requires assurance that Contractor will protect Ukiah from damage or damage claims which arise from its performance of the work.

Accordingly, Contractor agrees as follows:

1. **Indemnification.** Contractor shall indemnify and hold harmless Ukiah and its officers, agents, and employees from and against any claim, loss, or damage, including the legal and other costs of defending against any claim of damage or loss which arises out of the Contractor's negligent or wrongful performance under the work order attached hereto, except for claims, losses, or damages resulting from the sole and exclusive negligence or other wrongful conduct of Ukiah or its officers, agents and employees.

CONTRACTOR

BY: _____

TITLE: _____

CITY OF UKIAH
Mendocino County, California

PERFORMANCE BOND

BOND No. _____

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the City of Ukiah, organized and operating under the laws of the State of California, (hereinafter referred to as the "City") has awarded to _____, (hereinafter referred to as the "Contractor") an agreement for Contract No. _____ (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract for the Project dated _____, (hereinafter referred to, together with all attachments and exhibits thereto, as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by the Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, _____, the undersigned Contractor and _____, as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held firmly bound until the City in the sum of _____ (\$ _____), for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations; and shall indemnify and save harmless the City, its officials, officers, employees, and authorized volunteers, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees including reasonable attorneys' fees, incurred by the City in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by the City, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the City from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the City's rights or the Contractor or Surety's obligations under the Contract Documents, law or equity, including, but not limited to, California Code of Civil Procedure Section 337.15.

Whenever Contractor shall be, and is declared by the City to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the City's option:

- i. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- ii. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a contract between such bidder, the Surety and the City, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract

price, including other costs and damages for which Surety may be liable. The term “balance of the contract price” as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.

iii. Permit the City to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term “balance of the contract price” as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs by the City pursuant to the Contract Documents.

Surety expressly agrees that the City may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the City, when declaring the Contractor in default, notifies Surety of the City’s objection to Contractor’s further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, we have hereunto set our hands and seals this ____ day of _____, 2022.

(Corporate Seal)

Contractor/Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____

Attorney-in-Fact

(Attach Attorney-in Fact Certificate)

Title _____

The rate of premium on this bond is _____ per thousand. The total amount of premium charges is \$_____.

(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM.

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of Agent or

Representative for service of process in

California, if different from above)

(Telephone number of Surety and Agent
or Representative for service of process in California)

CITY OF UKIAH
Mendocino County, California

PAYMENT BOND

BOND No. _____

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the City of Ukiah ("City") has awarded to _____ ("Contractor/Principal") a contract (City Agreement No. _____, dated _____, _____, referred to as the "Agreement") for the work described as _____. The Agreement is incorporated by this reference into this Payment Bond ("Bond"); and

WHEREAS, Contractor/Principal is required to furnish a bond in connection with the Agreement and pursuant to California Civil Code section 9550;

NOW, THEREFORE, we _____, the undersigned Contractor/Principal, and _____ ("Surety"), a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held firmly bound until the City, and to any and all persons, companies, or corporations entitled by law to file stop payment notices under California Civil Code Section 9100, or any person, company, or corporation entitled to make a claim on this bond, in the sum of \$_____, for which payment will and truly be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Contractor/Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code Section 13020 with respect to work and labor thereon of any kind, then Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys' fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code Section 9550, et seq.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefor; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescissions or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is give; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Owner and Contractor/Principal or on the part of any oblige named in such bond; that the sole condition of recovery shall be that the claimant is a person described in California Civil Code section 9100, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned, including but not limited to the provisions of section 2819 and 2845 of the California Civil Code.

Any notice to Surety may be given in the manner specified in the Agreement and delivered or transmitted to Surety as follows:

Attn: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, two identical counterparts of this Bond, each of which shall for all purposes be deemed an original thereof, have been duly executed by Contractor/Principal and Surety above named, on the ___ day of _____, 202__.

Contractor/Principal (SEAL)

By _____
Contractor's Representative

Contractor/Principal's Address

City, State, Zip

Surety (SEAL)

By _____
Surety's Representative

Surety's Address

City, State, Zip

Telephone Number

NOTE: Signatures of those executing for Surety must be properly acknowledged, The bond must be accompanied by a properly acknowledged Power of Attorney from the Surety authorizing its agent to bind it to this bond. A copy of such Power of Attorney must be in file with the City.

DIRECTIONS FOR PREPARATION OF PERFORMANCE AND MATERIAL AND LABOR BOND

1. Individual sureties, partnerships, or corporations not in the surety business will not be acceptable.
2. The name of the Principal shall be shown exactly as it appears in the Contract.
3. The penal sum shall not be less than required by the Specifications.
4. If the Principals are partners or joint venturers, each member shall execute the bond as an individual and state his place of residence.
5. If the Principal is a corporation, the bond shall be executed under its corporate seal.
If the corporation has no corporate seal, it shall so state and affix a scroll or adhesive seal following the corporate name.
6. The official character and authority of the person(s) executing the bond for the Principal, if a corporation, shall be certified by the Secretary or Assistant Secretary thereof under the corporate seal, or copies attached to such records of the corporation as will evidence the official character and authority of the officer signing, duly certified by the Secretary or Assistant Secretary, under the corporate seal, to be true copies.
7. The current power-of-attorney of the person signing for the surety company must be attached to the bond.
8. The date of the bond must not be prior to the date of the Contract.
9. The following information must be placed on the bond by the surety company:
 - a. The rate of premium in dollars per thousand; and
 - b. The total dollar amount of premium charged.
10. The signature of a witness shall appear in the appropriate place attending to the signature of each party of the bond.
11. Type or print the name underneath each signature appearing on the bond.
12. An executed copy of the bond must be attached to each copy of the Contract (original counterpart) intended for signing.

CITY OF UKIAH
Mendocino County, California

DEFECTIVE MATERIAL AND WORKMANSHIP (MAINTENANCE) BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, _____
_____, as **PRINCIPAL**
and _____
_____, as **SURETY**,
are held and firmly bound unto the **City of Ukiah** as Obligee, in the penal sum of

_____ (\$ _____),
(5 PERCENT OF THE FINAL CONTRACT AMOUNT)

to which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the said Principal entered into a Contract with the City of Ukiah
dated _____
for _____

WHEREAS, said Contract has been completed, and was approved on the _____ day of _____,
_____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall guarantee that the work will be free of any defective materials or workmanship which become apparent during the period of one (1) year following completion of the Contract, then this obligation shall be void, otherwise to remain in full force and effect, provided however, any additional warranty or guarantee whether expressed or implied is extended by the Principal or Manufacturer only, and the surety assumes no liability for such a guarantee.

Signed, sealed, and dated this _____ day of _____, 20____.

_____(Seal)

BY: _____(Seal)

_____(Seal)

Principal

_____(Seal)

BY: _____(Seal)

Surety _____ (Seal)



INSURANCE REQUIREMENTS FOR CONTRACTORS

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

I. Minimum Scope of Insurance

Coverage shall be at least as broad as:

- A. Insurance Services Office Commercial **General Liability coverage** (Form No. CG 20 10 10 01 and Commercial General Liability – Completed Operations Form No. CG 20 37 10 01).
- B. Insurance Services Office form number CA 0001 (Ed. 1/87) covering **Automobile Liability**, code 1 (any auto).
- C. **Worker's Compensation** insurance as required by the State of California and Employer's Liability Insurance.

II. Minimum Limits of Insurance

Contractor shall maintain limits no less than:

- A. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage **including operations, products and completed operations**. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. Insurance must be written on an occurrence basis.
- B. Automobile Liability: \$2,000,000 per accident for bodily injury and property damage. Insurance must be written on an occurrence basis.
- C. Worker's Compensation Employer's Liability: \$1,000,000 per accident for bodily injury or disease.

III. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. The City may require the insurer to reduce or eliminate such deductibles or self-insured retentions with respect to the City, its officers, officials, employees and volunteers; or the Contractor to provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses; or to approve the deductible without a guarantee.

IV. REQUIRED Insurance Provisions

Proof of **general liability and automobile liability** policies are to contain, or **be endorsed** to contain, the following provisions:

A. The City, its officers, officials, employees, and volunteers are to be covered as **ADDITIONAL INSURED** with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment, furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance, or as a separate owner's policy.

B. **The workers' compensation policy is to be endorsed with a waiver of subrogation.** The insurance company, in its endorsement, agrees to waive all rights of subrogation against the City, its officers, officials, employees and volunteers for losses paid under the terms of this policy which arises from the work performed by the named insured for the City. NOTE: You cannot be added as an additional insured on a workers' compensation policy.

C. For any claims related to this project, the Contractor's insurance coverage shall be **primary insurance** with respect to the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it.

D. Each insurance policy required by this clause shall be endorsed to state that coverage shall **not be canceled** by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.

E. **Note: (This protects the Contractor)** -Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of Civil Code.

V. **RATING - Acceptability of Insurers**

Insurance is to be placed with admitted California insurers with a current A.M. Best's rating of no less than A- for financial strength, AA for long-term credit rating and AMB-1 for short-term credit rating.

VI. **Verification of Coverage**

Contractor shall furnish the City with original certificates and amendatory endorsements affecting coverage required by this clause. The endorsements should be on **forms provided by the City**. If endorsements are on forms other than the City's forms, those endorsements or policies must provide coverage that is equivalent to or better than the forms requested by the City. All certificates and endorsements are to be received and approved by the City before work commences. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications at any time.

VII. **Subcontractors**

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.

If you have questions regarding our insurance requirements contact:

**Risk Manager
(707) 463-6287 FAX (707) 463-6204**

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PART 1 - GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General Conditions and Supplemental General Conditions and other Division 01 General Requirements, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for Substitutions.
- B. Pre-bid substitutions will not be considered. No Substitution request will be accepted or considered by City prior to bid.
- C. Procedural requirements governing the Contractor's selection of products and product options are included under General Requirements - Product Requirements.

1.3 DEFINITIONS

- A. Definitions used in this Section are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents are considered requests for "substitutions." Where phrases such as "or equal" or "or equal as approved by the Architect" occurs in the Contract Documents, do not assume that materials or equipment will be approved as equal unless the item has been specifically approved for this work by the Architect prior to Bid Opening Date, or as otherwise allowed in these Contract Documents.

The following are not considered substitutions:

- 1. Revisions to Contract Documents requested by the Owner or Architect.
- 2. Specified options of products and construction methods included in Contract Documents.
- 3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. If the Contractor desires to use material or equipment other than that specified, they shall submit a request for approval of such substitution, in writing, to the Construction Manager.
Product Substitutions for all Specification Sections must be requested within the time period specified in the general conditions. Substitution Request Form: Use CSI Form 13.1A.
- B. Submit Substitution Request packages using the form provided and in a quantity to be returned to the Contractor plus four (4) copies of each request for substitution for review by the Architect.

- C. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
1. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
 2. Samples where applicable or requested.
 3. A detailed, side-by-side comparison of the significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include but is not necessarily limited to elements such as size, weight, durability, performance and visual effect.
 4. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors will become necessary to accommodate the proposed substitution.
 5. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 6. Cost information, including a proposal of the net change, if any, in the Contract Sum.
 7. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately
 8. The Contractor warrants that they have investigated the proposed product and determined that it is equal to or superior in all respects to that indicated or specified.
 9. The Contractor waives claim for additional costs and time associated with the proposed product, which may subsequently become apparent.
 10. The Contractor shall provide a signed statement that the proposed product is in full compliance with the Contract Documents, and applicable regulatory requirements, requires no changes to specified controls and monitoring systems that may be specified in other Sections, and Certify that the Contractor will be responsible for coordination at no additional expense to the Owner
 11. The Contractor shall provide information on availability of maintenance service, and source of replacement materials, and provide a sample of Manufacturer's standard form of guarantee or warranty for proposed product.

1.5 CONSTRUCTION MANAGER'S ACTION

- A. Within ten (10) days of receipt of the request, the Construction Manager will notify the Contractor of acceptance or rejection of the proposed substitution. The Architect at their sole discretion will determine the acceptability of proposed products and their determination shall be final. If a decision on use of a proposed substitution cannot be made or obtained within the time allocated, use the product specified by name in the Contract Documents.
- B. No consideration will be given to a substitute product unless, in the Architect's judgment, it complies with the following conditions.
 - 1. Substitution Request is complete.
 - 2. It is equal in quality, performance and serviceability.
 - 3. Its use does not entail changes in details or related construction.
 - 4. It is acceptable in regards to design and aesthetic effect.
 - 5. There is a cost and/or time advantage to the Owner.
- C. Acceptance of a product shall not relieve the Contractor from responsibility for the proper execution of the Work and any other requirements of the Contract Documents.
- D. If a proposed product is not accepted, use the product originally specified or indicated in the Contract Documents.
- E. No products other than those indicated or specified in the Contract Documents shall be purchased or incorporated in the Work without the Architect's prior written acceptance.

PART 2 - PRODUCTS**2.1 SUBSTITUTIONS**

- A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one (1) or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
 - 1. Extensive revisions to Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents.
 - 3. The request is timely, fully documented and properly submitted.
 - 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 - 5. The Specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method

cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or Separate Contractors, and similar considerations.
 8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
 10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents, does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (not used)

END OF SECTION



SUBSTITUTION REQUEST (After the Bidding Phase)

Project: Insert project name Substitution Request Number: For the Architect to fill in.
 From: Insert your name and company name
 To: Insert name of Architect, Engineer or GC Date: Insert the current date
 A/E Project Number: Fill in if you know the number
 Re: Substitution request Contract For: Insert your contract scope (in general)

Specification Title: Insert spec title from specification book Description: Copy section title from specification
 Section: Copy from spec book Page: insert page Article/Paragraph: insert para

Proposed Substitution: _____
 Manufacturer: _____
 Address: _____ Phone: insert plant phone number
 Trade Name: _____ Model No.: _____)
 Installer: insert subs company Address: insert subs address Phone: insert subs phone number
 History: ☐ New product ☐ 2-5 years old ☒ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

X ☐ Point-by-point comparative data attached - REQUIRED BY A/E.

Reason for not providing specified item: _____

Similar Installation:
 Project: List a completed project Architect: Insert name of Architect on completed project
 Address: Insert project address Owner: Insert name of Owner on completed project
 Date Installed: _____

Proposed substitution affects other parts of Work: X ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

SUBSTITUTION

REQUEST (Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Insert submitters name, normally project manager for sub

Signed by: Submitter to sign

Firm: Insert Submitters company name

Address: Insert

Telephone: Insert company phone number

Attachments: List name of attachments

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Project meetings.
 - 3. Requests for Interpretation (RFIs).

1.2 DEFINITIONS

- A. RFI: Request For Information from Contractor seeking interpretation or clarification of the Contract Documents.

1.3 WEB-BASED PROJECT MANAGEMENT SOFTWARE – NOT USED**1.4 COORDINATION**

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
 9. Project closeout activities.

1.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Sheet Size: At least 8-1/2 by 11 inches (215 by 279 mm) but no larger than 30 by 42 inches (750 by 1067 mm).
3. Number of Copies: Submit electronic files for each submittal and produce hard copies as required by the Architect.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner, Construction Manager and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager and Architect, within three (3) days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Kitchell, but no later than fifteen (15) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. LEED requirements.
 - l. Preparation of Record Documents.
 - m. Use of the premises and existing buildings.
 - n. Work restrictions.
 - o. Owner's occupancy requirements.

- p. Responsibility for temporary facilities and controls.
 - q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
 - x. Working hours.
3. Notes: Construction Manager or Architect will record and distribute meeting notes.
- C. Progress Meetings: Construction Manager will conduct progress meetings at **weekly** intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner, Construction Manager and Architect, each subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. General Contractor's designated Project Manager and Superintendent must attend all Progress Meetings in addition to all other project related meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve notes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.

- 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Notes: Construction Manager will conduct the meeting will record and distribute meeting notes to Owner, Architect and Contractor.
 4. Reporting: Distribute notes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Contractor shall update the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI via the web-based project management software.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. RFIs shall be submitted to the Construction Manager in the specified format.
 3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Project name.
 2. Project number
 3. Date.
 4. Name of Contractor.
 5. Name of Architect and Construction Manager.
 6. RFI number, numbered sequentially.
 7. Specification Section number and title and related paragraphs, as appropriate.
 8. Drawing number and detail references, as appropriate.
 9. Field dimensions and conditions, as appropriate.
 10. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 11. Contractor's signature.
 12. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
- C. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow fourteen (14) working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to **procedures defined in the Contract Documents including Division F, Section 21.**
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.
- D. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log (CSI Log Form 13.2B) weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)**PART 3 - EXECUTION (Not Used)**

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Submittals Schedule.
 - 2. Daily construction reports.
 - 3. Field condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- C. Major Area: A story of construction, a separate building, or a similar significant construction element.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit via the web-based project management software. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- B. Daily Construction Reports: Submit PDF file via the web-based project management software prior to close-of-business on the day covered by the report.

- C. Field Condition Reports: Submit PDF file via the web-based project management software at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate preparation and processing of reports with performance of construction activities and with scheduling and reporting of separate contractors.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 - 2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site and quantities relating to labor force.
 - 2. Equipment at Project site.
 - 3. Material deliveries.
 - 4. High and low temperatures and general weather conditions.
 - 5. Accidents.
 - 6. Stoppages, delays, shortages, and losses.
 - 7. Meter readings and similar recordings.
 - 8. Orders and requests of authorities having jurisdiction.
 - 9. Services connected and disconnected.
 - 10. Equipment or system tests and startups.
 - 11. Progress on any schedule activity, including all related activity IDs.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation [on **CSI Form 13.2A**]. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION – (Not Used)

- END OF SECTION-

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and Construction Manager and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. Contractor is to notify the Architect and Construction Manager when new materials for review have been posted to the designated web-based project management software. Time will begin upon successful download of that information. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
 - 1. Initial Review: Allow fourteen (14) calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Resubmittal Review: Allow fourteen (14) calendar days for review of each re-submittal.
- C. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement as well as any further waivers required by the Architect.
- D. Submittals are to be submitted electronically via the web-based project management software.
1. The following submittals are to be submitted electronically:
 - a. Product Data
 - b. Shop Drawings
 - c. Certifications
 - d. Test Data
 - e. Schedules
 2. Samples shall not be submitted electronically but a transmittal should be to document delivery of such samples.
- E. Identification and Information: Place a permanent label or title block on each cover of submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6x8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Construction Manager.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.

- f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.
- F. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
- 1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
 - 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01-LNHS). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A-LNHS).
 - 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect and Construction Manager.
 - 4. Include the following information on an inserted cover sheet:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Name of subcontractor.
 - h. Name of supplier.

- i. Name of Manufacturer
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Other necessary identification.
- G. Options: Identify options requiring selection by the Architect.
- H. Deviations: Highlight, encircle, and otherwise specifically identify deviations from the Contract Documents on submittals.
- I. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect or Construction Manager observes noncompliance with provisions in the Contract Documents, initial electronic submittal may serve as final submittal.
- J. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and Construction Manager will return submittals, without review, received from sources other than Contractor.
- 1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Construction Manager on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- K. Re-submittals: Make re-submittals in same form as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's and Construction Manager's action stamp.
- L. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- M. Use for Construction: Retain complete set of paper copies of submittals on Project site. Use only final submittals that are marked with approval notation from Architect's and Construction Manager's action stamp.
- 1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES
- A. At Contractor's written request, copies of Architect's CAD files of select plans will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions.
- 1. Only major site/floor/ceiling/roof plans, or building elevations/sections will be provided.
 - 2. Wall section, details, schedules will not be provided.

3. Title blocks will be removed from the file.
4. Notes and dimensions may be removed from the file.
5. Compliance of the requests for consultant files is at the discretion of the consultant.
6. The following disclaimer will be added to the file:

DISCLAIMER AND INDEMNIFICATION AGREEMENT FOR COMPUTER-BASED INFORMATION

The attached computer-based information for the **Construction of Fire Station 86** are provided to **(The User)** as a courtesy for their sole convenience. The User recognizes that computer-based information is easily changeable, that changes are difficult to detect and that use or conversion of the information provided may introduce errors, inaccuracies or anomalies that the Architect and their consultants can neither predict nor control. The delivery of this electronic data does not constitute the delivery of the professional work product of the Architect shall not be responsible for any modifications made to the electronic files or any products derived from the electronic files which are not prepared by us. By accepting and utilizing this electronic data in lieu of the corresponding drawings and specifications prepared by the Architect, the User agrees that such data is an instrument of service of the Architect, who shall be deemed to be the author of the drawings and data, and shall retain all common law, statutory law and other rights, including copyrights. The User, by accepting the electronic files, agrees to assume all risk and liabilities associated with the use of the information provided by the Architect and understand the Architect makes no claim or warranty as to the suitability or usefulness of the information for any purpose. The User also agrees, to the fullest extent permitted by law, to hold harmless and indemnify the Architect from and against any and all claims, liabilities, losses, damages and costs, including but not limited to attorney's fees, arising from or in connection with the use, misuse, modification, or misinterpretation of the electronic data provided by the Architect. Use of the attached computer-based information indicates acceptance and constitutes agreement to abide by the terms and conditions of this agreement.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Post electronic submittals as PDF electronic files directly to the web-based project management software (Prolog Converge). Notify the Architect and Construction Manager of the presence of the submittal(s) via email with identification of the specific materials posted. In web-based project management software, include link for all submittal register items associated with the submittal package. Where possible, endeavor to include all required action submittals for that specification section.
 - a. Architect, through Construction Manager, will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Submit electronic submittals via email as PDF files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 3. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified "Closeout Procedures."
 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. PDF electronic file with transmittal as noted above.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Submittals based upon Architect's digital data drawing files will be permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches. Provide hard copies as required by the Architect and Construction Manager
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package. Provide transmittal listing all samples submitted along with quantities.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one (1) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal, through Construction Manager, with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for

use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two (2) Sample sets; remainder will be returned. Mark up and retain one returned sample set as a project record sample.
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Submit product schedule in the following format:
 - a. PDF electronic file.
- F. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 16 "Construction Progress Document."
- G. Application for Payment: Comply with requirements specified in Section 01 29 00 "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Section 01 29 00 "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Wherever possible, including CSI numbers with description of work being completed. Also, provide DIR numbers for all subcontractors and vendors listed. Provide an updated list when any changes take place along with an explanation of what changed and why.
 1. Submit subcontract list in the following format:
 - a. PDF electronic file.
- J. Coordination Drawings: Comply with requirements specified in Section 01 31 00 "Project Management and Coordination."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- V. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

- W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES (Including DEFERRED APPROVALS)

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Section 01 77 00 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S AND CONSTRUCTION MANAGER'S ACTION

- A. General: Construction Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.

- B. Action Submittals: Architect and Construction Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
1. Final Unrestricted Release: Where the submittal is marked "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.
 2. Final-but-Restricted Release: Where the submittal is marked "Reviewed with Exceptions as Noted," the Work covered by the submittal may proceed provided it complies with both Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.
 3. Returned for Resubmittal: Where the submittal is marked "Revise and Resubmit," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise or prepare a new submittal according to Architect's notations and corrections.
 4. Rejected: Where the submittal is marked "Rejected," do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
 5. Incomplete: Where the submittal is marked "Submit Specified Item," do not proceed with the Work covered by the submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance with requirements.
- C. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it or will return it if it does not comply with requirements. Construction Manager will forward each submittal to appropriate party.
- D. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

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PART 1 - GENERAL**1.1 DESCRIPTION**

- A The work of this section consists of implementing measures to prevent Storm Water Pollution during construction activities, in accordance with Federal, State, and local regulations, and in accordance with the Storm Water Pollution Prevention Plan (SWPPP) to be prepared for this project.

1.2 SUBMITTALS

- A Submit SWPPP to Owner after contract award and before the preconstruction conference.
- B Plans showing proposed arrangements and methods for control of erosion, sedimentation, and pollutant conveyance in storm water resulting from construction activities (Sheet C-7.2). The contractor shall provide final arrangement, methods of control and conveyance in the Storm Water Pollution Prevention Plan that satisfies all State NPDES permit requirements.
- C Provide sufficient information for evaluation of the following:
 - 1. Erosion protection measures and products
 - 2. Drainage management strategies
 - 3. Surface restoration
- D Submit schedules for inspection and monitoring of all SWPPP measures.
- E Submit manufacturer's product information and installation recommendations for silt fence, filter fabric and erosion control blanket, straw bales, and any other materials proposed for use on this project.
- F Contractor shall register on the State Water Resources Control Board (SWRCB) on-line Storm Water Multiple Application and Report Tracking System (SMARTS) database and submit the User Identification (ID) to the Owner. Owner will file a Notice of Intent (NOI) and link the Contractor User ID as a Data Entry Person for required entries (i.e., SWPPP, Annual Reports, Ad Hoc Reports) in accordance with the determined Risk Level monitoring and sampling requirements.

1.3 QUALITY ASSURANCE

- A Before commencing construction activities, such as grading, excavation or filling in any part of the site, Contractor shall plan for temporary structures to guide runoff away from the work area and to capture eroded material before it reaches natural water courses. The measures shall be in accordance with reviewed and approved SWPPP.

- B. Arrange construction activities to minimize erosion to the maximum practical extent. Clearing, excavation, and grading shall be limited to those areas of the project site necessary for construction. Minimize the area exposed and unprotected.
- C. Clearly mark and delineate the limits of work activities. Do not allow equipment to operate outside the limits of work or to disturb existing vegetation. Complete excavation and grading during the dry season to the maximum extent possible.

1.4 REGULATORY REQUIREMENTS

- A. The Contractor shall comply with provisions of Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from the project site and areas outside the project limits during construction.
- B. The project site is more than one acre and therefore requires compliance with the State Water Resources Control Board statewide general permit entitled "Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ), National Pollutant Discharge Elimination System General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities" (Construction General Permit) that regulates discharges of storm water and non-storm water from construction activities disturbing one acre or more of land surface, or that are part of a common plan of development. The Construction General Permit is available for review at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/

This project shall conform to applicable provisions of this Permit and modifications thereto.

- C. This project lies within the boundaries of the San Francisco Bay Region (2) Regional Water Quality Control Board (SFRWQCB). The SFRWQCB has issued Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) including construction sites (San Francisco Bay Region Municipal Regional Stormwater NPDES Permit Order No. R2-2015-0049 NPDES Permit No. CAS612008 November 19, 2015). The MS4 Regional Stormwater NPDES Permit is available to review at:

https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/R2_2015_0049_amended.pdf

This project shall conform to applicable provisions of this Permit and modifications thereto.

- D. Storm Water Pollution Prevention Plan (SWPPP)
 - 1. The SWPPP will include a description of best management practices (BMPs) that will be implemented to reduce the pollutants in stormwater and non-stormwater discharges to assure compliance with the terms and conditions of the Construction

General Permit.

2. A Qualified Stormwater Developer (QSD) shall prepare the SWPPP and a Qualified Stormwater Practitioner shall ensure implementation of the SWPPP.
3. The SWPPP shall include the following information and forms:
 - a. Site description
 - b. Expected sequencing of operations and construction schedule
 - c. Weather monitoring procedure
 - d. Descriptions and details of erosion controls, including dust control
 - e. Erosion control plans
 - f. Controls for other potential onsite storm water pollutants
 - g. Applicable specifications
 - h. Maintenance and inspection procedures and forms
 - i. Description of potential non-storm water discharges at site
 - j. Notice of Intent (NOI) form
 - k. Notice of Termination (NOT) form
 - l. QSD/QSP Certification forms
 - m. Other record keeping forms and procedures
 - n. Good housekeeping practices and procedures, including vehicle wash-down areas, protection of equipment storage and maintenance areas, and sweeping of roadways related to hauling activities
4. The Owner will review the draft SWPPP. Contractor QSD will address Owner review comments and submit revised SWPPP for Owner approval. Upon Owner approval, Contractor QSD and Owner representative will sign the approved SWPPP.
5. Contractor will upload approved SWPPP onto SMARTS database for Notice of Intent (NOI) submittal.
6. When the SWRCB approves the NOI, the SWPPP will be the document in force on the project.
7. Place the SWPPP and all updates in a three-ring binder so that completed inspection forms and other records may be inserted. The Contractor shall maintain a copy of the SWPPP and all associated records and forms on site throughout the construction period.
8. The SWPPP shall be available for public inspection. The Contractor shall notify the Owner immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor and the Owner shall provide copies of correspondence, notices of violation, enforcement actions, or proposed fines by regulatory agencies to the requesting regulatory agency.
9. Implement the SWPPP as required throughout the construction period and maintain all erosion control elements in proper working order until final acceptance of project.

10. Do not perform clearing and grubbing or earthwork until applicable BMPs have been installed.
 11. Prior to construction, the Contractor and all subcontractors shall sign certifications (included in the SWPPP) that they understand the requirements of the Construction General Permit and SWPPP. All Contractor and subcontractor crews shall comply with the requirements of the Construction General Permit under the supervision of the Contractor QSP who will be responsible for implementing the SWPPP. The Contractor QSP shall ensure that emergency procedures and the SWPPP are updated as needed and available for inspection. The SWPPP (including inspection forms) and all data used to complete the NOI shall be provided to the Owner at the completion of the project.
 12. SWPPP Inspections and Amendments
 - a. The Contractor QSP and/or trained crew under QSP supervision will perform weekly inspections of the project site in accordance with the SWPPP. Inspections shall be documented on forms provided in the SWPPP binder.
 - b. It may be necessary to revise the SWPPP during construction to make necessary improvements or to respond to unforeseen conditions noted during construction or site inspections. For that purpose, the SWPPP shall specify the mechanism whereby revisions may be proposed by the Contractor or the Owner and incorporated into the SWPPP, including review and acceptance of minor changes. The Contractor and the Owner will jointly accept and sign each revision to the SWPPP before implementation. Accepted modifications will be implemented within 7 calendar days following the date of the inspection when deficiencies or necessary corrections are first noted.
 - c. Temporary erosion and pollution control measures shall be used to correct conditions that develop during construction that were not foreseen during design, that are needed prior to installation of permanent control features, or that are needed temporarily to control erosion that developed during normal construction practices but are not associated with permanent control features on the project.
 - d. Provide additional temporary erosion and pollution controls made necessary by Contractor's errors or negligence at no additional cost to the Owner.
- E Notice of Intent (NOI)
1. Owner will complete NOI form on SMARTS and submit to SWRCB after accepted SWPPP has been uploaded by Contractor.
 2. Annual Reports are due to the SWRCB SMARTS by September 1 of each year. Contractor shall submit Annual Reports and any Ad Hoc Reports onto SMARTS by August 15 for Owner review.
- F Notice of Termination (NOT)
- G Upon final acceptance, the Owner will file the NOT.

1.5 PROJECT CONDITIONS

- A. The Contractor shall maintain records of work performed on the sediment control structures.
- B. The Contractor shall not remove any erosion or sediment control measure without prior permission from the Owner.
- C. The Contractor shall obtain approval from the Owner prior to making changes to erosion control plans.

1.6 SEQUENCE OF CONSTRUCTION

- A. The Contractor shall be responsible for arranging and conducting an Erosion and Sediment Control meeting/briefing to inform all parties scheduled to be on-site during the project of the measures to be implemented for proper erosion and sediment control (may be included as part of the preconstruction meeting).
 - 1. Installation of silt fences, storm drain protection, and all other forms of erosion and sediment control shall not begin until after this meeting has occurred.
- B. The Contractor shall notify the Owner in writing and by telephone of the following events:
 - 1. The required erosion and sediment control meeting/briefing.
 - 2. Following installation of required sediment control structures.
 - 3. Prior to removal of or modification to sediment control structures.
 - 4. Prior to removal of all sediment control structures.
- C. Silt fences, storm drain protection, and all other forms of erosion and sediment control shall be installed, inspected, and accepted by the Contractor before beginning any utility excavation.
- D. Temporary silt fences shall be installed around any stockpiles and/or excavated material that cannot be backfilled during the same day in which it was excavated. Temporary silt fences shall also be placed immediately downstream of any utility trench that has not been backfilled at the end of the working day. Temporary silt fences shall be installed prior to leaving the work site for the day.
- E. Silt fences and storm drain protection shall be inspected by the Contractor weekly. Repairs to these devices shall be completed prior to leaving the work site for the day.
- F. The Contractor shall prevent the deposition of materials onto paved areas. The Contractor shall inspect the paved areas for deposited materials weekly and remove the materials immediately.
- G. Silt fences shall be removed with permission of the Owner within 20 working days

after final acceptance of the project and/or after the establishment of permanent stabilization of all excavations and fill areas.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Before the work begins, sufficient equipment shall be available on the site to assure that the operation and adequacy of the erosion control plans can be continuously maintained.

2.2 EROSION CONTROL MEASURES

- A. Erosion control measures shall consist of silt fencing or equivalent (eg. wattles, etc.), barrier protectors, straw bales, temporary soil retention blankets, excelsior drainage filters, sediment traps and berms.
- B. Berms and excelsior drainage filters shall be used to form sediment traps and to control run-on and run-off into other areas, including creeks, streams, marshes, access roads, well areas, and the staging areas.
- C. Erosion control measures shall be used to contain only direct precipitation in the construction zone. The contained water shall be allowed to percolate into the ground or drain slowly through the drainage filter sediment traps.
- D. Earthen sediment traps or holding ponds shall not be used unless accepted by the Owner.

PART 3 - EXECUTION

3.1 GENERAL DESCRIPTION

- A. Furnish, install, maintain, and operate necessary control measures and other equipment necessary to prevent erosion to the maximum extent practical, including implementation of Best Management Practices (BMPs).
 - 1. Temporary measures shall be to Contractor's own design and Contractor shall be solely responsible for risks related to the management of erosion control during construction.
- B. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations that will disturb the natural erosion protection.
- C. Schedule work to expose areas subject to erosion for the shortest possible time, and preserve natural vegetation to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast-growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

3.2 METHODS

- A. Construct berms to reduce runoff velocity as well as direct surface runoff around and away from all fuel containment, storage, and borrow areas.
- B. Divert surface runoff around and away from cut and fill slopes by constructing berms or ditches at the base of disturbed slopes. Provide conveyance for the runoff in temporary pipes or protected channels to temporary sediment traps.
- C. Place drainage filters around all catch basins to create sediment traps to control runoff from the construction area.
- D. Excess water used for dust control shall be contained within the demolition areas by the erosion control measures.

3.3 MAINTENANCE OF TEMPORARY FACILITIES

- A. Inspect erosion and sediment control structures weekly. Ensure erosion and sediment control structures remain effective throughout excavation and grading operations. Relocate structures as necessary.
- B. Inspect control structures after each significant rainfall. Promptly repair breaches which occur.
- C. The Contractor shall remove entrapped sediment from behind excelsior drainage filter after each storm.

3.4 DISPOSAL OF SEDIMENT FROM STORM WATER POLLUTION CONTROL STRUCTURES

- A. Sediment excavated from temporary sediment control structures shall be disposed on the site with general fill, or with topsoil. Sediment shall be allowed to dry out as required before reuse.
- B. Contractor shall place the sediment removed from traps and other structures where it will not enter a storm drain or watercourse and where it will not immediately reenter the basin.

3.5 REMOVAL OF TEMPORARY STORM WATER POLLUTION CONTROL MEASURES

- A. All temporary control measures shall be removed with permission of the Owner within 20 working days after final acceptance of the Project or once grading is completed and slopes have stabilized.

SWPPP Contents

- a. SWPPP Certifications and Approval
- b. Risk Level
- c. Table of Contents
- d. Qualified SWPPP Developer
- e. Legally Responsible Person
- f. Amendment Log
- g. SWPPP Requirements
 - Permit registration documents
 - SWPPP availability and implementation
 - SWPPP amendments
 - Retention of records
 - Required non-compliance reporting
 - Annual report
 - Changes to permit coverage
 - Notice of Termination
- h. Project Information
 - Site description
 - Existing conditions
 - Existing drainage
 - Geology and groundwater
 - Project description
 - Developed condition
 - Permits and governing documents
 - Stormwater run-on from off-site areas
 - Findings of the construction site sediment and receiving water risk determination
 - Construction schedule
 - Potential construction activity and pollutant sources
 - Identification of non-stormwater discharges
 - Required site map information
- i. Best Management Practices
 - Schedule for BMP implementation
 - Erosion and sediment control
 - Non-stormwater controls and waste and materials management
 - Post-construction stormwater management measures
- j. BMP inspection and maintenance
 - Rain Event Action Plans
- k. Training
- l. Responsible parties and operators
 - Responsible parties

- Contractor list
- m. Construction Monitoring Program
 - Weather and rain event tracking
 - Monitoring locations
 - Safety and monitoring exemptions
 - Visual monitoring
 - Routine observations and inspections: Routine BMP inspections, Non-stormwater discharge observations
 - Rain-event triggered observations and inspections: Visual observations prior to a forecasted qualifying rain event, BMP inspections during an extended storm event, Visual observations following a qualifying rain event
 - Visual monitoring procedures
 - Visual monitoring follow-up and reporting
 - Visual monitoring locations
 - Water quality sampling and analysis
 - Sampling and analysis plan for non-visible pollutants in stormwater runoff discharges: Sampling scheduled, sampling locations, monitoring preparation, analytical constituents, sample collection, sample analysis, data evaluation and reporting
 - Sampling and analysis plan for pH and turbidity and stormwater runoff discharges: Sampling schedule, sampling locations, monitoring preparation, field parameters, sample collection, field measurements, data evaluation and reporting
 - Sampling and analysis plan for non-stormwater discharges: Sampling schedule, sampling locations, monitoring preparation, analytical constituents, sample collection, sample analysis, data evaluation and reporting
 - Additional monitoring following an NEL exceedance
 - Training of sampling personnel
 - Sample collection and handling
 - Sample documentation procedures
 - Records retention
- n. Attachments
 - Construction General Permit
 - Risk Level calculations
 - Water Pollution Control Drawings
 - Permit Registration Documents/Amendments
 - QSD/QSP Certifications
 - SWPPP Amendment Certifications
 - Construction Schedule

- Construction Activities, Materials Used, and Associated Pollutants
- CASQA Stormwater BMP Handbook Portal: Construction Fact Sheets
- BMP Inspection Form
- Training Reporting Form
- Weather forecast reports
- Monitoring records
- Field meter instructions

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 3. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities

having jurisdiction, to establish product performance and compliance with industry standards.

- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to Tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction. See specific specification sections for additional experience requirements.

1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement as defined in the General Conditions. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and re-inspecting.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.

- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Construction Manager seven (7) days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.
- J. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 48.

1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor (contract sum adjusted through change order procedures).
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections.
- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Does not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.

- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency, special inspector and/or Essential Services Inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, this includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the

following:

1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 2. Comply with the Contract Document requirements for "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

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PART 1 – GENERAL**1.1 MOCK-UP SUMMARY**

- A. Mock-ups will be used to review of appearance, quality of workmanship, coordination, compatibility, and relationships with adjacent materials. Unless otherwise specifically indicated mock-ups shall be constructed in place at location directed by Architect. Approved mock ups may remain as part of the work.

1.2 SUBMITTALS

- A. Mock-ups shall not be fabricated until after acceptance of required submittals for all materials to be incorporated into the mock-ups. This means that the Project schedule shall take into account early submittal of these components to the Architect.
- B. Samples: Prior to construction of mock-ups, provide samples as specified in the respective Specification Sections included as part of the mock-ups.

1.3 QUALITY ASSURANCE

- A. Design Concept: Mock-up requirements are intended to establish function, workmanship, finish, and color for conformance with the architectural design intent.
- B. Purpose: To verify suitability of colors, finishes, and satisfactory integration of building materials and components indicated and required.
- C. Performance: Mock-ups shall be constructed for the Architect's review for compliance with the Contract Documents and shall be used as a standard for the final installation.
- D. Make necessary additions and modifications to mock-ups as directed by the Architect.
- E. Modify mock-ups, or construct or install new components if requested by the Architect, until final acceptance is obtained.
- F. Mock-ups shall serve as the standard for subsequent work of like kind after approval by the Architect. Be prepared, at no additional cost to the Owner, to make as many modifications as required to achieve mock-ups that are acceptable to the Architect and of sufficient quality to serve as the standard for the complete Project.
- G. Following acceptance, mock-ups shall serve as a performance standard of quality and appearance of the work it represents, including the interface with adjacent

materials and components as applicable.

- H. Coordinate fabrication, delivery, assembly, and installation with related materials to be included in the mock-ups. Construction of the mock-up assemblies shall be under the supervision of the same personnel who will be employed for the subsequent work.
- I. Maintain mock-ups in neat, clean condition until removal or final acceptance. Repair damage as required to maintain in condition suitable for review and approval.
- J. Scheduling:
 - 1. Construct mock-ups in a timely manner to permit review and modifications such that the work is not delayed.
 - 2. Do not proceed with ordering of components or construction subject to mock-up approval until after approvals have been obtained.
 - 3. Provide the Architect not less than 10 working days notice of the time each component is ready for review.
 - 4. Include line item in the construction schedule for the building section mock-up, showing submittals, construction, review, and approval periods.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. As specified in the respective Sections of the Specifications.

PART 3 – EXECUTION

3.1 EXTERIOR BUILDING MOCK-UP

- A. Provide building mock-up of building area indicated where directed by the Architect.
- B. Purpose: Establish standards for work indicated and specified to be included in mock-ups to demonstrate quality of workmanship, materials, colors, and textures required by the Contract Documents. Include roof, roof overhang, soffits, windows, doors, glazing, sealants, siding and cladding, flashings, and other exterior materials.
 - 1. Mock-up will be used by the Architect to test color and material alternatives and to approve final colors, textures, and workmanship.
 - 2. Interior finishes will not be required to be installed on the interior side of the exterior building mock-up.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes requirements for temporary fencing, utilities, support facilities, and security and protection facilities.

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weather tight; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Construction Manager, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water Service: Water from Owner's existing water system is not available for use without metering and without payment of use charges. Contractor is responsible for coordination of this activity with the local municipality.
- C. Electric Power Service: Contractor to provide connections and extensions of services as required for construction operations including the office trailers. Contractor will be responsible to coordinate and make arrangements with PG&E to provide temporary power to the construction site. Contractor will be responsible for all costs associated with the installation of temporary power and any and all use charges for the duration of the contract. **Contractor shall provide temporary power as required to allow for operation of office trailers, construction power and new modular building.** Temporary power from PG&E is available in the immediate area of the site, contractor shall pursue engineering and installation of temporary power at their own cost.
- D. Internet Service/Data: Temporary hardwired service is not currently available in the immediate area of the site, but contractor may pursue engineering and installation of temporary hardwired service at their own cost. Contractor may need to pursue other options to meet the contractual temporary service requirements (satellite, etc.).
- E. Temporary Fencing: Contractor to provide temporary fencing at the perimeter of the project site with adequate protection provided to pedestrians outside of the project site. If there is any exposure to falling objects outside of the project site then the Contractor must provide a covered walkway. Contractor shall comply with FAA Orders and Standards for temporary fencing installed at airside (aircraft parking areas). Contractor shall install fencing to secure FAA Parking areas near ATCT during work at ATCT parking lots.

1.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel and Construction Managers.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA

Construction General Permit or authorities having jurisdiction, whichever is more stringent.

- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibility.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fence with privacy screening fabric mesh; minimum 6 feet high (8 feet at airside) with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Galvanized Steel posts will be required to be driven into the ground for support and stability or portable fencing, if appropriate, with sufficient hold down weight to prevent overturning.

2.2 TEMPORARY FACILITIES FOR PROJECT SITE

- A. Field Offices for each site, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Field Offices: Provide and maintain for the duration of the Work temporary offices on site for use by the Contractor and a separate onsite trailer for use by the Owner's representatives (including Owner, Construction Manager and the Architect).
 - 1. **Owner's Representative.** This office shall be a self-contained construction trailer, minimum size 10' X 44', and shall be set up with an office at one end and an area for plans. The office will include a desk (minimum size of 30" X 60"), a rolling office chair and two (2) guest chairs. The plan area furnishings will include a 30" X 72" folding table, a small table with a coffee maker, (1) microwave, (1) mini refrigerator, (4) folding chairs, a plan table, a rolling plan rack, two trashcans, three (3) lockable 4 drawer filing cabinets, water cooler, fire extinguisher, smoke detector, and a complete set of unmarked Contract Documents for the Owner's Representative's use. The office shall also be equipped with a scanner/copier/printer and a dedicated data line. Two (2) dedicated parking spaces will be provided for use by the Construction Manager's staff.
 - 2. Offices shall be equipped with secure wireless internet capabilities to allow for onsite users access to email and the internet.

3. Offices shall be provided with a door and lock with security bar and a window with a minimum size of 4 feet x 3 feet and security screen. Provide and maintain an electric heater and air conditioning along with adequate electric lighting for each office.
- C. Office Supplies: The Contractor shall supply the field office of the Owner's Representative with (2) cases of 8-1/2 x 11 paper, (1) case of 11 x 17 paper, (1) box post-it notes, (1) box white-out tape, (1) stapler with staples, (1) box assorted binder clips, (1) box paperclips, (1) box of pens, (1) box of pencils, Printer/Copier Toner or Ink, (2) surge protectors, (1) 24' extension cord, (2) water cooler bottles, (1) box coffee cups, coffee, (3) rolls paper towels. Supplies shall be restocked monthly and/or on an as-needed basis.
- D. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- E. Temporary Field Fencing: Provide fence size, material and privacy screen fabric mesh to encompass each site, furnish and installed, equipped for entrance of utility trucks (16- foot gates) and man gates for easy access.
- F. Network Setup: The network shall have the following requirements:
 1. The internet connection must be separate service and independent of the Contractor's and shall be the fastest speed available in the area with a minimum a 20-Meg upload / 20-Meg download speed. This should be accomplished via a hard-wired connection.
 - a. Wired network connections must be provided at
 - 1) The Office, Planroom, and the Printer/Scanner.
 - b. Reasonable access to power for the equipment must be provided.
 2. If it is necessary to "piggyback" off of an existing hard-wired line, the line provided to the Owner's Representative shall be an unfiltered line, with no limitations set by the main line holder, such as access restrictions or DNS port blocking.
 3. In the cases where a hard-wired connection is not available, the wireless connection provided must meet the same speed needs of 20-Meg upload / 20-Meg download. It shall also be of sufficient bandwidth to meet the needs of the staff.
 4. In the case of sites where the internet speeds do not meet the above requirements, a cellular "hot-spot" is to be provided if resulting in a faster connection, along with a local storage device must be provided for the location to save the project data. The local storage device will be connected to the Kitchell network, and backed up during non-business hours to the Kitchell network server.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

PART 3 - EXECUTION**3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION FOR PROJECT SITE

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Electrical Power and Lighting:
 - 1. Contractor will furnish and pay for power during the course of the work to the extent power is not in the building(s) or on the Site. Contractor shall be responsible for providing temporary facilities required on the Site to point of intended use.
 - 2. Contractor shall furnish, wire for, install and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/ or observe of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.
 - 3. Contractor shall be responsible for maintaining existing lighting levels in the Project vicinity should temporary outage or service interruptions occur.
- C. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction. Coordination is the responsibility of the Contractor.
- D. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction and modular passenger terminal.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Provide connection to existing sanitary sewer for temporary passenger terminal modular.
- F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- H. Electric Power Service: It is the Contractor's responsibility to coordinate with PG&E to obtain the temporary electrical service, including submission of services applications, load calculation, and single line diagrams. The Contractor will also be responsible for payment of

the monthly PG&E invoices and all other temporary requirements as outlined within the specification section.

Contractor shall provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations including office trailers.

1. See Section 1.3.C

- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 Temporary Controls

- A. Noise Control
 1. Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work, and it shall take all reasonable precaution to minimize noise as required by applicable law and the Contract Documents.
 2. Notices of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to the City a minimum of forty-eight (48) hours in advance of their performance. Contractor responsible for obtaining all permits required for construction noise outside of the times allowable within the noise ordinance.
 3. Contractor to meet the Conditions of Approval related to Noise Control as defined in the Contract Documents.
- B. Noise and Vibration
 1. Equipment and impact tools shall have intake and exhaust mufflers.
 2. Contractor shall cooperate with the City to minimize and /or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.
 3. Contractor to meet the Conditions of Approval related to noise and vibration as defined in the Contract Documents.
- C. Dust and Dirt
 1. Contractor shall conduct demolition and construction operations to minimize the generation of dust & dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.
 2. Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.
 3. Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.
 4. Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.
 5. Contractor to meet the Conditions of Approval related to dust and dirt as defined in the Contract Documents.
 6. Comply with FAA Orders and Standards.

3.4 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Provide incombustible construction for offices, shops, and sheds located within

2. construction area or within thirty (30) feet of building lines. Comply with NFPA 241. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
 - B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
 1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.
 - C. Temporary Roads and Paved Areas: All areas are currently paved.
 - D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
 - E. Parking: Contractor is to provide temporary parking for construction personnel within confines of the designated construction site. If parking within the designated construction site becomes unavailable due to number of Trades, Subcontractors and Vendors, Contractor shall be responsible for coordinating with the City, or local jurisdiction for parking requirements, locations, permits, shuttle services, etc. Contractor is to review and follow all related Conditions of Approval, Laws and Regulations from the City of Ukiah.
 - F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water. (refer to demolition drawings for specifics)
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 - G. Project Identification and Temporary Signs: Provide Project identification and other signs as indicated on drawings or required by the County or the City. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
 1. Provide temporary, directional signs for construction personnel and visitors.
 2. Maintain and touchup signs so they are legible at all times.
 - H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater

from heavy rains.

- D. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- E. Temporary Site Enclosure Fence: All costs associated with the install, monthly fencing rental fees and demobilization of the fencing will be the responsibility of the contractor. Furnish and install any additional site enclosure fence panels in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Temporary Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations and protection of the public. Operations include temporary offices, parking, staging areas, actual construction site.
- F. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Contractor is responsible to ensure that the fencing and all gates are secured and locked prior to leaving the site on a daily basis to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
 - 2. Insulate partitions to provide noise protection to occupied areas.
 - 3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
 - 4. Protect air-handling equipment.
 - 5. Weather strip openings.
 - 6. Provide walk-off mats at each entrance through temporary partition.
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Smoking is **prohibited** in all construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and

abuse, limit availability of temporary facilities to essential and intended uses.

- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.

1.2 SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Survey reports and plots as detailed below.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as

intended or that results in increased maintenance or decreased operational life or safety.

1.4 EXAMINATION

- A. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

1.5 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

1.6 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

1.7 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

1.8 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

1.9 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
- F. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

1.10 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than seven (7) days during normal weather or three (3) days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

1.11 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

1.12 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

1.13 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

PART 2 - PRODUCTS (Not Used)**PART 3 - EXECUTION (Not Used)**

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 48 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, and result in

reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.

- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 4. Ceilings: Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY – WASTE MANAGEMENT GOALS**

- A. Section includes administrative and procedural requirements for salvaging, recycling and disposing of nonhazardous demolition and construction waste.
- B. The Owner has established that this Project shall generate the least amount of waste possible and processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
- C. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal of off-site waste and subsequent sale, recycling, reuse or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosivity, toxicity or reactivity.
- E. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- F. Recycle: Recovery of waste from the Project site to another site for subsequent processing in preparation for reuse
- G. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of recycling. Recycling does not include burning, incinerating, or thermally destroying waste.
- H. Salvage: To remove a waste material from the Project site for subsequent sale or reuse in another facility.

- I. Salvage and Reuse: Recovery of waste and subsequent incorporation into the Work

1.3 PERFORMANCE REQUIREMENTS

- A. Develop and implement a waste management program resulting in an end-of-project rates for salvage/recycling of minimum 65 percent by weight or volume of the total waste generated by the project. Refer the Contra Costa Cal Green Construction and Demolition. Debris Recovery Program and follow the CalGreen Applicant Instructions (<https://www.contracosta.ca.gov/DocumentCenter/View/61489/CalGreen-Applicant-Instructions---Non-Residential-Projects?bidId=>).
- B. Regulations: The Contractor shall be responsible for knowing and complying with regulatory requirements, Federal, State, and Local, pertaining to legal disposal of all construction and demolition waste materials.
- C. Coordination: Coordinate the recycling of materials with Owner and Subcontractors as required to conform to the Construction Waste Management Plan.
- D. Site Access and Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Waste Management Meetings: Conduct on-site waste management meetings with all subcontractors. Review and discuss the waste management plan, methods, procedures and each party's roles and responsibilities.
- C. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- D. Packing and Shipping
 - 1. Shipping: Coordinate the schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
 - 2. Packing: Arrange for the return of packing materials, such as wood pallets, where economically feasible.
- E. Handling
 - 1. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
 - 2. Promptly inspect shipments to assure products comply with requirements, quantities are correct, and products are undamaged.
 - 3. Promptly return damaged shipments or incorrect orders to manufacturer for

credit or refund.

- F. Storage: Store products in accordance with manufactures recommendations and periodically inspect to assure that stored products are undamaged and are maintained under required conditions.
- G. Preparation
 - 1. Storage and Protection:
 - a. Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
 - b. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials covered and off the ground, and store in a dry, secure area.
 - c. Prevent contact with material that may cause corrosion, discoloration, or staining.
 - d. Protect all materials and installations from damage by the activities of other trades.
- H. Waste Management
 - 1. Source separated waste: Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.
 - 2. Comingled Waste: Waste may be comingled at the site and separated at a recycling facility.
 - 3. Return: Set aside and protect missed-delivered and substandard products and materials and return to supplier for credit.
 - 4. Reuse and Salvage: Set aside, sort, and protect separated products and materials for collection, re-use on site by contractor, and salvage by other.
 - 5. Recycling: Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

1.5 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to the requirements in this Section, as well as the requirements indicated in the LEED for Building Design and Construction New Construction Reference Guide, version 2009, under Materials and Resources Credit 2 – Construction Waste Management. Plan shall consist of the following sections: Waste Management Goals, Responsible Parties, Waste Identification, Waste Prevention and Diversion Measures, Contamination Prevention Measures, Communication and Education Measures, Onsite Recycling Operations, and Cost/Revenue Analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan. The plan shall result in end-of-Project rates for salvage/recycling of minimum 65 percent by weight or volume of the total waste generated by the work. Refer the Contra Costa Cal Green Construction and Demolition Debris Recovery Program and follow the CalGreen applicant Instructions.
[\(https://www.contracosta.ca.gov/DocumentCenter/View/61489/CalGreen-Applicant-Instructions---Non-Residential-Projects?bidId=\)](https://www.contracosta.ca.gov/DocumentCenter/View/61489/CalGreen-Applicant-Instructions---Non-Residential-Projects?bidId=) .

- B. Waste Identification: Indicate anticipated types and quantities of demolition, site- clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates
- C. The list of these materials is to include, at minimum, the following materials:
 - 1. Cardboard.
 - 2. Clean dimensional wood.
 - 3. Beverage containers.
 - 4. Land clearing debris.
 - 5. Concrete.
 - 6. Bricks.
 - 7. Concrete Masonry Units (CMU).
 - 8. Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 9. Drywall.
 - 10. Carpet and carpet pads.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.
- B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Owner's Representative.
- C. Instruction and Training: The Contractor shall provide on-site instruction and train workers, subcontractors and suppliers of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used.
- D. Separation facilities: The Contractor shall layout and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. Waste may be commingled at the site in a specific label area for pickup by the waste hauler and separated at a recycling facility.
- E. Hazardous wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations.
- F. Contractor shall provide a monthly summary to the LEED Consultant with the following information:

- G. The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.
- H. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date (removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material). Attach manifests, weight tickets, receipts, and invoices.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.

- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Owner.

Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan
- D. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin. Regularly inspect bins for contamination.
- E. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- F. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
- G. Store components off the ground and protect from the weather.
- H. Remove recyclable waste from Owner's property per approved Waste Management Plan.

3.3 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3.4 INSTALLATION

- A. Install product(s) per manufacturer's recommendations to reduce damage to or waste of materials by required replacement.

3.5 TRANSPORTATION

- A. Transport materials in covered trucks to prevent contamination of product or littering of surrounding areas.

3.6 GENERAL CLEANING

- A. Control accumulation of waste materials and trash. Recycle or dispose of off-site at intervals approved by the Owner and in compliance with waste management procedures.
- B. Cleaning materials: Use cleaning materials that are non-hazardous.

3.7 FINAL CLEANING

- A. Cleaning Materials: Only non-hazardous cleaning materials shall be used in the final cleanup.
- B. Recycle, salvage, and return construction and demolition waste from Project.
- C. Arrange for pick-up of salvageable materials in accordance with the Waste Management Plan.
- D. Disposal Operations: Promptly and legally transport and dispose of any trash. Do not burn, bury, or otherwise dispose of trash on the Project site.

END OF SECTION

PART 1 – GENERAL**1.1 Section Includes**

- A. Cleaning throughout the construction period, and final project cleaning prior to the acceptance tour.

1.2 Quality Assurance

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the requirements specified herein, comply with pertinent requirements of authorities having jurisdiction.

PART 2 – PRODUCTS**2.1 Cleaning Materials and Equipment**

- A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 Compatibility

- A. Use cleaning materials and equipment that are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned.

PART 3 – EXECUTION**3.1 Progress Cleaning**

- A. General:
 - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work. Debris shall be removed from the site and disposed of in a lawful manner. Disposal receipts or dump tickets shall be furnished to Architect upon request.
 - 3. At least twice each month, and more often if necessary, remove scrap debris, and waste material from the job site.

4. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove items to the place designated for their storage. Flammable waste shall be kept in sealed metal containers until removed from the site.
 2. Weekly, and more often if necessary, inspect arrangements of materials stored on the site; restack, tidy, or otherwise service arrangements to meet the requirements specified above.
 3. Maintain the site in a neat and orderly condition.
- C. Structures:
1. Weekly, and more often if necessary, inspect the structures and pick up scrap, debris, and waste material. Remove items to the place designated for their storage.
 2. Weekly, and more often if necessary, sweep interior spaces clean.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a handheld broom, i.e., "broom-clean".
 3. As required preparatory to installation of succeeding materials, clean the structures of pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the required cleanliness.
 4. Following the installation of finish floor materials, clean the finish floor daily, and more often if necessary, and while work is being performed in the space in which finish materials have been installed.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material that, in the opinion of the Architect, may be injurious to the finish floor material, i.e., "vacuum-clean".
- D. General: The General Conditions require general cleaning during construction. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described below.
- E. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions. Unless otherwise specifically directed by the Architect, water and broom clean paved areas on the site and public paved areas directly adjacent to the site. Remove resultant debris
- F. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
1. Remove labels that are not permanent labels.

2. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
- G. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces. Sweep and mop vinyl and rubber surfaces.
- H. Structures:
3. Exterior: In areas affected by the work under this contract, visually inspect exterior surfaces and remove traces of soil, waste material, smudges, and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure.
 4. In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the District.
- I. Interior: In areas affected by the work under this contract, visually inspect interior surfaces and remove traces of soil waste material, smudges, and other foreign matter. Remove traces of splashed materials from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only the cleaning materials and equipment instructed by the manufacturer of the surface material.
- J. Glass: Clean glass inside and outside.
- K. Polished surfaces: On surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished. Glossy surfaces shall be cleaned and shined as intended by the manufacturer
5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 6. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
- L. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.
- M. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- N. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess

materials on the District's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

- O. Extra Materials: Where extra materials of value remain after completion of associated Work, they become the District's property. Dispose of these materials as directed by the Owner.
- P. Timing: Schedule final cleaning as accepted by the Architect to enable the District to accept a completely clean project.
- Q. Cleaning During District's Occupancy
 - 7. Should the District occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the District, responsibilities for interim and final cleaning of the occupied spaces shall be determined by the Architect in accordance with the General Conditions of the Contract.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Final Completion.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of work.
- B. 01 79 00 "Demonstration and Training" for requirements for instructing Owner's personnel.
- C. See Divisions 02 through 48 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 8. Complete startup testing of systems.
 - 9. Submit test/adjust/balance records.
 - 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 11. Advise Owner of changeover in heat and other utilities.
 - 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 - 13. Complete final cleaning requirements, including touchup painting.
 - 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 - 15. Successful completion of Functional Testing for equipment requiring LDD Commissioning.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final

Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1. Submit a final Application for Payment according to "Payment Procedures."
 - 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit electronic versions of list (including editable file and PDF file). Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect, through Construction Manager, will return annotate copy.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8- 1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS**2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION**3.1 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision- obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

- n. Replace parts subject to unusual operating conditions.
 - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - r. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

PART 1 – GENERAL**1.1 SUMMARY**

- A. Commissioning is intended to achieve the following specific objectives; this section specifies the Contractor's responsibilities for commissioning:
 - 1. Verify that the work is installed in accordance with Contract Documents and the manufacturer's recommendations and instructions, and that it receives adequate operational checkout prior to startup: Startup reports and Prefunctional Checklists executed by Contractor are utilized to achieve this.
 - 2. Verify and document that functional performance is in accordance with Contract Documents: Functional Tests executed by Contractor and witnessed by the Commissioning Authority are utilized to achieve this.
 - 3. Verify that operation and maintenance manuals submitted to Airport are complete: Detailed operation and maintenance (O&M) data submittals by Contractor are utilized to achieve this.
 - 4. Verify that the Airport's operating personnel are adequately trained: Formal training conducted by Contractor is utilized to achieve this.
- B. The Commissioning Authority directs and coordinates all commissioning activities; this section describes some but not all of the Commissioning Authority's responsibilities.

1.2 RELATED REQUIREMENTS

- A. Section 01 77 00 - Closeout Submittals: Scope and procedures for operation and maintenance manuals and project record documents.

PART 2 – PRODUCTS**2.1 TEST EQUIPMENT**

- A. Provide all standard testing equipment required to perform startup and initial checkout and required Functional Testing; unless otherwise noted such testing equipment will NOT become the property of Airport.
- B. Calibration Tolerances: Provide testing equipment of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. If not otherwise noted, the following minimum requirements apply:
 - 1. Temperature Sensors and Digital Thermometers: Certified calibration within past year to accuracy of 0.5 degree F and resolution of plus/minus 0.1 degree F.
 - 2. Pressure Sensors: Accuracy of plus/minus 2.0 percent of the value range being measured (not full range of meter), calibrated within the last year.

3. Calibration: According to the manufacturer's recommended intervals and when dropped or damaged; affix calibration tags or keep certificates readily available for inspection.
- C. Equipment-Specific Tools: Where special testing equipment, tools and instruments are specific to a piece of equipment, are only available from the vendor, and are required in order to accomplish startup or Functional Testing, provide such equipment, tools, and instruments as part of the work at no extra cost to Airport; such equipment, tools, and instruments are to become the property of Airport.
- D. Dataloggers: Independent equipment and software for monitoring flows, currents, status, pressures, etc. of equipment.
 1. Dataloggers required to for Functional Tests will be provided by the Commissioning Authority and will not become the property of Airport.

PART 3 – EXECUTION

3.1 COMMISSIONING PLAN

- A. Commissioning Authority has prepared the Commissioning Plan.
 1. Attend meetings called by the Commissioning Authority for purposes of completing the commissioning plan.
 2. Require attendance and participation of relevant subcontractors, installers, suppliers, and manufacturer representatives.
- B. Contractor is responsible for compliance with the Commissioning Plan.
- C. Commissioning Plan: The commissioning schedule, procedures, and coordination requirements for all parties in the commissioning process.
- D. Commissioning Schedule:
 1. Submit anticipated dates of startup of each item of equipment and system to Commissioning Authority within 60 days after award of Contract.
 2. Re-submit anticipated startup dates monthly, but not less than 4 weeks prior to startup.
 3. Prefunctional Checklists and Functional Tests are to be performed in sequence from components, to subsystems, to systems.
 4. Provide sufficient notice to Commissioning Authority for delivery of relevant Checklists and Functional Test procedures, to avoid delay.

3.2 STARTUP PLANS AND REPORTS

- A. Startup Plans: For each item of equipment and system for which the manufacturer provides a startup plan, submit the plan not less than 8 weeks prior to startup.

- B. Startup Reports: For each item of equipment and system for which the manufacturer provides a startup checklist (or startup plan or field checkout sheet), document compliance by submitting the completed startup checklist prior to startup, signed and dated by responsible entity.
- C. Submit directly to the Commissioning Authority.

3.3 PREFUNCTIONAL CHECKLISTS

- A. A Prefunctional Checklist is required to be filled out for each item of equipment or other assembly specified to be commissioned.
 - 1. No sampling of identical or near-identical items is allowed.
 - 2. These checklists do not replace manufacturers' recommended startup checklists, regardless of apparent redundancy.
 - 3. Prefunctional Checklist forms will not be complete until after award of the contract; the following types of information will be gathered via the completed Checklist forms:
 - a. Certification by installing contractor that the unit is properly installed, started up, and operating and ready for Functional Testing.
 - b. Confirmation of receipt of each shop drawing and commissioning submittal specified, itemized by unit.
 - c. Manufacturer, model number, and relevant capacity information; list information "as specified," "as submitted," and "as installed."
 - d. Serial number of installed unit.
 - e. List of inspections to be conducted to document proper installation prior to startup and Functional Testing; these will be primarily static inspections and procedures; for equipment and systems may include normal manufacturer's start-up checklist items and minor testing.
 - f. Sensor and actuator calibration information.
- B. Contractor is responsible for filling out Prefunctional Checklists, after completion of installation and before startup; witnessing by the Commissioning Authority is not required unless otherwise specified.
 - 1. Each line item without deficiency is to be witnessed, initialed, and dated by the actual witness; checklists are not complete until all line items are initialed and dated complete without deficiencies.
 - 2. Checklists with incomplete items may be submitted for approval provided the Contractor attests that incomplete items do not preclude the performance of safe and reliable Functional Testing; re-submission of the Checklist is required upon completion of remaining items.
 - 3. Individual Checklists may contain line items that are the responsibility of more than one installer; Contractor shall assign responsibility to appropriate installers or subcontractors, with identification recorded on the form.
 - 4. If any Checklist line item is not relevant, record reasons on the form.
 - 5. Contractor may independently perform startup inspections and/or tests, at Contractor's option.

6. Regardless of these reporting requirements, Contractor is responsible for correct startup and operation.
7. Submit completed Checklists to Commissioning Authority within two days of completion.
- C. Commissioning Authority is responsible for furnishing the Prefunctional Checklists to Contractor.
 1. Initial Drafts: Contractor is responsible for initial draft of Prefunctional Checklist where so indicated in Contract Documents.
 2. Provide all additional information requested by Commissioning Authority to aid in preparation of checklists, such as shop drawing submittals, manufacturers' startup checklists, and O&M data.
 3. Commissioning Authority may add any relevant items deemed necessary regardless of whether they are explicitly mentioned in Contract Documents or not.
 4. When asked to review the proposed Checklists, do so in a timely manner.
- D. Commissioning Authority Witnessing: Required for:
 1. Each piece of primary equipment, unless sampling of multiple similar units is allowed by the commissioning plan.
 2. A sampling of non-primary equipment, as allowed by the commissioning plan.
- E. Deficiencies: Correct deficiencies and re-inspect or re-test, as applicable, at no extra cost to Airport.
 1. If difficulty in correction would delay progress, report deficiency to the Commissioning Authority immediately.

3.4 FUNCTIONAL TESTS

- A. A Functional Test is required for each item of equipment, system, or other assembly specified to be commissioned, unless sampling of multiple identical or near-identical units is allowed by the final test procedures.
- B. Contractor is responsible for execution of required Functional Tests, after completion of Prefunctional Checklist and before closeout.
- C. Commissioning Authority is responsible for witnessing and reporting results of Functional Tests, including preparation and completion of forms for that purpose.
- D. Contractor is responsible for correction of deficiencies and re-testing at no extra cost to Airport; if a deficiency is not corrected and re-tested immediately, the Commissioning Authority will document the deficiency and the Contractor's stated intentions regarding correction.
 1. Deficiencies are any condition in the installation or function of a component, piece of equipment or system that is not in compliance with Contract Documents or does not perform properly.
 2. When the deficiency has been corrected, the Contractor completes the form certifying that the item is ready to be re-tested and returns the form to the

- Commissioning Authority; the Commissioning Authority will reschedule the test and the Contractor shall re-test.
3. Identical or Near-Identical Items: If 10 percent, or three, whichever is greater, of identical or near-identical items fail to perform due to material or manufacturing defect, all items will be considered defective; provide a proposal for correction within 2 weeks after notification of defect, including provision for testing sample installations prior to replacement of all items.
 4. Contractor shall bear the cost of Airport and Commissioning Authority personnel time witnessing re-testing.
 5. Contractor shall bear the cost of Airport and Commissioning Authority personnel time witnessing re-testing if the test failed due to failure to execute the relevant Prefunctional Checklist correctly; if the test failed for reasons that would not have been identified in the Prefunctional Checklist process, Contractor shall bear the cost of the second and subsequent re-tests.
- E. Functional Test Procedures:
1. Some test procedures are included in Contract Documents; where Functional Test procedures are not included in Contract Documents, test procedures will be determined by the Commissioning Authority with input by and coordination with Contractor.
 2. Examples of Functional Testing:
 - a. Test the dynamic function and operation of equipment and systems (rather than just components) using manual (direct observation) or monitoring methods under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint).
 - b. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc.
 - c. Systems are run through all the HVAC control system's sequences of operation and components are verified to be responding as the sequence's state.
 - d. Traditional air or water test and balancing (TAB) is not Functional Testing; spot checking of TAB by demonstration to the Commissioning Authority is Functional Testing.
- F. Deferred Functional Tests: Some tests may need to be performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions; performance of these tests remains the Contractor's responsibility regardless of timing.

3.5 SENSOR AND ACTUATOR CALIBRATION

- A. Calibrate all field-installed temperature, relative humidity, carbon monoxide, carbon dioxide, and pressure sensors and gauges, and all actuators (dampers and valves) on this

piece of equipment shall be calibrated. Sensors installed in the unit at the factory with calibration certification provided need not be field calibrated.

- B. Calibrate using the methods described below; alternate methods may be used, if approved by Commissioning Authority and Owner beforehand. See PART 2 for test instrument requirements. Record methods used on the relevant Prefunctional Checklist or other suitable forms, documenting initial, intermediate and final results.
- C. All Sensors:
 - 1. Verify that sensor location is appropriate and away from potential causes of erratic operation.
 - 2. Verify that sensors with shielded cable are grounded only at one end.
 - 3. For sensor pairs that are used to determine a temperature or pressure difference, for temperature make sure they are reading within 0.2 degree F of each other, and for pressure, within tolerance equal to 2 percent of the reading, of each other.
 - 4. Tolerances for critical applications may be tighter.
- D. Sensors Without Transmitters - Standard Application:
 - 1. Make a reading with a calibrated test instrument within 6 inches of the site sensor.
 - 2. Verify that the sensor reading, via the permanent thermostat, gauge or building automation system, is within the tolerances in the table below of the instrument-measured value.
 - 3. If not, install offset, calibrate or replace sensor.
- E. Sensors With Transmitters - Standard Application.
 - 1. Disconnect sensor.
 - 2. Connect a signal generator in place of sensor.
 - 3. Connect ammeter in series between transmitter and building automation system control panel.
 - 4. Using manufacturer's resistance-temperature data, simulate minimum desired temperature.
 - 5. Adjust transmitter potentiometer zero until 4 mA is read by the ammeter.
 - 6. Repeat for the maximum temperature matching 20 mA to the potentiometer span or maximum and verify at the building automation system.
 - 7. Record all values and recalibrate controller as necessary to comply with specified control ramps, reset schedules, proportional relationship, reset relationship and P/I reaction.
 - 8. Reconnect sensor.
 - 9. Make a reading with a calibrated test instrument within 6 inches of the site sensor.
 - 10. Verify that the sensor reading, via the permanent thermostat, gauge or building automation system, is within the tolerances in the table below of the instrument-measured value.
 - 11. If not, replace sensor and repeat.
 - 12. For pressure sensors, perform a similar process with a suitable signal generator.
- F. Sensor Tolerances for Standard Applications: Plus/minus the following maximums:

1. Watthour, Voltage, Amperage: 1 percent of design.
 2. Pressure, Air, Water, Gas: 3 percent of design.
 3. Air Temperatures (Outside Air, Space Air, Duct Air): 0.4 degrees F.
 4. Relative Humidity: 4 percent of design.
 5. Barometric Pressure: 0.1 inch of Hg.
 6. Flow Rate, Air: 10 percent of design.
 7. Flow Rate, Water: 4 percent of design.
 8. AHU Wet Bulb and Dew Point: 2.0 degrees F.
- G. Critical Applications: For some applications more rigorous calibration techniques may be required for selected sensors. Describe any such methods used on an attached sheet.
- H. Valve/Damper Stroke Setup and Check:
1. For all valve/damper actuator positions checked, verify the actual position against the control system readout.
 2. Set pump/fan to normal operating mode.
 3. Command valve/damper closed; visually verify that valve/damper is closed and adjust output zero signal as required.
 4. Command valve/damper to open; verify position is full open and adjust output signal as required.
 5. Command valve/damper to a few intermediate positions.
 6. If actual valve/damper position does not reasonably correspond, replace actuator or add pilot positioner (for pneumatics).
- I. Isolation Valve or System Valve Leak Check: For valves not associated with coils.
1. With full pressure in the system, command valve closed.
 2. Use an ultra-sonic flow meter to detect flow or leakage.

3.6 TEST PROCEDURES – GENERAL

- A. Provide skilled technicians to execute starting of equipment and to execute the Functional Tests. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments and problem-solving.
- B. Provide all necessary materials and system modifications required to produce the flows, pressures, temperatures, and conditions necessary to execute the test according to the specified conditions. At completion of the test, return all affected equipment and systems to their pre-test condition.
- C. Sampling: Where Functional Testing of fewer than the total number of multiple identical or near-identical items is explicitly permitted, perform sampling as follows:
1. Identical Units: Defined as units with same application and sequence of operation; only minor size or capacity difference.
 2. Sampling is not allowed for:
 - a. Major equipment.

- b. Life-safety-critical equipment.
 - c. Prefunctional Checklist execution.
 - 3. XX = the percent of the group of identical equipment to be included in each sample; defined for specific type of equipment.
 - 4. YY = the percent of the sample that if failed will require another sample to be tested; defined for specific type of equipment.
 - 5. Randomly test at least XX percent of each group of identical equipment, but not less than three units. This constitutes the "first sample."
 - 6. If YY percent of the units in the first sample fail, test another XX percent of the remaining identical units.
 - 7. If YY percent of the units in the second sample fail, test all remaining identical units.
 - 8. If frequent failures occur, resulting in more troubleshooting than testing, the Commissioning Authority may stop the testing and require Contractor to perform and document a checkout of the remaining units prior to continuing testing.
- D. Manual Testing: Use hand-held instruments, immediate control system readouts, or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make the "observation").
- E. Simulating Conditions: Artificially create the necessary condition for the purpose of testing the response of a system; for example apply hot air to a space sensor using a hair dryer to see the response in a VAV box.
- F. Simulating Signals: Disconnect the sensor and use a signal generator to send an amperage, resistance or pressure to the transducer and control system to simulate the sensor value.
- G. Over-Writing Values: Change the sensor value known to the control system in the control system to see the response of the system; for example, change the outside air temperature value from 50 degrees F to 75 degrees F to verify economizer operation.
- H. Indirect Indicators: Remote indicators of a response or condition, such as a reading from a control system screen reporting a damper to be 100 percent closed, are considered indirect indicators.
- I. Monitoring: Record parameters (flow, current, status, pressure, etc.) of equipment operation using dataloggers or the trending capabilities of the relevant control systems; where monitoring of specific points is called for in Functional Test Procedures:
- 1. All points that are monitored by the relevant control system shall be trended by Contractor; at the Commissioning Authority's request, Contractor shall trend up to 20 percent more points than specified at no extra charge.
 - 2. Other points will be monitored by the Commissioning Authority using dataloggers.
 - 3. At the option of the Commissioning Authority, some control system monitoring may be replaced with datalogger monitoring.

4. Provide hard copies of monitored data in columnar format with time down left column and at least 5 columns of point values on same page.
 5. Graphical output is desirable and is required for all output if the system can produce it.
 6. Monitoring may be used to augment manual testing.
- 3.7 OPERATION AND MAINTENANCE MANUALS

- A. Add design intent documentation furnished by Architect to manuals prior to submission.
- B. Submit manuals related to items that were commissioned to Commissioning Authority for review; make changes recommended by Commissioning Authority.
- C. Commissioning Authority will add commissioning records to manuals after submission.

- END OF SECTION

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PART 1 GENERAL**A.01 DESCRIPTION**

- A. This section specifies demolition and removal of buildings, portions of buildings, utilities, pavements, base courses, signage, pavement markings, other structures and debris from trash dumps shown.
- B. Includes removal of interior wood and suspended ceiling systems, lighting, raceways, conductors, and attachments to ceiling areas removed.
- C. Includes removal of interior floors, foundation coring, exterior pavements, trenching, barricades, patching, coordination, permitting and other work related to installation on new sanitary sewer underground piping and new lateral.
- D. Demolition materials shall be removed from site and costs for transportation and removal included in Bid. Including all pavements and base course materials.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 PROTECTION

- A. Perform demolition in such a manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures.
- B. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel and aircraft during demolition and removal operations.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- D. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to; ice, flooding, or pollution. Vacuum and dust the work area daily. Follow City requirements.
- E. In addition to previously listed fire and safety rules to be observed in performance of work, include following:
 - 1. No wall or part of wall shall be permitted to fall outwardly from structures.

2. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate use. Instruct all possible users in use of fire extinguishers.
 3. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 15 feet of fire hydrants.
- F. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the site; any damaged items shall be repaired or replaced. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works.

1.04 UTILITY SERVICES

- A. Demolish and remove outside utility service lines (water, sewer, storm water, gas, electrical and communications) shown to be removed and as required to install new utility lines and building.
- B. Remove abandoned outside utility lines that would interfere with installation of new utility lines and new construction.
- C. Coordinate removal of utilities with utility companies.
- D. Coordinate relocation of mainline sewer and water lines.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

- A. Completely demolish and remove buildings and structures, including all appurtenances related or connected thereto. Completely demolish pavements, curbs, walks, pads, irrigation systems, utility boxes, gutters, exterior signage, landscaping, landscape features, fencing and all other site features required to install new building and site elements.
 1. As required for installation of new utility service lines.
 2. To full depth within an area defined by hypothetical lines located 20 feet outside building lines of new structures.

3. As required to install new site/civil components.
- B. Debris, including brick, concrete, stone, metals and similar materials shall become the property of Contractor and shall be disposed daily, off the property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Owner. Contractor shall dispose of debris in compliance with applicable federal, state or local permits, rules and/or regulations.
- C. Remove and legally dispose of all materials, other than earth to remain as part of project work. Materials removed shall become the property of the contractor and shall be disposed of in compliance with applicable federal, state or local permits, rules and/or regulations. Materials that are located beneath the surface of the surrounding ground.
- D. Remove existing utilities as indicated or uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Owner. When utility lines are encountered that are not indicated on the drawings, the Owner shall be notified prior to further work in that area.

3.02 CLEAN-UP

- A. On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to Owner. Clean-up shall include off-site disposal of all items and materials not required to remain property of the Owner as well as all debris and rubbish resulting from demolition operations.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This Section includes the requirements for tests and inspections for site concrete work specified in Sections 03 20 00 Concrete Reinforcement and 03 30 00 Cast in Place Concrete.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit for review and approval.
 - 1. Design Data: Certified copies of mix designers for each concrete class specified
 - 2. Certifications that materials comply with requirements specified.
 - 3. Samples: As requested by the Testing Laboratory and accompanied by certification from vendor that samples originate from and are representative of each lot proposed for use.
 - 4. Test Reports
 - a. Mill test reports for reinforcement.
 - b. Reports from testing organization.

1.04 QUALITY ASSURANCE

- A. Referenced Standards
 - 1. California Building Code (CBC), 2019.
 - 2. ACI 301 – Specifications for Structural Concrete for Buildings.
 - 3. ACI 318 – Building Code Requirements for Structural Concrete.
 - 4. ASTM C143 / C143M-15a – Standard Test Method for Slump of Hydraulic-Cement Concrete

1.05 DELIVERY, STORAGE AND HANDLING

- A. Owner is responsible for all testing and inspection of concrete work. The owner shall retain the services of a certified testing laboratory to perform concrete testing.

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. The Testing Laboratory
 - 1. Take samples from bundles delivered to job site from the mill, unless bundles are identified by heat number and accompanied by mill certificates. When reinforced is not positively identified by heat numbers or when random sampling is intended two specimens will be taken from each 2 ½ tons or fraction thereof of each size and grade.
 - 2. Test for tensile and bending strength in accordance with CBC Chapters 17 and 19.

2.02 CAST IN PLACE CONCRETE

- A. The Testing Laboratory will:
 - 1. Review mix designs, compliance certificates and samples of materials proposed for use.
 - 2. Test and inspect materials according to CBC 1903 from compliance with requirements specified in Section 03 30 00 Cast-in-Place Concrete.
 - 3. Inspect batch plant prior to concrete being furnished to verify that:
 - a. Plant is equipped with approved metering devices for determining moisture content of fine aggregate.
 - b. Other plant quality controls are satisfactory.

PART 3 EXECUTION

3.01 CAST-IN-PLACE CONCRETE

- A. The Testing Laboratory will:
 - 1. Perform testing in accordance with ACI 318
 - 2. Test concrete slump in accordance with ASTM C143
 - 3. Test concrete for required compressive strength in conformance with CBC Section 1905, as follows.
 - a. Make and cure a minimum of five specimen cylinders according to ASTM C31 for each 150 cubic yards, or fraction thereof, of each class of concrete placed each day.

- b. As a minimum, one set of five specimen cylinders shall be made for each 5,000 square feet of slab or wall surface area or fraction thereof placed each day
 - c. Retain one cylinder for 7-day test, one for 14-day test, and two for 28-day test. Hold one or more cylinders for subsequent testing, in necessary.
 - d. Number each cylinder, date each set of cylinders and record placement represented by each set of cylinders.
 - e. Transport specimen cylinders from jobsite to laboratory.
 - f. Test specimen cylinders according to ASTM C30 from specified strength after cylinders have aged for 7 days, 14 days, and 28 days.
- B. Furnish to the Testing Laboratory the ready-mix delivery tickets for each batch of concrete delivered to the jobsite, each ticket bearing the following:
 - 1. Design mix number
 - 2. Time of batching
 - 3. Weight of cement, type and maximum size of aggregates, water, and admixtures in each batch.
 - 4. Total volume of concrete in each batch.
- C. When laboratory tests of specimen cylinders show compressive strengths below the minimum specified, the Contractor will be back charged for costs of the taking and testing core specimens of hardened concrete according to ASTM C42.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This section includes the requirements for furnishing and placing concrete formwork.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Referenced Standards
1. California Building Code (CBC), 2019
 2. ACI 301 – Specifications for Structural Concrete for Buildings.
 3. ACI 318 – Building Code Requirements for Reinforced Concrete
 4. ACI 347R – Guide to Formwork for Concrete.
 5. CRSI Manual of Standard Practice
 6. PSI-95 US Product Standard for Construction and Industrial Plywood
 7. West Coast Lumber Inspection Bureau (WCLB) Standard.
 8. Western Wood Products Association (WWPA) Publication: Western Lumber Grading Rules.
- B. Design Criteria: Unless otherwise shown, noted, or specified, formwork shall be in conformance with ACI 347

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials subject to damage from dirt and moisture maintaining them clean and dry, off the ground, and suitably protected.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. General: Form materials shall be new at start of work.
- B. Form Lumber: Douglas Fir, Construction Grade, S1S2E
- C. Plywood Forms and Architectural Smooth Finish: Five-ply, 3/4-inch thick, APA A-A Plyform, Class I, Exterior Type, with mill-oiling treatment omitted for architecture smooth finish; or Owner approved equal.
- D. Flexible spring steel forms or laminated boards for forming radius bends.
- E. Form Accessories:
 - 1. Accessories which will be entirely or partially embedded in concrete, such as ties and hangers, shall be of metal and of standard manufacture; wire ties are not acceptable.
 - 2. The portion of embedded accessories remaining in concrete shall have no metal within one inch of face of concrete, and shall have no fractures, spalls, depressions, or other surface disfigurements exceeding 3/4 inch in diameter.
 - 3. Spreader cones on ties shall not exceed one inch in diameter.
- F. Form Sealer: Sealer shall eliminate grain raise as a result of moisture, and shall not interfere with color, bond, or subsequent treatment of or application of finishes to concrete surface; Sonneborn Building Products, Inc. "Form Saver," Grace Construction Materials "Form Film," Burke "Form Sealer," or approved equal.
- G. Form Release Agents:
 - 1. For Concrete Exposed to View in the Finished Work or to Receive Applied Finishes: Use chemically-active types producing water-insoluble soaps. Release agents shall contain no petroleum-based solvents such as creosote, paraffin, wax, or diesel oil.
 - 2. For ABS form liners, use only form release agents recommended by form liner manufacturer.
 - 3. For Unexposed Concrete: Any type that will not interfere with bond of finishes to be applied.

PART 3 EXECUTION**3.01 PREPARATION**

- A. Treat contact surface of plywood and board forms with a form sealer in accordance with the manufacturer's printed instructions.
- B. Clean form surfaces and reseal before each use. The use of form oil will not be permitted.

3.02 CONSTRUCTION

- A. Design, construct, and brace formwork and temporary falsework to safely support concrete and hold personnel during construction operations.
- B. Coordinate design, construction, and installation of formwork to accommodate openings, sleeves, chases, pipes, nailers, anchors, ties, inserts, and other embedded items.
- C. Construct forms of sufficient strength and rigidity to produce finished concrete of the size, shape, and location shown, without exceeding specified tolerances. Form assembly shall permit removal in proper sequence without damaging concrete.
- D. Use only new plywood form material for creating smooth architectural finish where required; reuse of forms not permitted for creating smooth architectural finish.
- E. Install form liners for architectural finishes in strict accordance with manufacturer's printed instructions and approved submittal.
- F. Arrange forms to permit single pours of exposed areas and panels without joints between adjacent form materials in the same plane.
- G. Construct forms for all exposed to view concrete full height and width between construction joints in surface of concrete. Do not break forms for pour or construction joints within such areas.
- H. Forms shall not extend higher than 12 inches above the top of a pour or construction joint.
- I. Form construction joints as specified in Section 03 30 00 – Cast-In-Place Concrete. Provide a surfaced pouring strip where construction joints intersect faces of surfaces to be exposed to view in the finished work; prior to subsequent pour, remove strip and tighten forms.
- J. Construction joints shall show no overlapping or offsetting of concrete surfaces and shall as closely as possible have the same appearance as butted board joints. Joints in a continuous line shall be straight and true.
- K. Provide cleanouts as required to permit inspection and thorough cleaning of loose dirt and debris. Cleanouts shall not be apparent on concrete surfaces exposed to view in finished work.
- L. Arrange forms to permit proper erection sequence and subsequent form removal without damaging concrete.
- M. Whenever concrete bases and foundations are required for equipment furnished as part of the work of other Sections, verify equipment dimensions prior to placing concrete.
- N. Forms for concrete surfaces exposed to view in the finished work shall be constructed to match existing concrete finish.
- O. Forms for unexposed concrete surfaces shall be undressed lumber, form plywood, or other suitable material.
- P. Formwork shall be clean and free of foreign material when concrete is placed.

3.03 FORM REMOVAL

- A. Do not remove forms until concrete has attained sufficient strength to support its own weight and anticipated construction live loads without damage, but in no case less than the following.
 - 1. Walls: Four (4) days
 - 2. Footings, Curbs, Walks, Paving: Side forms may be removed 24 hours after concrete placement.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This section includes the requirements for furnishing and installing concrete reinforcement.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Shop Drawings: Complete bending and placing details of reinforcement.
 - 1. Details of reinforcement not shown on Drawings shall be in conformance with ACI 315 and ACI 318.
 - 2. Detailing, fabricating and spacing of reinforcement shall be in conformance with ACI 315 unless otherwise shown or noted.
- B. Test Reports: Certified copies of mill tests showing chemical and physical analyses of each heat or melt from which reinforcement was made.

1.04 QUALITY ASSURANCE

- A. Referenced Standards
 - 1. California Building Code (CBC), 2019.
 - 2. ACI 301 – Specifications for Structural Concrete for Buildings
 - 3. ACI 318 – Building Code Requirements for Reinforced Concrete
 - 4. ACI 347R – Guide to Formwork for Concrete
 - 5. CRSI Manual of Standard Practice
- B. Allowable Tolerances Fabricating/placing tolerances shall be in conformance with ACI 301.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement from the mill in securely tied bundles, each bundle limited to one size and grade of reinforcement. Identify each bundle with readily visible metal or plastic tags identifying the reinforcement by the same item marking as on the approved shop

drawings; tags shall also identify the mill, heat or melt number, and the grade and size of reinforcement.

- B. After bundles are broken, identify by segregating reinforcement by sizes and grades.
- C. Store reinforcement off the ground, protected from the elements and foreign material which could adversely affect its bond with concrete.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Reinforcing Bars: ASTM A625, Grade 60 for all bars except where noted otherwise on plans.
- B. Wire for Ties, Stirrups, and Spiral Reinforcement: ASTM A82.
- C. Spacers, Bar Supports, and Other Accessories: In conformance with ACI 315. Where portions of accessories will be within 1/2 inch of concrete surfaces which will be exposed to the elements in the finished work, such accessories shall be of non-corrosive material or shall be corrosion-resistant treated; aluminum products will not be acceptable.

2.02 FABRICATION

- A. Fabricate reinforcement in accordance with the requirements of ACI 315, where specific details are not shown or where Contract Documents are not more restrictive.
- B. Fabrication of reinforcement shall begin only after approval of bar lists and shop drawings, with each item of reinforcement fabricated in conformance with such approved documents.
- C. Bend reinforcing steel cold; do not straighten/rebend, doing damage to the material.

PART 3 EXECUTION

3.01 INSTALLATION

- A. At time of concrete placement, reinforcement shall be free of dirt, oil, scale, loose rust, and other foreign material that could adversely affect the bond with concrete.
- B. Fasten reinforcement/support to prevent displacement beyond the tolerances specified in ACI 301, by construction loads and concrete placement. Sizes and dimensions of supports shall be as required to position the reinforcement as shown on the approved shop drawings and in conformance with the minimum concrete protective covering requirements of ACI 301.
- C. Furnish reinforcing bars full length whenever possible; splices will be permitted only where shown or noted on the approved shop drawings, or as otherwise permitted by the Owner.
- D. Splices may be made in horizontal reinforcement by lapping and placing ends of bars in contact and securely wiring; or bars may be separated sufficiently to permit the embedment of the entire surface of each bar in concrete.

1. Locate all splices as per drawings. Lap bars 48 diameters minimum.
 2. Stagger splices in adjacent bars.
- E. Obstructions: Should items to be embedded in concrete interfere with placement of reinforcements, notify the Owner to obtain written approval of procedure before starting.
- F. Concrete Cover: Install reinforcement to achieve the minimum concrete coverage shown or noted on the Drawings, unless otherwise specified.
- G. Welding: Reinforcing bars shall not have welded joints.
- H. Misplaced Reinforcing Bars:
1. If reinforcing bars are found to be misplaced after concrete placement, immediately notify the Owner for recommendations for correcting the misplacement; perform no corrective measures without such prior recommendations.
 2. Redesign, alterations, corrections, and replacement of concrete or reinforcing bars due to misplaced bars shall be performed at no additional expense to the Owner.

3.02 MAINTENANCE OF REINFORCEMENT

- A. Continuously inspect/maintain reinforcement in proper position during concreting operations.
- B. Where reinforcement cannot otherwise be kept properly aligned, provide additional bracing ties, stirrups, and other items as necessary.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This Section includes the requirements for furnishing and placing cast-in-place concrete, including cast-in-place architectural finish concrete, curing and finishing.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

SUBMITTALS

- B. Mix design for each class of concrete proposed for use. If concrete will be pneumatically placed, mixes shall be specifically designed and designated.
- C. Laboratory test reports for concrete mixes. Compression test data (field experience method) or results of testing (trial batch method) used to establish mix proportions.
- D. Product Data: Manufacturers' and suppliers' proprietary information on materials.
- E. Layout Drawings: Submit layout drawings showing proposed locations of construction joints, control joints, details of construction, and connections for approval prior to concrete placement.
- F. Submit delivery ticket to Owner for each batch of concrete delivered.

1.03 QUALITY ASSURANCE

- A. Reference Standards
 - 1. California Building Code (CBC), 2016.
 - 2. ACI 301 – Specifications for structural Concrete for Buildings.
 - 3. ACI 318 – Building Code Requirements for Reinforced Concrete.
- B. Quality Control: Contractor to retain the services of a qualified testing organization as specified in Testing Laboratory Services.
- C. Quality Control Supervisor: Owner will retain the services of an independent concrete contractor that will observe Contractor's work to achieve desired results.

- D. Allowable Tolerances: Deviation from plumb and level shall not exceed 1/8 inch within ten feet in any direction, as determined with a ten-foot straightedge. Cumulative deviation over the length or height of the building shall not exceed 3/8 inch in any direction.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle packaged materials in the manufacturers' original, sealed packages, each clearly identified with the manufacturer's name, and name and type of material.
- B. Deliver, store, and handle materials subject to damage from dirt and moisture maintaining them clean and dry, off the ground, and suitably protected.
- C. Store coarse and fine aggregates in separate, covered bins to prevent them from mixing, and to preserve moisture content of aggregate at batch plant.
- D. Store bulk cement in covered bins.

1.05 PROJECT CONDITIONS

- A. Environmental Requirements for Concrete Placement:
 - 1. Hot Weather: In conformance with ACI 305.
 - 2. Cold Weather: In conformance with ACI 306.
 - 3. During Precipitation: Do not place unless adequate protection is provided.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Concrete, ready-mixed, ASTM C94.
 - 1. Cement: ASTM C150, Type II, Portland Cement.
 - 2. Aggregate:
 - a. Fine Aggregate: ASTM C33
 - b. Coarse Aggregate: ASTM C33
 - c. Source of aggregate shall remain constant for the duration of the work.
 - 3. Water: Clean, clear, and potable.
- B. Curing materials:

1. Liquid Membrane: ASTM C308, Type I.
2. Sheet material: ASTM C171.
- C. Admixtures
 1. Water reducing Admixture: ASTM C494, only with prior review of mix design.
 2. Air-Entraining Admixture: ASTM C260, for lightweight concrete only with prior review of mix design.
 3. Unspecified Admixtures: Not Permitted.
 4. Calcium Chloride: not Permitted.
 5. Hydrogen Chloride: Not Permitted
- D. Non-shrink Grout: Premixed, requiring only addition of specified water; Master Builders "Masterflow 928," or approved equal.
 1. Flowable, low shrinkage, 5,000 psi at 7 days.
 2. Non-metallic Type: For all uses.
 3. Metallic Type: Will not be permitted.
- E. Bonding Agent: Larsen Products Corp. "Weld-Crete," Sika Chemical Corp. "Sikastix 370" or "Sikadur Hi-Mod," or approved equal.
- F. Hardener: Clear, dust-on type; Sonneborn-Contech "Harcot Standard Natural," Upco Co. "Hydroment," Lambert Corp. "Colorhard," or approved equal.
- G. Sealer: Heavy penetrating type, from same manufacturer as hardener.
 1. Without wax or other constituent that will impair application of finishes.
- H. Epoxy Grout for Reinforcement and Bolt Installation: Hilti "HIT-RE 500-SD" Adhesive Anchor System", Simpson Strong-Tie "SET XP", or equal.
- I. Detectable Warning - Truncated Domes & Nosing:
 1. Spacing, height and configuration of truncated domes shall meet CBC 11B-705. Base diameter of 0.9 inch min. and 0.92 inch max, a top diameter of 0.45 inch minimum and 0.47 inch maximum, and a height of 0.2 inch. Dome spacing shall have center to center 2.3 inch min. and 2.4 inch max., and a base-to-base spacing of 0.65 inch minimum.
 2. Amstep Model 224A, 2-3/8 inches wide, and meets the California Title 24 code for the visually impaired. Tread 5/16 inch thick with continuous arrow profile anchor 5/8 inch deep. The abrasive filler shall consist of a mixture of aluminum

oxide and silicon granules in an epoxy resin and hardener mixture and locked into an extruded base, alloy 6063-T6. Coefficient of friction 1.02 dry, 0.98 wet per ASTM F 609. Abrasive filler color as selected.

2.02 MIXES

A. Design Criteria

1. Concrete shall develop the minimum compressive strength noted on the Contract Documents at 28 days on cylinders made and tested in accordance with referenced ASTM standards.
2. The average of the sets of three consecutive strength tests shall be equal to or greater than the specified strength, and no individual strength test results shall fall below the specified strength by more than 500 psi.

B. General

1. Mix designs shall be in conformance with CBC Section 1905, based on materials tested and approved by the Testing Laboratory.
2. If concrete will be pneumatically placed, mixes shall be specifically so designed and designated.
3. If concrete is to be pumped, mixes shall be specifically so designed and designated.

C. Nonshrink Grout: Mix in accordance with the manufacturer's printed instructions.

D. Dry Pack: Mix, in proportions by volume, one-part cement to two-and-one-half parts fine aggregate, screening out materials retained on a No. 4 sieve. Mix with water to a consistency so that when a ball of mixture is compressed in the hand, it will show finger marks but maintain its shape and not show any surface water.

E. Patching Mortar: Mix in proportion by volume, one part cement to two parts fine aggregate.

2.03 MIXING

A. Batch Plant:

1. Equipment and plant shall be capable of weighing, segregating, and efficiently handling materials. Automatic metering capable of determining moisture content of sand shall be utilized.
2. Equipment and plant shall be subject to the approval of the Testing Laboratory; equipment and processes not so approved shall not be used for the work.

B. General:

1. Mixing shall be in conformance with ASTM C94 and CBC.
 2. Mix cement, fine and coarse aggregate, admixtures, and water to exact proportions of approved mix designs.
 3. Measure fine and coarse aggregates separately according to approved method which affords accurate control and checking.
 4. Adjust grading to improve workability; do not add water unless otherwise recommended by the Owner.
- C. Admixtures: use automatic metering dispenser to incorporate admixtures into mix

2.04 CONCRETE CLASSES

A. Definitions:

1. Strength: Minimum compressive strength after 28 days, when tested in accordance with ASTM C39.
2. Aggregate: Maximum size.
3. Weight: Pounds per cubic foot, air dry.
4. Slump: When tested in accordance with ASTM C143.
5. Maximum water/ cement ratio of 0.45

B. Concrete Classes and Uses:

Class	Weight (psf)	Strength (psi)	Aggregate (inches)	Use
A	145	4000	3/4	Cast-In-Place Concrete, Concrete Foundations, Concrete Slabs, etc.
B	110	3000	5/8	Sand Lightweight Concrete over metal deck

PART 3 EXECUTION

3.01 PREPARATION

- A. Prior to concrete placement, determine finishes required to accommodate the work of other sections, and prepare for such finishes. Where determination for such finishes may be in question, refer to Owner for resolution.
- B. Remove loose dirt/foreign material from excavations and forms and standing and saturated soil from excavations and cavities. Placing concrete in standing water is not permitted.

- C. Thoroughly clean reinforcement and other items to be embedded in concrete of loose rust and other foreign matter which could inhibit bond with concrete.
- D. Thoroughly wet wood forms, except coated plywood, and adjacent concrete a minimum of one hour prior to placing concrete; securely close cleanout and inspection ports; repeat wetting as required to keep forms damp.
- E. Work form release agent into all areas of form liner as recommended by form manufacturer.
- F. Apply form release agent to form liners before each use and within the same day that concrete is placed.
- G. Subgrade and forms shall have been checked for line and grade, and work areas shall have been inspected by Engineer and observed by the Owner prior to starting concrete placement.
- H. Roughen surfaces +/- $\frac{1}{4}$ " amplitude at all joints and at all contact surfaces between new and existing concrete. Provide shear keys and prepare joints as per Drawings and Specifications. Apply bonding agent between existing and new concrete pours.

3.02 TRANSPORTING

- A. Transport concrete from the mixer to the place of final deposit as quickly as possible, and by methods which prevent the separation and loss of ingredients. Concrete shall be of uniform density when placed.
- B. Concrete shall not be freely dropped where reinforcement will cause segregation. Spouts, elephant trunks, or other approved means shall be utilized to prevent segregation.
- C. In no case shall concrete be freely dropped more than six (6) feet. Provide formwork with pour ports at four (4) feet or closer horizontally so that concrete will be deposited freely such that no more than six (6) feet is dropped at any location.
- D. Concrete may be pumped from the mixer to the place of deposit, provided that information on mix design adjustments, equipment, and procedures have received the Owner's written approval.

3.03 PLACING

- A. General:
 - 1. Notify Owner a minimum of 72 hours prior to each major concrete placement.
 - 2. Place concrete in a continuous operation until a section of approved size and shape has been completed.
 - 3. For horizontal surfaces, maintain a plastic surface essentially horizontal until completion of placement of the section.

4. Prevent displacement of reinforcement and other items to be embedded.
5. Before concrete sets, completely remove concrete spilled on forms and reinforcement in sections where concrete is not to be immediately installed.
6. An interruption of more than 60 minutes in concrete placement will be cause for shutting down the work and disposing of remaining mixed concrete. If such interruption occurs, provide construction joints where and as instructed, and cut concrete back to such line, cleaning forms and reinforcement as specified.
7. Record the date and time of concrete placement in each section. Retain records until completion of the work and make available at all times to the review of the Owner.

B. Consolidation:

1. Thoroughly consolidate concrete by puddling with suitable tools during placement, and by thoroughly working around reinforcement and other embedded items.
2. In addition to manual spading and tamping, internally vibrate concrete with high-speed mechanical vibrators of sufficient amplitude for thorough consolidation.
3. Prevent formation of shoulders and ledges.
4. Provide keys across vertical joints as shown on drawings. Place dowels across joints.
5. Joints for Slabs on Grade: Locate construction joints where approved and under partitions, whenever possible.

3.04 PROTECTION AND CURING

A. Protection:

1. Maintain concrete temperature above 50 degrees F during curing.
2. Protect concrete from sun and rain.
3. Do not subject concrete to loads until it has completely cured and attained minimum 28-day strength.
4. Water cure concrete continuously for minimum duration specified, including Saturdays, Sundays, and holidays; do not permit it to dry out until it has cured for the specified time.
5. Protect concrete during/after curing from damage from construction operations.

6. Cover traffic areas with kraft paper and plywood sheets; maintain protective covering in place and in good repair as long as necessary to protect concrete from damage.
 7. Keep finished areas free from traffic for a minimum of four days, or as long as necessary for concrete to have set sufficiently to prevent its being damaged.
- B. Curing: Curing shall immediately follow finishing and shall be performed as follows.
1. Flatwork Surfaces: Membrane cure for a minimum of seven days.

3.05 DEFECTIVE CONCRETE

- A. Repair or replace defective concrete as instructed by Owner, and at no additional expense to Owner. Repair materials shall include, as necessary, cements, aggregates, admixtures, and epoxy.
- B. With written approval of Owner, some minor defective work may be repaired by use of cement mortar; however, if the defects affect the strength of the structure, its appearance, or are otherwise detrimental, Owner may require the removal and replacement of that portion of the structure.

END OF SECTION

PART 1 GENERAL**1.1 DESCRIPTION**

- A. This section specifies the requirements for materials, proportioning, and application of shotcrete using either dry-mix or wet-mix process.

1.2 DEFINITION

- A. Mortar or concrete pneumatically projected at high velocity onto a surface; also known as air-blown mortar; also pneumatically applied mortar or concrete, sprayed mortar and gunned concrete.

1.3 RELATED WORK

- A. All Sections listed in the Table of Contents are a Condition of this Section.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Design Mix: Test Reports and Proportions.
- C. Shop Drawings: Reinforcing Steel.
- D. Two 300 mm x 300 mm x 25 mm (12 inch by 12 inch by 1 inch) sample panels showing required finish. Submit panels within 30 days after receipt of notice to proceed.
- E. Aggregate gradation.
- F. Certificates: Contractor's qualifications as specified.

1.5 QUALITY CONTROL

- A. Contractor Qualifications.
 - 1. Work in this section shall be provided only by a Contractor specializing in and possessing the equipment, knowledge, and skilled operators for application of shotcrete.
 - 2. Furnish evidence to Resident Engineer that Contractor conforms to above requirements, has been specializing in this work for a period of at least five years, and will use only experienced shotcrete foremen, nozzle men and delivery equipment operators on the work.
 - 3. Conform to ACI 506R, Paragraphs 4.2 and 4.3, for qualifications and duties of craftsmen.
- B. Tolerances:
 - 1. Cover of reinforcement: ACI 506.2, Paragraph 3.6.2.

2. Alignment and thickness of shotcrete shall be controlled by installing ground wires. Alignment and thickness control shall conform to ACI 506R Section 5.6.

1.6 PRECONSTRUCTION TESTING

- A. Conform to the requirements of ACI 506R, Paragraph 6.4.
- B. Testing laboratory approved by the Resident Engineer and reimbursed by Contractor shall design dry or wet mix, as applicable, to produce compressive strengths indicated on drawings.
- C. Make 2 test panels for each mix design, 450 mm (18 inches) square and 75 mm (3 inch) minimum thickness. Take 5 cores or cubes from each 75 mm (3 inch) panel for compressive strength testing in accordance with ACI 506R, Paragraph 6.4.

1.7 CONSTRUCTION TESTING

- A. Make one test panel 450 mm (18 inches) square and 75 mm (3 inches) thick for each half-day's work or portion thereof. Provide test panels to a testing laboratory approved by Resident Engineer and reimbursed by the contractor. Five compressive strength specimens will be obtained from each panel and tested for compressive strength in accordance with ASTM C42. Two (2) samples are to be tested at 7 days and 28 days after application. The fifth sample should be retained for 56 days should additional testing be required. Strength test results are to be reported to the Resident Engineer 24 hours after completion of test.

1.8 DELIVERY, HANDLING, AND STORAGE

- A. Properly deliver and handle materials to prevent contamination, segregation, or damage to materials.
- B. Store cement in weathertight enclosures to protect against dampness and contamination.
- C. Prevent segregation and contamination of aggregates by proper arrangement and use of stockpiles.
- D. Store admixtures properly to prevent contamination, evaporation, freezing, or other damage.

1.9 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Concrete Institute (ACI):

304R-00(2009)	Guide for Measuring, Mixing, Transporting, & Placing Concrete
506R-05	Guide to Shotcrete
506.2-95	Specification for Shotcrete

506.4R(R2004) Guide for the Evaluation of Shotcrete

C. American Society for Testing and Materials (ASTM):

A615/A615M-09 Deformed and Plain Carbon Steel Bars for Concrete
Reinforcement

A1064/A1064M Specification for Carbon-Steel Wire and Welded Wire
Reinforcement, Plain and Deformed, for Concrete

C33/C33M-11 Concrete Aggregates

C94/C94M-10 Ready-Mixed Concrete

C150/C150M-09 Portland Cement

C260/C260M-10 Air-Entraining Admixtures for Concrete

C494/C494-10 Chemical Admixtures for Concrete

PART 2 PRODUCTS

2.1 MATERIALS

A. Portland Cement: ASTM C150, Type I or II.

B. Aggregate: ASTM C33, Gradation Table 2.1

TABLE 2.1 -- GRADATION LIMIT FOR COMBINED AGGREGATES

Sieve Size, U.S. standard square mesh	Percent by Weight Passing Individual Sieves		
	Gradation No. 1	Gradation No. 2	Gradation No. 3
20 mm 3/4 inch	---	---	100
13 mm 1/2 inch	---	100	80-95
10 mm 3/8 inch	100	90-100	70-90
No. 4	95-100	70-85	50-70
No. 8	80-100	50-70	35-55
No. 16	50-85	35-55	20-40
No. 30	25-60	20-35	10-30
No. 50	10-30	8-20	5-17
No. 100	2-10	2-10	2-10

- C. Chemical Admixtures: ASTM C494.
- D. Air-entraining Admixture: ASTM C260.
- E. Water: Fresh, Clean, and Potable
- F. Reinforcing Steel: ASTM A615, grade as shown.
- G. Welded Wire Fabric: ASTM A1064/A1064M.

PART 3 EXECUTION

3.1 PROPORTIONING, DELIVERY AND MIXING

- A. Proportioning: Mix shall be designed by Contractor-retained testing laboratory; see "PRECONSTRUCTION TESTING" hereinbefore. Maintain water-cement ratio between 0.35 to 0.50 by weight.
- B. Mixing Processes:
 - 1. Mixing, General: Strength of mix is specified on the drawings. At Contractor's option, use either the dry or wet mix process. Discharge entire batch before recharging. Clean mixer at least once every 8-hour shift or portion thereof.

Reject material mixed and standing for 45 minutes; remixing or tempering not permitted.

2. Dry Mix Process: Conform to ACI 506R, Paragraph 1.6.1.
3. Wet Mix Process: Conform to ACI 506R, Paragraph 1.6.2.

3.2 EQUIPMENT, DRY MIX PROCESS

- A. Batching and Mixing Equipment: Batch by weighing, use rotating mixer or adequate capacity for dry-mixing aggregate and cement for continuous supply of material to gun, all conforming to ACI 506R, Paragraph 3.5.
- B. Delivery equipment:
 1. Gun and Nozzle: Premixing type conforming to the requirements of ACI 506R, Paragraphs 3.2 and 3.7 designed for material delivery and water injection.
 2. Air Compressor and Hoses: Standard type, of capacity to provide without interruption, pressures and volume of air necessary for longest hose delivery; conform to ACI 506R, Table 3.1. Make allowances for air consumed by separate blow pipe in blowing away rebound, cleaning reinforcing and incidental uses.
 3. Water Supply: Conform to ACI 506R, Paragraph 3.8.1 with adequate capacity to maintain water pressure approximately 65 N (15 pounds) higher than highest air pressure required, both air and water pressure uniformly steady, non-pulsating.

3.3 EQUIPMENT, WET MIX PROCESS

- A. Batching and Mixing Equipment: ACI 506R, Paragraph 3.5. Batch by weighing; use rotating mixing equipment and mix in accordance with ACI 304R, and ASTM C94 for ready-mixed concrete.
- B. Delivery Equipment: Use pneumatic feed or positive displacement type of design and size capable of delivering premixed materials accurately, uniformly and continuously through the hose, all in accordance with ACI 506R, Paragraphs 3.3 and 3.7.
- C. Air Supply: ACI 506R, Paragraph 3.4.2.

3.4 ALIGNMENT CONTROL

- A. General: To establish thickness and surface planes or shotcrete build-up provide ground wires, taut, secure, true to line and plane, conforming to ACI 506R, Paragraph 5.6.
- B. Reinforcing Positioning: Check that reinforcing is positioned and sized all in accordance with ACI 506R, Paragraph 5.4.

3.5 EXHAUST SYSTEM

- A. Construct a sealed air barrier around immediate area of work as approved by Resident Engineer. Construct a sealed air barrier prior to any application within confines of the Medical Center.

- B. Continuously exhaust work area to outside creating a negative pressure within area. Do not locate air exhaust near any Medical Center air intakes.

3.6 SHOOTING

- A. General: ACI 506R, Paragraph 8.5.7. Shoot and fill corners first, with continuous uniform material flow from nozzle held approximately 600 mm to 1500 mm (2 to 5 feet) from the work, at angle normal to the surface.
 - 1. Shoot around reinforcing with nozzle close to encase reinforcement as illustrated in ACI 506R, Figure 8.4, left column.
 - 2. If flow is not uniform and slugs, sand spots or wet sloughs result, turn nozzle away until faulty work is cut out and repaired.
 - 3. Do no shotcrete work if temperature is below 40 C (40 0 F) without providing continuous heat and adequate protection from freezing.
- B. Preparation of Surfaces to Receive Shotcrete: ACI 506R, Paragraph 5.2, as applicable to the work, as approved.
- C. Rebound: ACI 506R, Paragraph 8.5.10. Do not work rebound into construction nor salvage rebound for subsequent batching.
- D. Suspend application if:
 - 1. High wind prevents nozzlemen from proper application of material.
 - 2. Weather approaches freezing and shotcrete cannot be protected.
 - 3. Rain, other than a very light sprinkle, occurs which would wash cement out of freshly placed material.
- E. Time Between Coats:
 - 1. In sloping, vertical or overhanging work, allow interval of time sufficient for initial, but not final, set to develop.
 - 2. At development of initial set, lightly broom surface to remove any laitance to provide better bond with succeeding applications.
- F. Construction Joints:
 - 1. ACI 506R, Paragraph 5.7, tapering over a width of 300 mm (1 foot) to a 25 mm (1 inch) edge from board laid flat.
 - 2. Before proceeding with additional shotcrete work, thoroughly clean joint and adjacent shotcrete, then wet and scour surfaces with air jet.
- G. Warm Weather Application: Prevent dry-out resulting in cracking and separation by keeping surfaces continuously moist and/or covered with continuously moistened burlap for 7 days after shotcreting.

- H. Surface Finish: Bring final surfaces of shotcrete to an even plane, well formed corners either square or to radius shown, working up to ground wires using somewhat lower placing velocity than normal.

- 1. Remove ground wires to 20 mm (3/4 inch) back from surface and fill holes with shotcrete to adjacent surface elevations.
 - 2. Wood float surfaces to provide a smooth true finish.

3.7 CURING

- A. ACI 506.2, Paragraph 3.7.

3.8 HOT WEATHER SHOTCRETING

- A. ACI 506R, Paragraph 8.8.

3.9 COLD WEATHER SHOTCRETING

- A. ACI 506R, Paragraph 8.9.

3.10 PROTECTION AND CLEAN-UP

- A. Protection: Protect adjacent walls, windows, doors, other building surfaces, grounds and/or shrubs and property of others from damage by shotcreteing, rebound and dust.
 - 1. Construct a sealed dust partition to confine rebound and dust to the immediate work area. Dust partitions shall be integral with exhaust system. A negative air pressure shall be maintained within partitioned area during shotcrete applications to prevent dust leakage beyond area.
 - 2. Immediately clean all shotcrete materials and remove all rebound from site.
- B. Clean-up: Continuously remove rebound material to ensure that base, intermediate, and finish surfaces are clean and ready for bonding layers.

3.11 DEFECTIVE WORK

- A. General work will be evaluated by the Resident Engineer or designated agent in accordance with ACI 506.4. If the evaluation reveals unbonded work or cores fail to meet specified strengths, or finishes are unsatisfactory, repair such defective work, as approved, without additional cost to the Owner.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY****A. Section Includes:**

1. This Section includes a self-leveling underlayment that consists of a blend of Portland cement and other hydraulic cements and polymers that is used to level and smooth interior concrete, terrazzo, well-bonded ceramic & quarry tile, epoxy coating systems, wood, metal and properly prepared, non-water-soluble adhesive residue on concrete prior to the installation of finish flooring on all grade levels.

1.02 RELATED WORK**A. All Related Documents and Sections:** Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM C109M, Compressive Strength Air-Cure Only
- B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars
- C. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- D. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

1.05 QUALITY ASSURANCE

- A. Installation of the product must be completed by a factory-trained applicator using mixing equipment and tools approved by the manufacturer.
- B. Product must have a hydraulic cement-based inorganic binder content as the primary binder which includes portland cement per ASTM C150: Standard Specification for Portland Cement and other specialty hydraulic cements. Gypsum-based products are not acceptable.

- C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation.

1.06 WARRANTY

- A. Contact Manufacturer for comprehensive warranty, depending on the system installed.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

1.08 CONDITIONS

- A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if the substrate is warm and follow warm weather instructions per Manufacturer's instructions.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Hydraulic Cement-Based Self-Leveling Underlayment

- 1. Basis-of-Design Products or approved equal:

- a. ARDEX K 15; Manufactured by ARDEX AMERICAS, USA, (724) 203-5000, www.ardexamericas.com

- i. Primer:

- 1) Standard Absorbent Concrete: ARDEX P 51 Primer
- 2) Extremely Absorbent Concrete: May require two applications of ARDEX P 51 to minimize the potential for pinholes forming in the ARDEX K 15.
- 3) Wood: ARDEX P 82 Ultra Prime
- 4) Metal: ARDEX EP 2000 Substrate Preparation Epoxy Primer
- 5) Other Non-Porous Substrates (burnished concrete, terrazzo, well-bonded ceramic, quarry and porcelain tiles, epoxy coating systems and non-water soluble adhesive residue on concrete and concrete treated with

silicate compounds): ARDEX P 82 Ultra Prime

- ii. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F+/-3°F (23° C+/-3°C) and 50% +/-5% relative humidity:
 - 1) Application: Barrel Mix or Pump
 - 2) Flow Time: 10 minutes
 - 3) Walkable: 2 to 3 hours
 - 4) Compressive Strength: 5,500 psi (385 kg/cm2) at 28 days, ASTM C109M
 - 5) Flexural Strength: 1,200 psi (84 kg/cm2) at 28 days, ASTM C348
 - 6) VOC: 0

2.02 WATER

- A. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

PART 3 EXECUTION

3.01 PREPARATION

- A. General: Prepare substrate in accordance with manufacturer's instructions.
 - 1. Concrete:
 - a. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 - b. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering. For areas where moisture vapor emissions exceed the required limits coordinate with Basis-of-Design Manufacturer to install an appropriate Moisture Control System.
- B. Crack and Joint Preparation:
 - 1. Moving Joints and Moving Cracks – honor all expansion, isolation joints and moving cracks up through the underlayment. Install a flexible sealing compound per Basis-of Design Manufacturer's instructions.

2. Saw Cuts, Dormant Control Joints and Dormant Cracks – fill all dormant control joints and dormant cracks with a Low Viscosity Rigid Polyurethane Crack & Joint Repair or Cement-Based Finish Underlayment as recommended by the manufacturer.
- C. Wooden subfloors: The wood subfloor either must be solid hardwood flooring; a minimum of 3/4" (19 mm) tongue-and-groove, APA-rated Type 1, exterior exposure plywood; or an approved OSB equivalent. The wood subfloor must be constructed according to prevailing building codes and must be solid and securely fixed to provide a rigid base free of undue flex. Any boards exhibiting movement must be refastened to create a sound, solid subfloor. The wood must be clean and free of all foreign matter. If necessary, sand down to bare wood. Vacuum to remove all dust. Do not use solvent, strippers or cleaners. Open joints should be filled as recommended by the Basis-of-Design manufacturer. It is the responsibility of the installation contractor to ensure that the wood subfloor is thoroughly clean and properly anchored prior to installation.
- D. Metal subfloors: Metal subfloors must be rigid, well supported, properly anchored and free of undue flex and vibration. They must also be clean and free of all rust, corrosion and foreign matter.
 1. Non-lead metal substrates must be mechanically cleaned and profiled to create a bonding surface. Please note that care must be taken when mechanically preparing thin metal foils so that the metal foil is not compromised. Use an #80 or #100 grit sanding screen to mechanically profile the metal surface. A hand or floor sander may be used. After sanding, thoroughly deep vacuum to remove all loose material, and then wipe the metal using a clean, white cloth dampened with 91% isopropyl alcohol. Repeat wiping using a new cloth on each pass until the degree of discoloration on the cloth remains consistent on subsequent passes (typically, approx. 5 – 7 passes). Lightly shot blasting also is suitable. From this point until the metal has been primed, disposable shoe covers should be worn by anyone traversing the surface of the prepared metal. Allow 15 – 20 minutes for residual alcohol to evaporate before proceeding. Contact the Technical Service Department for guidelines on preparing lead substrates.
- E. Adhesive residues on concrete must first be tested to make certain they are not water-soluble. Water-soluble adhesives must be completely mechanically removed down to clean concrete. Non- water-soluble adhesives should be prepared to a thin, well-bonded residue using the wet-scraping technique as recommended by the Resilient Floor Covering Institute (www.rfci.com). The prepared residue should appear as nothing more than a transparent stain on the concrete after scraping.
- F. Non-porous subfloors such as ceramic, porcelain and quarry tile, burnished concrete, epoxy coating systems as well as terrazzo should be clean and free of all waxes, sealers, dust, dirt, debris and any other contaminant that may act as a bond breaker. If necessary, clean by mechanical methods such as shot blasting.

3.02 APPLICATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming: Comply with manufacturer's printed instructions

- D. Mixing: Comply with manufacturer's printed instructions and the following.
 - 1. For pump installations, the hydraulic cement underlayment shall be mixed using the Manufacturer's recommended Automatic Mixing Pumps.
- E. Application: Comply with manufacturer's printed instructions and the following:
 - 1. Installations over metal and other non-porous substrates should be limited to a thickness of 1/2" (12.7 mm) unless otherwise approved by the Basis-of-Design Manufacturer. For all other substrates, self-leveling underlayment must be installed at a minimum thickness of 1/8" (3 mm) over the highest point in the floor, which typically results in an average thickness of 1/4" (6 mm) or more over the entire floor. Self-leveling underlayment can be installed up to 1 1/2" (4 cm) over large areas neat, and up to 5" (12.7 cm) with the addition of proper aggregate. Featheredge to match existing elevations. Confer with the Basis-of-Design Manufacturer if a true featheredge is needed.
 - 2. Pour or pump the liquid and spread into place with Spreader. Immediately use the Smoother to smooth the surface. Wear non-metallic cleats to avoid leaving marks in the liquid.
 - 3. Wood subfloors require mesh-reinforced Resilient Emulsion Underlayment System. After priming, install 3.4 galvanized diamond metal lath by stapling to the wooden subfloor approximately every 6 inches to center.
 - 4. Metal subfloors require Resilient Emulsion Underlayment System.
- F. Curing
 - 1. Finished product can be walked on in 2-3 hours. Moisture-insensitive tiles such as ceramic, quarry and porcelain can be installed after 6 hours. All other finish floor coverings can be installed after 16 hours at 70°F (21°C). For resinous systems such as epoxy and polyurethane floors please contact the Basis-of-Design Manufacturer.

3.03 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.04 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION

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PART 1 GENERAL**1.01 DESCRIPTION:**

- A. This section specifies structural steel shown and classified by Section 2, Code of Standard Practice for Steel Buildings and Bridges.

1.02 RELATED WORK:

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE:

- A. Fabricator and erector shall maintain a program of quality assurance in conformance with Section 8, Code of Standard Practice for Steel Buildings and Bridges. Work shall be fabricated in an AISC certified Category Std fabrication plant.
- B. Before authorizing the commencement of steel erection, the controlling contractor shall ensure that the steel erector is provided with the written notification required by 29 CFR 1926.752. Provide copy of this notification to the Resident Engineer.

1.04 TOLERANCES:

- A. Fabrication tolerances for structural steel shall be held within limits established by ASTM A6, by AISC 303, Sections 6 and 7, Code of Standard Practice for Buildings and Bridges, except as follows:
- B. Elevation tolerance for closure plates at the building perimeter and at slab openings prior to concrete placement is 6 mm (1/4 inch).

1.05 REGULATORY REQUIREMENTS:

- A. AISC 360: Specification for Structural Steel Buildings
- B. AISC 303: Code of Standard Practice for Steel Buildings and Bridges.

1.06 SUBMITTALS:

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples,
- B. Shop and Erection Drawings: Complete
- C. Certificates:
 - 1. Structural steel.

- 2. Steel for all connections.
 - 3. Welding materials.
 - D. Test Reports:
 - 1. Welders' qualifying tests.
 - E. Design Calculations and Drawings:
 - 1. Connection calculations, if required.
 - F. Record Surveys.
- 1.02 APPLICABLE PUBLICATIONS:
- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
 - B. American Institute of Steel Construction (AISC):
 - 1. AISC 360-10 Specification for Structural Steel Buildings
 - 2. AISC 303-10 Code of Standard Practice for Steel Buildings and Bridges
 - C. American National Standards Institute (ANSI):
 - B18.22.1-65(R2008)..... Plain Washers
 - B18.22M-81(R2000)..... Metric Plain Washers
 - D. American Society for Testing and Materials (ASTM):
 - A6/A6M-11 Standard Specification for General Requirements for
Rolled Structural Steel Bars, Plates, Shapes, and Sheet
Piling
 - A36/A36M-08 Standard Specification for Carbon Structural Steel
 - A53/A53M-10 Standard Specification for Pipe, Steel, Black and Hot-
Dipped, Zinc-Coated Welded and Seamless
 - A123/A123M-09 Standard Specification for Zinc (Hot-Dip Galvanized)
Coatings on Iron and Steel Products
 - A242/A242M-04(R2009) Standard Specification for High-Strength Low- Alloy
Structural Steel

- A283/A283M-03(R2007) Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- A307-10..... Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
- A325-10..... Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- A490-12..... Standard Specification for Heat-Treated Steel Structural Bolts 150 ksi Minimum Tensile Strength
- A500/A500M-10a Standard Specification for Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A501-07 Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- A572/A572M-07 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel A992/A992M-11.....Standard Specification for Structural Steel Shapes
- E. American Welding Society (AWS):
- D1.1/D1.1M-10 Structural Welding Code-Steel
- F. Research Council on Structural Connections (RCSC) of The Engineering Foundation:
- Specification for Structural Joints Using ASTM A325 or A490 Bolts
- G. Military Specifications (Mil. Spec.):
- MIL-P-21035 Paint, High Zinc Dust Content, Galvanizing, Repair
- H. Occupational Safety and Health Administration (OSHA):
- 29 CFR Part 1926-2001 Safety Standards for Steel Erection

PART 2 PRODUCTS

2.01 MATERIALS:

- A. Structural Steel: ASTM A572 W Shapes, A36 misc. steel

- B. Structural Tubing: ASTM A500, Grade B.
- C. Steel Pipe: ASTM A53, Grade B.
- D. Bolts, Nuts and Washers:
 - 1. High-strength bolts, including nuts and washers: ASTM A325 or A490 as noted.
 - 2. Bolts and nuts, other than high-strength or as shown on plans: ASTM A307, Grade A.
 - 3. Plain washers, other than those in contact with high-strength bolt heads and nuts: ANSI Standard B18.22.1.
- E. Zinc Coating: ASTM A123.
- F. Galvanizing Repair Paint: Mil. Spec. MIL-P-21035.

PART 3 EXECUTION

3.01 CONNECTIONS (SHOP AND FIELD):

- A. Welding: Welding in accordance with AWS D1.1. Welds shall be made only by welders and welding operators who have been previously qualified by tests as prescribed in AWS D1.1 to perform type of work required.
- B. High-Strength Bolts: High-strength bolts tightened to a bolt tension not less than 70% of their minimum tensile strength. Tightening done with properly calibrated wrenches, by turn-of-nut method or by use of direct tension indicators (bolts or washers). Tighten bolts in connections identified as slip-critical using Direct Tension Indicators. Twist-off torque bolts are not an acceptable alternate fastener for slip critical connections.

3.02 FABRICATION:

- A. Fabrication in accordance with Chapter M, AISC 360.

3.03 SHOP PAINTING:

- A. General: Shop paint steel with primer in accordance with AISC 303, Section 6.
- B. Do not apply paint to following:
 - 1. Surfaces within 50 mm (2 inches) of joints to be welded in field.
 - 2. Surfaces which will be encased in concrete.
 - 3. Surfaces which will receive sprayed on fireproofing.
 - 4. Top flange of members which will have shear connector studs applied.
- C. Structural steel in the interstitial space that does not receive sprayed on fireproofing shall be painted with primer in accordance with general requirement of shop painting.

3.04 ERECTION:

- A. General: Erection in accordance with AISC 303, Section 7B.
- B. Temporary Supports: Temporary support of structural steel frames during erection in accordance with AISC 303, Section 7

3.05 FIELD PAINTING:

- A. After erection, touch-up steel surfaces specified to be shop painted. After welding is completed, clean and prime areas not painted due to field welding.
- B. Finish painting of steel surfaces is specified in Section 09 91 00, PAINTING.

3.06 SURVEY:

- A. Upon completion of finish bolting or welding on any part of the work, and prior to start of work by other trades that may be supported, attached, or applied to the structural steel work, submit a certified report of survey to Resident Engineer for approval. Reports shall be prepared by Registered Land Surveyor or Registered Civil Engineer as specified in Section 01 00 00, GENERAL REQUIREMENTS. Report shall specify that location of structural steel is acceptable for plumbness, level and alignment within specified tolerances specified in the AISC Manual.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies items and assemblies fabricated from structural steel shapes and other materials as shown and specified.
- B. Items specified.
 - 1. Support for Wall and Ceiling Mounted Items
 - 2. Metal Railings
 - 3. Bollards

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Shop Drawings:
 - 1. Each item specified, showing complete detail, location in the project, material and size of components, method of joining various components and assemblies, finish, and location, size and type of anchors.
 - 2. Mark items requiring field assembly for erection identification and furnish erection drawings and instructions.
 - 3. Provide templates and rough-in measurements as required.
- C. Furnish setting drawings and instructions for installation of anchors to be preset into concrete and masonry work, and for the positioning of items having anchors to be built into concrete or masonry construction.

1.04 QUALITY ASSURANCE

- A. Each product type shall be the same and be made by the same manufacturer.
- B. Assemble product to the greatest extent possible before delivery to the site.

- C. Include additional features, which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product.

1.05 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society of Mechanical Engineers (ASME):
 - B18.2.2-87(R2005)..... Square and Hex Nuts
- C. American Society for Testing and Materials (ASTM):
 - A36/A36M-08 Structural Steel
 - A47-99(R2009)..... Malleable Iron Castings
 - A53-10..... Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
 - A123-09..... Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - A307-10..... Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
 - A653/A653M-10 Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
 - A786/A786M-09 Rolled Steel Floor Plate
 - C1107-08 Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
 - F436-10..... Hardened Steel Washers
 - F1667-11..... Driven Fasteners: Nails, Spikes and Staples
- D. American Welding Society (AWS):
 - D1.1-10 Structural Welding Code Steel
 - D1.3-08 Structural Welding Code Sheet Steel
- E. National Association of Architectural Metal Manufacturers (NAAMM)
 - AMP 521-01 Pipe Railing Manual
 - AMP 500-06 Metal Finishes Manual
- Structural Steel Painting Council (SSPC)/Society of Protective Coatings:
 - SP 1-04 No. 1, Solvent Cleaning
 - SP 2-04 No. 2, Hand Tool Cleaning
 - SP 3-04 No. 3, Power Tool Cleaning

1.06 DESIGN CRITERIA

- A. In addition to the dead loads, design fabrications to support the following live loads unless otherwise specified.
- B. Ladders and Rungs: 120 kg (250 pounds) at any point.
- C. Railings and Handrails: 900 N (200 pounds) in any direction at any point.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Structural Steel: ASTM A36.
- B. Floor Plate:
 - 1. Steel ASTM A786.
 - 2. Aluminum: ASTM B632.
- C. Steel Pipe: ASTM A53.
 - 1. Galvanized for exterior locations.
 - 2. Coated for interior locations, see SECTION 09 06 00 for coating.
- D. Cast-Iron: ASTM A48, Class 30, commercial pattern.
- E. Grout: ASTM C1107, pourable type.
- F. Steel Pipe (Bollard): ASTM A53.
 - 1. Galvanized for exterior locations.
 - 2. Type S, Grade A unless specified otherwise.
 - 3. NPS (inside diameter) as shown.

2.02 HARDWARE

- A. Rough Hardware:
 - 1. Furnish rough hardware with a standard plating, applied after punching, forming and assembly of parts; galvanized, cadmium plated, or zinc-coated by electro-galvanizing process. Galvanized G-90 where specified.
 - 2. Use G90 galvanized coating on ferrous metal for exterior work unless non-ferrous metal or stainless is used.
- B. Fasteners:
 - 1. Bolts with Nuts:

- a. ASTM A307 for 415 MPa (60,000 psi) tensile strength bolts.
- b. ASTM F593 for stainless steel.
- c. Screws: ASME B18.6.1.
- d. Washers: ASTM F436, type to suit material and anchorage.
- e. Nails: ASTM F1667, Type I, style 6 or 14 for finish work.

2.03 FABRICATION GENERAL

A. Material

- 1. Use material as specified. Use material of commercial quality and suitable for intended purpose for material that is not named or its standard of quality not specified.
- 2. Use material free of defects which could affect the appearance or service ability of the finished product.

B. Size:

- 1. Size and thickness of members as shown.
- 2. When size and thickness is not specified or shown for an individual part, use size and thickness not less than that used for the same component on similar standard commercial items or in accordance with established shop methods.

C. Connections

- 1. Except as otherwise specified, connections may be made by welding, riveting or bolting.
- 2. Field riveting will not be approved.
- 3. Design size, number and placement of fasteners, to develop a joint strength of not less than the design value.
- 4. Holes, for rivets and bolts: Accurately punched or drilled and burrs removed.
- 5. Size and shape welds to develop the full design strength of the parts connected by welds and to transmit imposed stresses without permanent deformation or failure when subject to service loadings.
- 6. Use Rivets and bolts of material selected to prevent corrosion (electrolysis) at bimetallic contacts. Plated or coated material will not be approved.
- 7. Use stainless steel connectors for removable members machine screws or bolts.

D. Fasteners and Anchors

- 1. Use methods for fastening or anchoring metal fabrications to building construction as shown or specified.

2. Where fasteners and anchors are not shown, design the type, size, location and spacing to resist the loads imposed without deformation of the members or causing failure of the anchor or fastener, and suit the sequence of installation.
3. Use material and finish of the fasteners compatible with the kinds of materials which are fastened together and their location in the finished work.
4. Fasteners for securing metal fabrications to new construction only, may be by use of threaded or wedge type inserts or by anchors for welding to the metal fabrication for installation before the concrete is placed or as masonry is laid.
5. Fasteners for securing metal fabrication to existing construction or new construction may be expansion bolts, toggle bolts, power actuated drive pins, welding, self-drilling and tapping screws or bolts.

E. Workmanship

1. General:

- a. Fabricate items to design shown.
- b. Furnish members in longest lengths commercially available within the limits shown and specified.
- c. Fabricate straight, true, free from warp and twist, and where applicable square and in same plane.
- d. Provide holes, sinkages and reinforcement shown and required for fasteners and anchorage items.
- e. Provide openings, cut-outs, and tapped holes for attachment and clearances required for work of other trades.
- f. Prepare members for the installation and fitting of hardware.
- g. Cut openings in gratings and floor plates for the passage of ducts, sumps, pipes, conduits and similar items. Provide reinforcement to support cut edges.
- h. Fabricate surfaces and edges free from sharp edges, burrs and projections which may cause injury.

2. Welding:

- a. Weld in accordance with AWS.
- b. Welds shall show good fusion, be free from cracks and porosity and accomplish secure and rigid joints in proper alignment.
- c. Where exposed in the finished work, continuous weld for the full length of the members joined and have depressed areas filled and protruding welds finished smooth and flush with adjacent surfaces.
- d. Finish welded joints to match finish of adjacent surface.

3. Joining:
 - a. Miter or butt members at corners.
 - b. Where frames members are butted at corners, cut leg of frame member perpendicular to surface, as required for clearance.
4. Cutting and Fitting:
 - a. Accurately cut, machine and fit joints, corners, copes, and miters.
 - b. Fit removable members to be easily removed.
 - c. Design and construct field connections in the most practical place for appearance and ease of installation.
 - d. Fit pieces together as required.
 - e. Fabricate connections for ease of assembly and disassembly without use of special tools.
 - f. Joints firm when assembled.
 - g. Conceal joining, fitting and welding on exposed work as far as practical.
 - h. Do not show rivets and screws prominently on the exposed face.
 - i. The fit of components and the alignment of holes shall eliminate the need to modify component or to use exceptional force in the assembly of item and eliminate the need to use other than common tools.

F. Finish:

1. Finish exposed surfaces in accordance with NAAMM Metal Finishes Manual.
2. Aluminum: NAAMM AMP 501.
 - a. Mill finish, AA-M10, as fabricated, use unless specified otherwise.
 - b. Clear anodic coating, AA-C22A41, chemically etched medium matte, with Architectural Class 1, 0.7 mils or thicker.
 - c. Colored anodic coating, AA-C22A42, chemically etched medium matte with Architectural Class 1, 0.7 mils or thicker.
 - d. Painted: AA-C22R10.
3. Steel and Iron: NAAMM AMP 504.
 - a. Zinc coated (Galvanized): ASTM A123, G90 unless noted otherwise.
 - b. Surfaces exposed in the finished work:
 - 1) Finish smooth rough surfaces and remove projections.

- 2) Fill holes, dents and similar voids and depressions with epoxy type patching compound.
- c. Shop Prime Painting:
 - 1) Surfaces of Ferrous metal:
 - a) Items not specified to have other coatings.
 - b) Galvanized surfaces specified to have prime paint.
 - c) Remove all loose mill scale, rust, and paint, by hand or power tool cleaning as defined in SSPC-SP2 and SP3.
 - d) Clean of oil, grease, soil and other detrimental matter by use of solvents or cleaning compounds as defined in SSPC-SP1.
 - e) After cleaning and finishing apply one coat of primer as specified in Section 09 90 00, PAINTING.
4. Stainless Steel: NAAMM AMP-504 Finish No. 4.

G. Protection:

1. Spot prime all abraded and damaged areas of zinc coating which expose the bare metal, using zinc rich paint on hot-dip zinc coat items and zinc dust primer on all other zinc coated items.

2.04 SUPPORTS

A. General:

1. Fabricate ASTM A36 structural steel shapes where shown.
2. Use clip angles or make provisions for welding hangers and braces to overhead construction.
3. Field connections may be welded or bolted.

B. For Wall Mounted Items:

1. For items supported by metal stud partitions.
2. Steel strip minimum of 150 mm (6 inches) wide, length extending one stud space beyond end of item supported.

C. For Trapeze Bars:

1. Construct assembly above ceilings as shown and design to support not less than a 340 kg (750 pound) working load at any point.
2. Fabricate trapeze supports as shown, with all exposed members, including screws, nuts, bolts and washers, fabricated of stainless steel.

3. Continuously weld connections where welds shown.
4. Use modular channel where shown with manufacturers bolts and fittings.

2.05 GATE HINGES LATCH AND STOP

- A. Manufacturer: Tymetal, Hoover Fence Co., or approved equal
- B. Galvanized ASTM A123, G-90 after fabrication.
- C. Doors:
 1. Provide pre-fabricated steel hinged door and frame as shown.
 2. Color: to match fence color
 3. Hardware:
 - a. Install lock or latch specified in Section 08 71 00, DOOR HARDWARE.

2.06 METAL RAILING

- A. In addition to the dead load design railing assembly to support live load specified.
- B. Fabrication General:
 1. Provide continuous welded joints, dressed smooth and flush.
 2. Standard flush fittings, designed to be welded, may be used.
 3. Exposed threads will not be approved.
 4. Form handrail brackets to size and design shown.
 5. Interior Post Anchors:
 - a. Provide flanged fittings for securing fixed posts to floor with expansion bolts, unless shown otherwise.
 - b. Weld or thread flanged fitting to posts at base.
 - c. For securing removable posts to floor, provide close fitting sleeve insert or inverted flange base plate with stud bolts or rivets concrete anchor welded to the base plate.
 - d. Provide sliding flange base plate on posts secured with set screws.
 - e. Weld flange base plate to removable posts set in sleeves.
- C. Handrails:
 1. Close free ends of rail with flush metal caps welded in place except where flanges for securing to walls with bolts are shown.

2. Make provisions for attaching handrail brackets to wall, posts, and handrail as shown.
- D. Aluminum Railings:
1. Fabricate from extruded aluminum.
 2. Use tubular posts not less than 3 mm (0.125 inch) wall thickness for exterior railings.
 3. Punch intermediate rails and bottom of top rails for passage of posts and machine to a close fit.
 4. Where shown use extruded channel sections for top rail with 13 mm (1/2 inch) thick top cover plates and closed ends.
 5. Fabricate brackets of extruded or wrought aluminum as shown.
 6. Fabricate stainless pipe sleeves with closed bottom at least six inches deep having internal dimensions at least 13 mm (1/2 inch) greater than external dimensions of posts where set in concrete.

2.06 METAL LADDER

- A. Aluminum Ladders:
1. Fixed-rail type, constructed of structural aluminum, with mill finish.
 2. Fabricate side rails and rungs of size and design shown, with the rungs shouldered and headed into and welded to the rails.
 3. Where shown fabrication side rails curved, twisted and formed into gooseneck.
 4. Fabricate angle brackets at top and bottom and intermediate brackets where shown. Drill for bolting.
- B. Ladder Rungs:
1. Fabricate from 25 mm (one inch) diameter steel bars.
 2. Fabricate so that rungs will extend at least 100 mm (4 inches) into wall with ends turned 50 mm (2 inches), project out from wall 175 mm (7 inches), be 400 mm (16 inches) wide and be designed so that foot cannot slide off end.
 3. Galvanized after fabrication, ASTM A123, G-90 rungs for exterior use and for access to pits.

2.07 STEEL PIPE BOLLARD

- A. Provide bollard in accordance with ASTM A53 with dimensions as shown in standard detail SD320523-04. Anchor posts in concrete and fill solidly with concrete with a minimum compressive strength of 17 MPa 2500psi.

PART 3 EXECUTION**3.01 INSTALLATION, GENERAL**

- A. Set work accurately, in alignment and where shown, plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Set frames of access doors and similar items flush with finish floor and, where applicable, flush with side of opening.
- C. Field weld in accordance with AWS.
 - 1. Design and finish as specified for shop welding.
 - 2. Use continuous weld unless specified otherwise.
- D. Install anchoring devices and fasteners as shown and as necessary for securing metal fabrications to building construction as specified.
- E. Spot prime all abraded and damaged areas of zinc coating as specified and all abraded and damaged areas of shop prime coat with same kind of paint used for shop priming.

3.02 INSTALLATION OF SUPPORTS

- A. Anchorage to structure:
 - 1. Secure angles or channels and clips to overhead structural steel by continuous welding unless bolting is shown.
 - 2. Secure supports to concrete inserts by bolting as shown.
 - 3. Secure steel plate to studs as detailed.
- B. Supports for Wall Mounted items:
 - 1. Locate center of support at anchorage point of supported item.
 - 2. Locate support at top and bottom of wall hung cabinets.
 - 3. Locate support at top of floor cabinets and shelving installed against walls.
 - 4. Locate supports where required for items shown.
- C. Supports for Trapeze Bars:
 - 1. Secure plates to overhead construction with fasteners where shown.
 - 2. Secure angle brace assembly to overhead construction with fasteners where shown and bolt plate to braces.
 - 3. Fit modular channel unit to equipment and secure with modular channel unit manufacturer's standard fittings as shown.

3.03 CLEAN AND ADJUSTING

- A. Adjust movable parts including hardware to operate as designed without binding or deformation of the members centered in the opening or frame and, where applicable, contact surfaces fit tight and even without forcing or warping the components.
- B. Clean after installation exposed prefinished and plated items and items fabricated from stainless steel, aluminum and copper alloys, as recommended by the metal manufacture and protected from damage until completion of the project.

3.04 INSTALLATION OF STEEL PIPE BOLLARD

- A. Set bollards vertically in concrete piers. Compressive strength of concrete piers shall be 21MPa 3000psi. For dimensions of concrete piers

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Provide labor, materials and equipment to complete all rough and finish carpentry work as indicated in the Contract Documents.
- B. Work of this section include rough carpentry, framing, plywood, composite lumber, sheathing, wood nailers, blocking, sleepers, curbs, cants, wood and hollow metal door frames rough framing, finish carpentry and miscellaneous installed finished items.
 - 1. Establish lines and levels for use of other trades.
 - 2. Create openings and lintels for increased door heights.
- C. Provide labor, materials and equipment to shore, brace either temporarily or permanently wood ceiling systems to remain that will be disturbed during demolition and preparation of new walls and ceiling systems.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. AHA A135.4 - Basic Hardboard; American Hardboard Association.
- B. ANSI A208.1 - Wood Particleboard.
- C. ASTM C1036 - Standard Specification for Flat Glass.
- D. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- F. AWI P-200 - Architectural Woodwork Quality Standards; Architectural Woodwork Institute.
- G. AWPAC2 - Lumber, Timbers, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes; American Wood Preservers Association.

- H. NWWDA I.S.4 - Industry Standard for Water-Repellent Preservative Non-Pressure Treatment for Millwork; National Wood Window and Door Association.
- I. NIST PS 1 - Construction and Industrial Plywood.
- J. NIST PS 20 - American Softwood Lumber Standard.
- K. WIC - Manual of Millwork; Woodwork Institute of California.
- L. Forest Products Society (FPS): National Design Specification for Stress Grade Lumber and its Fastening.

1.04 SUBMITTALS

- A. Product Data: Submit wood treatment certifications and instructions for proper use of each type of treated material.
- B. Wood Product Certifications:
 - 1. FSC Certification: Furnish certification indicating wood products are from "well-managed" forests.
 - 2. Toxicity Certification: Furnish certification plywood has no added formaldehyde and has no toxic materials as defined by LEED.

1.05 QUALITY ASSURANCE

- A. Lumber Grades: Provide visible grade stamp of an agency certified by FPS.
- B. Lumber Standard: Comply with US Product Standard PS20 for each indicated use, including moisture content and actual sizes related to indicated nominal sizes.
- C. Plywood Standard: Comply with PS1 (ANSI A199.1).
- D. FSC Certified Wood Products: Wood products to be from forests certified "well-managed" by an agency accredited by Forest Stewardship Council (FSC) including SmartWood Program and Forest Conservation Program.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Blocking: Provide dimensional lumber graded in accordance with FPS Grading Rules; Construction Grade, Douglas Fir; minimum S-Dry.
- B. Plywood: Provide minimum APA C-D exterior (CDX) plywood; stress rated where spanning between supporting members; fire retardant treated; minimum 3/4" thick unless otherwise indicated. Where plywood will be exposed in finished work with painted finish provide A-C/EXT-APA plywood with Grade A face exposed and Grade C face concealed

for exterior use: and A-C/INT-APA plywood with Grade A face exposed and Grade C face concealed for interior use.

1. General: Provide plywood certified with no added formaldehyde (NAF) and with no toxic materials as defined by LEED.
- C. Nails, Spikes and Staples: Galvanized; size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins and Screws: Medium carbon steel; galvanized; size and type to suit application.
- E. Fasteners: Provide fasteners as required for complete, secure installation of miscellaneous rough carpentry.
 1. Steel: Bolts or powder activated type.
- E. Hardwood Lumber: Graded in accordance with WIC Custom; of quality suitable for transparent finish. Species as directed by architect.
- F. Lumber for Shimming and blocking: Softwood lumber of Douglas fir species.
- G. Primer: Alkyd primer sealer type.
- H. Wood Filler: Solvent base, tinted to match surface finish color.
- I. Wood Treatment: Water Repellant Preservative Treatment by Dipping Method: NWWDA I.S.4, with 0.25 percent retainage.
- F. Wood Nailers
 1. All lumber for concealer blocking, roof curbs, roof nailers shall be preservative treated hemlock, pine, or fir and shall be new lumber of the best quality available, perfectly sound, well-seasoned, and free from sapwood, large loose or dead knots, streaks and evidence of disease or pests. Maximum moisture content shall be 15%.
- G. Building Paper
 1. 15 Lb. asphalt impregnated felt paper.
- H. Recessed Mount Key Box
 1. Knox Box, 3200 Series, recesses, 10 key steel vault, hinged door, color TBD. Located at main entry as directed by Owner.
 2. Recessed, 50 key steel vault, dark bronze, located in basement mechanical room as directed by Owner. Heavy duty box.
- I. Construction Adhesives
 1. Products of Contech Division of Rexnord Chemical Corporation or equal as approved by Architect.
 - a. Interior work dry areas – PL200
 - b. Exterior work and wet areas – PL 400

- c. Treated Wood – PL500

2.02 FABRICATION

- A. Wood Preservation: Treat lumber and plywood to comply with applicable requirements of American Wood Preservers Association.
 - 1. Decay Resistance Treatment: Pressure treat following items with water-borne preservatives for above ground use with AWP C-2.
 - a. Treat wood members in connection with roofing, flashing, vapor barriers and waterproofing.
 - b. Treat wood members in contact with masonry, with concrete, and below grade.
 - c. Kiln-dry wood to a maximum moisture content of 19% after treatment with water-borne preservative.
 - 2. Fire Retardant Treatment: Comply with AWP standards for pressure impregnation with fire-retardant chemicals to achieve flame-spread rating of not more than 25 in accordance with ASTM E84 or UL Test 723.
 - a. Treat interior wood and plywood complying with AWP C20 and C27, Interior Type A, and identify with FRTW.
 - 1) Exterior Type: Where indicated for exterior applications, provide fire treated wood passing ASTM D2898 rain test.
 - b. Provide UL label on each piece of fire-retardant wood and plywood.
 - c. Kiln-dry treated items to maximum moisture content of 19%.
 - 3. Complete fabrication of treated items prior to treatment, wherever possible; if cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment.
 - 4. Inspect each piece after drying and discard damaged and defective pieces.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place miscellaneous rough carpentry true to lines and levels.
- B. Correlate location so attached work will comply with design requirements and be properly located.
- C. Construct members of continuous pieces of longest possible lengths.
- D. Fit carpentry work to other work; scribe and cope as required for accurate fit.
- E. Shim with metal or slate for bearing on concrete and masonry.

- F. Securely attach carpentry work to substrates by anchoring and fastening as required by recognized standards.
 - 1. Provide washers under bolt heads and nuts in contact with wood.
- G. Wood Blocking: Provide blocking of S4S lumber not less than 1-1/2" wide and of thickness required to provide adequate support or to properly locate attached material.
 - 1. Provide attachment to other work; form to shapes shown.
 - 2. Countersink bolts and nuts flush with surfaces.
 - 3. Remove temporary blocking when no longer needed.
 - 4. Anchor to formwork before concrete placement.
- H. Plywood: Comply with recommendations of American Plywood Association (APA) for fabrication and installation of plywood work.
 - 1. Provide attachment to other work; form to shapes shown.
 - 2. Align fasteners for exposed view aesthetic as shown.
 - 3. Fit carpentry work to other work.
 - 4. Adjust, trim and level.

END OF SECTION 06 10 00

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PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: Provide mill fabricated architectural woodwork with accessories as required for complete finished installation.
 - 1. Provide wood veneer-faced cabinetwork.
 - 2. Provide solid surface counter.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Submit manufacturer's literature for manufactured items.
- C. Shop Drawings: Indicate materials and wood species, component profiles, fastening, joining details, finishes, and accessories.
 - 1. Certification: Provide WI MoM Certified Compliance Label on shop drawings.
- D. Samples: Furnish samples of each exposed material.
- E. Certificates: "Manual of Millwork" (WI MoM) certification is required.
 - 1. General: Before delivery to jobsite, provide WI MoM Certified Compliance Certificate indicating grade of millwork products to be furnished and certify WI MoM requirements for specified grades shall be met.
 - 2. Casework: Each unit to bear WI MoM Certified Compliance Label.
 - 3. Installation: Provide WI MoM Certified Compliance Certificate for Installation.
 - 4. FSC Certification: Furnish certification indicating wood products are from "well-managed" forests.

5. Toxicity Certification: Furnish certification plywood has no added formaldehyde and has no toxic materials as defined by LEED.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Member of Woodwork Institute (formerly Woodwork Institute of California) with minimum five years successful experience fabricating architectural woodwork similar to that required for Project.
- B. Standards: Perform architectural woodwork in accordance with recommendations Woodwork Institute "Manual of Millwork" (WI MoM).
- C. Seismic Anchorage: Provide seismic anchorage for wall cabinets as required by CBC.
- D. FSC Certified Wood Products: Wood products to be from forests certified "well-managed" by an agency accredited by Forest Stewardship Council (FSC) including SmartWood Program and Forest Conservation Program.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver architectural woodwork until site conditions are adequate to receive work; protect items from weather while in transit.
 1. Allow architectural woodwork shop finish to completely dry prior to delivery to site; allow materials to off-gas volatile organic compound (VOC) emissions off site.
- B. Store materials indoors, in ventilated areas with constant but minimum temperature of 60 degrees F and maximum relative humidity of 25% to 55%.
- C. Do not begin installation of architectural woodwork until space is fully enclosed and mechanical systems are fully operational.
 1. Maintain interior installation areas at 70 degrees F and 50% to 55% relative humidity.
- D. Immediately remove from site materials with visible mold and materials with mildew.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wood Veneer Finished Casework:
 1. Casework doors and exposed panels: Veneer finish per Architectural Finishes List, Section 09 06 00.
 2. Factory Finish: Shop prime with polyurethane opaque finish;

- a. Color and veneer species per Architectural Finishes List, Section 09 06 00.
- B. Countertop:
 - 1. Solid Polymer Systems: Manufacturer's standard polymer system with color throughout thickness; provide manufacturer recommended joint adhesive; exposed surfaces finished to match top.
 - a. Quality: Comparable to WI MoM/Premium Grade.
 - b. Type: Not less than 1/2" thick sheet designed to accept bowls as indicated and as specified in Division 15 and with edge conditions as indicated on Drawings.
 - c. Color: Manufacturer's standard color as selected by Architect.
 - d. Manufacturers:
 - 1) DuPont Co./Corian.
 - 2) Avonite, Inc./Avonite.
 - 3) Formica Corp./Surell.
 - 2. Core: Provide plywood with no added formaldehyde and no toxic materials.
- C. Anchors, Nails and Screws: Select material, type, size and finish required by each substrate for secure anchorage; provide toothed steel or lead expansion bolt screws for drilled-in-place anchors.

2.02 FABRICATION

- A. General: Fabricate architectural woodwork in accordance with specified quality standards.
- B. Plastic Laminate:
 - 1. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes.
 - 2. Make corners and joints hairline; slightly bevel arises.
 - 3. Locate butt joints at least 2'-0" from cutouts.
 - 4. Cap exposed edges with plastic laminate of same finish and pattern.
 - 5. Apply laminate backing sheet to reverse side of laminate surfaces.

6. Provide cutouts for inserts, fixtures and fittings; verify locations from on-site dimensions.
 7. Prime paint contact surfaces of cutouts.
- C. Use exposed fastening devices or nails only when approved and unavoidable; arrange neatly.
 - D. Assemble woodwork in shop in sizes easily handled and to ensure passage through building openings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication where possible; do not delay job progress, allow for trimming and fitting.

3.02 INSTALLATION

- A. Install work consistent with specified quality grade, plumb, level, true and straight with no distortions.
 1. Shim as required, using concealed shims.
- B. Secure work to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
- C. Scribe and cut for accurate fit to other finished work.
- D. Route and prepare beams for installation of beam connectors and hangers.
- E. Attach connectors to wall anchors and solid wood beams.
- F. Attach architectural woodwork securely in place with uniform joints providing for thermal and building movements.
- G. Attach countertop material to casework per manufacturer.
- H. Acceptable Tolerances:
 1. Variation from True Position: Maximum 1/16" at any position and maximum 1/8" in any 10'-0" length.
 2. Adjoining Surfaces of Same Material: No variation permitted.
 3. Offset with Abutting Materials: Maximum 1/32".

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes rubber waterproofing for below grade structures.

1.2 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Show locations and extent of waterproofing.
 - 2. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
- C. Sample warranty.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.5 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace waterproofing that fails in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 RUBBER WATERPROOFING**

- A. Two-Component, Reinforced, Rubber Waterproofing system: ASTM C836/C836M; coal-tar free.
 - 1. Basis-of-Design or Approved Equal:
 - a. Manufacturer: GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA; gcpat.com; 1-866-333-3726
 - b. Product: Procor Below Grade – Fluid applied waterproofing & all associated system components which include:
 - 1) Procor 75 Spray Grade – For horizontal and vertical applications
 - 2) Hydroduct Drainage Composites – Geocomposite Drainage Sheets
 - a) HYDRODUCT® 660 Drainage Composite for use on horizontal applications.
 - b) HYDRODUCT® 220 Drainage Composite for use on vertical applications.
 - 3) Bituthene Liquid Membrane – Detailing at pipe entries, etc.
 - 4) Preprufe Tape – For tie-ins of Procor, Bituthene, or Preprufe waterproofing sheet membranes.
 - 5) Preprufe 300R Plus – Pre-applied waterproofing membrane that bonds integrally to poured concrete
 - 2. Hydrostatic-Head Resistance: 65 feet minimum; ASTM D5385/D5385M.

2.2 AUXILIARY MATERIALS

- A. Primer: Manufacturer's standard primer, sealer, or surface conditioner; factory-formulated.
- B. Sheet Flashing: 50-mil- (1.3-mm-) minimum, nonstaining, uncured sheet neoprene.
 - 1. Adhesive: Manufacturer's recommended contact adhesive.
- C. Membrane-Reinforcing Fabric: Manufacturer's recommended fiberglass mesh or polyester fabric.
- D. Joint Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.
- E. Joint Sealant: Multicomponent polyurethane sealant, compatible with waterproofing; and as recommended by manufacturer for substrate and joint conditions.
 - 1. Backer Rod: Closed-cell polyethylene foam.

2.3 PRE-APPLIED WATERPROOFING MEMBRANE – BELOW SLAB

- A. Pre-Applied waterproofing membrane: Composite membrane comprised of a heavy duty grade HDPE film, pressure sensitive adhesive, and weather resistant protective coating to form an integral bond to poured concrete. Designed for horizontal and vertical use below slabs.
 - 1. Thickness: 0.046 inch (1.2 mm), nominal
 - 2. Lateral water migration resistance:

3. Hydrostatic-Head Resistance: 231 feet minimum; ASTM D5385.
4. Tensile strength: 4,000 psi (27.6 Mpa)
5. Required overlap: 3" minimum

2.4 PROTECTION COURSE

- A. Protection Course: ASTM D6506, semirigid sheets of fiberglass- or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners and as follows:
 1. Thickness: 1/4 inch (6 mm), nominal, for vertical applications; 1/4 inch (6 mm), nominal, elsewhere.
 2. Adhesive: Rubber-based solvent type recommended in writing by waterproofing manufacturer.

2.5 MOLDED-SHEET DRAINAGE PANELS

- A. Nonwoven-Geotextile-Faced, Molded-Sheet Drainage Panel with Polymeric Film: Composite subsurface drainage panel consisting of a studded, nonbiodegradable, molded-plastic-sheet drainage core; with a nonwoven, needle-punched geotextile facing with an apparent opening size not exceeding No. 70 (0.21-mm) sieve laminated to one side of the core and a polymeric film bonded to the other side; and with a vertical flow rate through the core of [9 to 21 gpm per ft. (112 to 261 L/min. per m)].

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- D. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete.
- E. Remove fins, ridges, and other projections, and fill honeycomb, aggregate pockets, holes, and other voids.
- F. Prepare surfaces at terminations and penetrations through waterproofing and at expansion joints, drains, sleeves, and corners according to waterproofing manufacturer's written instructions and to recommendations in ASTM C898/C898M.
- G. Apply waterproofing in two separate applications, and embed a joint reinforcing strip in the first preparation coat when recommended by waterproofing manufacturer.

- H. Prepare, treat, rout, and fill joints and cracks in substrate according to waterproofing manufacturer's written instructions and to recommendations in ASTM C898/C898M. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D4258.
- I. Install sheet flashing and bond to deck and wall substrates where required according to waterproofing manufacturer's written instructions.

3.2 WATERPROOFING APPLICATION

- A. Apply waterproofing according to manufacturer's written instructions and to recommendations in ASTM C898/C898M.
- B. Unreinforced Waterproofing Applications.
 - 1. Apply one or more coats of waterproofing to obtain a seamless membrane free of entrapped gases and pinholes, with a dry film thickness of 60 mils (1.5 mm).
- C. Install protection course with butted joints over waterproofing before starting subsequent construction operations.
 - 1. For horizontal applications, install protection course loose laid over fully cured membrane.
 - 2. For vertical applications, set protection course in nominally cured membrane, which will act as an adhesive. If membrane cures before application of protection course, use adhesive.
 - 3. Molded-sheet drainage panels may be used in place of a separate protection course for vertical applications when approved in writing by waterproofing manufacturer.

3.3 MOLDED-SHEET DRAINAGE PANEL INSTALLATION

- A. Place and secure molded-sheet drainage panels, with geotextile facing away from wall or deck substrate, according to manufacturer's written instructions. Use adhesive or another method that does not penetrate waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed molded-sheet drainage panels during subsequent construction.
 - 1. For vertical applications, install protection course before installing drainage panels.

3.4 PROTECTION

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide labor, material, equipment and services to furnish and install building insulation as shown on the drawings, as specified herein and as required for a complete and proper installation, including, but not limited to, the following:
 - 1. Thermal Insulation
 - 2. Acoustic Insulation

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's literature for each type of insulation.
 - 1. Submit Underwriter's Laboratory approval numbers for required fire ratings; approvals of other laboratories contingent upon acceptance of applicable authorities.
- C. Certificates: Stating the type, thickness and "R" value (thermal resistance) of the insulation to be installed.

1.04 STORAGE AND HANDLING

- A. Store insulation materials in weathertight enclosure.
- B. Protect insulation from damage from handling, weather and construction operations before, during, and after installation.

1.05 APPLICABLE STANDARDS: The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. Federal Specifications (Fed. Spec.)
 - FF N 105B (3) Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
- B. California Building Codes (CBC) 2019 Energy Codes

- C. American Society for Testing and Materials (ASTM):
 - C552 Cellular Glass Block and Pipe Thermal Insulation
 - C553 Mineral Fiber Blanket and Felt Insulation (Industrial Type)
 - C578 Preformed Cellular Polystyrene Thermal Insulation
 - C591 Unfaced Preformed Rigid Cellular Polyurethane Thermal Insulation
 - C612 Mineral Fiber Block and Board Thermal Insulation
 - C665 Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
 - C728 Perlite Thermal Insulation Board
 - C954 Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Base to Steel Studs From 0.033 inch to 0.112 inch in thickness
 - C1002 Steel Drill Screws for the Application of Gypsum Board

PART 2 PRODUCTS

2.01 MATERIALS

- A. Thermal Batt Insulation: Thermafiber SAFB, preformed slag mineral or glass fiber with thermosetting resin binders, conforming to ASTM C665, Type 1, HH-I-521F, unfaced; formaldehyde-free and with no toxic materials. Flame Spread/Smoke Density Rating: Maximum 0/0, ASTM E84. Combustibility: Pass ASTM E136.
- B. Acoustical Insulation
 - 1. Mineral Fiber Batt or Blankets: ASTM C665, Type 1. Thickness as shown; of widths and lengths to fit tight against framing.
- C. Rigid Insulation
 - 1. On the inside face of exterior walls.
 - 2. Cellular Glass Block, ASTM C552, Type 1.
- D. Accessories: Furnish as recommended by insulation manufacturer for insulation types, substrates, and conditions involved.
- E. Aerogel.
 - 1. Flexible gel filled blanket material: ASTM C1728, Type III, Grade 1A, 10 mm (0.4 in) thick, shown; of widths and lengths to fit tight against framing. Products similar to Pryogel HPS.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify substrate and adjacent materials are dry and ready to receive insulation; beginning installation signifies acceptance of conditions.
- B. Ensure mechanical and electrical items affecting work are properly placed, complete, and have been inspected by Architect prior to commencement of installation.

3.02 INSTALLATION

- A. Install batt or blanket insulation with tight joints and filling framing void completely. Seal cuts, tears, and un-lapped joints with tape.
- B. Fit insulation tight against adjoining construction and penetrations, unless specified otherwise. Install insulation in accordance with manufacturer's instructions.
- C. Cut and trim insulation neatly, to fit spaces.
- D. Fit insulation tight within spaces and tight to and behind mechanical and electrical services within insulation plane; leave no gaps or voids; maintain integrity of thermal barrier.
- E. Friction fit batt insulation in place; use tape or penetration supports as necessary to assure permanent installation.
- F. Fasten blanket insulation between metal studs and wall furring with continuous pressure sensitive tape along edges or adhesive.
- G. Pack insulation around door frames and windows and in cracks, expansion joints, control joints, door soffits and other voids. Pack behind outlets, around pipes, ducts, and services encased in wall or partition. Hold insulation in place with pressure sensitive tape or adhesive.
- H. Do not compress insulation below required thickness except where embedded items prevent required thickness.

END OF SECTION

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PART 1 - GENERAL**1.01 DESCRIPTION**

- A. Roof and deck insulation on new construction ready to receive roofing or waterproofing membrane over wood deck.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only. Editions of applicable publications current on date of issue of bidding documents apply unless otherwise indicated.
- B. American Society of Heating, Refrigeration and Air Conditioning (ASHRAE):
- 90.1-07Energy Standard for Buildings Except Low-Rise Residential Buildings
- C. ASTM International (ASTM):
- C208-08Cellulosic Fiber Insulating Board
- C552-07Cellular Glass Thermal Insulation
- C726-05Mineral Fiber Roof Insulation Board
- C728-05Perlite Thermal Insulation Board
- C1177/C1177M-08.....Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
- C1278/C1278M-07.....Standard Specification for Fiber-Reinforced Gypsum Panel
- C1289-10Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- C1396/C1396M-09.....Standard Specification for Gypsum Board
- D41-05Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
- D312-06Asphalt Used in Roofing

- D1970-09 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- D2178-04 Asphalt Glass Felt Used in Roofing and Waterproofing
- D2822-05 Asphalt Roof Cement
- D4586-07 Standard Specification for Asphalt Roof Cement, Asbestos-Free
- E84-09..... Standard Test Method for Surface Burning Characteristics of Building Material
- F1667-05 Driven Fasteners: Nails, Spikes, and Staples

- D. FM Approvals: RoofNav Approved Roofing Assemblies and Products.
 - 4450-89 Approved Standard for Class 1 Insulated Steel Deck Roofs
 - 4470-10 Approved Standard for Class 1 Roof Coverings
 - 1-28-09 Loss Prevention Data Sheet: Design Wind Loads.
 - 1-29-09 Loss Prevention Data Sheet: Above-Deck Roof Components
 - 1-49-09 Loss Prevention Data Sheet: Perimeter Flashing

- E. National Roofing Contractors Association: Roofing and Waterproofing Manual

- F. U.S. Department of Agriculture (USDA): USDA BioPreferred Catalog, www.biopreferred.gov

- G. Underwriters Laboratories, Inc. (UL): Fire Resistance Directory (2009)

- H. U.S. Department of Commerce National Institute of Standards and Technology (NIST):
 - DOC PS 1-09 U.S. Product Standard for Construction and Industrial Plywood
 - DOC PS 2-04 Performance Standard for Wood-Based Structural-Use Panels.

1.04 PERFORMANCE REQUIREMENTS

- A. Thermal Performance: Provide roof insulation meeting minimum overall average R-value of 33 (6 inches).
- B. FM Approvals: Provide roof insulation complying with requirements in FM Approvals 4450 and 4470 as part of specified roofing system, listed in FM Approvals "RoofNav" as part of roofing system meeting Fire/Windstorm Classification in Division 07 roofing section.

1.05 QUALITY CONTROL

- A. Requirements of Division 07 roofing section for qualifications of roofing system insulation Installer; Work of this Section shall be performed by same Installer.
- B. Requirements of Division 07 roofing section for inspection of Work of this Section and qualifications of Inspector.

- C. Unless specified otherwise, comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to insulation for storage, handling, and application.
- D. Requirements of roofing system uplift pressure design for specified roofing system.
- E. Requirements of applicable FM Approval for specified roofing system insulation attachment.
- G. Bio-Based Materials: Where applicable, provide products designated by USDA and meeting or exceeding USDA recommendations for bio-based content, and products meeting Rapidly Renewable Materials and certified sustainable wood content definitions; refer to www.biopreferred.gov.

1.06 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product Data:
 - 1. Asphalt and adhesive materials, each type.
 - 2. Roofing cement, each type.
 - 3. Roof insulation, each type.
- 4. Fastening requirements.
- C. Federal Sustainable Design Submittals:
 - 1. Product Data for Federally-Mandated Bio-Based Materials: For roof materials, indicating USDA designation and compliance with definitions for bio-based products, Rapidly Renewable Materials, and certified sustainable wood content.
- D. Shop Drawings: Include plans, sections, details, and attachments.
 - 1. Nailers, cants, and terminations.
 - 2. Layout of insulation showing slopes, tapers, penetration, and edge conditions.
- E. Samples:
 - 1. Roof insulation, each type.
 - 2. Nails and fasteners, each type.
- F. Certificates:
 - 1. Indicating type, thermal conductance, and minimum and average thickness of insulation.
 - 2. Indicating materials and method of application of insulation system meet the requirements of FM Approvals for specified roofing system.
- G. Laboratory Test Reports: Thermal values of insulation products.

- H. Layout of tapered roof system showing units required.
- I. Documentation of supervisors' and inspectors' qualifications.

1.07 DELIVERY, STORAGE AND MARKING

- A. Comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to built-up roofing for storage, handling and installation requirements.

1.08 QUALITY ASSURANCE:

- A. Roof insulation on combustible or steel decks shall have a flame spread rating not greater than 75 and a smoke developed rating not greater than 150, exclusive of covering, when tested in accordance with ASTM E84, or shall have successfully passed FM Approvals 4450.
 - 1. Insulation bearing the UL label and listed in the UL Building Materials Directory as meeting the flame spread and smoke developed ratings will be accepted in-lieu-of copies of test reports.
 - 2. Compliance with flame spread and smoke developed ratings will not be required when insulation has been tested as part of a roof construction assembly of the particular type used for this project and the construction is listed as fire-classified in the UL Building Materials Directory or listed as Class I roof deck construction in the FM Approvals "RoofNav."
 - 3. Insulation tested as part of a roof construction assembly shall bear UL or FM labels attesting to the ratings specified herein.

PART 2 - PRODUCTS

2.01 ADHESIVE MATERIALS

- A. Adhesive Materials, General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
 - 1. Liquid-type adhesive materials shall comply with VOC limits of authorities having jurisdiction.
 - 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Multipurpose Construction Adhesives: 70 g/L.
 - c. Fiberglass Adhesives: 80 g/L.
 - d. Contact Adhesives: 80 g/L.

- e. Other Adhesives: 250 g/L.
 - f. Non-membrane Roof Sealants: 300 g/L.
 - g. Sealant Primers for Non-porous Substrates: 250 g/L.
 - h. Sealant Primers for Porous Substrates: 775 g/L.
- B. Primer: ASTM D41.
- C. Asphalt: ASTM D312, Type III or IV for vapor retarders and insulation.
- D. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphaltic, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- E. Bead-Applied Urethane Insulation Adhesive: Insulation manufacturer's recommended bead-applied, low-rise, one- or multicomponent urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- F. Full-Spread Applied Urethane Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- G. Roof Cement: Asbestos free, ASTM D2822, Type I or Type II, ; or, D4586, Type I or Type II.

2.02 ROOF AND DECK INSULATION

- A. Roof and Deck Insulation, General: Preformed roof insulation boards approved by roofing manufacturer and listed as component of FM Approvals-approved roofing system.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
- C. Cellular Glass Board Insulation: ASTM C552, Type IV, kraft-paper sheet faced.
- D. Perlite Board Insulation: ASTM C728, expanded perlite, cellulosic fibers, binders, and waterproofing agents with top surface seal coated.
- E. Cellulosic Fiber Board Insulation: ASTM C208, Type II, Grade 1 for built-up asphalt or modified bitumen roofing.
- F. Tapered Roof Insulation System:
- 1. Fabricate of mineral fiberboard, polyisocyanurate, perlite board, or cellular glass. Use only one insulation material for tapered sections. Use only factory-tapered insulation.
 - 2. Cut to provide high and low points with crickets and slopes as shown.
 - 3. Minimum thickness of tapered sections; 38 mm (1-1/2 inch).

4. Minimum slope 1:48 (1/4 inch per 12 inches).

2.03 INSULATION ACCESSORIES

- A. Glass (Felt): ASTM D2178, Type VI, heavy duty ply sheet.
- B. Cants and Tapered Edge Strips:
 1. Wood Cant Strips: Refer to Division 06 Section "Rough Carpentry."
 2. Insulation Cant Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.
 3. Tapered Edge Strips: 1:12 (one inch per foot), from 0 mm (0 inches), 300 mm to 450 mm (12 inches to 18 inches) wide.
 - a. Cellulosic Fiberboard: ASTM C208.
 - b. Mineral Fiberboard: ASTM C726.
 - c. Perlite Board: ASTM C728.
- C. Vapor Retarder:
 1. Glass-Fiber Felts: ASTM D2178, Type IV, asphalt impregnated.
 2. Self-Adhering Sheet Vapor Retarder: ASTM D1970, minimum of 1.0-mm- (40-mil-) thick, polyethylene film laminated to layer of rubberized asphalt adhesive, or 0.76- to 1.0-mm- (30- to 40-mil-) thick, polyethylene film laminated to layer of butyl rubber adhesive; maximum permeance rating of 6 ng/Pa x s x sq. m (0.1 perm).

2.04 FASTENERS

- A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with FM Approvals 4470, designed for fastening substrate board to roof deck.
- B. Staples and Nails: ASTM F1667. Type as designated for item anchored and for substrate.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Comply with requirements of Division 07 roofing section.

3.02 PREPARATION

- A. Comply with requirements of Division 07 roofing section.

3.03 RIGID INSULATION INSTALLATION

A. Insulation Installation, General:

1. Install roof insulation in accordance with roofing system manufacturer's written instructions.
2. Install roof insulation in accordance with requirements of FM Approval's Listing for specified roofing system.
3. Base Sheet: Where required by roofing system, install one lapped base sheet specified in Division 07 roofing section by mechanically fastening to roofing substrate prior to installation of insulation.
4. Cant Strips: Install preformed insulation cant strips at junctures of roofing system with vertical construction.

B. Insulation Thickness:

1. Thickness of roof insulation shown on drawings is nominal. Actual thickness shall provide the average thermal resistance "R" value of not less than that specified in Performance Requirements Article.
2. When thickness of insulation to be used is more or less than that shown on the drawings, make adjustments in the alignment and location of roof drains, flashing, gravel stops, fascias and similar items at no additional cost to the Government.
3. Where tapered insulation is used, the insulation thickness at high points and roof edges shall be as shown on the drawings; the thickness at the low point (drains) shall be not less than 38 mm (1-1/2 inches).
5. Use not less than two layers of insulation when insulation is 68 mm (2.7 inch) or more in thickness unless specified otherwise. Stagger joints minimum 150 mm (6 inches).

C. Lay insulating units with close joints, in regular courses and with cross joints broken. When laid in more than one layer, break joints of succeeding layers of roof insulation with those in preceding layer.

D. Lay units with long dimension perpendicular to the rolled (longitudinal) direction of the roofing felt.

E. Seal all cut edges at penetrations and at edges against blocking with bitumen or roof cement.

F. Cut to fit tight against blocking or penetrations.

G. Cover all insulation installed on the same day; comply with temporary protection requirements of Division 07 roofing section.

H. Installation Method:

1. Adhered Insulation:

- a. Prime substrate as required.
 - b. Set each layer of insulation firmly in solid mopping of hot asphalt.
 - c. Set each layer of insulation firmly in ribbons of bead-applied insulation adhesive.
 - d. Set each layer of insulation firmly in uniform application of full-spread insulation adhesive.
2. Mechanically Fastened Insulation:
- a. Fasten insulation in accordance with FM Approval's "RoofNav" requirement in Division 07 roofing section.
 - b. Fasten insulation to resist uplift pressures specified in Division 07 roofing section.
3. Mechanically Fastened and Adhered Insulation:
- a. Fasten first layer of insulation according to "Mechanically Fastened Insulation" requirements.
 - b. Fasten each subsequent layer of insulation according to "Adhered Insulation" requirements.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Manufacturer's requirements for the proper design, use, and installation of an Exterior Insulation and Finish System.
 - 1. The scope of this work includes creating EIFS infill panels at exterior precast panel openings with a heavy aggregate finish.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM B117 Test Method for Salt Spray (Fog) Testing
- B. ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- C. ASTM D968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- D. ASTM D1037 Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
- E. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity
- F. ASTM D2294 Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal).
- G. ASTM D2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- H. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of
- I. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials
- J. ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings
- K. ASTM E119 Standard Test Method for Fire Tests of Building Construction and Materials.
- L. ASTM E330 Test method for Structural Performance by Uniform Static Air Pressure Difference
- M. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference

- N. ASTM E695 Method for Measuring Relative Resistance to Impact Loading
- O. ASTM E2134 Standard Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)
- P. ASTM E2430 Standard Specification For Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems ("EIFS")
- Q. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
- R. ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
- S. ASTM G155/ G153 Accelerated Weathering for Exposure of Nonmetallic Materials
- T. Fed. Spec. TT-C-555B Coating, Textured (For Interior and Exterior Masonry Surfaces)
- U. MIL STD 810B Military Standard, Environmental Test Methods
- V. NFPA 259 Test Method for Potential Heat of Building Materials
- W. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source
- X. NFPA 285 Standard Method of Test for the Evaluation of Flammability characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components Using the Intermediate-scale, Multistory Test Apparatus

1.04 SUBMITTALS

- A. Submit Samples, Evaluation Reports, warranties and Certificates.

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. All EIFS assembly materials must be manufactured or sold by a single-source manufacturer.
 - 2. Applicator:
 - a. Must process a current manufacturer's certificate of education
 - b. Must be experienced and competent in installation of plaster-like materials

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in original packaging with manufacturer's identification
- B. Storage: Store materials in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40°F (4°C) and below 110°F (43°C) in accordance with manufacturer's instructions.

1.07 SITE CONDITIONS

- A. Installation Ambient Air Temperature: Minimum of 40°F (4°C) and rising, and remain so for 24 hours thereafter.
- B. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- C. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.
- D. Sunlight Exposure: Avoid, when possible, installation of the materials in direct sunlight. Application of Acrylic Finishes in direct sunlight in hot weather may adversely affect aesthetics.
- E. Materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 40°F (4°C) within 24 hours of application. Protect materials from uneven and excessive evaporation during hot, dry weather.
- F. Prior to installation, the substrate shall be inspected for surface contamination, or other defects that may adversely affect the performance of the materials and shall be free of residual moisture.

1.08 WARRANTY

- A. Warranty: Manufacturer's 5 Year Warranty.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Manufacturer, Basis of Design: Parex USA, Inc.

2.02 MATERIALS

- A. Adhesives:
 - 1. Parex 302 ABC-N1 Base Coat & Adhesive: 100% acrylic polymer base, ready to use, applied without the addition of cement.
- B. Insulation Board: In compliance with manufacturer's requirements for Standard System EIFS.
 - 1. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
 - 2. Shall conform to ASTM C578 and ASTM E2430, Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
 - 3. Maximum size shall be 2 ft x 4 ft (610 mm x 1219 mm).
 - 4. Thickness: 3/4 in, minimum (19 mm) after rasping.
- C. Base Coats:
 - 1. 302 ABC-N1 Base Coat & Adhesive: 100% acrylic polymer base, ready to use, applied without the addition of cement.

D. Reinforcing Mesh:

1. 358.10 Intermediate Impact 10 Mesh: Wight 12 oz per sq. yd. (407 g/sq m) Reinforcing mesh used with a Standard Sustem, to achieve ASTM E2486 intermediate impact strength.
2. 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.

E. Primer:

1. Parex USA Primer: 100% acrylic based coating to prepare surfaces for acrylic or elastomeric finishes.
2. Variance VariPrime Sanded: 100% acrylic based coating to prepare surface for exposed aggregate specialty finishes

F. Finish:

1. Parex USA Variance. Acrylic-based specialty finish. Finish type, texture, and color per Section 09 06 00 Schedules for Finishes.
2. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealter for use as a protective coating over acrylic finishes. Use 600 Clear or Matte Clear.
 - a. Variance Antiquing Gel: a water-based, tinted, semi-transparent, acrylic emulsion for staining, sealing, and protecting concrete, masonry and other cementitious substrates. Use as required to achieve desired finish.
3. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealer for use as a protective coating over acrylic finishes. Use 600 Clear or 610 Matte Clear.

G. Portland Cement: ASTM C150, Type I or Type I-II.

H. Water: Clean, cool, potable water.

2.03 RELATED MATERIALS AND ACCESSORIES

A. Substrate Material: Concrete

B. Sealant System:

1. Sealant for expansion joints between panelized EIFS sections shall be ultra-low modulus designed for minimum 100% elongation and minimum 50% compression and as selected by Project Designer.
2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50% elongation and minimum 25% compression, and as selected by Project Designer.
3. Sealants shall conform to ASTM C 920, Grade NS.
4. Expansion joints between sections of EIFS shall have a minimum width of 3/4 in (19 mm).
5. Perimeter seal joints shall be a minimum width of 1/2 in (12.7 mm).

6. Sealant backer rod shall be closed-cell polyethylene foam.
7. Apply sealant to tracks or base coat of EIFS.
8. Refer to EIFS manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS materials.
9. Joint design, surface preparation, and sealant primer shall be based on sealant manufacturer's recommendations and project conditions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify project site conditions.
- B. Compliance: Comply with manufacturer's instructions for installation.
- C. Substrate Examination: Examine prior to installation of EIFS assembly materials as follows:
 1. Substrate shall be examined for soundness, and other harmful conditions.
 2. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
- D. Sealants and Backer Rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturers recommended primers.
- E. Advise Contractor of discrepancies preventing proper installation of the EIFS materials. Do not proceed with the work until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Protection: Protect surrounding material surfaces and areas during installation of system.
- B. Clean surfaces thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 MIXING

- A. Mix materials in accordance with manufacturer's instructions.

3.04 APPLICATION

- A. General: Installation shall conform to this specification and manufacturer's written instructions.
- B. Insulation Board:
 1. Install back-wrap mesh or edge-wrap mesh at system terminations.
 2. Apply EIFS adhesive to backs of insulation boards with a notched trowel, with ribbons of adhesive oriented in a vertical direction (parallel to the 2 ft (61 mm) dimension of the EPS board).

- 3. Install insulation board without gaps in a running bond pattern and interlocked at corners.
- 4. Rasp irregularities off insulation board after adhesive has dried a minimum of 24 hours.
- C. Apply base coat and fully embed mesh in base coat; include diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections. Apply multiple layers of base coat and mesh where required for specified impact resistance classification.
- D. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's product data sheets for the specified finish coat or otherwise specified for the project.
- E. Finish Coat: Apply finish coat to match specified finish type, texture, and color. Do not apply finish coat to surfaces to receive sealant. Keep finish out of sealant joint gaps.

3.05 CLEAN-UP

- A. Removal: Remove and legally dispose of EIFS materials from job site.
- B. Clean surfaces and work area of foreign materials resulting from material installation.

3.06 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed materials from dust, dirt, precipitation, and freezing during installation, and continuous high humidity until fully cured and dry.
- C. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.

END OF SECTION 07 24 00

PART 1 GENERAL**1.01 SUMMARY**

- A. Vapor retarder under concrete slabs on grade.

1.02 RELATED SECTIONS

- A. All Sections listed in the Table of Contents are a Condition of this Section.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Submit for vapor retarder sheet and installation accessories. Include data from tests performed within 18 months of submittal showing compliance with specified standard.
- C. Shop Drawings: Show extent of vapor retarder work. Include details for edges at walls, grade beams, and the like. Include details for penetrating elements including conduit, piping, and structural membranes.

PART 2 PRODUCTS**2.01 VAPOR RETARDER**

- A. Plastic Sheet Vapor Retarder: Meeting ASTM E 1745, Class A. Minimum 15 mil thick polyolefin sheet.

Acceptable types include:

- 1. Stego Wrap by Stego Industries
- 2. Moistop Ultra A by Fortifiber Corp
- 3. VaporBlock 15 by Raven Industries
- 4. Perminator by W.R. Meadows

- B. Accessory Products

- 1. Provide manufacturer's recommended self-adhesive plastic seam tape for seams and penetrations.
- 2. Penetration boots: Provide manufacturer's recommended accessory system for sealing pipe and conduit penetrations.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that surface to receive vapor retarder is compacted and trimmed smooth.
- B. Verify that all work that will penetrate vapor retarder is complete and rigidly installed.
- C. Confirm locations and details of vapor retarder termination.

3.02 VAPOR RETARDER INSTALLATION

- A. General: Comply with requirements of ASTM E 1643 and manufacturer's published instructions.
- B. Place plastic sheet vapor retarder directly on compacted granular fill. Place sheeting with longest dimension parallel with direction of pour.
- C. Lap joints 6 inches and seal with per manufacturer's recommendations with pressure sensitive tape.
- D. Tape seal vapor retarder at all perimeters.
- E. Tape seal vapor retarder around columns, pipe, and conduit penetrations.
- F. Avoid cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: Provide materials and accessories as required for complete installation.
 - 1. Surface preparation.
 - 2. Application of liquid applied vapor permeable air barrier. May be referred to weather resistive barrier on Drawings.
 - 3. Application of materials to provide bridge and seal air leakage pathways in
 - a. Wall and roof connections and penetrations.
 - b. Walls, windows, louvers or doors
 - c. All other penetrations through the wall assembly.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM D412-98a(2002)e1 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- B. ASTM E96-00e1 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.
- C. ASTM E283-91 (1999) - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- D. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage through Installed Exterior Windows and Doors.
- E. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.
- F. ASTM E2178-01 - Standard Test Method for Air Permeance of Building Materials.

- G. ASTM E2357 - 05 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's literature for each type of insulation.
 - 1. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.
 - 2. Shop Drawings: Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strip, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction. Include details of interfaces with other materials that form part of air barrier.
 - 3. Use an experienced installer and adequate number of skilled personnel who are thoroughly trained and experienced in the application of the air barrier.
 - 4. Obtain air/vapor barrier materials from a single manufacturer regularly engaged in manufacturing the product.
 - 5. Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

1.05 MOCK-UP

- A. Before beginning installation of air barrier, build mockups of exterior wall assembly, full height by ten (10) feet wide, including parapet, backup wall construction, external cladding, window, door frame and sill, insulation, and flashing to demonstrate surface preparation, crack and joint treatment, and sealing of gaps, terminations, and penetrations of air barrier membrane.
 - 1. Coordinate construction of mockup to permit inspection of air barrier before external insulation and cladding is installed.
 - 2. Reconstruct mockups do not comply with requirements.
 - 3. Approved mockups may become part of the completed.
 - 4. Include installers of other construction connecting to air barrier, including roofing, waterproofing, composite metal wall panels, metal wall panels, sealants, windows, glazed curtain walls, and door frames.
 - 5. Review air barrier requirements including surface preparation, substrate condition and pretreatment, minimum substrate curing period, forecasted weather conditions, special details and sheet flashings, mockups, installation

procedures, sequence of installation, testing and inspecting procedures, and protection and repairs.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air barrier manufacturer.
- B. Store at temperatures at or above 40°F (4°C), free from contact with cold or frozen surfaces.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- D. Protect stored materials from direct sunlight.
- E. Protect materials during handling and application to prevent damage or contamination.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Product not intended for uses subject to abuse or permanent exposure to the elements.
- B. Do not proceed with product application if rainfall is forecast or imminent within 12 hours.
- C. Do not apply membrane when air or surface temperatures are below 40°F (4°C).
- D. Do not apply when air, material and surface temperatures are expected to fall below 32° F (0° C) within 24 hours of completed application.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Carlisle
- B. Grace
- C. Henry
- D. Rubber Polymer Corporation
- E. Tremco
- F. W.R. Meadows

2.02 FLUID-APPLIED MEMBRANE AIR BARRIER

- A. Fluid-Applied, Vapor Impermeable Membrane Air Barrier: Two-component, self-curing synthetic-rubber-based membrane, free of solvents, isocyanates and bitumen, suitable for spray application to wet film and dry film thickness of 60 mils.

- B. Basis-of-Design Product: Products specified to establish required level of performance, quality, and appearance are by Grace Construction Products, Perm-A-Barrier.

2.03 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits.
- B. Transition Membrane Primer: Grace Construction Products; "Perm-A-Barrier WB Primer." Liquid primer recommended for substrate by manufacturer of air barrier material when applying flashing and transition membranes directly to substrate.
- C. Flashing and Transition Membrane: Grace Construction Products; "Perm-A-Barrier Wall Flashing." Modified bituminous, 40-mil thick, self-adhering sheet consisting of 32 mils of rubberized asphalt laminated to an 8-mil thick, cross-laminated polyethylene film with release liner backing.
- D. Modified Bituminous Transition Membrane: Grace Construction Products; "Perm-A-Barrier Detail Membrane." Vapor-retarding, 40-mil- thick, smooth-surfaced, self-adhering; consisting of 36 mils of rubberized asphalt laminated to a 4-mil-thick polyethylene film with release liner backing.
- E. Joint Reinforcing Strip: Sheathing manufacturer's glass-fiber-mesh tape.
- F. Substrate Patching Membrane: Manufacturer's standard trowel-grade single component substrate filler.
- G. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
- H. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, 0.0250-inch-thick, and Series 300 stainless-steel fasteners.
- I. Sprayed Polyurethane Foam Sealant: 1- or 2-component, foamed-in-place, polyurethane foam sealant, 1.5 to 2.0 lb/cu. ft. density; flame spread index of 25 or less according to ASTM E 162; with primer and noncorrosive substrate cleaner recommended by foam sealant manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive membrane. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
- C. Verify that sheathing is attached with proper fasteners and spacing.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Protect adjacent surfaces not designated to receive air barrier.
- B. Clean and prepare surfaces to receive air barrier membrane in accordance with manufacturer's instructions.
- C. Do not apply membrane to surfaces unacceptable to manufacturer.
- D. Patch all holes and voids and smooth out any surface misalignments.
- E. Insure joints between dissimilar building materials are sealed with a strip of self-adhesive membrane 10" wide minimum, centered over the joint.
- F. Exterior Sheathing Panels:
 - 1. Panels are to be fastened according to sheathing panel manufacturer.
 - 2. Fill all panel joint with detailing compound prior to full application.
 - 3. Gypsum Sheathing: Fill joints greater than 1/4 inch with sealant according to ASTM C 1193 and with air barrier manufacturer's written instructions. Apply first layer of fluid air barrier membrane at joints. Tape joints with joint reinforcing strip after first layer is dry. Apply a second layer of fluid air barrier membrane over joint reinforcing strip.
- G. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

3.03 TRANSITION MEMBRANE INSTALLATION

- A. Install strips, transition membrane, and auxiliary materials according to air barrier manufacturer's written instructions to form a seal with adjacent construction and maintain a continuous air barrier.
- B. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
- C. Install modified bituminous transition membrane on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over both substrates.
- D. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Re-prime areas exposed for more than 24 hours.
- E. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- F. Connect and seal exterior wall air barrier membrane continuously to roofing membrane air barrier, floor-to floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings.

- G. At end of each working day, seal top edge of strips and transition membranes to substrate with termination mastic.
- H. Apply joint sealants forming part of air barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- I. Wall Openings: Prime concealed perimeter frame surfaces of windows, curtain walls, storefronts, doors and louvers. Apply modified bituminous transition membrane so that a minimum of 6 inches of coverage is achieved over both substrates. Maintain 6 inches of full contact over firm bearing to perimeter frames with not less than 2 inches of full contact.
- J. Modified Bituminous Transition Membrane: Roll firmly to enhance adhesion.
- K. Preformed Silicone-Sealant Extrusion: Set in full bed of silicone sealant applied to walls, frame, and membrane.
- L. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, and doors, and miscellaneous penetrations of air barrier membrane with foam sealant.
- M. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counter-flashings or ending in reglets with termination mastic.
- N. Repair punctures, voids, and deficient lapped seams in strips and transition membranes. Slit and flatten fish-mouths and blisters. Patch with transition membranes extending 10 inches beyond repaired areas in membrane direction.

3.04 AIR BARRIER MEMBRANE INSTALLATION

- A. Apply air barrier membrane to form a seal with strips and transition membranes and to achieve a continuous air barrier according to air barrier manufacturer's written instructions.
- B. Apply air barrier at walls, soffits and fascia to roof barrier.
- C. Apply within manufacturer's recommended application temperature ranges.
- D. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Re-prime areas exposed for more than 24 hours.
- E. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- F. Apply a continuous unbroken air barrier to substrates according to the following minimum thickness. Apply membrane in full contact around protrusions.
- G. Vapor-Impermeable Membrane Air Barrier: 60-mil wet film thickness, 60-mil dry film thickness.

- H. Apply strip and transition membrane overlapping or onto according to air barrier manufacturer's written instructions.
- I. Do not cover air barrier until it has been tested and inspected by testing agency.
- J. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.

3.05 CLEANING AND PROTECTION

- A. Protect air barrier system from damage during application.
- B. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. Remove and replace vapor-impermeable air barrier exposed for more than 60 days.
- C. Keep barrier from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by air barrier manufacturer.
- D. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
- E. Remove masking materials after installation.

END OF SECTION

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PART 1 GENERAL**1.01 DESCRIPTION**

- A. Thermoplastic Polyolefin (TPO) sheet roofing mechanically fastened to roof deck.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only. Editions of applicable publications current on date of issue of bidding documents apply unless otherwise indicated.
- B. American National Standards Institute/Single-Ply Roofing Institute (ANSI/SPRI):
- ANSI/SPRI ES-1-03 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- C. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI):
- ASCE/SEI-7-10 Minimum Design Loads for Buildings and Other Structures
- D. ASTM International (ASTM):
- C1371-04 Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers
- C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer
- D6878-08 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
- E108-10 Standard Test Methods for Fire Tests of Roof Coverings
- E408-71(R2008) Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques
- E1980-01 Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field

- E 2430 -05. Rigid Polystyrene Insulation
- C 168. Test method for Thermal Insulation
- C 177. Test for Steady State Heat flux Measurements, and Thermal insulation
- E. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
ASHRAE 90.1-2007Energy Standard for Buildings Except Low-Rise Residential Buildings, Appendix f.
- F. Cool Roof Rating Council:
CRRC-1Product Rating Program, www.coolroofs.org
- G. FM Approvals: Roof Nav Approved Roofing Assemblies and Products.
1-28-09 Loss Prevention Data Sheet: Design Wind Loads.
1-29-09 Loss Prevention Data Sheet: Above-Deck Roof Components
- H. National Roofing Contractors Association: Roofing and Waterproofing Manual
- I. U.S. Department of Energy (DoE): Roof Products Qualified Product List,
www.energystar.gov

1.04 PERFORMANCE REQUIREMENTS

- A. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- B. Roofing System Energy Performance Requirements: Provide a roofing system identical to components that that have been successfully tested by a qualified independent testing and inspecting agency to meet the following requirements:
- C. Energy Performance, Energy Star: Provide roofing system that is listed on DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
www.energystar.gov.
 - 1. Solar Reflectance Index: Not less than 82 when calculated according to ASTM E1980 based on testing identical products by a qualified testing agency.
www.coolroofs.com.

1.05 QUALITY CONTROL

- A. Installer Qualifications:
 - 1. Licensed or approved in writing by manufacturer to perform work under warranty requirements of this Section.
 - 2. Employ full-time supervisors knowledgeable and experienced in roofing of similar types and scopes, and able to communicate with owner and workers.

- B. Inspector Qualifications: Inspection of work by third-party technical inspector or technical representative of manufacturer experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be an independent party certified as a Registered Roof Observer by the Roof Consultants Institute (RCI), retained by the Contractor and approved by the Manufacturer
- C. Product/Material Requirements:
 - 1. Obtain products from single manufacturer or from sources recommended by manufacturer for use with roofing system and incorporated in manufacturer's warranty.
- D. Roofing system design standard requirements:
 - 1. Recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to Thermoplastic Polyolefin (TPO) roofing for storage, handling and application.
 - 2. Recommendations of FM Approvals 1-49 Loss Prevention Data Sheet for Perimeter Flashings.
 - 3. Recommendations of ANSI/SPRI ES-1 for roof edge design.
 - 4. Roofing System Design: Provide roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
 - a. Corner Uplift Pressure: (75 lbf/sq. ft.).
 - b. Perimeter Uplift Pressure: (75 lbf/sq. ft.).
 - c. Field-of-Roof Uplift Pressure: (75 lbf/sq. ft.).
 - 5. FM Approvals Listing: Provide roofing membrane, base flashing, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a roofing system and that are listed in FM Approvals "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.
 - a. Fire/Windstorm Classification: Class 1A-75.
 - b. Hail Resistance: MH.
- E. Pre-Roofing Meeting:
 - 1. Prior to roofing, discuss specific expectations and responsibilities, construction procedures, specification requirements, application, environmental conditions, job and surface readiness, material storage, and protection with COR to:
 - a. Verify that work of other trades which penetrates roof deck is completed.

- b. Determine adequacy of deck anchorage, presence of foreign material, moisture and unlevel surfaces, or other conditions that would prevent application of roofing system from commencing or cause a roof failure.
- c. Examine samples and installation instructions of manufacturer.

1.06 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, SAMPLES.
- B. Product Data:
 - 1. Adhesive materials.
 - 2. Membrane sheet roofing and flashing membrane.
 - 3. Roof Insulation
 - 3. Fastening requirements.
 - 4. Application instructions.
- C. Samples:
 - 1. Nails and fasteners, each type.
- D. Shop Drawings: Include plans, sections, details, and attachments.
 - 1. Base flashings and terminations.
 - 2. Layout of insulation, crickets, edge conditions and roof drains, scuppers etc.
- E. Certificates:
 - 1. Indicating materials and method of application of roofing system meets requirements of FM Approvals "RoofNav" for specified fire/windstorm classification.
 - 2. Indicating compliance with energy performance requirement.
 - 3. Laboratory test reports: Thermal values of insulation products.
 - 4. Indicating Thermal conductance, and minimum average thickness of insulation.
- F. Warranty: As specified.
- G. Documentation of supervisors' and inspectors' qualifications.
- H. Field reports of roofing inspector.
- I. Contract Close-out Submittals:
 - 1. Maintenance Manuals.

2. Warranty signed by installer and manufacturer.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to single ply membrane roofing for storage, handling and installation.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.09 WARRANTY

- A. Roofing work subject to 10 years.

1.10 QUALITY ASSURANCE:

- A. Roof insulation on steel deck shall have a flame spread rating no greater than 75 and a smoke developed rating not greater than 150, exclusive of covering, when tested in accordance with ASTM E 84, or shall have successfully passed FM Approvals 4450.

PART 2 PRODUCTS

2.01 TPO MEMBRANE ROOFING

- A. TPO Sheet: ASTM D6878, internally fabric or scrim reinforced, 1.5 mm (60 mils) thick, with no backing.
- B. Color: White.

2.02 ACCESSORIES

- A. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as TPO sheet membrane.
- B. Bonding Adhesive: Manufacturer's standard, water based.
- C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 25 by 3 mm (1 by 1/8 inch) thick; with anchors.
- D. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 25 mm wide by 1.3 mm (1 inch wide by 0.05 inch) thick, prepunched.
- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with FM Approvals 4470, designed for fastening membrane to substrate.
- G. Miscellaneous Accessories: Provide sealers, preformed flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories acceptable to manufacturer.

- H. Roof and Deck Insulation.

2.03 ADHESIVE AND SEALANT MATERIALS

- A. General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
- B. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions with roofing Installer and roofing inspector to verify compliance with project requirements and suitability to accept subsequent roofing work. Correct unsatisfactory conditions before proceeding with roofing work.
- B. Do not apply roofing if roof surface will be used for subsequent work platform, storage of materials, or staging or scaffolding will be erected thereon unless system is protected.

3.02 PREPARATION

- A. Complete roof deck construction prior to commencing roofing work:
 - 1. Install curbs, blocking, edge strips, nailers, cants, and other components where insulation, roofing, and base flashing is attached to, in place ready to receive insulation and roofing.
 - 2. Complete deck and insulation to provide designed drainage to working roof drains.
 - 3. Document installation of related materials to be concealed prior to installing roofing work.
- B. Dry out surfaces, including the flutes of metal deck that become wet from any cause during progress of the work before roofing work is resumed. Apply materials to dry substrates.
- C. Sweep decks to broom clean condition. Remove all dust, dirt or debris.
- D. Remove projections that might damage materials.

3.04 INSTALLATION, GENERAL

- A. FM Approvals Installation Standard: Install roofing membrane, base flashings, wood cants, blocking, curbs, and nailers, and component materials in compliance with requirements in FMG 4450 and FMG 4470 as part of a membrane roofing system as listed in FM Approval's "RoofNav" for fire/windstorm classification indicated. Comply with recommendations in FM Approvals' Loss Prevention Data Sheet 1-49, including requirements for nailers and cants.

- B. NRCA Installation Standard: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations.
- C. Manufacturer Recommendations: Comply with roofing system manufacturer's written installation recommendations.
- D. Coordination with related work: Coordinate roof operations with roof insulation and sheet metal work so that insulation and flashings are installed concurrently to permit continuous roofing operations.
- E. Installation Conditions:
 - 1. Apply dry roofing materials. Apply roofing work over dry substrates and materials.
 - 2. Apply materials within temperature range and surface and ambient conditions recommended by manufacturer.
 - 3. Except for temporary protection, do not apply materials during damp or rainy weather, during excessive wind conditions, nor while moisture (dew, snow, ice, fog or frost) is present in any amount in or on the materials to be covered or installed:
 - a. Do not apply materials when the temperature is below 4 deg. C (40 deg. F).
 - b. Do not apply materials to substrate having temperature of 4 deg. C (40 deg. F) or less.

3.05 RIGID INSULATION INSTALLATION

- A. Insulation Installation, General:
 - 1. Install roof insulation in accordance with roofing system manufacturer's written instructions.
 - 2. Install roof insulation in accordance with requirements of FM Approval's Listing for specified roofing system.
 - 3. Base Sheet: Where required by roofing system, install one lapped base sheet specified in Division 07 roofing section by mechanically fastening to roofing substrate prior to installation of insulation.
 - 4. Cant Strips: Install preformed insulation cant strips strips at junctures of roofing system with vertical construction.
 - 5. Use same insulation as existing for roof repair and alterations unless specified otherwise.
- B. Insulation Thickness:
 - 1. Thickness of roof insulation shown on drawings is nominal. Actual thickness shall provide the average thermal resistance "R" value of not less than that specified in Performance Requirements Article.

2. Insulation on Metal Decks: Provide minimum thickness of insulation for metal decks recommended by the insulation manufacturer to span rib opening (flute size) of metal deck used. Support edges of insulation on metal deck ribs.
 3. When thickness of insulation to be used is more or less than that shown on the drawings, make adjustments in the alignment and location of roof drains, flashing, gravel stops, fascias and similar items at no additional cost to the Owner.
 4. Where tapered insulation is used, the thickness of the insulation at high points and roof edges shall be as shown on the drawings; the thickness at the low point (drains) shall be not less than 38 mm (1-1/2 inches).
 5. Use not less than two layers of insulation when insulation is 68 mm (2.7 inch) or more in thickness unless specified otherwise. Stagger joints minimum 150 mm (6 inches).
- C. Lay insulating units with close joints, in regular courses and with cross joints broken. When laid in more than one layer, break joints of succeeding layers of roof insulation with those in preceding layer.
- D. Lay units with long dimension perpendicular to the rolled (longitudinal) direction of the roofing felt.
- E. Seal all cut edges at penetrations and at edges against blocking with bitumen or roof cement.
- F. Cut to fit tight against blocking or penetrations.
- G. Cover all insulation installed on the same day; comply with temporary protection requirements of Division 07 roofing section.

3.06 INSTALLATION OF TPO ROOFING

- A. Do not allow the membrane to come in contact with surfaces contaminated with asphalt, coal tar, oil, grease, or other substances which are not compatible with TPO.
- B. Install the membrane so the sheets run perpendicular to the long dimension of the insulation boards.
- C. Commence installation at the low point of the roof and work towards the high point. Lap the sheets so the flow of water is not against the edges of the sheet.
- D. Position the membrane so it is free of buckles and wrinkles.
- E. Roll sheet out on deck; inspect for defects as being rolled out and remove defective areas. Allow for relaxing before proceeding.
1. Lap edges and ends of sheets 50 mm (two inches) or more as recommended by the manufacturer.
 2. Heat weld laps. Apply pressure as required. Seam strength of laps as required by ASTM D4434.
 3. Check seams to ensure continuous adhesion and correct defects.

4. Finish edges of laps with a continuous beveled bead of sealant to sheet edges to provide smooth transition.
 5. Finish seams as the membrane is being installed (same day).
 6. Anchor perimeter to deck or wall as specified.
- F. Repair areas of welded seams where samples have been taken or marginal welds, bond voids, or skips occurs.
- G. Repair fishmouths and wrinkles by cutting to lay flat and installing patch over cut area extending 100 mm (four-inches) beyond cut.
- H. Membrane Perimeter Anchorage:
1. Install metal fastening strip at the perimeter of each roof level, curb flashing, expansion joints and similar penetrations as indicated and in accordance with membrane manufacturer's instructions on top of roof membrane to deck or wall.
 2. Mechanically Fastened Metal Fastening Strip:
 - a. Set top of mechanical fastener set flush with top surface of the metal fastening strip. Space mechanical fasteners a maximum 300 mm (12 inches) on center starting 25 mm (one inch) from the end of the nailing strip.
 - b. When strips are cut round corners and eliminate sharp corners.
 - c. After mechanically fastening strip cover and seal strip with a six-inch wide roof membrane strip; heat weld to roof membrane and seal edges.
 - d. At roof edge metal, turn the membrane down over the front edge of the blocking or the nailer to below blocking. Secure the membrane to the vertical portion of the nailer; or, if required by the membrane manufacturer with fasteners spaced not over 300 mm (12 inches) on centers.
 - e. At parapet walls, intersecting building walls and curbs, secure the membrane to the structural deck with fasteners 300 mm (12 inches) on centers or as shown on NRCA manual.
- I. Mechanically-Attached System:
1. Secure the membrane to the structural deck with fasteners through stress plate or batten strips spaced and patterned in accordance with the membrane manufacturer's instructions to achieve specified wind uplift performance.
 2. When fasteners are installed within the laps of adjoining sheets, position the fastener so that the stress plates are a minimum 13 mm (1/2)inch) from the edge of the sheets.
 3. Where fasteners are installed over the membrane after the seams have been welded, cover the fasteners with a minimum 175 mm (seven inch) wide round TPO membrane cap centered over the fasteners. If batten strips are used cover the strip with a minimum 175 mm (seven inch) wide TPO strip centered over the

batten. Heat weld to the roof membrane and finish edges with sealant as specified. Finish edges with sealant as specified.

4. Before installing fasteners into cast in place concrete, pre-drill the correct size hole into the deck. Drill the hole 9 mm (3/8 inch) deeper than the fastener penetration.

3.07 INSTALLATION OF FLASHING

- A. Install flashings as the membrane is being installed. If the flashing cannot be completely installed in one day, complete the installation until the flashing is in a watertight condition and provide temporary covers or seals.
- B. Flashing Roof Drains:
 1. Install roof drain flashing as recommended by the membrane manufacturer, generally as follows:
 - a. Coordinate to set the metal drain flashing in asphalt roof cement, holding cement back from the edge of the metal flange.
 - b. Do not allow the roof cement to come in contact with the TPO roof membrane.
 - c. Adhere the TPO roof membrane to the metal flashing with the membrane manufacturer's recommended adhesive.
 2. Turn down the metal drain flashing and TPO roof membrane into the drain body and install clamping ring and strainer.
- C. Installing TPO Base Flashing and Pipe Flashing:
 1. Install TPO flashing membranes to pipes, wall or curbs to a height not less than eight-inches above roof surfaces and 100 mm (four inches) on roof membrane.
 - a. Adhere flashing to pipe, wall or curb with adhesive.
 - b. Form inside and outside corners of TPO flashing membrane in accordance with NRCA manual. Form pipe flashing in accordance with NRCA manual use pipe boot.
 - c. Lap ends not less than 100 mm (four inches).
 - d. Heat weld flashing membranes together and flashing membranes to roof membranes. Finish exposed edges with sealant as specified.
 - e. Install flashing membranes in accordance with NRCA manual.
 2. Anchor top of flashing to walls or curbs with fasteners spaced not over 200 mm (eight inches) on centers. Use fastening strip on ducts. Use pipe clamps on pipes or other round penetrations.
 3. Apply sealant to top edge of flashing.
- D. Installing Building Expansion Joints:

1. Install base flashing as shown.
 2. Coordinate installation with metal expansion joint cover or roof expansion joint system.
- E. Repairs to membrane and flashings:
1. Remove sections of TPO sheet roofing or flashing that is creased wrinkled or fish-mouthed.
 2. Cover removed areas, cuts and damaged areas with a patch extending 100 mm (four inches) beyond damaged, cut, or removed area. Heat weld to roof membrane or flashing. Finish edge of lap with sealant as specified.

3.08 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
1. Examine and probe seams in the membrane and flashing in the presence of Architect, Owner and Membrane Manufacturer's Inspector.
 2. Probe edge of welded seams with a blunt tipped instrument. Use sufficient hand pressure to detect marginal welds, voids, skips, and fish-mouths.
- C. Final Roof Inspection:
1. Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
 2. Notify Architect and Owner 7 days in advance of date and time of inspection.
- D. Repair or remove and replace components of roofing work where test results or inspections indicate that they do not comply with specified requirements. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.09 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of acceptance by Owner.
- C. Clean overspray and spillage from adjacent construction. Clean membrane and restore surface to like-new condition meeting solar reflectance requirements.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Provide metal flashings and sheet metal including accessories as required for complete weather tight installation.
- B. Patch existing flashing and sheet metal as required by new construction.
- C. Provide concealed sealants used in conjunction with installation of metal flashing and sheet metal.
- D. Provide miscellaneous sheet metal flashing and reglets not provided by other trades or suppliers.
 - 1. Where reglets are to be installed in conjunction with other work, provide in adequate time for installation.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish literature for manufactured products.
- C. Shop Drawings: Clearly indicate dimensioning, layout, general construction details including closures, flashings, locations and types of sealants, anchorages, and method of anchorage.
- D. Samples: Furnish samples of typical metal flashing fabrication indicating standard soldered joints and edge conditions.

1.04 QUALITY ASSURANCE

- A. Referenced Standards
 - 1. California Building Code (CBC), Latest Edition
 - 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA): Architectural Sheet Metal Manual, Latest Edition

- B. Design Requirements: Allow for movement of components without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to 100-year seasonal temperature ranges.
- C. Sheet metal fabricator and installer shall have a minimum five (5) years of experience with shop fabrication and installation of shop-fabricated roofing metal and flashings.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Provide strippable film protective covering on shop finished flashing materials to protect materials through shipping, fabrication and installation.

1.06 WARRANTY

- A. Special Warranty: Provide for correcting failure of metal flashing system to resist penetration of water and damage from wind.
 - 1. Special Warranty Period: Two years.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Flashing and Sheet Metal:
 - 1. Minimum gauge of aluminum per SMACNA. Minimum gauge of gutters, downspouts and roof edge, .040 aluminum, 20ga.
- B. Flexible Flashings: Reinforced self- adhered flexible flashing.
- C. Solder and Fasteners: As recommended by SMACNA and complying with applicable codes and regulations; hot dipped galvanized minimum coating comparable to G90.
- D. Concealed Sealant: Butyl type for use in conjunction with sheet metal; non-staining; non-corrosive; non-shrinking and non-sagging; ultra-violet and ozone resistant for exterior concealed applications.
- E. Bituminous Paint: Acid and alkali resistant type; black color; asbestos free.
- F. Plastic Cement: Cutback asphaltic type; asbestos free.
- G. Sealing Compound: Type recommended by roofing manufacturer; asbestos free.
- H. Gaskets: Type suitable for use in conjunction with sheet metal; non-staining, non-corrosive, non-shrinking, non-sagging, ultra-violet resistant, and ozone resistant; for exterior concealed applications.
 - 1. Manufacturers:
 - a. Sandell Manufacturing Co./Polytite Joint Sealant.
 - b. Emseal USA, Inc./Emseal Secondary Seal.

2.02 FABRICATION

- A. Fabricate sheet metal in accordance with SMACNA Architectural Sheet Metal Manual.
- B. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- C. Fabricate corners and intersections in shop with solder joints; watertight fabrication.
- D. Form sections in maximum 10'-0" lengths; make allowance for expansion at joints.
- E. Hem exposed edges on underside 1/2".
- F. Backpaint flashings with heavy bodied bituminous paint where in contact with cementitious materials or dissimilar metals.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install metal flashing and sheet metal in accordance with SMACNA Architectural Sheet Metal Manual.
 - 1. Install tight in place, with corners square, surfaces true and straight in planes, and lines accurate to profiles as indicated on Drawings.
 - 2. Lap joints in direction of water flow.
 - 3. Install self-adhering flexible flashings and overlap metal flashing joints and adjacent materials in direction of water flow.
- B. Exercise care when cutting materials on site, to ensure cuttings do not remain on finished surfaces.
- C. Provide expansion joints concealed within system.
- D. Use concealed fasteners, continuous cleat type, except where specifically approved by Architect.
 - 1. Exposed fasteners may be used, where clearly indicated on shop drawings and approved by the Owner, at areas not exposed at exterior walls nor in sight of interior spaces.
- E. Apply sealing compound at junction of metal flashing and felt flashing.
- F. Lock seams and end joints; fit flashing tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- G. Install flashings with minimum joints and as long of section as possible.
- H. Install sealants where required to prevent direct weather penetration.
 - 1. Install continuous gasket behind surface-applied reglets.

- I. Completed installation shall be free of rattles, noise due to thermal and air movement, and wind whistles.
- J. Install metal flashing at all intersections to protect waterproofing, insulation and gypsum sheathing from UV exposure.
- K. Install dam flashing at window, louvers, openings and at intersecting horizontal and vertical surfaces.

3.02 CLEANING

- A. Remove protective coating from shop finished sheet metal when no longer required to protect roofing and flashing from construction.
- B. Touch-up scratched and damaged finish to match new; remove and replace sheet metal units that cannot be repaired to look identical to adjacent sheet metal when viewed from 5'-0" away.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This section specifies the following materials and accessories as required for complete weathertight installation:
 - 1. Copings.

1.2 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of roof specialty and for each color and texture specified.
- C. Product Test Reports: For tests performed by a qualified testing agency.
- D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class.

1.6 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 07 54 23 - Thermoplastic Polyolefin (TPO) Roofing.

- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. FM Approvals' Listing: Manufacture and install copings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90 Identify materials with FM Approvals' markings.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C) material surfaces.

2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
 - 1. Metallic-Coated Steel Sheet Coping Caps: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Three-coat metallic fluoropolymer.
 - c. Color: Dark Bronze
 - 2. Corners: Factory mitered and mechanically clinched and sealed watertight.
 - 3. Coping-Cap Attachment Method: Face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
 - a. Face-Leg Cleats: Concealed, continuous stainless steel.

2.3 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.

- B. Stainless-Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements, complying with FM Approvals 4470.
- B. General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
- C. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.5 FINISHES

- A. Coil-Coated Galvanized-Steel Sheet Finishes:
 - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A755/A755M and coating and resin manufacturers' written instructions.
 - a. Three-Coat Metallic Fluoropolymer: AAMA 621. Fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 - 4. Torch cutting of roof specialties is not permitted.
 - 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of stainless-steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 - 1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

3.2 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
 - 1. Interlock face-leg drip edge into continuous cleat anchored to substrate at 16-inch (406-mm) centers. Anchor back leg of coping with screw fasteners and elastomeric washers at 16-inch (406-mm) centers.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide labor, material, equipment and services to furnish and install firestopping systems required for the work as shown on the drawings, as specified herein and as required for a complete and proper installation, including, but not limited to, the following:
 - 1. Closures of openings in walls, floors, and roof decks against penetration of flame, heat, and smoke or gases in fire resistant rated construction.
 - 2. Closures of openings in walls against penetration of gases or smoke in smoke partitions.
 - 3. Sealants around penetrations in non-rated smoke barriers where indicated on Drawings.
 - 4. Closures of floor openings in vertical mechanical shafts against penetration of flame, heat, smoke and gases.
- B. Drawings and General Provisions of the Contract, including General and Supplementary Conditions, and Division 1 Specification Sections, apply to this Section.

1.02 RELATED SECTIONS

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Section 01 33 00 – Submittals.
- B. Manufacturers literature, data, and installation instructions for types of firestopping and smoke stopping used.
- C. List of FM, UL, or WH classification number of systems installed.
- D. Certified laboratory test reports for ASTM E814 tests for systems not listed by FM, UL, or WH proposed for use.

1.04 DELIVERY AND STORAGE

- A. Deliver materials in their original unopened containers with manufacturer's name and product identification.
- B. Store in a location providing protection from damage and exposure to the elements.

1.05 QUALITY ASSURANCE

- A. FM, UL, or WH or other approved laboratory tested products will be acceptable.

1.06 APPLICABLE STANDARDS: The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Society for Testing and Materials (ASTM):
 - 1. E84 Surface Burning Characteristics of Building Materials
 - 2. E136 Behavior of Material in a Vertical Tube Furnace
 - 3. E814 Fire Tests of Through-Penetration Fire Stops
- B. Factory Mutual Engineering and Research Corporation (FM):
 - 1. Annual Issue Approval Guide Building Materials
- C. Underwriters Laboratories, Inc. (UL):
 - 1. Annual Issue Building Materials Directory
 - 2. Annual Issue Fire Resistance Directory
- D. Warnock Hersey (WH):
 - 1. Annual Issue Certification Listings

PART 2 PRODUCTS

2.01 FIRESTOP SYSTEMS

- A. Metallic Pipe or Conduits: Firestop systems shall comply with the following:
 - 1. Classified for use with the particular type of penetrating material used.
 - 2. Use either factory built (Firestop Devices) or field erected (through-Penetration Firestop Systems) to form a specific building system maintaining required integrity of the fire barrier and stop the passage of gases or smoke.
 - 3. Tested through-penetration firestop systems and firestop devices in accordance with ASTM E814 using the "T" rating to maintain the same rating and integrity as the fire barrier being sealed.
 - 4. Products requiring heat activation to seal an opening by its intumescence shall exhibit a demonstrated ability to function as designed to maintain the fire barrier.
 - 5. Firestop sealants used for firestopping or smoke sealing shall have following properties:
 - a. Contain no flammable or toxic solvents.
 - b. Have no dangerous or flammable outgassing during the drying or curing of products.
 - c. Water-resistant after drying or curing and unaffected by high humidity, condensation or transient water exposure.

- d. When used in exposed areas, shall be capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.
6. Maximum flame spread of 25 and smoke development of 50 when tested in accordance with ASTM E84.
7. FM, UL, or WH rated or tested by an approved laboratory in accordance with ASTM E814.
8. Materials to be asbestos free.
- B. Glass pipe, plastic pipe or conduits, unenclosed cables, or other non-metallic materials: Comply to requirements for metallic pipe and as follows:
 1. Penetrations containing loose electrical cables, computer data cables, and communications cables protected using firestopping systems that allow unrestricted cable changes without damage to the seal.
 2. Intumescent products which expand to seal the opening and act as fire, smoke, toxic fumes, and, water sealant.
- C. One-Hour Fire Barrier Sealant: One-component neutral-cure silicone rubber sealant.
 1. Manufacturers:
 - a. 3M "Fire Barrier 2000 or 2003 Sealant, Caulk Type CP25 or No. 303 Putty";
 - b. International Protective Coatings "Flame-Safe FS500 or FSP1000 Putty";
 - c. Fipro "A/D Silicone Firebarrier Sealant-SL";
 - d. Or equal.
 2. Two Hour Fire Barrier Sealant: 3M CP25 Sealant.

2.02 SMOKE STOPPING IN SMOKE PARTITIONS

- A. Non-Fire-rated Smoke Stop Partitions: Sealants around penetrations in smoke stop partitions or barriers not identified on the plans as part of a rated assembly shall comply as follows:
 1. Use silicone sealant in smoke partitions as specified in Section 07 90 00, Joint Sealers.
 2. Use mineral fiber filler and bond breaker behind sealant.
 3. Sealants shall have a maximum flame spread of 25 and smoke developed of 50 when tested in accordance with E84.
 4. When used in exposed areas capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.
- B. Fire-rated Smoke Stop Partitions: Sealants around penetrations in smoke stop partitions or barriers that are identified on the plans as part of a rated assembly shall comply as follows:

1. Use listed firestop system specified above.

2.03 ACCESSORIES

- A. Stuffing Material: Mineral fiber matting, permanent.
- B. Retainers: Clips to support mineral fiber matting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Submit product data and installation instructions, as required by article, submittals, after an on site examination of areas to receive firestopping.
- B. Examine substrates and conditions for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping.

3.02 PREPARATION

- A. Remove dirt, grease, oil, loose materials, or other substances that prevent adherence and bonding or application of the firestopping or smoke stopping materials.
- B. Remove insulation on insulated pipe for a distance of six inches (150 mm) on either side of the fire rated assembly prior to applying the firestopping materials unless the firestopping materials are tested and approved for use on insulated pipes.
- C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLATION

- A. Do not begin work until the specified material data and installation instructions of the proposed firestopping systems have been submitted and approved.
- B. Install firestopping systems with smoke stopping in accordance with FM, UL, WH, or other approved system details and installation instructions.
- C. Install smoke stopping seals in smoke partitions.

3.04 FIELD QUALITY CONTROL

- A. Owner's Fire Marshal will examine completed firestopping to determine, in general, if it is being installed in compliance with requirements.
- B. Do not proceed to enclose firestopping with other construction until reports of Owner Fire Marshal's examinations are issued.
- C. Where deficiencies are found, repair or replace firestopping so that it complies with requirements.

3.05 CLEANING

- A. Remove materials, litter, and debris.
- B. Clean up spills of liquid type materials.

END OF SECTION 07 84 00

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide joint sealants, for interior and exterior joints not specified elsewhere, with backing rods and accessories as required for complete installation. Joint sealers include sealants and caulking as indicated.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's descriptive literature.
- C. Samples: Furnish samples of each type of exposed joint sealer in required colors.
- D. Certifications:
 - 1. Furnish manufacturer's certification joint sealers comply with Contract Documents and are suitable for Project applications.
 - 2. Furnish certification indicating installers are trained in proper use of specified products, qualified, and familiar with proper installation techniques.

1.04 QUALITY ASSURANCE

- A. Performance Requirements:
 - 1. Select materials for compatibility with joint surfaces and indicated exposures.
 - 2. Where not indicated, select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated.
 - 3. Comply with applicable limitations on volatile organic compound (VOC) emissions.
- B. Installer Qualifications: Firm with minimum five years successful experience on projects of similar type and size, using specified products.
 - 1. Installers shall be familiar with proper application procedures to ensure maximum joint sealer expansion and contraction capabilities.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, cure time, and mixing instructions.

1.06 SITE CONDITIONS

- A. Do not proceed with installation of joint sealers under unfavorable weather conditions.
- B. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer.

1.07 WARRANTY

- A. Special Warranty: Repair or replace joint sealers which fail to perform as intended, because of leaking, crumbling, hardening, shrinkage, bleeding, sagging, staining and loss of adhesion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Elastomeric Sealants:
 - 1. Single-Component Low Modulus Silicone Sealant: ASTM C920 Type S, Class 25, Grade NS; minimum 50% expansion and compaction capability.
 - a. Provide at exterior locations not exposed to traffic.
 - b. Manufacturers:
 - 1) General Electric Co./Silpruf, Silglaz or GESIL.
 - 2) Dow Corning Corp./790 or 795.
 - 3) Pecora Corp./864 Architectural Silicone.
 - 4) Tremco/Spectrum 3.
 - 2. Multi-Component Polyurethane Sealant: ASTM C920, Type M, Grade P, Class 25, self-leveling; minimum 25% expansion and compaction capability.
 - a. Provide following at traffic bearing locations.
 - b. Manufacturers:
 - 1) Pecora Corp./NR-200 Urexpan.
 - 2) Tremco/Vulkem 245.
 - 3) Sonneborn Division of ChemRex /SL 2

3. Mildew-Resistant Silicone Rubber Sealant: ASTM C920, Type S, Grade NS, Class 25, compounded with fungicide, specifically for mildew resistance and recommended for interior joints in wet areas.
 - a. Provide at interior joints in wet areas.
 - b. Manufacturers:
 - 1) General Electric Co./SCS 1702 Sanitary Sealant.
 - 2) Dow Corning Corp./786 Bathtub Caulk.
 - 3) Pecora Corp./863 #345 White.
 - 4) Tremco/Tremsil 200.
- B. Non-Elastomeric Sealants:
 1. Acrylic-Emulsion Sealant: ASTM C834 acrylic or latex-rubber-modified acrylic sealant, permanently flexible, non-staining and non-bleeding; recommended for general interior exposure; compatible with paints specified in Section 09 90 00.
 - a. Provide at general interior applications.
 - b. Manufacturers:
 - 1) Pecora Corp./AC-20.
 - 2) Sonneborn Division of ChemRex/Sonolac.
 - 3) Tremco/Ultrem 1500
- C. Miscellaneous Materials:
 1. Primers/Sealers: Non-staining types recommended by joint sealer manufacturer for joint surfaces to be primed or sealed.
 2. Joint Cleaners: Non-corrosive types recommended by joint sealer manufacturer; compatible with joint forming materials.
 3. Bond Breaker Tape: Polyethylene tape as recommended by joint sealer manufacturer where bond to substrate or joint filler must be avoided for proper performance of joint sealer.
 4. Sealant Backer Rod: Compressible polyethylene foam rod or other flexible, permanent, durable non-absorptive material as recommended by joint sealer manufacturer for compatibility with joint sealer.
 - a. Oversize backer rod minimum 30% to 50% of joint opening.
- D. Colors: Provide colors indicated or as selected by Architect from manufacturer's full range of colors.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prepare joint surfaces in accordance with ASTM C1193 and as recommended by joint sealer manufacturer.
- B. Clean joint surfaces immediately before installation of joint sealer; remove dirt, insecure materials, moisture and other substances which could interfere with bond of joint sealer.
- C. Prime or seal joint surfaces where recommended by joint sealer manufacturer; do not allow primer/sealer to spill or migrate onto adjoining surfaces.
- D. Ensure protective coatings on surfaces in contact with joint sealers have been completely stripped.

3.02 INSTALLATION

- A. Comply with manufacturer's printed instructions and ASTM C1193, except where more stringent requirements are shown or specified.
- B. Set sealant backer rods at proper depth or position in joint to coordinate with other work, including installation of bond breakers and sealant; do not leave voids or gaps between ends of backer rods.
 - 1. Do not stretch, twist, puncture or tear backer rods.
- C. Install bond breaker tape where required by manufacturer's recommendations to ensure joint sealers will perform properly.
- D. Size materials to achieve required width/depth ratios.
- E. Employ installation techniques that will ensure joint sealers are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of bond surfaces equally on opposite sides.
- F. Joint Configuration: Fill sealant joint to a slightly concave surface, slightly below adjoining surfaces, unless otherwise indicated.
- G. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture or dirt.
- H. Install joint sealers to depths recommended by joint sealer manufacturer but within the following general limitations, measured at center (thin) section of bead.
 - 1. Horizontal Joints: 75% width with minimum depth of 3/8".
 - 2. Elastomeric Joints: 50% width with minimum depth of 1/4".
 - 3. Non-Elastomeric Joints: 75% to 125% of joint width.
- I. Spillage: Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into voids of adjoining surfaces.
 - 1. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

- J. Cure joint sealers in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength and surface durability.
- K. Maintain finished joints free of embedded matter, ridges and sags.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Interior non-rated and fire-rated welded steel doors and frames.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. Americans with Disabilities Act (ADA) - Accessibility Guidelines for Buildings and Facilities.
- B. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- C. ANSI/SDI 100 - Standard Steel Door and Frames.
- D. ASTM A366 - Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.
- E. ASTM A525 - Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process.
- F. ASTM C976 - Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box.
- G. ASTM E90 - Measurement of Airborne-Sound Transmission Loss of Building Partitions.
- H. ASTM E413 - Classification for Rating Sound Insulation.
- I. SFM Standard 12-7-4

1.04 SUBMITTALS

- A. Section 01 33 00 - Submittals: Submittal Procedures.
- B. Shop Drawings: Indicate door and frame configuration, anchor types and spacings, location of cut-outs for hardware, glazing and louvers, reinforcement, and finish.
- C. Product Data: Fire rated doors and frames, showing conformance with CBC and Underwriters Laboratory, Inc., or Warnock Hersey or Factory Mutual fire rating requirements.
- D. Instructions: Submit manufacturer's installation instructions.
- E. Manufacturer's Certification: Certify that Products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Conform to the requirements of ANSI/SDI-100 and Americans with Disabilities Act (ADA) - Accessibility Guidelines for Buildings and Facilities.
- B. Verify that field measurements are as indicated on approved shop drawings.
- C. Performance Standards:
 - 1. Fire-Rated Assemblies: SFM Standard 12-7-4, and acceptable testing agency listing.
 - 2. Sound-Rated Assemblies at Mechanical Rooms: ASTM E1408 and ASTM E413.

1.06 REGULATORY REQUIREMENTS

- A. Fire rated doors and frames construction to conform to SFM Standard 12-7-4.
- B. Installed door and frame assemblies to conform to CBC for fire rated class indicated on schedule.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Prior to shipment label each door and frame to show location, size, door swing and other pertinent information.
- B. Accept doors and frames on site in manufacturer's packaging. Inspect for damage.

1.08 WARRANTY

- A. Provide five-year warranty against defects in manufacture and materials.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Ceco Door Products;
- B. Curries, "747 Series";
- C. Republic, "DS Series";
- D. Steelcraft, "Series B";
- E. Or approved equal.

2.02 DOORS AND FRAMES

- A. Interior Flush Doors: SD1-100, Heavy Duty, Grade 2, Model 1.
- B. Interior Frames: Welded 16 gage thick material, core thickness to suit model and grade of doors. Knockdown frames not permitted.
- C. Inserts, Bolts, and Fasteners: Manufacturer's standard units for the required application; hot-dip-galvanize items to be embedded in or in contact with concrete foundation wall or slab-on-grade.

2.03 DOOR CORES

- A. Core: Vertical steel stiffeners at flush doors.

2.04 ACCESSORIES

- A. Rubber Silencers: Resilient rubber.
- B. Glass: As specified in Section 08 80 00 - Glazing.
- C. Glazing Stops: Rolled steel channel shape, butted corners, prepared for countersink style tamperproof screws.

2.05 PROTECTIVE COATINGS

- A. Primer: Manufacturer's standard red-oxide/zinc-chromate primer for interior surfaces.
- B. Paint galvanized surfaces with zinc-dust/zinc-oxide primer.

2.06 FABRICATION

- A. Fabricate frames and doors in accordance with requirements of the Steel Door Institute specification SDI-100, and as indicated on drawings. Provide welded frames at interior doors.
- B. Fabricate doors and frames with hardware reinforcement plates welded in place. Drill and tap for surface-applied finish hardware. Provide mortar guard boxes where indicated.
- C. Accurately form and cut mitered corners of welded type frames. Weld on inside surfaces. Sand-welded joints to a smooth uniform finish. Use welded frames at all interior locations. Use of splice plates at corners is not acceptable.
- D. Fabricate frames of pairs of doors wider than 3'-6" of 12 gage steel.
- E. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.
- F. Prepare frame for silencers. Provide three single silencers for single doors on strike side, and two single silencers on frame head at double doors.
- G. Provide jamb and floor anchors in accordance with SDI-100.
- H. Attach channel or angle spreaders at bottom of welded type doorframes to ensure proper alignment while shipping.
- I. Fill surface depressions with metallic paste filler and sand to a smooth uniform finish.
- J. Provide prime coat on doors and frames, including backs of frames.
- K. Touch up areas with zinc rich paint where galvanized coating has been removed due to welding, sanding or handling.
- L. Attach fire rated label to each frame and door unit scheduled to be labeled.

2.07 FINISH

- A. Shop primer, compatible with finish paint specified in Section 09 90 00.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 31 00 - Project Management and Coordination.
- B. Verify that opening sizes and tolerances are acceptable.

3.02 INSTALLATION

- A. Install frames in accordance with SDI-100.
- B. Install adjustable frames in accordance with manufacturer's instructions.
- C. Install doors in accordance with DHI.
- D. Coordinate installation of glass and glazing.
- E. Install door louvers plumb and level.
- F. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.03 ADJUSTING

- A. Adjust doors for smooth operation and balanced door movement.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies the installation of wood doors.
- B. Factory finished wood doors.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ANSI/NWMA I. S. - Industry Standard for Wood Flush Doors.
- B. WIC - Woodwork Institute of California, Manual of Millwork Standards of the Woodwork Industry, latest edition.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, identify cutouts for glazing and louvers, blocking for hardware attachment.
- C. Product Data: Indicate door core materials and construction, veneer species, type and characteristics.
- D. Manufacturer's Installation Instructions: Indicate special installation instructions.
- E. Labeled fire rated doors showing conformance with NFPA 80.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with WIC, Section 20, Custom Grade.
- B. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three (3) years documented experience.
- C. Millwork Shop: Company specializing in custom cabinetry and doors specified in this section with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver, and store doors in accordance with W.I.C. Section 20.

1.07 COORDINATION

- A. Coordinate work with door opening construction, door frame and door hardware installation.

1.08 WARRANTY

- A. Provide manufacturer's written standard lifetime warranty for full, unlimited, replacement for the life of the original installation for new interior doors.
- B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, telegraphing core construction.

PART 2 PRODUCTS

2.01 DOOR TYPES

- A. Interior Doors: 1-3/4 inch flush wood doors.
 - a. Veneer Finish per Architectural Finishes List, Section 09 06 00.
- B. Factory Finish: Shop prime with polyurethane opaque finish
 - a. Color and door veneer species per Architectural Finishes List, Section 09 06 00.

2.02 FABRICATION

- A. Fabricate wood doors in accordance with requirements of the Woodwork Institute of California (WIC).
- B. Make cut-outs and provide stops for glass and louvers. Refer to Drawings for size of openings required.
- C. Bevel strike edge of single acting doors 1/8 inch in 2 inches. Radius strike edge of double acting swing doors 2-1/8 inches.
- D. Prepare doors to receive hardware. Refer to Section 08 71 00 for hardware requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that opening sizes and tolerances are acceptable.
- B. Do not install doors in frame openings that are not plumb or are out of tolerances for size or alignment.

3.02 DOOR PREPARATION

- A. Field, shop or factory preparation: Do not violate the qualified testing and inspection agency label requirements for fire rated doors.
- B. Clearances between Doors and Frames and Floors:
 - 1. Maximum 3 mm (1/8 inch) clearance at the jambs, heads, and meeting stiles, and a 19 mm (3/4 inch) clearance at bottom, except as otherwise specified.
 - 2. Maximum clearance at bottom of sound rated doors, light-proofed doors, doors to operating rooms, and doors designated to be fitted with mechanical seal: 10 mm (3/8 inch).
- C. Provide cutouts for special details required and specified.
- D. Rout doors for hardware using templates and location heights specified in Section, 08 71 00 DOOR HARDWARE.
- E. Fit doors to frame, bevel lock edge of doors 3 mm (1/8 inch) for each 50 mm (two inches) of door thickness, undercut where shown.
- F. Immediately after fitting and cutting of doors for hardware, seal cut edges of doors with two coats of water-resistant sealer.
- G. Finish surfaces, including both faces, top and bottom and edges of the doors smooth to touch.
- H. Apply a steel astragal to meeting style of active leaf of pair of doors or double egress smoke doors.

3.03 INSTALLATION

- I. Install doors in accordance with W.I.C. Technical Bulletin No. 429 REV 1-99.
- J. Trim door width by cutting equally on both jamb edges.
- K. Trim door height by cutting bottom edges to a maximum of 3/4 inch.
- L. Pilot drill screw and bolt holes.
- M. Machine cut for hardware. Core for hardware and cylinders.
- N. Coordinate the installation of glass and glazing in wood doors.
- O. Prime and/or seal all factory-made cutouts prior to delivery.
- P. Finishing: All four edges and both faces of doors shall be factory finished.

3.04 INSTALLATION TOLERANCES

- A. Coordinate to W.I.C. requirements for fit and clearance tolerances.
- B. Conform to W.I.C. requirements for maximum diagonal distortion.

3.05 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Steel access panels.

1.02 RELATED WORK

- A. All All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate sizes, materials, thickness, fabrication methods, panel door and frame reinforcement, anchorage, and installation details.
 - 2. Provide layout drawings, indicating dimensioned locations of proposed access panels, size of each panel, and installation details. Determine and indicate required access panels in finished surfaces, whether furnished under this section or as part of the Work of Fire Protection, Plumbing, Mechanical or Electrical Divisions.

1.04 QUALITY ASSURANCE

- A. Panels shall be provided with UL listings and labels.
- B. Access panels and frames shall be products of one manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Panels and Frames: Provide protection as required by manufacturer to protect panels from damage during storage.

PART 2 PRODUCTS

2.01 MATERIALS

A. Access Panels:

Non-Rated

Milcor

Karp

Nystrom

Plaster

K

DSC214M

APPW

Drywall

DW

DSC214M

APWB

Rated B-Label

Plaster

M

KRP150PR

APFR-WP

Drywall

M

KRP150FR

APFR-WP

B. Provide prime coat finish suitable for field painting for panels installed in other finishes.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide access panels in finish construction, where indicated on the Drawings, wherever required for access to concealed mechanical and electrical equipment, and where required by codes. Panels indicated on Architectural Drawings shall be furnished under this section. Required panels for access to equipment, but not indicated on Architectural Drawings, shall be furnished as part of the Work requiring the access.

3.02 INSTALLATION

- A. Install panels accurately in location, perfect alignment, plumb, straight and true. Brace to prevent displacement by adjacent Work.
- B. Examine panels after installation for proper opening, closing and clearances. Replace damaged or defective panels.

3.03 CLEAN UP

- A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.04 PROTECTION

- A. Protect the Work of this Section until Substantial Completion.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies aluminum entrances, storefronts and manual sliding doors and other components to make complete assemblies.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, Shop Drawings, Product Data, and Samples.
- B. Shop Drawings: (1/2 full scale) showing construction, anchorage, reinforcement, installation details and glass elevations and images.
- C. Manufacturer's Literature and Data:
 - 1. Doors, each type.
- D. Samples:
 - 1. Two samples of anodized aluminum of each color showing finish and maximum shade range. Glass showing color and finish.
- E. Manufacturer's Certificates:
 - 1. Stating that aluminum has been given specified thickness of anodizing.
 - 2. Indicating manufacturer's qualifications specified.

1.04 QUALITY ASSURANCE

- A. Approved by Architect is required of products of proposed manufacturer, or supplier, and will be based upon submission by Contractor certification.
- B. Certify manufacturer regularly and presently manufactures aluminum entrances and storefronts as one of their principal products.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, cure time, and mixing instructions.

- B. Store balanced glass door and aluminum material in weather-tight and dry storage facility.
- C. Protect from damage from handling, weather and construction operations before, during and after installation.

1.06 REFERENCES

- A. The publications listed below form a part of this specification to the extent reference. The publications are referenced in the text by the basic designation only.
- B. America Society for Testing and Materials (ASTM):
 - B209-07 Aluminum and Aluminum-Alloy Sheet and Plate
 - B221-08 Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - E283-04 Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - E331-00 (R2009) Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
 - F468-10 Nonferrous Bolts, Hex Cap Screws, and Studs for General Use
 - F593-03(R2008) Stainless Steel Bolts, Hex Cap Screws, and Studs
- C. National Association of Architectural Metal Manufacturers (NAAMM):
 - AMP 500 Series Metal Finishes Manual

PART 2 PRODUCTS

2.01 MATERIALS

- A. Aluminum, ASTM B209 and B221:
 - 1. Alloy 6063 temper T5 for doors, door frames, fixed glass sidelights, storefronts, windows and transoms.
 - 2. For color anodized finish, use aluminum alloy as required to produce specified color.
 - 3. Sheet and plate to conform to ASTM-B209.
- B. Thermal Break: Manufacturer standard low conductive material retarding heat flow in the framework, where insulation glass is scheduled.
- C. Fasteners:
 - 1. Aluminum: ASTM F468, Alloy 2034.
 - 2. Stainless Steel: ASTM F593, Alloy Groups 1, 2 and 3.
- D. Aluminum Entrance
 - 1. Basis of Design: Aluminum entrance door shall be wide stile series as manufactured by Kawneer (Series 500) or Tubelite Architectural Products. Sizes and sidelites shall be as scheduled on the plans

2. Glazing strips shall be square glass stops, snap-in, tamperproof, with no exposed screws. Provide neoprene gaskets for glazing strips.
 3. Provide tempered insulated glazing as specified in Section 08 80 00.
 4. Provide intermediate horizontal rail, 8 1/4" high.
 5. Provide 12" high bottom and top rail.
- E. Framing
1. Provide nominal 2" x 4 1/2" thermally-broken aluminum framing system with positive mechanical bonding of interior and exterior aluminum sections at exterior frames, as manufactured by door manufacturers. Interior frames non-thermally broken.
 - a. Finish: To match door and framing.
 2. Position frame and secure in opening with concealed fasteners to maintain the integrity of thermal breaks in frame and wall, and in accordance with details provided.
- F. Glazing
1. See Section 08 80 00.
- G. Hardware
1. Application of materials to provide bridge and seal air leakage pathways in
 - a. Finish: To match door and framing.
 2. Threshold: Kawneer extruded aluminum threshold for use with offset pivot hinges – clear anodized aluminum.
 3. Hinges: Continuous Hinge
 4. Weatherstripping: Kawneer sealair weather stripping system for single acting offset pivot doors. Include optional sill sweep in door.
 5. Closers: As specified in Section 08 71 00.
 6. See Section 08 71 00 for Controlled Exit Device specification and Electrical Specifications.
- H. Sealant
1. Glazing Sealant: Clear structural silicone sealant, G.E. Dow, or approved equal.
 2. Frame to masonry component gun grade polyurethane, Tremco, Bostic, or Sonneborn or approved equal. Color to be selected by Architect/Engineer.
- I. Miscellaneous: .060" thick aluminum break metal cladding at windows or doors. Finish to framing metals which it adjoins. Extruded aluminum at appropriate locations to prevent damage to framing and break metal.

2.02 FABRICATION

- A. Fabricated doors, of extruded aluminum sections not less than 3 mm (0.125 inch) thick. Fabricate glazing beads of aluminum not less than 1.0 mm (0.050 inch) thick.
- B. Accurately form metal parts and accurately fit and rigidly assemble joints, except those joints designed to accommodate movement. Seal joints to prevent leakage of both air and water.
- C. Make welds in aluminum in accordance with the recommended practice AWA D1.2. Use electrodes and methods recommended by the manufacturers of the metals and alloys being welded. Make welds behind finished surfaces so as to cause no distortion or discoloration of the exposed side. Clean welded joints of welding flux and dress exposed and contact surfaces.
- D. Make provisions in doors and frames to receive the specified hardware and accessories. Coordinate schedule and template for hardware specified under Section 08 71 00, Door Hardware. Where concealed closers or other mechanisms are required, provide the necessary space, cutouts, and reinforcement for secure fastening.
- E. Fit and assemble the work at the manufacturer's plant. Mark work that cannot be permanently plant-assembled to assure proper assembly in the field.

2.03 PROTECTION OF ALUMINUM

- A. Isolate aluminum from contact with dissimilar metals other than stainless steel, white bronze, or zinc by any of the following:
 - 1. Coat the dissimilar metal with two coats of heavy-bodied alkali resistant bituminous paint.
 - 2. Place caulking compound, on non-absorptive tape, or gasket between the aluminum and the dissimilar metal.
 - 3. Paint aluminum in contact with mortar, concrete and plaster, with a coat of aluminum paint primer.

2.04 FINISH

- A. In accordance with NAAMM AMP 500 Series.
- B. Fluorocarbon Finish: AAMA 605.2, high performance coating. Color Finish: Chemically etched medium matte, with integrally colored anodic coating Class I Architectural, 7 mils thick. More than 50 percent variation of the maximum shade range approved will not be accepted in a single component or in adjacent components, stiles, and rails on a continuous series.
- C. Color: See specification section 09 06 00 – Schedule for Finishes

2.05 DISTRIBUTION

- A. Framing and door to accept glass as indicated on the drawings and specified in Section 08 81 00.

- B. Hardware
Existing aluminum frames will be retained. New aluminum doors to be provided.
Hardware to match existing and be replaced in kind.
1. AL-1: (Each leaf)
 - Hinge
 - Closer
 - Overhead Stop
 - Push/Pull Bar Set
 - Weatherstripping
 2. AL-2: (Each leaf)
 - Hinge
 - Concealed Vertical Rod Exit Device
 - Entrance Lockset
 - Cylinder
 - Closer
 - Overhead Stop
 - Drip Cap
 - Door Sweep
 - Threshold
 - Weatherstripping

PART 3 EXECUTION

3.01 INSPECTION

- A. Beginning of installation shall signify acceptance of substrate and adjacent conditions as being proper and acceptable. Corrections of defects due to installation of products on unacceptable substrata will be at Contractor's expense at no additional cost to Owner.

3.02 INSTALLATION

- A. Fabricate only from approved shop drawings.
- B. Install all doors, frames, sidelites and accessories per manufacturer's written instructions and final shop drawings.
- C. Anchor securely in place; install plumb, level and in true alignment. Isolate dissimilar materials to prevent corrosion.
- D. Allowable Installation Tolerances: Install work plumb and true, in alignment and in relation to lines and grades shown. Variation of 3 mm (1/8 inch) in 2400 mm (eight feet), non-accumulative, is maximum permissible for plumb, level, warp, bow and alignment.
- E. Install hardware specified under Section 08 71 00, Door Hardware.

3.03 PROTECTION, CLEANING AND REPAIRING

- A. Remove all mastic smears and other unsightly marks, and repair any damaged or disfiguration of the work. Protect the installed work against damage or abuse.

- B. Adjust and check each operating item of hardware to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application specified.
- C. Clean-up premises of all litter, dirt, and debris created by work of this Section.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

A. This Section includes the following types of automatic entrance doors:

1. Exterior bi-parting, sliding automatic entrance doors.

1.02 RELATED WORK

A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

A. Underwriters Laboratories (UL):

1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

B. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):

1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
2. ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products

C. American Society for Testing and Materials (ASTM):

1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

D. American Association of Automatic Door Manufacturers (AAADM):

E. National Fire Protection Association (NFPA):

1. NFPA 101 – Life Safety Code.
2. NFPA 70 – National Electric Code.

- F. California Building Code, CBC.2019:
- G. Building Officials and Code Administrators International (BOCA), 1999:
- H. National Association of Architectural Metal Manufacturers (NAAMM):
 - 1. Metal Finishes Manual for Architectural and Metal Products.
- I. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
 - 2. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
 - 3. AAMA 701 Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals.

1.04 DEFINITIONS

- A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.
- B. Safety Device: Device that prevents a door from opening or closing, as appropriate.

1.05 PERFORMANCE REQUIREMENTS

- A. Provide automatic entrance door assemblies capable of withstanding structural loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Thermal Movements: Provide automatic entrance doors that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- C. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).
- D. Opening-Force Requirements for Egress Doors: Not more than 50 lbf (222 N) required to manually set door in motion if power fails, and not more than 15 lbf (67 N) required to open door to minimum required width.
- E. Closing-Force Requirements: Not more than 30 lbf (133 N) required to prevent door from closing.

1.06 SUBMITTALS

- A. Submit listed submittals in accordance with Conditions of the Contract and Division 1 Specification Sections.
- B. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work.

- C. Closeout Submittals:
 - 1. Owner's Manual.
 - 2. Warranties.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained for installation and maintenance of units required for this Project with 10 years of experience installing and maintaining sliding automatic entrances.
- B. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility certified under ISO 9001 and with company certificate issued by AAADM.
- C. Certifications: Automatic sliding door systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
 - 1. ANSI/BHMA A156.10.
 - 2. NFPA 101.
 - 3. Underwriter's Laboratories 325 (UL) listed.
 - 4. IBC
- D. Source Limitations: Obtain automatic entrance door assemblies through one source from a single manufacturer.
- E. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated. Refer to Section 01 60 00 Product Requirements.
- F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- G. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrance doors serving as a required means of egress.

1.08 PROJECT CONDITIONS

- A. Field Measurements: Installer and Contractor shall verify openings to receive automatic entrance door assemblies by field measurements before fabrication and indicate measurements on Shop Drawings.
- B. Mounting Surfaces: Installer and Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.
- C. Other trades: Installer shall advise Contractor of any inadequate conditions or equipment.

1.09 COORDINATION

- A. Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing automatic entrance doors to comply with indicated requirements.

- B. Electrical System Roughing-in: Coordinate layout and installation of automatic entrance door assemblies with connections to power supplies.

1.10 WARRANTY

- A. Automatic Entrance Doors shall be free of defects in material and workmanship for a period of one (2) years from the date of substantial completion.
- B. During the warranty period the State shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the State.
- C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 PRODUCTS

2.01 AUTOMATIC ENTRANCE DOORS

- A. Manufacturers: Stanley Access Technologies; Besam Entrance Solutions; or Horton Automatics.

2.02 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - 1. Headers, stiles, rails, and frames: 6063-T6
 - 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 - 3. Sheet and Plate: ASTM B 209.
- B. Sealants and Joint Fillers: Performed under Division 7 Section "Joint Sealants".

2.03 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

- A. Provide manufacturer's standard automatic entrance door assemblies including doors, sidelites, framing, headers, carrier assemblies, roller tracks, door operators, activation and safety devices, and accessories required for a complete installation.
- B. Sliding Automatic Entrance Doors:
 - 1. Bi-Parting sliding doors:
 - a. Configuration: Two sliding leaves and two full sidelites.
 - b. Traffic Pattern: Two-way.
 - c. Emergency Breakaway Capability: Sliding leaves only.
 - d. Mounting: Between jambs

1.04 COMPONENTS

- A. Framing Members: Manufacturer's standard extruded aluminum reinforced as required to support imposed loads.

1. Nominal Size: 1 ¾ inch by 4 ½ inch (45 by 115 mm).
- B. Stile and Rail Doors and Sidelites: Manufacturer's standard 1 ¾ inch (45 mm) thick glazed doors with extruded-aluminum tubular stile and rail members. Incorporate concealed tie-rods that span full length of top and bottom rails or mechanically fasten corners with reinforcing brackets that are welded.
 1. Glazing Stops and Gaskets: Snap-on, extruded-security aluminum stops and preformed gaskets.
 2. Stile Design: Narrow stile; 2 inch (51 mm) nominal width.
 3. Bottom Rail Design: Minimum 4 inch (102 mm) nominal height.
 4. Muntin Bars: Horizontal tubular rail member for each door; 2 inch (51 mm) nominal width.
- C. Glazing: Performed under Division 8 Section Glazing.
- D. Headers: Fabricated from extruded aluminum and extending full width of automatic entrance door units to conceal door operators, carrier assemblies, and roller tracks. Provide hinged or removable access panels for service and adjustment of door operators and controls. Secure panels to prevent unauthorized access.
 1. Mounting: Concealed, with one side of header flush with framing.
 2. Capacity: Capable of supporting doors up to 220 lb (100 kg) per leaf over spans up to 14 feet (4.3 m) without intermediate supports.
- E. Carrier Assemblies and Overhead Roller Tracks: Manufacturer's standard carrier assembly that allows vertical adjustment of at least 1/8 inch; consisting of urethane with precision steel lubricated ball-bearing wheels, operating on a continuous roller track. Support doors from carrier assembly by 2 inch diameter anti-riser wheels with factory adjusted cantilever and pivot assembly. Minimum two ball-bearing roller wheels and two anti-rise rollers for each active leaf.
 1. Minimum Load Wheel Diameter: 2 1/2 inch (64 mm).
- F. Thresholds: Manufacturer's standard thresholds as indicated below:
 1. Continuous standard tapered extrusion double bevel.
 2. All thresholds to conform to details and requirements for code compliance.
- G. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.
- H. Signage: Provide signage in accordance with ANSI/BHMA A156.10.

2.05 DOOR OPERATORS

- A. Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, operation under normal traffic load for type of occupancy indicated.

- B. Electromechanical Operators: Self-contained overhead unit powered by a minimum of 1/4 horsepower, permanent-magnet DC motor with gear reduction drive, microprocessor controller; and encoder.
1. Operation: Power opening and power closing.
 2. Features:
 - a. Adjustable opening and closing speeds.
 - b. Adjustable back-check and latching.
 - c. Adjustable braking.
 - d. Adjustable hold-open time between 0 and 30 seconds.
 - e. Obstruction recycle.
 - f. On/Off switch to control electric power to operator.
 - g. Energy conservation switch that reduces door-opening width.
 - h. Variable rate open/closed speed control.
 - i. Closed loop speed control with active braking and acceleration.
 - j. Variable obstruction recycle time delay.
 - k. Self adjusting stop position.
 - l. Self adjusting closing compression force.
 - m. Optional Switch to open/Switch to close operation.
 3. Mounting: Concealed.
 4. Drive System: Synchronous belt type.
- C. Electrical service to door operators shall be provided under Division 26 Electrical. Minimum service to be 120 VAC, 5 amps.

2.06 ELECTRICAL CONTROLS

- A. Electrical Control System: Electrical control system shall include a microprocessor controller and position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed. Systems utilizing external magnets and magnetic switches are not acceptable. A single controller shall be capable of controlling up to 2 operators per entrance system.
- B. Life Cycle Data Counter: The microprocessor control shall incorporate a non-re-settable counter to track door operation cycles.
- C. Controller Protection: The microprocessor controller shall incorporate the following features to ensure trouble free operation:
1. Automatic Reset Upon Power Up

2. Fuse Protection
 3. Electronic Surge Protection
 4. Internal Power Supply Protection.
 5. Software "Watchdog" protection in the case of software malfunction.
- D. Soft Start/Stop: A "soft-start" "soft-stop" motor driving circuit shall be provided for smooth normal opening and recycling.
- E. Safety Search Circuitry: Provide system to recycle the sliding panels when an obstruction is encountered during the closing cycle. If an obstruction is detected, the system shall search for that object on the next closing cycle by reducing door closing speed prior to the previously encountered obstruction location, and will continue to close in check speed until doors are fully closed, at which time the doors will reset to normal speed. If obstruction is encountered again, the door will come to a full stop. The doors shall remain stopped until obstruction is removed and operate signal is given, resetting the door to normal operation.
- F. Programmable Controller: Microprocessor controller shall be programmable and shall be designed for connection to a local configuration tool. Local configuration tool shall be software driven and shall be utilized via Palm® handheld interface. The following parameters may be adjusted via the configuration tool.
1. Operating speeds and forces as required to meet ANSI/BHMA A156.10.
 2. Adjustable and variable features as specified in 2.05, B., 2.
 3. Reduced opening position.
 4. Firmware update.
 5. Trouble Shooting
 - a. I/O Status.
 - b. Electrical component monitoring including parameter summary.
 6. Entrance profile copy/paste.
- G. Software for local configuration tool shall be available as a free download from the sliding automatic entrance manufacturer's internet site.

2.07 ACTIVATION AND SAFETY DEVICES

- A. Motion Sensors: Motion sensors shall be mounted on each side of door header to detect pedestrians in the activating zone, and to provide a signal to open doors in accordance with ANSI/BHMA A156.10. Units shall be programmable for bi-directional or uni-directional operation and shall incorporate K-band microwave frequency to detect all motion in both directions.
- B. Presence Sensors: Presence sensors shall be provided to sense people or objects in the threshold safety zone in accordance with ANSI/BHMA A156.10. Units shall be self-contained, fully adjustable, and shall function accordingly with motion sensors provided. The sensor shall be enabled simultaneously with the door-opening signal and shall emit

an elliptical shaped infrared presence zone, centered on the doorway threshold line. Presence sensors shall be capable of selectively retuning to adjust for objects which may enter the safety zone; tuning out, or disregarding, the presence of small nuisance objects and not tuning out large objects regardless of the time the object is present in the safety zone. The door shall close only after all sensors detect a clear surveillance field.

- C. Photoelectric Beams: In addition to the threshold sensor include a minimum of two (2) doorway holding beams. Photoelectric beams shall be pulsed infrared type, including sender receiver assemblies for recessed mounting.

2.08 HARDWARE

- A. Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrances and uses indicated.
- B. Emergency Breakaway Feature: Provide release hardware that allows panel(s) to swing out in direction of egress to full 90 degrees from any position in sliding mode. Maximum force to open panel shall be 50 lbf (222 N) according to ANSI/BHMA A156.10. Interrupt powered operation of panel operator while in breakaway mode.
 - 1. Emergency breakaway feature shall include at least one adjustable detent device mounted in the top of each breakaway panel to control panel breakaway force.
- C. Exterior sliding doors shall be equipped keyed deadbolt, with indicating window and signed "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE OCCUPIED". Sign shall have letters not less than 1 inch in height and the color shall contrast to the background color.
- D. Provide solenoid lock assembly to automatic sliding doors. Solenoid lock assembly wired so that when the door "Enter" switch is set to the "Yes" or "Automatic" position that lock remains constantly unlocked. The inside and outside sensors operate the door. Provide 24VDC power supply. Door position switch, side screen switch and counter.
- E. Control Switch: Provide manufacturer's standard header mounted rocker switches to allow for full control of the automatic entrance door. Controls to include, but are not limited to:
 - 1. Power On/Off
 - 2. Reduced Opening
 - 3. Open/Closed/Automatic
- F. Sliding Weather Stripping: Manufacturer's standard replaceable components complying with AAMA 701; made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.
- G. Weather Sweeps: Manufacturer's standard adjustable nylon brush sweep mounted to underside of door bottom.

2.09 FABRICATION

- A. Factory fabricates automatic entrance door assembly components to designs, sizes, and thickness indicated and to comply with indicated standards.
 - 1. Form aluminum shapes before finishing.

2. Use concealed fasteners to greatest extent possible.
 - a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
 - b. Reinforce members as required to receive fastener threads.
- B. Framing: Provide automatic entrance doors as prefabricated assemblies.
 1. Fabricate tubular and channel frame assemblies with manufacturer's standard mechanical or welded joints. Provide sub-frames and reinforcement as required for a complete system to support required loads.
 2. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
 3. Form profiles that are sharp, straight, and free of defects or deformations.
 4. Prepare components to receive concealed fasteners and anchor and connection devices.
 5. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.
- C. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.
- D. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.
- E. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated.
- F. Hardware: Factory install hardware to the greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site.

2.10 ALUMINUM FINISHES

- A. Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.
- B. Class II, Clear Anodic Finish: AA-M10C22A31 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.40 mils minimum complying with AAMA 611-98, and the following:
 1. AAMA 607.1
 2. Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.
- C. Color: See specification section 09 06 00 – Schedule for Finishes

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine conditions for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of automatic entrance doors. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Do not install damaged components. Fit frame joints to produce joints free of burrs and distortion. Rigidly secure non-movement joints.
- B. Entrances: Install automatic entrance doors plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
 - 1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
 - 2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.
- C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.
- D. Glazing: Install glazing as specified in Division 8 Section "Glazing".
- E. Sealants: Comply with requirements specified in Division 7 Section "Joint Sealants" to provide weather tight installation.

3.03 FIELD QUALITY CONTROL

- A. Testing Services: Factory Trained Installer shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.04 ADJUSTING

- A. Adjust door operators, controls, and hardware for smooth and safe operation, for weather-tight closure, and complying with requirements in ANSI/BHMA A156.10.

3.05 CLEANING AND PROTECTION

- A. Clean glass and aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish. Comply with requirements in Division 8 Section "Glazing", for cleaning and maintaining glass.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This section includes translucent sandwich panel skylights and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM International:
 - 1. ASTM E 84 Standard Test Method for flame spread and smoke development.
 - 2. ASTM D 635 Standard Test Method for burn extent.
 - 3. ASTM D 2244 in accordance with ASTM D 1435 Standard Test Method for Color change.
 - 4. UL 972 Standard Test Method for Impact strength.
 - 5. ASTM D 1037 Standard Test Method for Accelerated aging.
 - 6. ASTM C 297 Standard Test Method for Bond strength.
 - 7. ASTM D 1929 Standard Test Method for Self-ignition.
 - 8. ASTM E 108 Standard Test Method for Class A burning brand.
 - 9. ASTM E 283 Standard Test Method for Air infiltration.
 - 10. ASTM E 331 Standard Test Method for Water penetration.
 - 11. ASTM E 72 and E 330 Standard Test Method for Uniform load deflection.
 - 12. ASTM E 661 Standard Test Method for Concentrated and Impact.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including preparation

instructions and recommendations, storage and handling requirements, installation methods and maintenance instructions.

- B. Shop Drawings: Include plans, elevations, sections, and details, indicating dimensions, tolerances, profiles, anchorage, connections, fasteners, provisions for expansion and contraction, drainage, flashing, finish, glazing, and attachments to other Work.
- C. Samples:
 - 1. Submit sample sets of color chips for initial selection representing manufacturer's full range of available colors and finishes.
- D. Design Data:
 - 1. Submit manufacturer's structural calculations showing sizes of framing members and loads applied to supporting structure based on design loads.
- E. Test Reports: Submit certified test reports from a qualified independent testing agency, indicating skylights comply with specified requirements. Submit results from the following:
 - 1. Flame spread and smoke development, ASTM E 84.
 - 2. Burn extent, ASTM D 635.
 - 3. Color change, ASTM D 2244 in accordance with ASTM D 1435.
 - 4. Impact strength, exterior face sheets, UL 972.
 - 5. Accelerated aging, ASTM D 1037.
 - 6. Bond strength, ASTM C 297.
 - 7. Self-ignition, ASTM D 1929.
 - 8. Class A burning brand, ASTM E 108.
 - 9. Air infiltration, ASTM E 283.
 - 10. Water penetration, ASTM E 331.
 - 11. Uniform load deflection, ASTM E 72 and E 330.
 - 12. Concentrated and Impact, ASTM E 661.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum ten years documented experience in the fabrication of skylights of the type required for this project and capable of providing field service representation during installation.
- B. Installer Qualifications: Minimum five years documented experience in the work of this section, specializing in work similar to project requirements and approved by manufacturer.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and installation location.
- B. Storage/Handling: Store products above the floor and under cover in a clean, dry area until installation. Protect materials and finish from damage during handling and installation.

1.07 SITE CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.08 WARRANTIES

- A. Material Workmanship: Provide manufacturer's standard 5 year warranty.
- B. Exterior Fiberglass Color Change: Provide manufacturer's standard 10 year warranty.
- C. Fiberglass Fiberbloom: Provide manufacturer's standard 20 year warranty.
- D. Metal Finishes: 50% Kynar® Paint: Provide manufacturer's standard 5 year / optional 10 year warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Manufacturer:
Major Industries Inc., 7120 Stewart Ave, Wausau, WI 54401
Contact: Charlie Kennedy, Collier Building Specialties, (415) 467-9235 x130.
- B. Acceptable manufacturers for approval include: Kalwall; or approved equal.

2.02 TRANSLUCENT SKYLIGHTS

- A. Basis of Design fiberglass sandwich panel skylight system, and associated products and accessories:
 - 1. Guardian 275® Translucent Skylight System; or approved equal.

2.03 DESIGN / PERFORMANCE REQUIREMENTS

- A. Performance Requirements:
 - 1. Framing Members: Sufficient sizes required to support design loads.
 - 2. Deflection Limits: Shall not exceed L/60 per IBC code requirements.
 - 3. Safety Factors: Allowable stresses shall incorporate the following safety factors, unless otherwise specified:
 - a. Load Carrying Members: 1.65
 - b. Load Carrying Fasteners: 2.0
 - 4. Expansion and Contraction: Design and install components with provisions for expansion and contraction due to a 100 degree F (56 degrees C) temperature variation.

5. Design Loads: Framing components shall be designed to support following loads:
 - a. Live Load / Wind Load: 0 PSF (interior installation, not exposed to exterior elements)

2.04 COMPONENTS

A. Translucent Panel Units:

1. Construction: Facings of ICC ES listed architectural-grade fiberglass reinforced polymer sheets bonded under controlled heat and pressure to a mechanically-interlocked aluminum I-beam grid core to form double-faced, self-supporting, structural composite sandwich panels.
 - a. Thickness: 2-3/4 inches (699 mm).
 - b. Panel Size: 4 feet wide x 20 feet long
 - c. Total Panel Count: 7
 - d. U-Factor: Center of Panel U-factor (for glazing comparison only).
 - a. 2-3/4 inch: 0.48 (No insulation).
 - e. Grid Pattern: In-line Shoji (12 inch x 24 inch maximum grid size).
 - f. Unbonded Areas: Maximum of 4 unbonded areas, a maximum of 3/64 inch (.11 mm) in diameter, in an area a maximum of 40 square feet of panel surface.
 - g. Panel Corners: Notch and interlock or reinforce with aluminum for radius conditions.
 - h. Assembly: Factory assembled. Field assembly of panels not allowed.
2. Physical Properties:
 - a. ASTM E 108 - Burning Brand: Class A rating.
 - b. ASTM E 72 and E 330 - Uniform Load Deflection.
3. I-Beam Grid Core:
 - a. Material: Mechanically interlocked Aluminum Alloy 6061-T6.
 - b. 7/16 inch (11 mm) minimum flange width, 0.050 inch (1.27 mm) web thickness.
 - c. Full surface contact with face sheets.
4. Adhesive:
 - a. Waterproof resin for use in laminating face sheet to aluminum grid core.

- b. Impact and Thermal Shock: Adhesive capable of withstanding impact and thermal shock normally encountered in exterior construction.
 - c. Adhesive Bond Line: Straight, black, cover entire width of I-beam, with neat edge.
 - d. Initial Adhesive Bond Strength: Shear Strength, ASTM D 1002: 563 psi., Tensile Strength, ASTM C 297: 557 psi minimum.
 - e. Aged Adhesive Bond Strength, ASTM D 1037: Shear Strength, ASTM D 1002: 1212 psi., Tensile Strength, ASTM C 297: 914 psi.
- 5. Translucent Face Sheets:
 - a. Appearance of Face Sheets:
 - 1) Uniform in color to prevent splotchy appearance.
 - 2) Free of ridges, wrinkles, clusters of air bubbles and pinholes.
 - 3) ICC-ES listed (ESR-2855).
 - b. Exterior Face Sheet:
 - 1) ASTM D 2244: Color change shall not exceed 3.0 Delta E units after 5 years of weathering (accelerated Arizona / simulated South Florida testing).
 - 2) Impact Strength, UL 972 / Thickness:
 - a) Standard - 70 foot-pounds / 0.070 inches (1.77 mm).
 - 3) Color: Crystal.
 - c. Interior Face Sheet:
 - 1) Flame Spread, ASTM E 84: 10 maximum.
 - 2) Smoke Development, ASTM E 84: 300 maximum.
 - 3) Burn Rate, ASTM D 635: 1.0 inch per minute maximum.
 - 4) Self-Ignition, ASTM D 1929: Greater than 650 degrees F.
 - 5) Thickness: Standard - 0.045 inches.
 - 6) Color: White.
- B. Components and Framing:
 - 1. Aluminum:
 - a. Extruded Aluminum: ASTM B 221, Alloy 6063-T5/T6, 6061-T5/T6.
 - b. Formed Aluminum Components and Flashing: ASTM B 209, Alloy 5005-

H34.

- c. Minimum Thickness: 0.040 inch.

2. Glazing Gaskets:

- a. Factory installed (in extruded dovetail slots) EPDM hybrid, 9/16 inch wide.
- b. Compression Deflection, 25% Deflection Limits, ASTM D 1056, 13 to 24 psi.
- c. Compression Set, 22 Hours at 158 Degrees F, ASTM D 395, Method B: 30 psi.
- d. Heat Aging, 70 Hours at 212 Degrees F, Change in Compression Values, ASTM D 865 and D 1056: 0 to 10 psi.
- e. Ozone Resistance at 40% Elongation, 100 Hours at 104 Degrees F, ASTM D 1149: Type I, 1 Ppm Ozone: No cracks / Type II, 3 Ppm Ozone: No cracks.
- f. Straining of Surface, ASTM D 925: Non-straining, no migratory strain.

- C. Expansion and Contraction: Design and install components with provisions for expansion and contraction due to a 100 degree F temperature variation.

D. Glazing Caps:

- 1. Extruded aluminum.
- 2. Attach glazing caps with glazing cap fasteners located at a maximum of 12 inches on center or as required to resist negative loading.

E. Fasteners:

- 1. Clips for Attachment of Rafter Bars: Aluminum - attach using bolted fastening methods.
- 2. Construction and Glazing Cap Fasteners: 18-8 stainless steel - include gasketed sealing washers.
- 3. Field Anchors: Cadmium plated, unless otherwise specified.
- 4. Exposed Fasteners: Finish to match aluminum.

2.05 FABRICATION

- A. Construct skylights of extruded aluminum shapes similar to sections indicated on the Drawings.

2.06 ALUMINUM FINISHES

- A. Pigmented Organic Coating: 50% Kynar® / AAMA 2604.
 - 1. Color: Selected from standard non-metallic/non-exotic colors.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Examine areas to receive translucent skylights with installer and manufacturer's representative present, including supporting structure and substrate for dimensions, tolerances, material conditions, and support.
- B. Notify Architect of conditions that would adversely affect installation or subsequent utilization of skylights and do not proceed until conditions are corrected.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Ensure supports to receive skylights are clean, flat, level, plumb, and square.
- C. Aluminum Protection: Where aluminum will contact dissimilar materials, apply a coating of bituminous paint or other neutral material or separate with a nonabsorbent isolator.

3.03 INSTALLATION

- A. Install skylights level, plumb, square, and accurately aligned, and in accordance with manufacturer's instructions at locations indicated on the approved drawings.
- B. Do not install skylight components with deficiencies or dimensional errors. Do not proceed with installation until unsatisfactory components are replaced.
- C. Anchor skylights securely to supports using attachment methods that permit adjustment for construction tolerances, irregularities, alignment, and expansion and contraction.
- D. Install skylights including flashings, fasteners, hardware, sealants, and glazing materials required for a complete, weatherproof installation.

3.04 CLEANING

- A. Clean skylights inside and outside, including member connections and inside corners, immediately after installation and after sealants have cured, but not more than 10 days after installation.
- B. Follow related cleaning instructions in accordance with manufacturer's recommendations.

3.05 PROTECTION

- A. Protect installed products until completion of scope of work.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This Section includes door hardware.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Submit product data including installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: Submit shop drawings with details of door hardware:
- D. Samples: Submit samples of exposed door hardware for each type indicated below, in specified finish. Tag with full description for coordination with the Door Hardware Schedule.
 - 1. Door Hardware: As follows:
 - a. Locks and latches.
 - b. Operating trim.
 - 2. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
- E. Door Hardware Schedule: Submit door hardware schedule prepared by or under the supervision of door hardware supplier. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware. The Architect's review of schedule shall neither be construed as a complete check nor shall it relieve the Contractor of responsibility for errors, deviations, or omissions from the specified requirements to provide complete door hardware for the project.
 - 1. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.

- a. Organize door hardware sets in same order as in the Door Hardware Schedule at the end of Part 3.
- 2. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware. Supply templates to door and frame manufacturer(s) to enable proper and accurate sizing and locations of cutouts for hardware. Detail any conditions requiring custom extended lip strikes, or any other special or custom conditions.
 - g. Door and frame sizes and materials.
- F. Warranties: Submit special warranties specified in this Section.
- G. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware. Written verification and testing results for door operating pressures.
- H. Installation Instructions: Provide manufacturer's installation instructions for each type of hardware item for owner's maintenance at completion of work.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Supplier Qualifications: Door hardware supplier, who has completed a minimum of three (3) projects over the last 5 years which were similar in material, design and extent to that indicated for the project - as determined by the Architect – and which have resulted in construction with a record of successful in service performance, and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
- C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
- D. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

- E. Regulatory Requirements: Comply with the following:
 - 1. Provide hardware items complying with the applicable provisions for accessibility and usability by the disabled and handicapped in compliance with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)."
 - 2. NFPA 101: Comply with applicable provisions for means of egress doors.
- F. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 - 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2. Preliminary key system schematic diagram.
 - 3. Address for delivery of keys.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to electrified and mechanical door hardware including, but not limited to, the following:
 - 1. Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review required testing, inspecting, and certifying procedures.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule and include basic installation instructions with each item or package.

1.06 COORDINATION

- A. Templates: Furnish templates and door hardware schedules, coordinated for the application of door hardware items with door and frame details, to door opening fabricators and trades performing door opening work to permit the preparation of doors and frames to receive the specified door hardware. The fabricated prep and installation shall be in compliance with the lock manufacturer's recommendations, requirements and templating. Where the door hardware item scheduled is not adaptable to the finished size of door opening members requiring door hardware, submit an item having a similar operation and quality to the Architect for review. Each door hardware item shall be fabricated to templates.

1.07 WARRANTY

- A. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 - 1. Faulty operation of door hardware.
 - 2. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

PART 2 PRODUCTS

2.01 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in this Section, door hardware sets are keyed to each scheduled door in the door and frame schedule, and the Door Hardware Schedule at the end of Part 3.
 - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturer's products.
 - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
 - 3. The hardware supplier shall review each hardware set and compare it with the door types, details, and sizes as shown and verify each hardware item for function, hand, backset, and method of fastening through shop drawing submittals.

2.02 HINGES AND PIVOTS

- A. Butt Hinge Products and Manufacturers:
 - 1. Standard Weight, Ball Bearing, 5 Knuckle, Steel: Complying with BHMA A156.1 A8112, one of the following:
 - a. BB5000; Bommer Industries, Inc. (BI).
 - b. BB1279; Hager Companies (HAG).
 - c. TA2714; McKinney Products Company (MCK).
 - d. FBB179; Stanley Commercial Hardware (STH).
 - 2. Heavy Weight, Ball Bearing, 5 Knuckle, Steel: Complying with BHMA A156.1 A8111, one of the following:
 - a. BB5004; Bommer Industries, Inc. (BI).
 - b. BB1168; Hager Companies (HAG).
 - c. T4A3786; McKinney Products Company (MCK).
 - d. FBB168; Stanley Commercial Hardware (STH).

3. Heavy Weight, Ball Bearing, 5 Knuckle, Stainless Steel: Complying with BHMA A156.1 A5111, one of the following:
 - a. BB5006; Bommer Industries, Inc. (BI).
 - b. BB1199; Hager Companies (HAG).
 - c. T4A3386-32D; McKinney Products Company (MCK).
 - d. FBB199(US32D); Stanley Commercial Hardware (STH).
 4. Heavy Weight, Ball Bearing, 5 Knuckle, Steel, Concealed Electric 24V, 4 Wire: Complying with BHMA A156.1 A8111, one of the following:
 - a. BB5064 (ETW04); Bommer Industries, Inc. (BI).
 - b. BB1168 x ETW-4; Hager Companies (HAG).
 - c. T4A3786 x CC-4; McKinney Products Company (MCK).
 - d. CEFBB168-54; Stanley Commercial Hardware (STH).
 5. Heavy Weight, Ball Bearing, 5 Knuckle, Stainless Steel, Concealed Electric 24V, 4 Wire: Complying with BHMA A156.1 A5111, one of the following:
 - a. BB5066 (ETW04); Bommer Industries, Inc. (BI).
 - b. BB1199 x ETW-4; Hager Companies (HAG).
 - c. T4A3386-32D x CC-4; McKinney Products Company (MCK).
 - d. CEFBB199(US32D)-54; Stanley Commercial Hardware (STH).
 6. Standard Weight, Ball Bearing, 5 Knuckle, Steel, Concealed Electric 24V, 4 Wire: Complying with BHMA A156.1 A8112, one of the following:
 - a. BB5060 (ETW04); Bommer Industries, Inc. (BI).
 - b. BB1279 x ETW-4; Hager Companies (HAG).
 - c. TA2714 x CC-4; McKinney Products Company (MCK).
 - d. CEFBB179-54; Stanley Commercial Hardware (STH).
- B. General Hinge Characteristics: Where door jamb or trim projects to such an extent that the width of leaf specified will not allow the door to clear such frame or trim, furnish hinges and pivots with leaves of sufficient width to clear. Hinges and pivots shall be template hinges conforming to BHMA A156.1 and in accordance with door and frame material requirements.
- C. Butt Hinge Quantity: Provide the following, unless otherwise indicated:
1. Two Hinges: For doors with heights up to and including 60 inches (1524 mm).

2. Three Hinges: For doors with heights of greater than 60 inches (1524 mm) to and including 90 inches (2286 mm).
 3. Four Hinges: For doors with heights greater than 90 inches (2286 mm) to and including 120 inches (3048 mm).
 4. Provide 4 hinges, plus 1 hinge for every 30 inches (750 mm) of door height greater than 120 inches (3048 mm).
- D. Butt Hinge Sizes: 4-1/2 inches (114 mm) h. by 4 inches (102 mm) or 4-1/2 inches (114 mm) w. for doors up to and including 36 inches (914 mm) in width; 5 inches (127 mm) h. by 4 inches (102 mm) or 4-1/2 inches (114 mm) w. for doors greater than 36 inches (914 mm) in width.
- E. Hinge Characteristics: Full mortise type with square corners. All butt hinges are to have nonrising pins for interior hinges and all exterior butt hinges are to be made of non-ferrous base metal. Hinges at all locked outswinging doors shall have non-removable pins (NRP). Provide only steel bodied butt and pivot hinges at labeled doors. All butt hinges shall be furnished with button tips.
- F. Electrified Functions for Hinges: Furnish fully concealed circuit, tamper resistant, wired hinges at doors requiring power transfer or door monitoring from jamb to door. Furnish junction box and mortar shield for use with each wired hinge and ship directly to the door and frame manufacturer(s) for fastening to frame.
- G. Fasteners: Package all hinges and pivots with machine and wood screws as required by door and frame construction.

2.03 LOCKS AND LATCHES

- A. Mortise Lock and Latch Sets: Heavy duty, commercial, mortise bodies complying with BHMA A156.13 Series 1000, Grade 1, with through-bolted lever trim. Furnish mortise type, field reversible, lock and latch sets with 1 or 2 piece anti-friction deadlocking brass or stainless steel latch-bolts having a minimum 3/4 inch (19 mm) throw, 2-3/4 inches (70 mm) backset, and UL listed for 3 hour doors. All lock and latch sets, to be furnished complete with heavy gage wrought steel zinc dichromate or chrome plated case, trim, adjustable beveled square cornered armored fronts, steel or stainless steel hubs, and 6 pin Best cylinders. Conceal fastenings, washers and bushings. Provide wrought, or black plastic, box strikes for each lock and latch set with curved lips of sufficient length to protect frames. Provide solid forged or cast levers with wrought roses. Where lock functions are scheduled provide non-handed guard bolt and stainless steel deadbolt with a minimum 1 inch (25 mm) throw. Where electro-mechanical locksets are scheduled provide transformers properly sized for conversion of power supply to the power characteristics of the electromechanical locksets. Use Schlage L mortise locks, Best 6 pin cylinders. Trim will be cast stainless steel with antimicrobial finish unless otherwise specified.
1. Schlage L9000 Series, 17 Design x A Rose; Schlage Lock Company (SCH). Provide handed ANSI 4-7/8" curved lip strikes die punched to match bolts provided with latch-set functions only (Part No. XL11-820/XL11-821), provide non-handed standard curve lip strikes for all other functions 10-072. Where electro-mechanical locksets are scheduled provide L9000EL Series with trim matching mechanical locksets. Touch pads only on Exit Devices. No crossbar arm designs.

2.04 ELECTROMAGNETIC LOCKS

- A. Exposed, Surface Applied Type: Surface mount application with a minimum 1650 pound holding force at 24 V, provide complete with all cabling, rectifier kits, holding force sensors, adjustable time delay, and mounting hardware, complying with BHMA A156.23, Grade 1, high security, fail-safe operation.

1. Magnalock Model M62B; Securitron (SEC).

2.05 DOOR BOLTS

- A. Manual Flush Bolts: Provide flush bolts, with 1" wide fronts, in paired sets (top and bottom), with 1/2" diameter flattened bolt tip and standard 12" rod. Flush bolts shall fit ANSI A115.4 door and frame preparation. Flush bolts in wood and metal fire doors shall be A Label UL Listed. Bolts for fire doors to comply with BHMA A156.16, Type L14081, L14251 or L24081. Furnish rods of proper length to afford easy reach from the floor. Furnish manufacturers standard top strikes for top bolts.

1. Manual Flushbolts for Fire Rated Wood Doors: One of the following:

- a. No. 790F; Door Controls International (DCI).
- b. FB358; Ives: H. B. Ives (IVS).
- c. 3913; Triangle Brass Manufacturing Company, Inc. (TBM).
- d. 557; Rockwood Manufacturing Company (RM).

2. Manual Flushbolts for Fire Rated Metal Doors: One of the following:

- a. No. 780F; Door Controls International (DCI).
- b. FB458; Ives: H. B. Ives (IVS).
- c. 3917; Triangle Brass Manufacturing Company, Inc. (TBM).
- d. 555; Rockwood Manufacturing Company (RM).

- B. Self-Latching Flush Bolt Assemblies for Metal Fire Doors: BHMA A156.3, Type 27; one of the following:

- 1. No. 845 (805 top bolt x 840 automatic bottom bolt); Door Controls International (DCI).
- 2. FB51P (FB51T constant latching top bolt x FB31B automatic bottom bolt; Ives: H. B. Ives (IVS).
- 3. 3820 (3820 x 3810); Triangle Brass Manufacturing Company, Inc. (TBM).
- 4. 1845 automatic flush bolt x constant self-latching top bolt; Rockwood Manufacturing Company (RM).

2.06 EXIT DEVICES

- A. Exit Devices: Exit devices and exit device accessories shall conform to BHMA A156.3, Grade 1. Trim shall be wrought construction and commercial plain design with straight,

beveled or smoothly rounded sides, corners and edges. Keyed devices shall be furnished less cylinders. Cylinders shall be as herein specified keyed to building system.

- B. Push Pad Style Exit Devices:
 - 1. 98 series Function with Schlage Lever 17A and Trim as Scheduled Von Duprin in 630 (US32D) with antimicrobial finish. No substitutions.
- C. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- D. Fire Exit Devices: Complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.
- E. Outside Trim: Match design for locksets and latchsets, unless otherwise indicated. Adjustable strikes provided for Rim and Vertical Rod Exit Devices. Exit Devices shall be installed with proprietary 32 series Medeco, I/C cylinders and cores

2.07 CYLINDERS AND KEYING

- A. Cylinders: Full faced interchangeable core cylinders with square shouldered (not tapered) compression rings, 6 pin cylinders, standard threaded, keyed into building system, with cams to suit lock functions. Provide cylinders for installation into all locks and key-operated electrical switching devices keyed to the instructions by the Best.
- B. Keying System: Final keying to determine lock cylinders, keyed alike sets, level of keying, master key groups, grandmaster keying system shall be as directed by the Owner. Supplier and Contractor shall meet with the Owner and obtain final instructions in writing.
 - 1. Construction Keyed Cylinders: Provide construction keyed cylinders in locks during construction and as may be necessary for security or as may be requested by the Owner. Upon completion of the construction phase, construction keyed cylinders shall be voided mechanically without removal of the cylinder housing from the locks. All construction keyed cylinders shall be individually keyed as required.

2.08 STRIKES

- A. Strikes for Locks and Latches: All strikes for locks and latches shall be provided by the lock and latch manufacturer unless otherwise specified or scheduled, refer to Article 'Locks and Latches'.
- B. Dustproof Floor Strikes: Complying with BHMA A156.16, Type L04251 or L14021, one of the following:
 - 1. No. 80; Door Controls International.
 - 2. DP2; H.B. Ives.
 - 3. 3910; Triangle Brass Manufacturing Company, Inc. (TBM).
 - 4. 570 x 571; Rockwood Manufacturing Company (RM).
- C. Dustproof Threshold Strikes: Complying with BHMA A156.16, Type L2402X or L14011, one of the following:

1. No. 81; Door Controls International.
2. DP1; H.B. Ives.
3. 3911; Triangle Brass Manufacturing Company, Inc. (TBM).
4. 572; Rockwood Manufacturing Company (RM).

2.09 OPERATING TRIM (PUSHES AND PULLS)

- A. Types as scheduled on Door Hardware Schedule.

2.10 ACCESSORIES FOR PAIRS OF DOORS

- A. Tubular Coordinators and Filler Bars: UL listed for use on labeled doors and complying with BHMA A156.3, Type 21A. Provide with filler piece of length as required to close the header area and mounting brackets at stop mounted hardware. Furnish extenders at active leaf levers where required to clear overlapping astragals on doors installed with pocket pivot hinges or jambs with deep jamb stops.
1. No. 600 Series x Filler Bar; Door Controls International (DCI).
 2. COR Series Coordinators x FL filler; H. B. Ives (IVS).
 3. 1600 Series; Rockwood Manufacturing Company (RM).
- B. Coordinator Brackets: UL listed for use on labeled doors and complying with BHMA A156.3, Type 21B. Minimum 7-inch (178-mm) projection.
1. No. 500 Coordinator; Door Controls International (DCI).
 2. CORG7; H. B. Ives (IVS).
 3. 576; Rockwood Manufacturing Company (RM).
- C. Carry Open Bars: UL listed for use on labeled doors and complying with BHMA A156.3, Type 21. Provide carry-open bars for inactive leaves of pairs of doors, unless automatic or self-latching bolts are used.
1. No. CB Carry Bar; Door Controls International (DCI).
 2. CB1 Carry Bar; H. B. Ives (IVS).
 3. 1100; Rockwood Manufacturing Company (RM).
- D. Astragals: UL listed for use on labeled doors, surface applied continuous extruded aluminum minimum 7/8" wide retaining EPDM gaskets for installation on both sides of all meeting stiles of doors:
1. 125NA; National Guard Products, Inc. (NGP).
 2. 305CN; Pemko Manufacturing Co., Inc. (PEM).
 3. WS235; Ultra Industries; a Macklanburg-Duncan Company (ULT).

- E. Lock Protectors: Fabricated from heavy gauge metal and in finish as scheduled. Fabricate lock protectors with no exposed fasteners on face of lock protector. Furnish protectors sized to cover the latch bolt area of the door and lock and narrow enough to clear rose and escutcheon lock trims, offset formed to clear strike projection. Machine lock protectors where required to accommodate rose and escutcheon trims, and cylinders.

- 1. LG Series Lock Guards; H. B. Ives (IVS).

2.11 CLOSERS

- A. Surface-Mounted Closers: Closers shall be certified by ETL laboratories and the manufacturer to a minimum of 8,000,000 cycles and meet BHMA A156.4, Grade 1. Closers shall be warranted by the manufacturer against defects in materials and workmanship for a minimum of 10 years. Closers used in conjunction with overhead stops and holders shall be templated and coordinated to function properly. Properly detail closers to meet application requirements by providing drop plates, brackets, etc. to meet application and installation requirements as indicated. Comply with manufacturers recommendations for size of door closer depending on size of door, stack pressure conditions, exposure to weather, and anticipated frequency of use. Closers shall have adjustable spring power, full rack and pinion, independent closing speed and latch regulating V-slotted valves, fully hydraulic with a high strength cast iron cylinder and solid forged steel arms, bore diameter of 1-1/2", pinion shaft diameter of 5/8", adjustable back check, cushion and built-in stop feature where scheduled, hold open arms where scheduled, delayed action where scheduled, arm finish to match closer cover finish scheduled. Provide metal covers of clean line design with plated or primed for paint finish as scheduled and that require removal in order to make adjustments to closer.

- 1. 4111/4011; LCN Closers (LCN).
 - 2. 4041; LCN Closers (LCN).
 - 3. 2030 series concealed in aluminum storefront; LCN Closers (LCN).

2.12 PROTECTIVE TRIM UNITS

- A. Kick and Armor Plates: Fabricate protection plates from minimum 0.050 inch (1.3 mm) thick stainless steel, beveled top and 2 sides (B3E), square corners, complying with BHMA A156.6, and fastened with oval head Phillips fasteners countersunk into plate surface.

- 1. Series 8400; Ives: H. B. Ives (IVS).
 - 2. K1050 Doorplate Series; Rockwood Manufacturing Company (RM).
 - 3. KA050-2 Armor Plate and KOO50 for Kickplates; Triangle Brass Manufacturing Company, Inc. (TBM).

- B. Size: Furnish kick and armor plates sized 2 inches (51 mm) less than door width. Furnish kickplates in 12 inches (305 mm) heights, furnish armor plates in 48 inches (1219 mm) heights unless otherwise indicated. Provide protective plates with cutouts for locks, louvers and windows to the extent indicated. Mount protective plates flush with bottom of door.

2.13 STOPS AND HOLDERS

- A. Concealed Overhead Door Holders: Heavy duty, concealed mounting, full mortised, bronze bodied, slide track design, with heavy shock absorber spring providing 5 to 7 degree compression before dead-stop, non-metal slide and shock blocks, 110 degree maximum opening, complying with BHMA A156.8 Type C11511 for hold open and Type C11541 for stop function. Provide stop, or hold open, functions as scheduled.
1. 1000 Series; Architectural Builders Hardware Mfg., Inc. (ABH).
 2. 100 Series; Glynn-Johnson (GJ).
 3. Checkmate Heavy Duty 1 Series; Rixson-Firemark, Inc. (RIX).
- B. Exposed Overhead Door Holders: Heavy duty, surface mounted, bronze bodied, slide track design, with heavy shock absorber spring providing 5 to 7 degree compression before dead-stop, non-metal slide and shock blocks, 110 degree maximum opening, complying with BHMA A156.8 Type C12511 for hold open and Type C12541 for stop function. Provide stop, or hold open, functions as scheduled.
1. 9000 Series; Architectural Builders Hardware Mfg., Inc. (ABH).
 2. 90 Series; Glynn-Johnson (GJ).
 3. Checkmate Heavy Duty 9 Series; Rixson-Firemark, Inc. (RIX).
- C. Electromagnetic Door Hold Opens for Labeled Fire and Smoke Door Assemblies: Provide each electromagnetic door hold open with fail-safe operation, concealed wiring, door mounted contact plates with concealed mounting fasteners, shims, extensions, and installed approximately 6 inches in from lock edge of door. Comply with BHMA A156.15 for wall mounted single unit, water resistant floor mounted single unit, water resistant floor mounted double unit for back to back mounting to the extent indicated. Coordinate voltage and current characteristics with power supplied to holders, in addition coordinate with fire detectors and interface with fire alarm system.
1. Wall Mounted Single Unit – Low Profile:
 - a. Model 989; Rixson-Firemark, Inc. (RIX).
 - b. Model 2100 with #20100 1" extension; Architectural Builders Hardware Mfg., Inc. (ABH).
- D. Silencers for Metal Door Frames: BHMA A156.16, Type L03011; grey rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame, specifically designed to form an air pocket to absorb shock and reduce noise of door closing. Provide 2 silencers for each pair of doors, 3 silencers for each single door.
1. 8S; Door Controls International (DCI).
 2. SR64; H. B. Ives (IVS).
 3. 1229A; Triangle Brass Manufacturing Company, Inc. (TBM).
 4. 608; Rockwood Manufacturing Company (RM).

- E. Wall Stops: Cast disc type with concave rubber bumper, having a 2-1/2 inch (63.5 mm) diameter base with nominal 1 inch (25 mm) projection and concealed attachment to substrate.
1. For Attachment to Masonry: Complying with BHMA A156.16, Type L12251 or L12101.
 - a. WS401CCV, WS407CVX; H.B. Ives (IVS).
 - b. 1276CCS; Triangle Brass Manufacturing Company, Inc. (TBM).
 2. For Attachment to Gypsum Wallboard: Complying with BHMA A156.16, Type L12251 or L12101.
 - a. WS402CCV, WS407CVX; H.B. Ives (IVS).
 - b. 1274CCS; Triangle Brass Manufacturing Company, Inc. (TBM).

2.14 DOOR GASKETING

- A. Type 1: Self-adhesive flexible silicone type, continuous gaskets for installation at all heads and jambs of doors:
1. 5050C; National Guard Products, Inc. (NGP).
 2. S88BL; Pemko Manufacturing Co., Inc. (PEM).
 3. 188BK; Zero International, Inc. (ZRO).Type
- B. Type 2: Self-adhesive flexible silicone type, continuous gaskets for installation at all heads and jambs of doors, extruded aluminum automatic door bottoms with two lines of flexible, silicone type, continuous gaskets for mortised installation at door bottoms.
1. 5050C x 320S automatic door bottom; National Guard Products, Inc. (NGP).
 2. S88BL x 420ASL automatic door bottom; Pemko Manufacturing Co., Inc. (PEM).
 3. WS108BL x DB044 automatic door bottom; Ultra.Thresholds.
- C. Smoke Gasket:
- Self-adhesive flexible silicone type, continuous gaskets for installation at all heads and jambs of doors:
1. 5050C; National Guard Products, Inc. (NGP).
 2. S88BL; Pemko Manufacturing Co., Inc. (PEM).
 3. 188BK; Zero International, Inc. (ZRO).Types
- D. Perimeter Gasket:
- Rigid jamb weatherstrip seals gaps to reduct sound infiltration, continuous gaskets for installation at all heads and jambs of door.

1. 303_S (PG) Standard Perimeter Gasketing; Pemko Manufacturing Co., Inc. (PEM).

2.15 MISCELLANEOUS DOOR HARDWARE

- A. Boxed Power Supplies: Modular unit in NEMA ICS 6, Type 4 enclosure; filtered and regulated; voltage rating and type matching requirements of door hardware served; and listed and labeled for use with fire alarm systems.

2.16 FABRICATION

- A. Manufacturer's Nameplate: Provide each door hardware item without exposed manufacturers labels, names, or designs.
- B. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturer's specified fastener for each application intended. Provide Phillips oval-head screws with finished heads to match surface of door hardware item being attached. Machine screws and expansion shields shall be used for attaching hardware to concrete and masonry. Use through-bolts for renovation work only where existing door blocking and reinforcements are unknown.
 1. Concealed Fasteners: All new doors and door frames have been specified with adequate blocking and reinforcement provisions to eliminate exposed through-bolting of hardware items. Doors installed with exposed through-bolts will be rejected and replaced by the Contractor at no cost to the Owner. Where through bolts are used on existing doors provide sleeves for each through bolt.

2.17 FINISHES

- A. Standard: Comply with BHMA A156.18.
- B. Appearance of Finished Work: Finishes of the same designation, that come from 2 or more sources, shall match when the items are viewed at arms-length and approximately 2' apart. Unless otherwise scheduled, match each hardware item in a single hardware set with the scheduled latch or lock set finish. Painting of BHMA 600 (USP) surfaces is required and is specified under Division 09 Section "Painting."
- C. Designations: The abbreviations used to schedule hardware finishes are generally BHMA (Federal Standards where indicated in parenthesis) designations. Comply with base material and finish requirements indicated by the following:
 1. BHMA 600 (USP): Primed for painting.
 2. BHMA 626 (US26D): Satin chromium plated.
 3. BHMA 628 (US28): Satin aluminum, clear anodized.
 4. BHMA 630 (US32D): Satin stainless steel.
 5. Alum.: Aluminum.

2.18 DOOR SIGNAGE

- A. Adhesive Sign - Self adhesive – Post on egress size of door vertically on frame as required by CBC. "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED".

2.19 SECURITY HARDWARE

- A. HID Global Door Access Control Systems.
 - 1. Card Readers: ProPro II 5455, Mini 5365 at mullions
 - 2. Controller VertX EVO V1000 Network Controller
 - 3. Door Position Sensors

PART 3 EXECUTION

3.01 INSTALLATION

- A. Mounting Heights: Mount door hardware units at the following heights, unless specifically indicated on the drawings or required to comply with governing regulations. Accessible hardware must be centered between 34" and 44" above finish floor per accessibility requirements:
 - 1. Locks and Latches: 38 inches to center of lever from finish floor.
 - 2. Door Pulls: 34 inches from finish floor to center of grip. Pull bases centered on door stiles, unless otherwise indicated.
 - 3. Door Pulls: Pull bases centered on top and bottom door rails and spaced from lock edge of door stile as indicated, or recommended, by the pull manufacturer.
 - 4. Push Plates: 40 inches from finish floor to center of plate. Coordinate with pull location.
 - 5. Butt Hinges: 10 inches to bottom of lowest hinge from finish floor; 5 inches to top of upper hinge from top of door; space intermediate hinges equally between lower and upper hinges.
 - 6. Deadbolts: Not more than 44 inches from finish floor to operating trim.
- B. Install each door hardware item to comply with manufacturer's written instructions. Install overhead surface closers for maximum degree of opening obtainable. Place on room side of corridor doors, stair side of stair doors, secondary corridor side of doors between corridors. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be finished, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Section 09 90 00 "Paint". Do not install surface-mounted items until finishes have been completed on substrates involved.
- C. Do not install permanent key cylinders in locks until the time of preliminary acceptance by the Owner. At the time of preliminary acceptance, and in the presence of the Owner's representative, permanent key all lock cylinders. Record and file all keys in the key control system specified, and turn system over to Owner for sole possession and control.

- D. Thresholds: Thresholds shall be secured with a minimum of 3 fasteners per single door width and 6 fasteners per double door width with a maximum spacing of 12 inches. Minimum screw size shall be No. 10 length, dependent on job conditions, with a minimum of 3/4 inch thread engagement into the floor or anchoring device used. Screw heads to be countersunk and flush with face of threshold. Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Section 07 09 00 "Joint Sealants".

3.02 ADJUSTING

- A. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every hardware component. Replace hardware components that cannot be adjusted to operate as intended.
- B. Adjust and check each door closer. The maximum effort to operate doors shall not exceed 5 pounds for exterior and interior doors per code.

3.03 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation. Clean hardware components as necessary to restore proper finish. Provide protection during the progress of the work and maintain conditions that ensure door hardware is in perfect working order and without damage or deterioration at time of Substantial Completion.

3.04 DOOR HARDWARE SCHEDULE – SCHEDULED DOORS

- A. Door Hardware Schedule follows at end of this Section.

DOOR HARDWARE

The Owner is seeking best bid on items specified. Any questions or concerns regarding the items or equals specified must be brought to the attention of the Owner's Representative before bid submittal. Owner will make all final decisions regarding the products to be used. If, after bid acceptance, Contractor presents hardware items that are not named equals, there may be a charge to the Contractor for evaluation of those products.

Hinge quantity will vary with size of door; follow manufacturer's recommendations. Hinges on all Exterior Doors to be nonferrous stainless-steel material and have non-removable pins.

All cylinders to be full-faced interchangeable core cylinders with square shouldered (not tapered) compression rings, 6 pin, standard threaded, keyed into the Owner's standard, with cams to suit lock functions. Provide cylinders for installation into all locks.

HARDWARE GROUPS

GROUP #1

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (storage function)	Schlage
1 Cylinder	to match system	Best
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Wall Stop	WS407CCV	Ives
3 Mutes	SR64	Ives

GROUP #2 (Sliding Door)***Security Door Hardware – Group 2**

1 Door Contact
 1 Card Reader
 1 Power Supply

GROUP #3

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F04 (office function)	Schlage
1 Cylinder	to match system	Best
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives

GROUP #4

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F02 (privacy)	Schlage
	W "Occupied" indicator and "EZ" thumb turn	
1 Cylinder	to match system	Best
1 Wall Stop	WS407CCV	Ives
3 Mutes	SR64	Ives

GROUP #5 (Exterior Door)

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (storage function)	Schlage
1 Cylinder	to match system	Best
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Overhead Stop	90 Series	GJ
1 Perimeter Gasket	303AS	Pemko
1 Drip Cap	346C	Pemko
1 Threshold	14/1A	Pemko
1 Sill Sweep		
1 Latch Guard	321	Rockwood
3 Mutes	SR64	Ives

GROUP #6

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F01 (passage function)	Schlage
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives
1 Perimeter Gasket	303AS	Pemko

GROUP #7 (Exterior Door)

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (entrance function)	Schlage
1 Cylinder	to match system	Best
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Overhead Stop	90 Series	GJ
1 Perimeter Gasket	303AS	Pemko

1 Drip Cap	346C	Pemko
1 Threshold	14/1A	Pemko
1 Sill Sweep		
1 Latch Guard	321	Rockwood
3 Mutes	SR64	Ives

GROUP #8

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F04 (office function)	Schlage
1 Cylinder	to match system	Best
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives

GROUP #9

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F20 (entrance function)	Schlage
1 Cylinder	to match system	Best
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives

GROUP #10

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (storage function)	Schlage
1 Cylinder	to match system	Best
3 Mutes	SR64	Ives

GROUP #11 (Exterior Door)

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (storage function)	Schlage
1 Cylinder	to match system	Best
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Overhead Stop	90 Series	GJ
1 Perimeter Gasket	303AS	Pemko
1 Drip Cap	346C	Pemko
1 Threshold	14/1A	Pemko
1 Sill Sweep		
1 Latch Guard	321	Rockwood
3 Mutes	SR64	Ives

GROUP #12

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	Fixed outside/free inside	Schlage
1 Electric Strike	6200 Series	Von Duprin
1 Cylinder	to match system	Best
1 Power Transfer Hinge	EPT-10C x SP28 w. connectors	Von Duprin
1 Door Wire Harness	to be determined	Von Duprin
1 Door Contact	2507A	GE Security
1 Closer	4041	LCN
1 Kickplate	K1050 12" bevel 4 sides	Rockwood
1 Wall Stop	WS407CVX	Ives
1 Perimeter Gasket	303AS	Pemko
1 Drip Cap	346C	Pemko
1 Threshold	14/1A	Pemko

1 Latch Guard	321	Rockwood
3 Mutes	SR64	Ives

***Security Door Hardware – Group 12**

1 Door Contact
1 Card Reader
1 Power Supply

GROUP #13

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F07 (storage function)	Schlage
1 Electric Strike	6200 Series	Von Duprin
1 Cylinder	to match system	Best
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives

***Security Door Hardware – Group 13**

1 Door Contact		HID Global
1 Card Reader	Secured Side	
1 Power Supply		

GROUP #14

1 1/2 Pair Butts	BB1279	Hager
1 Lockset	F04 (office function)	Schlage
1 Cylinder	to match system	Best
1 Wall Stop	WS407CVX	Ives
3 Mutes	SR64	Ives

***Security Door Hardware – Group 14**

1 Door Contact		HID Global
1 Card Reader	Secured Side	
1 Power Supply		

GROUP #15

*See Specifications Section 10 22 39 - Folding Glass Partitions for additional information.

1 Lockset	F07 (entrance function)	Schlage
1 Cylinder	to match system	Best

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies glass, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 LABELS

- A. Temporary Labels:
 - 1. Provide temporary label on each light of glass identifying manufacturer or brand and glass type, quality and nominal thickness.
 - 2. Label in accordance with NFRC (National Fenestration Rating Council) label requirements.
 - 3. Temporary labels shall remain intact until glass is approved by the Owner.
 - 4. Permanent labels:
 - a. Locate in corner for each pane.
 - b. Label in accordance with ANSI Z97.1:
 - 1) Tempered glass
 - 2) Organic coated glass

1.04 PERFORMANCE REQUIREMENTS

- A. Glass Thickness:
 - 1. Select thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7 and the CBC
 - 2. Test in accordance with ASTM E 1300
 - 3. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers

1.05 SUBMITTALS

- A. Manufacturer's Certificates:
 - 1. Certificate on shading coefficient
 - 2. Certificate on "R" value when value is specified
- B. Warranty: Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.
- C. Manufacturer's Literature and Data:
 - 1. Glass, each kind required
 - 2. Insulating glass units
 - 3. Glazing cushion
 - 4. Sealing compound
- D. Samples:
 - 1. Size: 6 inches by 6 inches
 - 2. Tempered Low-E glass
 - 3. Insulated glass
 - 4. Glass Film
- E. Preconstruction Adhesion and Compatibility Test Report: Submit glazing sealant manufacturer's test report indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.

1.06 MOCK-UP

- A. Insulated Tempered Glass: Contractor to provide multiple Mock-Ups to determine new glazing system to match appearance of exterior glazing system.
 - 1. Architect to select final glazing system from mock-ups on site.
 - 2. Mock-Up to be minimum of 12"x12".

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.
- B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.

- C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators between each.

1.08 PROJECT CONDITIONS

- A. Field Measurements: Field measure openings before ordering tempered glass products. Be responsible for proper fit of field measured products.

1.09 WARRANTY

- A. Warranty: Conform to terms of "Warranty of Construction"
 - 1. Insulating glass units to remain sealed for 10 years.

1.010 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extend referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - C794-10 Adhesion-in-Peel of Elastomeric Joint Sealants
 - C864-05 Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers
 - C920-11 Elastomeric Joint Sealants
 - C964-07 Standard Guide for Lock-Strip Gasket Glazing
 - C1036-06 Flat Glass
 - C1048-12 Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass
 - C1376-10 Pyrolytic and Vacuum Deposition Coatings on Flat Glass
 - E84-10 Surface Burning Characteristics of Building Materials
 - E119-10 Standard Test Methods for Fire Test of Building Construction and Material
 - E413-16 Classification for Rating Sound Insulation
 - E2190-10 Insulating Glass Unit
- C. Code of Federal Regulations (CFR):
 - 16 CFR 1201 Safety Standard for Architectural Glazing Materials; 2010
- D. National Fenestration Rating Council (NFRC)
- E. Glass Association of North America (GANA):
 - 1. Glass Manual (Latest Addition)

- 2. Sealant Manual (2009)
- F. American Society of Civil Engineers (ASCE):
 - ASCE 7-16 Wind Load Provisions

PART 2 PRODUCTS

2.01 GL-1: INSULATED TEMPERED GLASS - EXTERIOR DOORS

- A. 1–3/16" Laminated Insulating Acoustical Unit
 - 1. ASTM C1048, Kind FT, Type I, Class 1, Quality q3
 - 2. Basis of design unit: Thickness, 6 mm (1/4 inch), Solarban 70XL, Optigray, Low E coated, tempered
 - a. Contractor to provide multiple Mock-Ups per Section 1.06. Coordinate final selection with Architect.
 - 3. Air space, 13.2 mm (1/2 inch)
 - 4. Thickness, 4.7 mm (3/16 inch), tempered
 - 5. 1.5 mm (0.060 inch) clear thick interlayer PVB
 - 6. Thickness, 4.7 mm (3/16 inch), tempered
 - 7. Performance: VLT 34; SHGC .22, Shading .26, Reflectance 10%, U value-W .29, U value-S .27.

2.02 GL-2: INTERIOR TEMPERED GLASS – STOREFRONT

- A. Tempered Glass:
 - 1. ASTM C1048, Kind FT, Type I, Class 1, Quality q3
 - 2. Thickness, 6 mm (1/4 inch), tempered
 - 3. Color: Clear

2.03 GL-3: INSULATED TEMPERED SPANDREL GLASS - EXTERIOR

- A. Low-E Insulated Tempered Glass:
 - 1. ASTM C1048, Kind FT, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15
 - 2. Basis of design unit: 1-inch insulated unit with exterior pane of (1/4 inch) Vitro Solarban 60 (2) and interior pane of 6mm (1/4 inch) Optigrey tempered glass and 4th surface opacifier with 13.2 mm (1/2 inch) air space

- a. Contractor to provide multiple Mock-Ups per Section 1.06. Coordinate final selection with Architect.

2.04 GL-4: INSULATED TEMPERED GLASS - EXTERIOR

A. Low-E Insulated Tempered Glass:

1. ASTM C1048, Kind FT, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15
2. Basis of design unit: 1-inch insulated unit with exterior pane of 6mm (1/4 inch) Vitro tempered Solarban 70XL (2) Optigray sputtered and interior pane of 6mm (1/4 inch) clear tempered glass with 13.2 mm (1/2 inch) air space
 - a. Contractor to provide multiple Mock-Ups per Section 1.06. Coordinate final selection with Architect.
3. Performance: VLT 47; SHGC .24, Shading .28, Reflectance 8%, U value-W .28, U value-S .26.

2.05 ACCESSORIES

- A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation. Ferrous metal accessories exposed in the finished work shall have a finish that will not corrode or stain while in service.

B. Setting Blocks: ASTM C864:

1. Channel shape; having 1/4 inch internal depth
2. Shore a hardness of 80 to 90 Durometer
3. Block lengths: two inches except four to six inches for insulating glass
4. Block width: Approximately 1/16 inch less than the full width of the rabbet
5. Block thickness: Minimum 3/16 inch, sized for rabbet depth, as required

C. Spacers: ASTM C864:

1. Channel shape having a 1/4 inch internal depth
2. Flanges not less 3/32 inch thick and web 1/8 inch thick
3. Lengths: One to one to three inches
4. Shore a hardness of 40 to 50 Durometer

D. Sealing Tapes:

1. Semi-solid polymeric based material exhibiting pressure sensitive adhesion and withstanding exposure to sunlight, moisture, heat, cold, and aging.
2. Shape, size and degree of softness and strength suitable for use in glazing application to prevent water infiltration.

- E. Glazing Gaskets : ASTM C864:
 - 1. Soft, closed-cell with locking key for sash key
 - 2. Flanges may terminate above the glazing beads or terminate flush with top of beads.
- F. Glazing Sealants: ASTM C920, silicone neutral cure:
 - 1. Type S
 - 2. Class 25
 - 3. Grade NS
 - 4. Shore A hardness of 25 to 30 Durometer
- G. Color:
 - 1. Color of glazing compounds, gaskets, and sealants used for aluminum color frames shall match color of the finished aluminum and be non-staining.
 - 2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted shall be black.
- H. Glass Film:
 - 1. 3M Fasara Glass Finishes. Type and configuration as shown on window elevations and per architect direction. Pressure sensitive adhesive polyester film with pattern.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions:
 - 1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.
 - 2. Verify that glazing openings conform with details, dimensions and tolerances indicated on manufacturer's approved shop drawings.
- B. Advise Contractor of conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation: Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. For sealant glazing, prepare glazing surfaces in accordance with GANA-02 Sealant Manual.

- B. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.
- C. Shop fabricate and cut glass with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.
- D. Verify that components used are compatible.
- E. Clean and dry glazing surfaces.
- F. Prime surfaces scheduled to receive sealants, as determined by preconstruction sealant-substrate testing.

3.03 INSTALLATION – GENERAL

- A. Install in accordance with GANA-01 Glazing Manual and GANA-02 Sealant Manual unless specified otherwise.
- B. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.
- C. Set glazing without bending, twisting, or forcing of units.
- D. Do not allow glass to rest on or contact any framing member.
- E. Glaze doors and operable sash, in a securely-fixed or closed-and-locked position, until sealant, glazing compound, or putty has thoroughly set.
- F. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.
- G. Insulating Glass Units:
 - 1. Glaze in compliance with glass manufacturer's written instructions.
 - 2. When glazing gaskets are used, they shall be of sufficient size and depth to cover glass seal or metal channel frame completely.
 - 3. Do not use putty or glazing compounds.
 - 4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.

3.04 REPLACEMENT AND CLEANING

- A. Clean new glass surfaces removing temporary labels, paint spots, and defacement.
- B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
- C. Leave glass, putty, and other setting material in clean, whole, and acceptable condition.

3.05 PROTECTION

- A. Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

3.06 GLAZING SCHEDULE

- A. Tempered Glass:
 - 1. Install in full and half glazed doors unless indicated otherwise.
 - 2. Use clear, tempered glass on interior side lights and doors unless otherwise indicated or specified.
- B. Tempered Glass Low E Glass:
 - 1. Install Sealed Edge Unit (SEU) Low-E tempered in exterior pane of dual glazed storefronts.

END OF SECTION

DIVISION 3 – CONCRETE

03 30 00 Cast-In-Place Concrete Clear Seal

DIVISION 5 – METALS

05 50 00 Metal Fabrications
Guard and Rails See section 09 90 00 below.

DIVISION 6 – WOOD AND PLASTIC

06 40 23 Interior Architectural Millwork
Cabinetwork
Faces: Natural Select Cherry, Plain Sliced.
Stain/Finish: To match Doors, see spec. section 08 14 00
Locks: 626 Brushed/Satin Chrome
Pulls: 626 Brushed/Satin Chrome

S-1 Countertop: Manufacturer: Corian
Material: Quartz
Color/Style: Valente Pearl

DIVISION 7 – THERMAL MOISTURE PROTECTION

07 24 00 Insulation & Finish System (EIFS)
Color & Texture: Provide Architect with options to best match adjacent surfaces. Final selection per Architect selection.

07 62 00 Sheet Metal Flashing and Trims
Coping: Custom: Per Architect Selection
Flashing and Counter Flashing Stainless Steel

07 90 00 Joint Sealants
Color: Provide Architect with options to best match adjacent surfaces. Final selection per Architect selection.

DIVISION 8 – DOORS AND WINDOWS

08 11 13 Hollow Metal Doors & Frames
Paint: Per Architect Selection in Section 09 90 00

08 14 00 Wood Doors
Interior Flush Door: Masonite Architectural
Series: Aspiro
Species: Cherry wood
Slice: Plain
Wood Door Stain: Masonite Architectural
Series: Aspiro

		Stain Color: Stout
08 31 00	Access Doors and Frames	Paint to match adjacent surfaces
08 41 13	Aluminum-Framed Storefronts, including sliding doors and hardware	
	Framing Color:	Anodized Aluminum Dark Bronze
08 42 29	Sliding Automatic Entrances, including door, frame, and hardware	
	Framing Color:	Anodized Aluminum Dark Bronze
08 71 00	Door Hardware	
	Locksets:	US26D, Brushed/Satin Chrome
	Closers:	US26D, Brushed/Satin Chrome
	Butts:	US26D, Brushed/Satin Chrome
	Exit Devices:	US26D, Brushed/Satin Chrome
	Weather-stripping	Aluminum, Dark Bronze
08 80 00	Glazing	
	GL-1: Exterior Doors	Color: Clear
	GL-2: Interior Tempered	Color: Clear

DIVISION 9 – FINISHES

09 30 13	Porcelain Tile	
	CT-1 (floor):	Daltile
	Style:	Emerson Wood
	Color:	EP01 Butter Pecan Plank
	Finish:	Matte
	Shade Variation:	Random (V4)
	Size:	6"x48"
	Thickness:	5/16"
	Joints:	1/8"
	Pattern:	33% running bond
	CT-2 (toilet wall):	Daltile
	Collection:	Linear, Color Wheel Collection - Glazed Ceramic
	Color:	0190, Artic White
	Pattern:	Horizontal, straight stack
	Finish:	Semi-gloss
	Size:	4" x 16"
	Joints:	1/16"
	CT3 (drinking fountain):	Garden State Tile
	Collection:	Slash Collection
	Color:	Slash White W Dots Deco (SLSH1 73W)
	Pattern:	Horizontal, straight stack
	Finish:	Semi-Gloss
	Size:	3"x12"

	Joints:	1/16"
	CT-B (wall base)	Daltile
	Collection:	Linear, Color Wheel Collection - Glazed Ceramic
	Color:	0190, Artic White
	Trim Base:	S44D9 / 4x16
		*Installed @ painted GWB walls only
	Finish:	Semi-gloss
	Size:	4" x 16"
	Joints:	1/16"
	GRT-1 (floor tile grout):	Color: Mapei, 107 Iron or Per Architect's selection Mold and Mildew resistant
	GRT-2 (wall tile grout):	Color: Mapei, 00 White or Per Architect's selection Mold and Mildew resistant
09 51 00	Acoustical Ceilings	
	ACT-1:	Armstrong Cirrus, Angled Tegular, 24"x24"x15/16" Color: White finish. NRC 0.70
	ACT-2:	Armstrong Ceramaguard, 24" x 24" x 15/16" square edge. Color: White. NRC 0.70
	Ceiling Grid:	Type1: Exposed Grid, 15/16, Prelude XL Color: Standard White
09 65 00	Resilient Flooring and Base	
	RF-1 (Flooring):	Interface, High performance LVT Collection: Stargazing Collection Product: A017, Scorpio Color: Silverlight Size: 19.6"x19.6" Pattern: Monolithic Thickness: 0.18 inch (4.5 mm)
	RF-2 (Stair Tread/Riser):	Mannington Commercial/Burke Stairway System Collection: Linear Series Style: Visually Impaired Safety Stair Treads Tread Material: Type TP (Thermoplastic Rubber) Riser Material: Type TP (Thermoplastic Rubber) Profile: Linear Nose: Square Color: Rocky 660 ADA Tread Insert: 2" Abrasive Strip, Black
	RF-3 (Rubber flooring @ Stair landing):	Mannington Commercial Collection: Color Anchor Rubber

Style: ColorScape Tile
 Material: Thermoset Rubber Tile
 Classification: ASTM F1344, Type 1 (A), Grade 1
 Thickness: 1/8"
 Profile: Sculptured
 Color: Rocky 660
 Size: 36" x 36"

RB-1 (base):

Mannington Commercial
 Collection: Edge Effects
 Classification: ASTM F1861, Group 1
 Type: Type TP (Thermoplastic Rubber)
 Style: Etched EEETC
 Color: Black 701
 Finish: Matte
 Thickness: 1/4"
 Profile Height: 6"
 Profile: Smooth

09 65 19 Static Dissipative Resilient Flooring

SDT-1 (flooring):

Armstrong, Static Dissipative Tile
 Product Line: Excelon SDT
 Construction: Vinyl Composition Tile
 Color: Pearl White - 51953
 Size: 12" x 12"
 Pattern: 1/4 turn
 Thickness: 1/8 inch (3.2 mm)

09 68 13 Carpet Tile

CPT-1

Interface
 Collection: Net Effect Collection
 Product: B701, planks
 Color: 102893 Caspian
 Pattern: Ashlar
 Backing: GlasBac

09 90 00 Painting

PT-1 - Ceiling

Sherwin Williams, High Reflective White, SW-7757,
 Location Number: 256-C1

PT-2 - Interior walls

Sherwin Williams, Pure White, SW-7005,
 Location Number: 255-C1

**PT-3 - Interior Hollow Metal Door
 Frames, Interior Hollow
 Metal Doors &
 Handrails**

Sherwin Williams, Caviar, SW-6990
 Location Number: 251-C2

PT-4 - Exterior Doors

Sherwin Williams, to match existing Anodized
 Aluminum Dark Bronze framing OR per architect
 selection

PT-5 – Exterior Door Frames	Sherwin Williams, to match existing Anodized Aluminum Dark Bronze framing OR per architect selection
PT-6 – Exterior Guard rails & Handrails	Sherwin Williams, to match existing Anodized Aluminum Dark Bronze framing OR per architect selection
PT-7 – Additional accent colors	per Architect selection.
PT-8 – Exterior troweled flat Concrete @ new windows	Sherwin Williams, to match existing paint at smooth concrete adjacent to existing windows
ST-1 – Wood Stain	Masonite Architectural, Aspiro Series Color: Stout

DIVISION 10 – SPECIALTIES

10 14 00	Signage Interior Signage: Background Color: Text Color: Exterior Signage: Site Signs:	Beige Black Per ADA, CBC and Transportation Standards
10 22 39	Folding Glass Partitions Framing Color:	Anodized Aluminum Dark Bronze
10 26 00	Wall Protection Accessories: Height: Finish:	Stainless Steel corner guards 48" high unless otherwise noted in Drawings No. 4 Stainless Steel - Satin
10 28 00	Toilet Accessories Accessories: Grab Bars: Mirror:	No. 4 Stainless Steel Satin Finish Stainless Steel Stainless Steel Framing
10 44 13	Fire Extinguisher Cabinets Finish:	Larsen, Architectural Series, Solid Door with vertical engraved letters, #8 Stainless Steel

DIVISION 12 – FURNISHING

Not Used

DIVISION 14 – CONVEYING EQUIPMENT

14 24 00	Elevator
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Flooring:	Armstrong, Luxe, A6746
Wall Panel:	Plastic Laminate Color, Wood Grained per Architect selection.
Reveals:	20 ga, match frame finish
Base:	6" high stainless steel, #4 satin
Handrail:	1 1/2" diameter stainless steel, #4 satin, with end caps, 3 sides.
Ceiling:	Nine (9) painted panels per Architect selection with center light.
Lighting:	LED in each panel
Doors:	Stainless steel
Jamb:	Stainless steel

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 17 23	Pavement Markings	
	Line Paint:	White
	ADA Paint:	per CBC

GENERAL NOTES – Schedule for Finishes:

- A. See Architectural Finishes Schedule, specifications, and interior elevations for additional finishes information.
- B. Miscellaneous metals to be painted per Architect color selection.
- C. Paint interior handrails, PT3.
- D. Paint interior hollow metal door frames, high gloss, PT3.
- E. Paint remaining hollow metal door frames per architect's selection.

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION**

- A. This section specifies steel studs wall systems, ceiling or soffit suspended or furred framing, wall furring, fasteners, and accessories for the screw attachment of gypsum board, plaster bases or other building boards.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 TERMINOLOGY

- A. Description of terms shall be in accordance with ASTM C754, ASTM C11, ASTM C841 and as specified.
- B. Underside of Structure Overhead: The underside of structure overhead shall be the underside of the roof/floor construction supported by beams.
- C. Thickness of steel specified is the minimum bare (uncoated) steel thickness.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Manufacturer's Literature and Data:
 - 1. Studs, runners and accessories.
 - 2. Furring channels.
 - 3. Screws, clips and other fasteners.
- C. Shop Drawings:
 - 1. Typical ceiling suspension system.
 - 2. Typical metal stud and furring construction system including details around openings, access panels and corner details.
 - 3. Typical support for external attachments

1.05 DELIVERY, IDENTIFICATION, HANDLING AND STORAGE

- A. In accordance with the requirements of ASTM C754.

1.06 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society For Testing And Materials (ASTM)
 - A123-09.....Zinc (Hot-dip Galvanized) Coatings on Iron and Steel Products
 - A653/A653M-09Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
 - A641-09.....Zinc-Coated (Galvanized) Carbon Steel Wire
 - C11-10 Terminology Relating to Gypsum and Related Building Materials and Systems
 - C645-09 Non-Structural Steel Framing Members
 - C754-09 Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
 - C841-03 (R2008) Installation of Interior Lathing and Furring
 - C954-07 Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
 - E580-09.....Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint.

PART 2 PRODUCTS

2.01 PROTECTIVE COATING

- A. Galvanize steel studs, runners (track), rigid (hat section) furring channels, "Z" shaped furring channels, and resilient furring channels, with coating designation of G-60, per ASTM A123.

2.02 STEEL STUDS AND RUNNERS (TRACK)

- A. ASTM C645, modified for thickness specified and sizes as shown.
 - 1. Use ASTM A653 steel, 0.8 mm (0.0329 inch) thick bare metal (33 mil).
 - 2. Runners same thickness as studs.

- B. Provide not less than two cutouts in web of each stud, approximately 300 mm (12 inches) from each end, and intermediate cutouts on approximately 600 mm (24 inch) centers.
- C. Doubled studs for openings as shown.
- D. Studs 3600 mm (12 feet) or less in length shall be in one piece.

2.03 FURRING CHANNELS

- A. Rigid furring channels (hat shape): ASTM C645.
- B. Resilient furring channels:
 - 1. Not less than 0.45 mm (0.0179 inch) thick bare metal.
 - 2. Semi-hat shape, only one flange for anchorage with channel web leg slotted on anchorage side, channel web leg on other side stiffens fastener surface but shall not contact anchorage surface other channel leg is attached to.
- C. "Z" Furring Channels:
 - 1. Not less than 0.45 mm (0.0179 inch) thick bare metal, with 32 mm (1-1/4 inch) and 19 mm (3/4 inch) flanges.
 - 2. Web furring depth to suit thickness of insulation with slotted perforations.
- D. Rolled Steel Channels: ASTM C754, cold rolled; or, ASTM C841, cold rolled.

2.04 FASTENERS, CLIPS, AND OTHER METAL ACCESSORIES

- A. ASTM C754, except as otherwise specified.
- B. Fasteners for steel studs thicker than 0.84 mm (0.033 inch) thick. Use ASTM C954 steel drill screws of size and type recommended by the manufacturer of the material being fastened.
- C. Clips: ASTM C841 (paragraph 6.11), manufacturer's standard items. Clips used in lieu of tie wire shall have holding power equivalent to that provided by the tie wire for the specific application.
- D. Concrete ceiling hanger inserts (anchorage for hanger wire and hanger straps): Steel, zinc-coated (galvanized), manufacturers standard items, designed to support twice the hanger loads imposed and the type of hanger used.
- E. Tie Wire and Hanger Wire:
 - 1. ASTM A641, soft temper, Class 1 coating.
 - 2. Gage (diameter) as specified in ASTM C754 or ASTM C841.
- F. Attachments for Wall Furring:
 - 1. Manufacturers standard items fabricated from zinc-coated (galvanized) steel sheet.

2. For concrete walls: Metal slots with adjustable inserts or adjustable wall furring brackets. Spacers may be fabricated from 1 mm (0.0396 inch) thick galvanized steel with corrugated edges.

PART 3 EXECUTION

3.01 INSTALLING STUDS

- A. Install studs in accordance with ASTM C754, except as otherwise shown or specified.
- B. Space studs not more than 610 mm (24 inches) on center.
- C. Cut studs 6 mm to 9 mm (1/4 to 3/8 inch) less than floor to underside of structure overhead when extended to underside of structure overhead.
- D. Where studs are shown to terminate above suspended ceilings, extend studs to underside of structure overhead.
- E. Extend studs to underside of structure overhead.
- F. Frame jambs of openings as shown.
- G. Fasten studs as shown.
- H. Form building expansion joints as shown.

3.02 INSTALLING WALL FURRING FOR FINISH APPLIED TO ONE SIDE ONLY

- A. In accordance with ASTM C754, or ASTM C841 except as otherwise specified or shown.
- B. Wall furring-Stud System:
 1. Framed with 63 mm (2-1/2 inch) or narrower studs, 600 mm (24 inches) on center.
 2. Brace as specified in ASTM C754 for Wall Furring-Stud System or brace with sections or runners or studs placed horizontally at not less than three foot vertical intervals on side without finish.
 3. Securely fasten braces to each stud with two Type S pan head screws at each bearing.
- C. Direct attachment to concrete; rigid channels or "Z" channels:
 1. Install rigid (hat section) furring channels at 600 mm (24 inches) on center, horizontally or vertically.
 2. Install "Z" furring channels vertically spaced not more than 600 mm (24 inches) on center.
 3. At corners where rigid furring channels are positioned horizontally, provide mitered joints in furring channels.
 4. Ends of spliced furring channels shall be nested not less than 200 mm (8 inches).

5. Fasten furring channels to walls with power-actuated drive pins or hardened steel concrete nails. Where channels are spliced, provide two fasteners in each flange.
 6. Locate furring channels at interior and exterior corners in accordance with wall finish material manufacturers printed erection instructions. Locate "Z" channels within 100 mm (4 inches) of corner.
- D. Installing Wall Furring-Bracket System: Space furring channels not more than 400 mm (16 inches) on center.

3.03 INSTALLING SUPPORTS REQUIRED BY OTHER TRADES

- A. Provide for attachment and support of electrical outlets, plumbing, heating fixtures, access panel frames, wall bumpers, recessed fire extinguisher cabinets and other items like auto door buttons and auto door operators supported by stud construction.
- B. Provide additional studs where required. Install metal backing plates, or special metal shapes as required, securely fastened to metal studs. Including locations for future County supplied and installed accessories and equipment such as; toilet accessories, caulk boards, projection screens and similar.

3.04 INSTALLING FURRED AND SUSPENDED CEILINGS OR SOFFITS

- A. Install furred and suspended ceilings or soffits in accordance with ASTM C754 or ASTM C841 except as otherwise specified or shown for screw attached gypsum board ceilings and for plaster ceilings or soffits.
 1. Space framing at 600 mm (24 inch) centers for gypsum board anchorage.
- B. Use clips, bolts, or wire ties for direct attachment to steel framing.
- C. Existing concrete construction exposed:
 1. Use power actuated fasteners either eye pin, threaded studs or drive pins for type of hanger attachment required.
 2. Install fasteners at approximate mid height of concrete beams or joists. Do not install in bottom of beams or joists.
- D. Do not fasten to steel decking.
- E. Construct and install ceiling bracing system as shown and in accordance with ASTM E580.

3.05 TOLERANCES

- A. Fastening surface for application of subsequent materials shall not vary more than 3 mm (1/8 inch) from the layout line.
- B. Plumb and align vertical members within 3 mm (1/8 inch.)
- C. Level or align ceilings within 3 mm (1/8 inch.)

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: Provide gypsum board systems including gypsum board, joint treatment, acoustical accessories, and general accessories for complete installation.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's literature for gypsum board, insulation, and acoustical accessories.
- C. Manufacturer's Certification: Furnish manufacturer's certification indicating products comply with Contract Documents and applicable codes.

1.04 PROJECT CONDITIONS

- A. Do not begin installation of interior gypsum board until space is enclosed, space is not exposed to other sources of water, and space is free of standing water.
- B. Maintain areas to receive gypsum board at minimum 50 degrees F for 48 hours prior to application and continuously after application until drying of joint compound is complete; comply with ASTM C840.
- C. Immediately remove from site gypsum board for interior use exposed to water, including gypsum board with water stains, with signs of mold, and gypsum board with mildew.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. National Gypsum Co.
- B. Georgia-Pacific Corp.
- C. United States Gypsum Co., USG Corp.

2.02 PERFORMANCE REQUIREMENTS

- A. General: Perform gypsum board work in accordance with ASTM C840 unless otherwise specified.

2.03 MATERIALS

- A. Exterior Gypsum Board:

- 1. ASTM C1177/ C1177M, water-resistant core, 16 mm (5/8 inch) thick.

- B. Gypsum Board: Comply with ASTM C840; maximum permissible lengths; ends square cut, tapered edges on boards to be finished.

- 1. Typical: ASTM C1396, Type X, fire rated gypsum board, unless otherwise indicated.
 - 2. Tile Substrates: Cementitious backer units ASTM C1178, specified in Section 09 30 13 - Tiling.
 - 3. Abuse Resistive: ASTM C1629, 16 mm (5/8 inch) thick., Type X.

- C. Gypsum Board Accessories: Comply with ASTM C840.

- 1. Provide protective coated steel corner beads and edge trim; type designed to be concealed in finished construction by tape and joint compound.
 - 2. Corner Beads: Manufacturer's standard metal beads.
 - 3. Edge Trim: "J", "L", "LK", or "LC" casing beads.
 - 4. Reinforcing Tape, Joint Compound, Adhesive, Water, Fasteners: Types recommended by system manufacturer and conforming to ASTM C475.
 - a. Typical Joint Compound: Chemical hardening type for bedding and filling, ready-mixed or powder vinyl type for topping.
 - 5. Control Joints: Back to back casing beads.
 - a. Back control joints with 4 mil thick polyethylene air seal.

- D. Acoustical Accessories:

- 1. Acoustical Sealant: ASTM C919, type recommended for use in conjunction with gypsum board. Paintable, non-shrinking and non-cracking where exposed, non-drying, non-skinning, non-staining, and non-bleeding where concealed. Provide as required for acoustical ratings and at non-fire-rated partitions to seal edges of gypsum board.
 - 2. Electrical Box Pads: Provide at outlet, switch and telephone boxes in walls with acoustical insulation.
 - a. Manufacturers for Non-Fire Rated Partitions:
 - 1) Harry A. Lowry & Associates (800.772.2521)/Lowry's Electrical Box Pads.

- 2) Tremco Sheet Caulking (650.572.1656).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Openings: Obtain dimensions and locations from other trades and provide openings and enclosures for accessories, specialties, equipment, and ductwork.
- B. Gypsum Board Installation: Install in accordance with ASTM C840 and manufacturer's recommendations.
 1. Use screws when fastening gypsum board to furring and to framing.
 2. Erect gypsum board with ends and edges occurring over firm bearing.
 - a. Ensure joints of second layer do not occur over joints of first layer in double layer applications.
 3. Place control joints to be consistent with lines of building spaces and as directed by Architect.
 - a. Provide where system abuts structural elements.
 - b. Provide at dissimilar materials.
 - c. Wings of "L", "U" and "T" shaped ceilings.
 4. Place corner beads at external corners; use longest practical lengths.
 5. Place edge trim where gypsum board abuts dissimilar materials.
 6. Tape, fill, and sand exposed joints, edges, corners and openings to produce surface ready to receive finishes; feather coats onto adjoining surfaces.
 7. Finishing: Comply with Gypsum Association (GA) "Levels of Gypsum Board Finish".
 - a. Level 4, three-coat finish to achieve special smooth surface ready for applied paint finishes.
 8. Remove and replace defective work.
- C. Acoustical Accessories Installation:
 1. Place acoustical insulation tight within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
 2. Place acoustical sealant within partitions in accordance with manufacturer's recommendations; install acoustical sealant at gypsum board perimeter at:
 - a. Wood Framing: One or two beads.

- b. Base layer and face layer.
 - c. Penetrations of partitions.
- 3. Tolerance: Maximum 1/4" space between gypsum board at floor, ceiling, and penetrations.
 - 4. Install electrical box pads with pads molded and pressed on back side of box, closing openings, in accordance with manufacturer's instructions, for complete acoustical barrier.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. This Section describes the requirements for furnishing and installing ceramic tile, accessories and related materials as indicated on the Drawings and as specified herein.
 - 1. Floor tile.
 - 2. Toilet room wall tile and base.
 - 3. Drinking fountain alcove.
 - 4. Backsplash, break room.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. American National Standards Institute (ANSI): Standard Specifications for the Installation of Ceramic Tile.
 - 1. ANSI A108.4: Installation of ceramic tile with Water-Resistant Organic Adhesive.
 - 2. ANSI A108.5: Installation of ceramic tile, with Dry-Set Portland Cement Mortar or Latex Portland Cement Mortar.
 - 3. ANSI A108.10: Installation of Grout in Tilework.
 - 4. ANSI A118.1: Dry-Set Portland Cement Mortar.
 - 5. ANSI A118.4: Latex Portland Cement Mortar.
 - 6. ANSI A118.6: Ceramic Tile Grout.
 - 7. ANSI A137.1: Standard Specifications for Ceramic Tile.
- B. Tile Council of America (TCA): "Handbook for Ceramic Tile Installation".

1.04 SYSTEM DESCRIPTION

- A. Design Requirements: Floor tile tested both wet and dry shall have minimum static coefficient of friction of 0.60 in accordance with ASTM C1028.

1.05 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Samples:
 - 1. Tile: Submit three full-sized samples of each color, size and type of tile specified
 - 2. Trim Shapes: Each color, type, and shape
- C. Product Data:
 - 1. Pictorial information or samples showing manufacturer's full line of standard patterns and colors.
 - 2. Upon completion of ceramic tile Work, submit two copies of a list of recommended maintenance products and procedures.
- D. Mock-Up
 - 1. One full toilet room wall with accessories shall be installed prior for Owner approval, prior to completion of remaining tile work.
 - 2. Tile not meeting TCA standards and visual observations of architect for lippage and square shall be removed.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver tile in manufacturer's original cartons, grade-sealed by manufacturer in accordance with ANSI A137.1, and with grade seals unbroken.
- B. Deliver dry-set mortar in moisture-proof containers.
- C. Manufactured mortars and grouts shall be from one manufacturer for each system, shall contain hallmarks certifying compliance with specified TCA and other referenced standards and shall be recommended by tile manufacturer for the application intended.
- D. Organic adhesive containers shall bear hallmark of either Adhesive and Sealant Council or Tile Contractors of America certifying compliance with ANSI A136.1.
- E. Store materials in accordance with manufacturer's directions and under cover in manner to prevent damage or contamination.
- F. Handle materials carefully to avoid chipping and breakage.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Ambient Temperature: At least 50 degrees F and rising, when setting and grouting with Portland-cement mortar for at least 7 days after completion of installation.
- B. Follow manufacturer's requirements for ambient temperature when setting and grouting with other than Portland-cement mortar.

- C. Moisture Conditions: In accordance with tile and installation materials manufacturers' requirements.
- D. Protect adjoining work surfaces before tile work begins.
- E. Close spaces in which tile is being set to traffic and other work; keep closed until firmly set.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Tile, General:
 - 1. Tile shall conform to ANSI A137.1, Standard Grade, and shall be the product of Daltile Company or approved equal.
 - 2. Units shall be factory made. Furnish bases, caps, stops, returns, trimmers, and other shapes for a complete installation within limits of selected manufacturer's type group. Vertical internal corners and external corners shall be bull-nosed, including all transitions. Corners shall use special shapes that avoid straight edges, end of tile runs shall be bull-nosed. Finish shall match that of wall tile.
- B. Ceramic Tile Type:
 - 1. See Section 09 06 00. Schedules of Finishes.
- C. Trim Shapes and Bases:
 - 1. Provide bull-nose, returns, trimmers, and other shapes, both standard and special, to finish installation. See Drawings and Tile Trim in Section 2.02 Setting Materials for additional information.

2.02 SETTING MATERIALS

- A. Concrete Primer: As recommended by waterproofing membrane manufacturer.
- B. Waterproofing Membrane: Elastomeric-based, polyurethane coating, 3M Company "Scotch-Clad Brand Deck Coating Base Coat," or accepted equal.
- C. Dry-Set Mortar: Conforming to ANSI A118.1.
- D. Latex Portland Cement Mortar: Conforming to ANSI A118.4.
- E. Organic Adhesive: In conformance with ANSI A136.1, Type I, low VOC.
- F. Water: Clean and potable.
- G. Setting Blocks.
- H. Raimondi - Leveling System
- I. Tile Trim/Floor Material Transition - Schluter Schiene, Anodized Aluminum
- J. Corner Trim, Outside Corner - Schluter Rondec, Anodized Aluminum

- K. Floor to Wall Transition – Schluter DILEX-AHK, Anodized Aluminum

2.03 GROUTING MATERIALS

- A. Latex-Portland Cement Grout, or accepted equal, mastic grout: Special latex emulsions with commercial Portland cement grout, replacing all or part of water according to directions specified by latex manufacturer.
- B. Grout: Custom Building Products, Polyblend (color to be selected by Architect), sanded grout at floor (1/8-inch joints), non-sanded grout at walls (1/8-inch joints).
- C. Elastomeric Sealant: One part, mildew-resistant silicone and low VOC.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that conditions are satisfactory for the installation of ceramic tile and does not adversely affect the quality and execution of tile installation.
- B. Condition of surfaces to receive tile:
 - 1. Surfaces shall be firm, dry, clean and free of oily or waxy films.
 - 2. Grounds, anchors, plugs, hangers, bucks, and electrical and mechanical work in or behind tile shall be installed prior to proceeding with tile Work.
- C. Do not commence the installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Install tile in accordance with the requirements of the specified TCA Method from the TCA "Handbook for Ceramic Tile Installation" appropriate to the tile and surface specified herein.
 - 1. Set tile in a manner to produce solid bedding, smooth even surfaces, and uniform joints, accurately aligned and symmetrically arranged. Avoid use of tile less than half size. Cut and drill tile neatly without marring the tile and grind rough exposed edges.
 - 2. Whenever possible, turn cut to inside corner. Terminate tile at center lines of doors, unless otherwise indicated.
 - 3. Establish lines of borders where applicable, prior to spreading setting bed, centering field work in both directions. Lay tile from center line of wall or floor surface outward, with adjustments made at junction with other floor or wall surfaces.
 - 4. Omit tile where floor or wall area is covered by permanently built-in equipment such as toilet fixtures and recessed accessories.
 - 5. Patch existing tilework, layout shall match existing tile pattern. Align joints vertically and horizontally.

- B. Wall Tile: Install in conformance with ANSI A108.4, using TCA Method W242. Utilize tile leveling systems. Use stainless steel trim system at all edges and terminations.
- C. Curing: Apply non-staining laminated and reinforced Kraft paper having a bituminous or latex binder over floor tile as soon as pointing, grouting and cleaning are completed.
 - 1. Lap the sheets at least 4 inches, and seal the laps against the escape of moisture.
 - 2. Leave curing paper in place until job is ready for final cleaning.
 - 3. Keep traffic off floors during the curing period (7 days).
 - 4. Do not permit cement grouts to dry out until cured a minimum of 72 hours.

3.03 CLEANING

- A. Clean surfaces after installation and grouting as recommended by tile manufacturer.
- B. Remove grout haze, observing grout manufacturer's recommendations as to use of acid and chemical cleaners.
- C. Rinse tile work thoroughly with clean water before and after using chemical cleaners. Do not use acids or abrasive soaps on tile, except as approved by tile manufacturer.
- D. Replace damaged, cracked, stained, or broken surfaces before time of final acceptance.

3.04 PROTECTION

- A. Apply a protective coat of neutral cleaner solution, one part cleaner to one part water, to clean, completed tile walls and floors.
- B. Maintain curing paper cover on floor tile to protect from construction dirt.
- C. Place board walkways on newly tiled floors for at least 7 days where floors must be used as passageways by workmen.
- D. Just before final acceptance of tile work, remove paper and rinse protective coat of neutral cleaner from tile surfaces.

END OF SECTION

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PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Suspended metal grid ceiling systems
- B. Acoustical panels
- C. Perimeter trim
- D. Replace and patching of existing ceiling systems.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Provide product data on metal grid system components and acoustic units.
- C. Submit two samples 6x6 inch in size, illustrating material and finish of acoustic units.
- D. Submit two samples each, 12 inches long of suspension system main runner, cross runner and edge trim.
- E. Manufacturer's Literature and Data:
 - 1. Ceiling suspension system, each type, showing complete details of installation.
 - 2. Acoustical units, each type.
- F. Manufacturer's Certificates:
 - 1. Acoustical units, each type, in accordance with specification requirements.
 - 2. Drilled Expansion Anchors: ICBO Evaluation Report.

1.04 APPLICABLE STANDARDS

The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Society for Testing and Materials (ASTM):

A526/A526M	Steel, Zinc-Coated (Galvanized by the Hot-Dip Process, Commercial Quality)
A641	Zinc-coated (Galvanized) Carbon Steel Wire
A653	Steel Sheet, Zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
C423	Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
C634	Standard Terminology Relating to Environmental Acoustics
C635	Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
C636	Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
E84	Standard Test Method for Surface Burning Characteristics of Building Materials
E119	Fire Tests of Building Construction and Materials
E597	Determining a Single-Number Rating of Airborne Sound Isolation for Use in Multi-unit Building Specifications
E580	Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint
E1111	Standard Test Method for Measuring the Interzone Attenuation of Ceiling Systems (for open plan products)
E1264	Classification for Acoustical Ceiling Products
E1414	Standard Test Method for Airborne Sound Attenuation between Rooms Sharing a Common Ceiling Plenum
E1477	Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers
G21	Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi (for HumiGuard Plus products)

B. Federal Specification (Fed. Spec):

FF-F-395B	Pin, Drive, Guided and Pin Drive, Power Actuated (Fasteners for Power Actuated Hand Fastening Tools)
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C. International Conference of Building Officials (ICBO):

D. California Building Code (CBC): Chapter 25, Section 2504 and Table A.

1.05 QUALITY ASSURANCE

A. Qualifications of Installer: Minimum of three project installations of extent comparable to

proposed project.

- B. Single Source Responsibility: To ensure proper interface and color match, all acoustical panel units and grid components shall be produced or supplied by a single manufacturer. Materials supplied by more than one manufacturer are not permissible.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver with manufacturer's labels indicating brand name, pattern, size, and thickness.
- B. Protect against exposure to moisture, sunlight, surface contamination and other unacceptable conditions.
- C. Store cartons open at each end to stabilize moisture content and temperature in accordance with manufacturer's recommended limitations.
- D. Do not begin installation until sufficient materials to complete a room are received.

1.07 PROJECT CONDITIONS

- A. Do not install ceilings until building is enclosed, sufficient heat is provided, dust generating

Activities have terminated and overhead mechanical work is completed, tested and approved.
- B. Allow wet work to dry prior to commencement of installation.
- C. Maintain a uniform temperature minimum of 60 degrees and humidity of 20 percent to 40 percent prior to and during installation of materials or as recommended by the manufacturer.
- D. Coordinate acoustical ceiling work with installers of related work including, but not necessarily limited to, building insulation, gypsum drywall, light fixtures, mechanical systems, and electrical systems.

1.08 MAINTENANCE

- A. Extra Material: Deliver extra material to owner; furnish extra material described below matching products installed. Package with protective covering for storage and identify with appropriate labels.
 - 1. Acoustical Ceiling Units: Furnish quantity of full-sized units equal to 5% of the amount installed.
 - 2. Exposed Suspension Systems Components: Furnish quantity of each suspension component equal to 2% of the amount installed.

1.09 WARRANTY

- A. Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels or grid that fails within the warranty period. Failures include, but are not limited to:
 - 1. Acoustical Panels: Sagging and warping.

- 2. Grid System: Rusting and manufacturers' defects.
- B. Warranty period for acoustical panels shall be one (1) year for standard products.
- C. Warranty period for grid system shall be ten (10) years from date of Acceptance of the Work.
- D. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to the run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS – Suspension Systems

- A. Acoustical Ceiling Panels: Acceptable manufacturers for approval include Armstrong Ceiling Systems; Chicago Metallic Corporation; USG Interiors; or approved equal.
- B. Suspension System: Acceptable manufacturers for approval include Chicago Metallic, USG Donn Corp., or approved equal.

2.02 SUSPENSION SYSTEM MATERIALS

- A. Grid: ASTM C635. Heavy duty, non-fire rated, exposed T, components die cut and interlocking. Catalog numbers of acceptance manufacturer are indicated on drawings.
- B. Accessories: Stabilizer bars, clips, splices and edge moldings required for suspended grid system.
- C. Grid Material: Commercial quality cold rolled steel with galvanized coating.
- D. Grid Finish: Off-white color, baked enamel.
- E. Support Channels and Hangers: Galvanized steel, size and type to suit application to rigidly secure acoustic ceiling system including integral mechanical and electrical components as detailed on drawings.
- F. Compression strut: ASTM A513, telescoping design as detailed on drawings, galvanized $\frac{3}{4}$ inch diameter 14 gage rigid steel tubing with crimped end attached to roof framing and secured to $\frac{1}{2}$ inch diameter 14 gage rigid steel tubing with crimped end to main runners or equivalent pre-manufactured compression post supplied by ceiling grid manufacturer.
- G. Hanger Wire: ASTM C641, Class 1 coating (galvanized), soft temper, No 12 gage.

2.03 ACCEPTABLE MANUFACTURERS – Acoustic Units

- A. Armstrong World Industries
- B. USG Interiors, Inc.
- C. Chicago Metallic Ceiling Systems

D. Substitutions: Under provision of Division 01.

2.04 ACOUSTIC UNIT MATERIALS

A. Acoustic Panels: Provide ACT-1 as called for on the drawings, and conforming to ASTM E 1264 and the following:

1. ACT-1 – Equivalent to Armstrong Cirrus Acoustical tiles.

- | | | |
|------|----------------------|--|
| (1) | Type: | Cirrus |
| (2) | Form: | Angled Tegral |
| (3) | Pattern Designation: | Nodular, medium texture, Factory-applied latex paint |
| (4) | Size: | 24x24 inches |
| (5) | Thickness: | 15/16 inches |
| (6) | Composition: | Wet-formed Mineral Fiber |
| (7) | Light Reflectance: | 0.85 to 0.88 |
| (8) | NRC Range: | 0.55 to 0.75 |
| (9) | CAC range: | 35 to 39 |
| (10) | Edge: | Angled Tegral |
| (11) | Surface Color: | White |
| (12) | Flame Spread: | (0-25) Class A, UL 723 |
| (13) | Smoke Density: | (0- 50) when tested in accordance with NFPA 286 |

B. Acoustic Panels: Provide ACT-2 as called for on the drawings, and conforming to ASTM E 1264 and the following:

1. ACT-2 – Equivalent to Armstrong Ceramaguard Acoustical tiles.

- | | | |
|-----|----------------------|--|
| (1) | Type: | Ceramaguard |
| (2) | Form: | Square Lay-in |
| (3) | Pattern Designation: | medium texture |
| (4) | Size: | 24x24 inches |
| (5) | Thickness: | 15/16 inches |
| (6) | Composition: | Wet-formed ceramic and mineral fiber composite |

(7)	Light Reflectance:	0.75 to 0.85
(8)	NRC Range:	0.55 to 0.75
(9)	CAC range:	35 to 40
(10)	Edge:	Square Lay-In 15/16
(11)	Surface Color:	White
(12)	Flame Spread:	(0-25) Class A, UL 723
(13)	Smoke Density:	(0- 50) when tested in accordance with NFPA 286

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that existing conditions are ready to receive work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

- A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- B. Measure each ceiling area and establish the layout of acoustical board to balance border widths at opposite edges of each ceiling. Avoid using less than half widths units at borders, and conform to the layout indicated on Drawings.
- C. Edges of panels shall be tooled to drop into ceiling system.

3.03 CEILING TREATMENT

- A. Treatment of ceilings shall include sides and soffits of ceiling beams, furred work 24 inches wide and over, and vertical surfaces at changes in ceiling heights unless otherwise shown.
- B. Lay out acoustical units symmetrically about center lines of each room or space unless shown otherwise on reflected ceiling plan.
- C. Moldings:
 - 1. Install metal wall molding at perimeter of room, column, or edge at vertical surfaces.
 - 2. Install special shaped molding at changes in ceiling heights and at other breaks in ceiling construction to support acoustical units and to conceal their edges.

3. Install metal trim and wood wrapped aluminum veneer at edges of floating linear wood ceiling systems.

D. Perimeter Seal:

1. Install perimeter seal between vertical leg of wall molding and finish wall, partition, and other vertical surfaces.
2. Install perimeter seal to finish flush with exposed faces of horizontal legs of wall molding.

3.04 CEILING SUSPENSION SYSTEM INSTALLATION

A. General:

1. Install metal suspension system for acoustical tile and lay-in panels in accordance with ASTM C636 and ASTM E580 as supplemented in this Section and with notes on the drawings entitled Metal Suspension System for Lay-in Panel Ceilings.
2. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
3. Hang systems independent of columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
4. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest effected hangers and related carrying channels to span the extra distance.
5. Compression struts to be installed at each main runner not exceeding 12'-0" o.c. in both directions and not more than 8" from end of main runner. Insert main $\frac{3}{4}$ inch tube over $\frac{1}{2}$ inch tube with a minimum 6 inch lap. Secure crimped end of main $\frac{3}{4}$ inch tube to structural framing with metal screws and $\frac{1}{2}$ inch tube to main runner with metal screws. Secure tube sections together with 2 set screws. Install prefabricated compression post according to manufacturer's recommendations.
6. Locate system on room axis according to reflected plan.
7. Do not eccentrically load system or produce rotation of runners.
8. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junction with other interruptions. Bend to match ceiling curve profile.

B. Seismic Ceiling Bracing System:

1. Construct system in accordance with ASTM E580 and as additionally detailed on plans.
2. Connect bracing wires to structure above as specified for anchorage to structure and to ceiling suspension system as additionally detailed.

3.05 ACOUSTICAL UNIT INSTALLATION

- A. Field reveal cut edge of perimeter tiles to match factory reveal edge. Paint cut surface if necessary to match surface of tile.
- B. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units one way in room. Fit border neatly against abutting surfaces.
- D. Lay Install acoustic units level, in uniform plane and free from twist, warp and dents.
- E. Custom cut, route, texture and paint MDF infill panels at column/ceiling intersections.

3.06 ADJUSTING AND CLEANING

- A. Maintain tolerances in accordance with manufacturer requirements.
- B. Variation from Flat and Level Surface: 1/8 inch in 10 feet
- C. Variation from Plumb of Grid Members caused by eccentric loads: 2 degrees maximum.
- D. Cut and patch adjacent ceiling systems as required to integrate with new remodeled ceiling area for final finished appearance.

3.07 TOLERANCES

- A. Replace damaged, discolored, dirty, cracked and broken acoustical units and grid tees.
- B. Touch up scratches, abrasion, voids, and other defects in painted surfaces.
- C. Leave finished work free from defects.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. High performance luxury vinyl tile.
- B. Resilient base (rubber).
- C. Resilient floor tile (rubber).
- D. Resilient stair treads and risers (rubber).

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Furnish each style and color of resilient flooring from a single mill run. Submit manufacturer's certified compliance.
- B. Maintain complete manufacturer's installation directions for all products at the job site throughout installation.
- C. Qualifications of Installer: Minimum of three project installations of extent comparable to proposed Project.
- D. Regulatory Requirements:
 - 1. Materials shall have the following flammability ratings, according to ASTM E84:
 - a. Flame Spread: 75 or less.
 - b. Smoke Density: 450 or less.
 - 2. Slip Resistance: In accordance with ADA Section A4.5 recommendations, flooring shall have a minimum static coefficient of friction of 0.6 for floors ASTM D2047 "Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine".

1.04 SUBMITTALS

- A. Comply with requirements of Section 01 33 00 – Submittal Procedures.
- B. Manufacturer's Literature and Data:
 - 1. Description of each product.

2. Resilient material manufacturers recommendations for adhesives, underlayment, primers and polish.
 3. Application and installation instructions.
- C. Samples:
1. Tile: Three 12 inches by 12 inches (300 mm by 300 mm) tile for each type, pattern and color.
 2. Base: Three 6 inch (150 mm) long pieces for each type and color.
- D. Extra Material: Deliver to the State at completion of work extra materials as listed below. Furnish all products from same mill runs as the installed products. Deliver in original wrappings, properly identified.
1. Each type and color of flooring: 5%.
 2. Each type and color of rubber top-set: 5%.
- E. Upon completion of work, submit three (3) copies of manufacturer's maintenance and installation

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Storage: Deliver material to the job site and store in their original unopened containers with all labels intact and legible at time use. Store materials at not less than 70 degrees F. for not less than 24 hours immediately before installation.
- B. Store in strict accordance with the manufacturers' recommendations.
- C. Protection: Use all means necessary to protect materials of the section before, during and after installation and to protect installed work and material of all other trades.
- D. Replacements: In the event of damage, immediately make all repairs and replacements necessary for approval by the State and at no additional cost to the State.

1.06 APPLICABLE STANDARDS: The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Society for Testing and Materials (ASTM):

D4078	Water Emulsion Floor Finish
D3564	Application of Floor Polishes to Maintain Vinyl Asbestos Tile or Flooring
F510	Resistance to Abrasion of Resilient Floor Coverings Using an Abrader with a Grit Feed Method
F710	Preparing Concrete Floors and other Monolithic Floors to Receive Resilient Flooring
F1066	Vinyl Composition Floor Tile

B. Federal Specifications (Fed. Spec):

SS-T-312B	Tile, Floor: Asphalt, Rubber, Vinyl, and Vinyl
SS-W-40A	Wall Base; Rubber, And Vinyl Plastic
INT AMD 2	Composition
MMM-A-115C-79	Adhesive, Asphalt, Water Emulsion Type (For Asphalt And Vinyl Composition Tiles)

C. National Fire Protection Association (NFPA):

NFPA 253	Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using Radiant Heat Energy Source
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D. Resilient Floor Covering Institute (RFCI):

ADH-1	Vinyl Composition Tile Adhesive
ADH-2	Wall Base Adhesive
ID-2	Concrete Treating Compounds Installation Specifications for Vinyl Composition, Solid Vinyl and Asphalt Tile Floorings
CL-1	Cleaners for Use on Resilient Floor Coverings (Revised 1988)
TM-6	Determination of Quality of Cut (Joint Tightness and Corner Openings) of Resilient Tile

1.07 GUARANTEE / WARRANTY

- A. Section 01 77 00 - Closeout Procedures.
- B. Provide State with a guarantee, signed by the Contractor and cosigned by the installer, stating that resilient base will stay fully adhered to substrate for a minimum period of two (2) years after Completion Date, and that any resulting failures will be repaired at no additional cost to the client.
- C. Failures include any and all delamination of the resilient base from the substrate other than for causes of excessive abuse.

PART 2 PRODUCTS

2.01 TILE MANUFACTURERS

- A. Interface
- B. Armstrong World Industries
- C. Mannington Commercial
- D. Roppe
- E. Nora

2.02 GENERAL

- A. Furnish product type, materials of the same production run.
- B. Use adhesives, underlayment, primers and polish recommended by the floor resilient material manufacturer.
- C. Interior Floor Finishes For Corridors, Stairs, and Halls: Flame spread not to exceed 25, Smoke developed not to exceed 450 per ASTM E84.
- D. Interior Floor Finishes For Remaining Areas: Flame spread not to exceed 75, Smoke developed not to exceed 450 per ASTM E84.

2.03 FLOOR TILE: Interface, Mannington Commercial, Armstrong, Roppe, Nora or approved equal.

- A. Tile: See Section 09 06 00, Schedules for Finishes, colors to be selected; or approved equal.
- B. Tile Standard:
 - a. Rubber tile: ASTM F1344, Class I-A, Homogeneous Rubber Tile, solid color.
 - b. High performance luxury vinyl tile: ASTM F1700, Class III Printed Vinyl Tile.
- C. Rubber Hardness: Grade 1, minimum hardness of 85, measured using Shore, Type A durometer according to ASTM D2240.
- D. Wearing Surface: See Schedule for Finishes Specification section 09 06 00.
- E. Molded-Pattern Figure: See Schedule for Finishes Specification section 09 06 00.
- F. Thickness: See Schedule for Finishes Specification section 09 06 00.
- G. Size: See Schedule for Finishes Specification section 09 06 00.
- H. Color: See Schedule for Finishes Specification section 09 06 00.
- I. Pattern: See Schedule for Finishes Specification section 09 06 00.

2.04 RUBBER STAIR TREADS: Mannington Commercial, Armstrong, Roppe, Nora or approved equal.

- A. Rubber Stair Treads & Risers: See Section 09 06 00, Schedules for Finishes, colors to be selected; or approved equal.
- B. Tile Standard: ASTM F2169, Type TS, Class 1 and 2, Group 1 and 2.
- C. Hardness: Grade 1, minimum hardness of 85, measured using Shore, Type A durometer according to ASTM D2240.
- D. Slip Resistance: ASTM D2047, ≥ 0.5 SCOF (ADA compliant)
- E. Flammability: ASTM E648, Class 1 (≥ 0.45 W/cm²)

- F. Smoke Density: ASTM E662, ≤ 450 .
- 2.05 RUBBER BASE: Mannington Commercial, Armstrong, Roppe, Nora or approved equal.
- A. Tile Base: See Section 09 06 00, Schedules for Finishes, colors to be selected; or approved equal.
 - B. Provide pre-molded outside corners.
- 2.06 ADHESIVE
- A. Adhesives at floor tile and wall base: Provide adhesives as recommended by the floor system manufacturer.
 - B. Comply with applicable regulations regarding toxic and hazardous materials Green Seal (GS-36) for commercial adhesive.
 - C. Use low-VOC adhesive during installation. Water based is preferred over solvent based adhesives.
- 2.07 PRIMER
- A. Primer (for concrete subfloors): As recommended by the adhesive and floor tile system manufacturer.
- 2.08 LEVELING COMPOUND
- A. Leveling compound: Provide cementitious products with latex or polyvinyl acetate resins in the mix as recommended by the floor tile system manufacturer.
 - B. Determine the type of underlayment selected for use by the condition to be corrected.
- 2.09 POLISH AND CLEANERS
- A. Polish: As recommended by the floor tile system manufacturer.
 - B. Cleaner: As recommended by the floor tile system manufacturer.
- 2.10 TRANSITION & EDGE STRIPS
- A. 1-1/8 inch (28 mm) wide unless shown otherwise.
 - B. Bevel from maximum thickness to minimum thickness for flush joint unless shown otherwise.
 - C. Extruded aluminum, mill finish, mechanically cleaned:
 - 1. Drill and counter sink edge strip for flat head screws.
 - 2. Space holes near ends and approximately 225 mm (9 inches) on center between.
- 2.11 SCREWS
- A. Stainless steel flat head screw.

PART 3 EXECUTION**3.01 PROJECT CONDITIONS**

- A. Maintain temperature of materials at a minimum of 70 degrees F (22 degrees C,) for 48 hours before installation.
- B. Maintain the temperature of rooms where work occurs between 70 degrees and 80 degrees F (21 degrees and 27 degrees C), for at least 48 hours, before, during and after installation.
- C. Do not install flooring until building is permanently enclosed and wet construction in or near areas to receive tile materials is complete, dry and cured.

3.02 SUBFLOOR PREPARATION

- A. Examine surfaces on which resilient flooring is to be installed.
- B. Correct conditions which will impair proper installation.
- C. Fill cracks, joints and other irregularities in concrete with leveling compound and level floors for a maximum wave variation of 1/8-inch in 10 feet (1:1000) (non-accumulative).
 - 1. Do not use adhesive for filling or leveling purposes.
 - 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 - 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joints.
- D. Clean floor of oil, paint, dust, and deleterious substances: Leave floor dry and cured free of residue from existing curing or cleaning agents.
- E. Concrete Subfloor Testing:
 - 1. Apply a 1-meter (three foot) square test patch to the prepared concrete subfloor in room or area to be tiled in accordance with RFCI ID-2.
 - 2. After the test patches have remained on the floor for a period of 72 hours, check adherence to surface by scraping test patches for ease of removal.
- F. Perform additional subfloor preparation to obtain satisfactory adherence of flooring if subfloor test patches allows easy remove of tile.
- G. Prime the concrete subfloor if the primer will seal slab conditions that would inhibit bonding, or if priming is recommended by the tile or adhesive manufacturers.
- H. Conduct and Comply with all manufacturer required testing prior to installation.

3.03 INSTALLATION

- A. Install in accordance with RFCI INS and manufacturer's instructions for application and installation unless specified otherwise.

- B. Mix tile from at least two containers. An apparent line either of shades or pattern variance will not be accepted.
- C. Tile Layout:
 - 1. If layout is not shown on drawings, lay tile symmetrically about center of room or space with joints aligned.
 - 2. No tile shall be less than 6-inches and of equal width at walls.
 - 3. Place tile pattern in the same direction; do not alternate tiles.
- D. Trim tiles to touch for the length of intersections at pipes and vertical projections, seal joints at pipes with waterproof cement.
- E. Application:
 - 1. Apply adhesive uniformly with no bare spots.
 - a. Conform to RFC1-TM-6 for joint tightness and for corner intersection unless layout pattern shows random corner intersection.
 - b. More than 5 percent of the joints not touching or any joint more than 0.005-inch wide will not be accepted.
 - 2. Roll tile floor with a minimum 100-pound roller. No exceptions.
 - 3. The State Representative may have test tiles removed to check for non-uniform adhesion, spotty adhesive coverage, and ease of removal. Install new tile for broken removed tile.
- F. Installation of Transition Strips:
 - 1. Locate transition strips under centerline of doors unless otherwise shown.
 - 2. Set resilient edge strips in adhesive. Anchor metal edge strips with anchors and screws specified.
 - 3. Where tile edge is exposed, butt edge strip to touch along tile edge.
 - 4. Where thin set ceramic tile abuts resilient tile, set edge strip against floor file and against the ceramic tile edge.

3.04 TILE LOCATION

- A. Unless otherwise specified or shown, install tile on floor under areas where casework and other equipment occurs, except where mounted in wall recesses.
- B. Extend tile and sheet vinyl flooring for room into adjacent closets and alcoves.

3.05 BASE INSTALLATION

- A. Location:
 - 1. Unless otherwise specified or shown, where base is scheduled, install base over

toe space of base of casework, lockers, laboratory, pharmacy furniture island cabinets and where other equipment occurs.

2. Extend base scheduled for room into adjacent closet, alcoves, and around columns.

B. Application:

1. Apply adhesive uniformly with no bare spots.
2. Set base with joints aligned and tightly butted to touch for entire height. Joints not to exceed 5 mils (0.005 inch) as measured in accordance with RFCI TM-6.
3. Before starting installation, layout base material to provide the minimum number of joints with no strip less than 24 inches (600 mm) length.
 - a. Short pieces to save material will not be permitted.
 - b. Locate joints as remote from corners as the material lengths or the wall configuration will permit.

C. Form corners and end stops as follows:

1. Use pre-molded corners for external corners
2. Score face of inside corner and notch cove.

D. Roll base for complete adhesion.

3.06 CLEANING AND PROTECTION

- A. Clean adhesive marks on exposed surfaces during the application of resilient materials before the adhesive sets. Exposed adhesive is not acceptable.
- B. Keep traffic off resilient material 72 hours after installation.
- C. Clean and polish materials in the following order:
 1. For the first two weeks sweep and damp mopped only.
 2. After two weeks, scrub resilient materials with a minimum amount of water and a mild detergent. Leave surface clean and free of detergent residue.
 3. Apply wax polish to the floors in accordance with the polish manufacturer's instructions.
- D. When construction traffic occurs over tile, cover resilient materials with reinforced craft paper. At entrances and where wheeled vehicles or carts are used, cover tile with plywood, hardboard, or particleboard over paper. All protective surfaces are to be properly secured and maintained.
- E. When protective materials are removed and immediately prior to acceptance, replace any damage tile, re-clean resilient materials, lightly re-apply polish and buff floors.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Static dissipative resilient flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM International:
 - 1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
 - 2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
 - 3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - 4. ASTM F 1066 Standard Specification for Vinyl Composition Tile
 - 5. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
 - 6. ASTM F 1861 Standard Specification for Resilient Wall Base
 - 7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - 8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
 - 2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials
- C. ANSI/ESD Standards
 - 1. ANSI/ESD STM 7.1 :Floor Materials—Resistive Characterization of Materials

2. ANSI/ESD STM 97.1: Floor Materials and Footwear—Resistance in Combination with a Person
 3. ANSI/ESD STM 97.2: Floor Materials and Footwear Voltage Measurement in Combination with a Person
- D. Resilient Floor Covering Institute (RFCI):
1. ADH-1 Vinyl Composition Tile Adhesive
 2. ADH-2 Wall Base Adhesive
 3. ID-2 Concrete Treating Compounds Installation Specifications for Vinyl Composition, Solid Vinyl and Asphalt Tile Floorings
 4. CL-1 Cleaners for Use on Resilient Floor Coverings (Revised 1988)
 5. TM-6 Determination of Quality of Cut (Joint Tightness and Corner Openings) of Resilient Tile

1.04 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.
- B. Administrative Requirements
1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
- C. Sequencing and Scheduling
1. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including moisture mitigation systems, primers, leveling and patching compounds, and adhesives.
- B. Furnish each style and color of resilient flooring from a single mill run. Submit manufacturer's certified compliance.
- C. Maintain complete manufacturer's installation directions for all products at the job site throughout installation.
- D. Qualifications of Installer: Select an installer who is experienced and competent in the installation of resilient vinyl composition tile flooring and the use of subfloor preparation products. Minimum of three project installations of extent comparable to proposed Project.

1. Confirm installer's certification by requesting their credentials
- E. Fire Performance Characteristics: Provide resilient vinyl composition tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
 1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
 2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less
 3. Slip Resistance: In accordance with ADA Section A4.5 recommendations, flooring shall have a minimum static coefficient of friction of 0.6 for floors ASTM D2047 "Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine".

1.06 SUBMITTALS

- A. Comply with requirements of Division 1 for Submittal Procedures.
- B. Manufacturer's Literature and Data:
 1. Description of each product.
 2. Resilient material manufacturers recommendations for adhesives, underlayment, primers and polish.
 3. Application and installation instructions.
- C. Samples:
 1. Tile: Three 12 inches by 12 inches (300 mm by 300 mm) tiles for each type, pattern and color.
- D. Extra Material: Deliver to the State at completion of work extra materials as listed below. Furnish all products from same mill runs as the installed products. Deliver in original wrappings, properly identified.
 1. Each type and color of flooring: 5%.
 2. Each type and color of rubber top-set: 5%.
- E. Upon completion of work, submit three (3) copies of manufacturer's maintenance and installation

1.07 DELIVERY, STORAGE AND HANDLING

- A. Comply with Division 1 Product Requirements Sections
- B. Delivery: Deliver material to the job site and store it in original unopened containers with all labels intact and legible at time use.
- C. Installation: Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 85°F (29°C) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, the temperature should never rise above 100°F (38°C) nor fall below 55°F (13°C). Protect all materials from

the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to manufacturer's product installation recommendations for a complete guide to project conditions.

- D. Storage: Store in strict accordance with the manufacturers' recommendations.
- E. Protection: Use all means necessary to protect materials of the section before, during and after installation and to protect installed work and material of all other trades.
- F. Replacements: In the event of damage, immediately make all repairs and replacements necessary for approval by the State and at no additional cost to the State.

1.08 GUARANTEE / WARRANTY

- A. See Division 1 for Closeout Procedures.
- B. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.
- C. Limited Warranty Period: 5 years
- D. Limited Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.09 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from the same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - 1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.
 - 2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Acceptable manufacturers of static dissipative resilient tile flooring system, adhesives and subfloor preparation products and accessories are as follows:
 - 1. Armstrong World Industries
 - 2. Roppe
 - 3. Flexco
 - 4. Ployfor

2.02 GENERAL

- A. Furnish product type, materials of the same production run.
- B. Use adhesives, underlayment, primers and polish recommended by the floor resilient material manufacturer.
- C. Interior Floor Finishes For Corridors, Stairs, and Halls: Flame spread not to exceed 25, Smoke developed not to exceed 450 per ASTM E84.
- D. Interior Floor Finishes For Remaining Areas: Flame spread not to exceed 75, Smoke developed not to exceed 450 per ASTM E84.

2.03 STATIC DISSIPATIVE FLOOR TILE:

- A. Description: Static dissipative vinyl tile composed of polyvinyl chloride resin, plasticizers, fillers, pigments, and antistatic additive with colors and texture dispersed uniformly throughout its thickness:
 - 1. See Section 09 06 00, Schedules for Finishes, for size, thickness, and colors to be selected; or approved equal.
- B. Tile shall meet size, thickness, indentation, impact, deflection, dimensional stability, resistance to chemicals, squareness, and resistance to heat requirements of ASTM F 1066 Standard Specification for Vinyl Composition Tile, Class 2, through pattern.

2.04 STATIC DISSIPATIVE WALL BASE MATERIAL

- A. For wall base selection, see Section 09 06 00, Schedules for Finishes.

2.05 STATIC DISSIPATIVE ADHESIVE

- A. Adhesives at floor tile and wall base: Provide adhesives as recommended by the floor system manufacturer
- B. Copper ground-connection strips: Provide size, occurrence, and location of copper ground-connection strips under the floor tile as recommended by the floor system manufacturer
- C. Comply with applicable regulations regarding toxic and hazardous materials Green Seal (GS-36) for commercial adhesive.
- D. Use low-VOC adhesive during installation. Water based is preferred over solvent based adhesives.

2.06 STATIC DISSIPATIVE PRIMER

- A. Primer (for concrete subfloors): As recommended by the adhesive and floor tile system manufacturer.

2.07 STATIC DISSIPATIVE LEVELING COMPOUND

- A. Static dissipative leveling compound: Provide cementitious products with latex or polyvinyl acetate resins in the mix as recommended by the floor tile system manufacturer.

- B. Determine the type of underlayment selected for use by the condition to be corrected.

2.08 STATIC DISSIPATIVE POLISH AND CLEANERS

- A. Static dissipative polish: As recommended by the floor tile system manufacturer.
- B. Static dissipative cleaner: As recommended by the floor tile system manufacturer.

2.09 STATIC DISSIPATIVE TRANSITION & EDGE STRIPS

- A. 1-1/8 inch (28 mm) wide unless shown otherwise.
- B. Bevel from maximum thickness to minimum thickness for flush joint unless shown otherwise.
- C. Extruded aluminum, mill finish, mechanically cleaned:
 - 1. Drill and counter sink edge strip for flat head screws.
 - 2. Space holes near ends and approximately 225 mm (9 inches) on center between.

2.10 SCREWS

- A. Stainless steel flat head screw.

2.11 STATIC DISSIPATIVE FLOOR SYSTEM ACCESSORIES

- A. As recommended by the floor tile system manufacturer.

PART 3 EXECUTION

3.01 PROJECT CONDITIONS

- A. Maintain temperature of materials at a minimum of 70 degrees F (22 degrees C,) for 48 hours before installation.
- B. Maintain the temperature of rooms where work occurs between 70 degrees and 80 degrees F (21 degrees and 27 degrees C), for at least 48 hours, before, during and after installation.
- C. Do not install flooring until the building is permanently enclosed and wet construction in or near areas to receive tile materials is complete, dry and cured.

3.02 SUBFLOOR PREPARATION

- A. Examine surfaces on which resilient flooring is to be installed.
- B. Correct conditions which will impair proper installation.
- C. Fill cracks, joints and other irregularities in concrete with leveling compound and level floors for a maximum wave variation of 1/8-inch in 10 feet (1:1000) (non-accumulative).
 - 1. Do not use adhesive for filling or leveling purposes.

2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joints.
- D. Clean floor of oil, paint, dust, and deleterious substances: Leave floor dry and cured free of residue from existing curing or cleaning agents.
- E. Concrete Subfloor Testing:
1. Apply a 1-meter (three foot) square test patch to the prepared concrete subfloor in room or area to be tiled in accordance with RFCI ID-2.
 2. After the test patches have remained on the floor for a period of 72 hours, check adherence to surface by scraping test patches for ease of removal.
- F. Perform additional subfloor preparation to obtain satisfactory adherence of flooring if subfloor test patches allow easy remove of tile.
- G. Prime the concrete subfloor if the primer will seal slab conditions that would inhibit bonding, or if priming is recommended by the tile or adhesive manufacturers.
- H. Conduct and Comply with all manufacturers required testing prior to installation.

3.03 INSTALLATION

- A. Install in accordance with RFCI INS and manufacturer's instructions for application and installation unless specified otherwise.
- B. Mix tile from at least two containers. An apparent line either of shades or pattern variance will not be accepted.
- C. Tile Layout:
1. If layout is not shown on drawings, lay tile symmetrically about center of room or space with joints aligned.
 2. No tile shall be less than 6-inches and of equal width at walls.
 3. Place tile pattern in the same direction; do not alternate tiles.
- D. Trim tiles to touch for the length of intersections at pipes and vertical projections, seal joints at pipes with waterproof cement.
- E. Application:
1. Apply adhesive uniformly with no bare spots.
 - a. Conform to RFC1-TM-6 for joint tightness and for corner intersection unless layout pattern shows random corner intersection.
 - b. More than 5 percent of the joints not touching or any joint more than 0.005-inch wide will not be accepted.
 2. Roll tile floor with a minimum 100-pound roller. No exceptions.

3. The State Representative may have test tiles removed to check for non-uniform adhesion, spotty adhesive coverage, and ease of removal. Install new tiles for broken removed tiles.

F. Installation of Transition Strips:

1. Locate transition strips under the centerline of doors unless otherwise shown.
2. Set resilient edge strips in adhesive. Anchor metal edge strips with anchors and screws specified.
3. Where tile edge is exposed, butt edge strip to touch along tile edge.
4. Where thin set ceramic tile abuts resilient tile, set edge strip against floor file and against the ceramic tile edge.

3.04 TILE LOCATION

- A. Unless otherwise specified or shown, install tile on floor under areas where casework and other equipment occurs, except where mounted in wall recesses.
- B. Extend tile and sheet vinyl flooring for room into adjacent closets and alcoves.

3.06 CLEANING AND PROTECTION

- A. Clean adhesive marks on exposed surfaces during the application of resilient materials before the adhesive sets. Exposed adhesive is not acceptable.
- B. Keep traffic off resilient material 72 hours after installation.
- C. Clean and polish materials in the following order:
 1. For the first two weeks sweep and damp mopped only.
 2. After two weeks, scrub resilient materials with a minimum amount of water and a mild detergent. Leave surface clean and free of detergent residue.
 3. Apply wax polish to the floors in accordance with the polish manufacturer's instructions.
- D. When construction traffic occurs over tile, cover resilient materials with reinforced craft paper. At entrances and where wheeled vehicles or carts are used, cover tile with plywood, hardboard, or particleboard over paper. All protective surfaces are to be properly secured and maintained.
- E. When protective materials are removed and immediately prior to acceptance, replace any damage tile, re-clean resilient materials, lightly re-apply polish and buff floors.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Furnish labor, materials, equipment, and services to install carpet tile materials and related components and accessories as shown on the Drawings, as specified herein and as required for a complete and proper installation.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Regulatory Requirement: Provide carpet tile with a minimum critical radiant flux limit of 0.22 watts/cm² in compliance with National Fire Protection Association (NFPA) 253.
- B. Maintain complete manufacturer's installation directions for all products at the job site throughout installation. Installation shall conform to CRI 104 Standards.
- C. Qualifications of Installer: Minimum of three years experience on at least three project installations of extent comparable to proposed Project.
- D. Carpet Materials:
 - 1. Face yarns shall be of same dye batch and finish material shall be of same mill run in each unit.
 - 2. Conform to applicable codes for flame/smoke rating requirements in accordance with ASTM E84.

1.04 SUBMITTALS

- A. Procedures: In accordance with Section 01 33 00 – Submittals.
- B. Product Data:
 - 1. Manufacturer's specifications, installation instructions, maintenance recommendations, and form of guarantee offered for each type of carpet.
- C. Certification: Letter of certification that materials proposed comply with specified requirements.
- D. Samples:
 - 1. Carpet tile - submit three full size carpet tiles for each type and color.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in factory wrapping with manufacturer's registry numbers attached and intact to prevent damage and deterioration during shipment, handling, and storage.
- B. Maintain protective coverings in place and in good repair until removal is necessary for the Work.
- C. Protect products against damage during shipment, field handling, and installation.
- D. Store products inside enclosed storage facilities or closed building, supported above grade and slabs-on-grade.
- E. Environmental Requirements:
 - 1. Maintain storage spaces and products in dry condition at all times, and within temperature extremes recommended by manufacturer.
 - 2. Store materials for one day prior to installation in area of installation to achieve temperature stability.
- F. Follow manufacturer's special instructions.

1.06 COORDINATION

- A. Existing Substrates.
 - 1. Furnish instructions for condition required for such substrates, which are to receive new or replacement carpet.
- B. Painting Work in areas to receive carpet shall have been completed prior to installation of carpet.
- C. Metal thresholds at fire-rated door openings and elsewhere indicated or scheduled adjacent to carpet areas shall have been installed prior to carpet installation.

1.07 EXTRA MATERIALS

- A. Carpet Tile: Furnish the Owner with a minimum of 5 percent of each type and color of material used in this project from same dye lot or production run for compatibility with the installed materials.
- B. Deliver to Owner unused carpet pieces over 2 square feet and 8 inches in least dimension.
- C. Store where indicated by Owner.
- D. Provide the Owner with a signed receipt indicating materials and quantities upon delivery.

1.08 GUARANTEE

- A. Guarantee directly or through carpet mill or fiber manufacturer the surface pile in any given area against abrasive wear of more than 10 percent within 15 years for carpet tile as properly installed and maintained. Misuse, damage, or improper cleaning methods

shall not apply. Carpet areas, which fail to perform, shall be replaced at no additional cost to Owner.

PART 2 PRODUCTS

2.01 GENERAL

- A. Carpet Schedule:
 - a. See Section 09 06 00, Schedules for Finishes.
- B. Carpet shall have a Critical Panel Flux of not less than .45 watts per square centimeter, in accordance with ASTM E648.
- C. When tested in accordance with ASTM E662, smoke density shall not exceed 450.
- D. Carpet shall meet requirements of DOC FF 1-70.

2.02 ACCESSORY MATERIALS

- A. Edge Binder: Molded vinyl type designed for carpet in manufacturer's standard color; Flexco, Mercer, or accepted equal.
- B. Carpet Adhesive: Release type recommended by carpet tile manufacturer.
- C. Subfloor Filler: Latex base type as recommended by carpet tile manufacturer.
- D. Miscellaneous: Tape, thread, and other items necessary for installation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which carpet is to be installed. Do not install carpet over substrate, which is uneven, cracked, or has other detrimental conditions that could affect the performance and appearance of the carpet. Do not proceed with the Work until unsatisfactory conditions have been corrected.
- B. Before installation, inspect carpet tile for manufacturing flaws, shipping damage, and other non-compliant conditions. Do not install carpet found not in compliance with Specifications.
- C. Maintain spaces to receive carpet tile at 70 degrees F. minimum, for at least 48 hours previous to, during, and for 48 hours after installation of carpet.

3.02 SUBSTRATE PREPARATION

- A. Clean substrates free from dust and other foreign and residual materials, which could inhibit proper bonding.
- B. Fill cracks exceeding 1/16 inch in width, holes, and depressions to level surfaces. Maximum allowable variation of 1/4 inch in 10 feet. See Specification section "03 54 16 - Hydraulic Cement Underlayment".
- C. Prime substrates when and as recommended by manufacturer.

- D. Confirm compatibility of adhesive with sealers or curing agency on concrete floors.

3.03 INSTALLATION

- A. Install carpet tile and associated materials in accordance with manufacturer's printed instructions.
- B. Install carpet tile prior to installation of movable fixtures.
- C. Apply adhesive in accordance with manufacturer's printed instructions, and for uniform coverage directly onto floor. Remove excess cement with approved solvent.
- D. Cut evenly along walls, cut and fit evenly around projections, corners, pipes, electrical outlets, floor air or heating elements, and trim strips.
- E. Securely fasten carpet edging binder to floor wherever carpet tiles meet different flooring material and no threshold or other divider is noted.
- F. Extend carpet tile materials under all open-bottomed and raised bottom obstructions, and under removable flanges of obstructions. Extend carpet tiles into closets and alcoves of rooms indicated to receive carpeting, unless another material is specifically identified to be used in that space. Carpet tile shall be installed under all movable furniture and equipment.
- G. Neatly trim carpet free from loose thread ends and projecting frays. Finish installation shall be free from visual defects.
- H. After each area of carpet has been installed, protect from soiling and damage.
- I. Installation shall not receive furniture or heavy traffic for 48 hours after installation.

3.04 CLEANING AND COMPLETION

- A. When complete, carpet joint lines shall be straight and free from stagger and offsets not intended.
- B. Finished carpet surfaces shall be flat, true to plane, and free from offsets across Joints.
- C. Units shall lay fully in place and free from warps, bulges, and lifting at edges.
- D. Replace or repair any damaged base and door trim.
- E. Vacuum-clean completed installation using equipment of type recommended by carpet manufacturer. Carpet base and walls shall be cleaned and free from stains, blemishes and other foreign materials.
- F. In all carpeted areas subject to traffic, provide a temporary non-staining paper pathway in the direction of traffic. Remove temporary pathway upon final acceptance by the Owner.

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION**

- A. Painting and finishing of exposed exterior and interior surfaces as required to complete finishing of the Work as indicated on the Drawings including the following items:
 - 1. Mechanical diffusers.
 - 2. Visible interior of ductwork.
 - 3. Electrical Sub-panels painted to match adjacent wall surface.
 - 4. Visible piping and electrical components.
- B. The Work includes painting and finishing of new and existing interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.
 - 1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
- C. Surfaces Not to be Painted:
 - 1. Factory pre-finished items as specified in various Sections.
 - 2. Pre-finished wall, ceiling, and floor coverings.
 - 3. Painting specified elsewhere and included in respective Sections, including but not necessarily limited to, shop priming.
 - 4. Code-Required Labels: Keep equipment identification and fire rating labels free of paint.
 - 5. Surfaces concealed in walls and above ceilings except as specifically indicated otherwise.
 - 6. Ducts, piping, conduit, and equipment concealed in walls and ceilings, unless specifically indicated otherwise.
- D. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- E. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color of finish is not designated, Architect will select these from standard colors available for materials systems specified.

1.02 RELATED WORKS

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data:
 1. Not less than 30 days before beginning work, submit a complete list of materials proposed for use, together with manufacturer's specifications.
 2. Paint materials and products shall be subject to the Architect's acceptance.
- C. Samples:
 1. Custom and Stock Colors: Submit 8x8 inch brush-out samples for Architect's review of each color and texture. Provide a listing of material and application for each coat of each finish sample.
 2. Samples shall be resubmitted as requested until required sheen, color, and texture is achieved.
 3. Label and identify each sample as to location and application.
- D. Field Samples: On actual wall surfaces and other exterior and interior building components in areas designated by Architect, duplicate painted finishes of prepared samples in 4 ft. sq. areas. Simulate finished lighting conditions for Architect's and Owner's review of in-place Work. Colors may require adjustment at no additional cost to Owner.

1.04 QUALITY ASSURANCE

- A. Include on label of containers:
 1. Manufacturer's name
 2. Type of paint
 3. Manufacturer's stock number
 4. Color
 5. Instructions for reducing, where applicable
- B. Field Quality Control:
 1. Request review by the Architect of first finished room, space, or item of each color scheme required for color, texture, and workmanship.
 2. Use first acceptable room, space, or item as the Project standard for each color scheme.

C. Regulatory Requirements:

1. Comply with the regulations of the Southern California Air Quality Management District (SCAQMD) for Volatile Organic Contents (VOC's).
2. Paint shall be certified by the manufacturer as "non-lead" (less than 0.06 percent lead by weight in the dried film) as defined in Part 1303 of the Consumer Product Safety Act.
3. Work to be painted may contain excessive levels of lead-based paint. Contractor shall retain and pay for the services of a Testing Agency to perform and report on tests for such suspected material

1.05 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material
2. Manufacturer's stock number and date of manufacturer
3. Manufacturer's name
4. Contents by volume, for major pigment and vehicle constituents
5. Thinning instructions
6. Application instructions
7. Color name and number

B. Storage of Materials:

1. Store only acceptable project materials on project site.
2. Store in a suitable location.
3. Restrict storage to paint materials and related equipment.
4. Comply with health and fire regulations.

1.06 PROJECT CONDITIONS

A. Environmental Requirements:

1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be stored and applied.
2. Do not apply paint in rain, fog or mist; or when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

3. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

1.07 WARRANTY

A. Color and Life of Film:

1. At the end of 1 year, colors of surfaces shall have remained free from serious fading, and variations (if any) shall be uniform.
2. Materials shall have their original adherence at end of 1 year and there shall be no evidence of blistering, running, peeling, scaling, chalking, streaking, or stains at end of this period.

1.08 MAINTENANCE

A. Extra Materials:

1. At completion of the Work, deliver to the Owner extra stock of paint equaling approximately 5 percent of each color used in each coating material used.
2. Stock shall be in tightly sealed and clearly labeled containers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Product numbers specified in Article 3.06, "Paint Systems", are as manufactured by Sherwin Williams, unless otherwise indicated. Equivalent products manufactured by Sinclair Paint Co., Benjamin Moore, Dunn-Edwards, ICI Paints, Fuller O'Brien or Glidden are acceptable.
- B. Materials selected for coating system of each type of surface shall be the product of a single manufacturer.
- C. Thinner: As recommended by each manufacturer for his respective product for use only within recommended limits.
- D. Colors used shall be selected for their permanence and non-fading qualities. In addition, colors that are used over concrete and plaster surfaces shall be lime-proof.
- E. Unsuitability of Specified Products: Claims concerning unsuitability of any materials specified will not be entertained, unless such claim is made in writing to the Architect before the Work is started.
- F. Texturing: Match texture of adjacent textures when new materials abut textured areas.

2.02 MATERIAL QUALITY

- A. Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

- B. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

2.03 COLORS

- A. Colors: Colors to be selected by Architect from manufacturer's color chart.
- B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
- C. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish material proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

2.04 MIXING AND TINTING

- A. Deliver paints ready mixed to jobsite.
- B. Accomplish job mixing and job tinting only when acceptable to the Architect.
- C. Mix only in mixing pails placed in suitable sized nonferrous or oxide-resistant metal pans.
- D. Use tinting colors recommended by manufacturer for specific type of finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.
- B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.02 SURFACE PREPARATION

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
- B. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, re-install removed items.

- C. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces. Do not paint until all interior gypsum board is installed, taped and sanded.
- D. Gypsum Board:
 - 1. Fill narrow, shallow cracks and small holes with spackling compound.
 - 2. Rake deep, wide cracks and deep holes.
 - a. Dampen with clear water.
 - b. Fill with thin layers of drywall joint cement.
 - 3. Allow to dry.
 - 4. Sand smooth after drying; do not raise nap of paper on gypsum board.
 - 5. See Section 09 25 00 for requirements for gypsum board finishing.
- E. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.
 - 1. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.
- F. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum-based solvent.
- G. Surfaces which cannot be prepared or painted as specified shall be immediately brought to the attention of the Architect in writing.
 - 1. Starting of work without such notification will be considered acceptance by the Contractor of surface involved.
 - 2. Contractor shall replace unsatisfactory work caused by improper or defective surfaces, as directed by the Architect, at no additional cost to the Owner.

3.03 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.04 APPLICATION

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 1. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
 - 3. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
 - 4. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
- B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 1. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- D. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.
 - 1. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn through or other defects due to insufficient sealing.
- E. Stipple Eggshell Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.
- F. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

3.05 CLEAN-UP AND PROTECTION

- A. Clean-up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

1. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- B. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
 1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
 2. At the completion of work of other trades, touch up and restore all damaged or defaced painted surfaces.

3.06 PAINT SYSTEMS

- A. General:
 1. Exterior paint systems are specified and identified by number and interior paint systems by letter.
 2. Only major areas are scheduled, but miscellaneous and similar items and areas within room or space shall be treated with suitable system.
 3. Number of coats scheduled is minimum.
 - a. Additional coats shall be applied at no additional cost if necessary to completely hide base material, produce uniform color, and provide satisfactory finish result.
 4. This specification shall serve as a guide and is meant to establish procedure and quality.
- B. Acceptance of Final Colors: Final coat of paint for both exterior and interior shall not be applied until colors have been accepted by the Architect based on Field Samples noted in 1.03.C above.
- C. Interior Coating Systems: Provide the following finish coating systems for the various substrates, as shown on the Finish Plan. Provide coats as indicated and sufficient to cover.
 1. Gypsum Wallboard:
 - a. Flat: (ceilings, except as noted)
 - 1) Prime Coat: 220-22 PVA Sealer.
 - 2) Second Coat: One coat 209-00 Alkyd Wall Primer Sealer.
 - 3) Finish Coat: One coat 202-XX Flat Latex Wall Finish.
 - b. Stipple Eggshell: (walls, except as noted)
 - 1) Prime Coat: One coat 220-22 PVA Sealer.

- 2) Second Coat: 209-05 Satin Latex Stipple.
 - 3) Finish Coat: One coat 212-XX Eggshell Latex Enamel.
 - 2. Galvanized Metal (trim and access doors, except structural steel, etc.):
 - a. Semi-gloss:
 - 1) Prime Coat (delete if shop primed): One coat 621-04 BLOX-RUST Alkyd Metal Primer.
 - 2) Two coats 619-6X Ultra-Color Alkyd Semi-Gloss Enamel.
 - 3. Ferrous Metal or Aluminum (miscellaneous)
 - a. Semi-gloss:
 - 1) Prime Coat (delete if shop primed): 15 Red Oxide Primer
 - 2) Second Coat: 1790 Latex Enamel Undercoater
 - 3) Finish Coat: 4000 Acrylic Latex Enamel
- D. Other Coating Systems:
 - 1. Plaster
 - a. Semi-gloss:
 - 1) Prime Coat: 18 Epoxy Water-Base Primer
 - 2) Finish Coat: 4400 Acrylic Emulsion

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies interior and exterior identification signs, building identification signs, parking and regulatory signs.
- B. Interior signs.
 - 1. Toilet Rooms
 - 2. Lobby Entry
 - 3. No Smoking distance at building access doors
 - 4. Accessible Signs at Entries
 - 5. Accessible Parking Stalls
 - 6. Fire Extinguishers
 - 7. Exit Signage

1.03 MANUFACTURER'S QUALIFICATIONS

- A. Sign manufacturer shall provide evidence that they regularly and presently manufactures signs similar to those specified in this section as one of their principal products.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Manufacturer's Literature:
 - 1. Showing the methods and procedures proposed for the concealed anchorage of the signage system to each surface type.
 - 2. Manufacturer's printed specifications, anchorage details, installation and maintenance instructions.
- C. Shop Drawings:
 - 1. Sign location plan, showing location, type and total number of signs required.
 - 2. Scaled drawings for manufacture and fabrication of sign types. Identify materials, show joints, welds, anchorage, accessory items, mounting and finishes.
- D. Samples:
 - 1. All sign colors.

1.05 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver materials to job in manufacturer's original sealed containers with brand name marked thereon. Protect materials from damage.
- B. Package to prevent damage or deterioration during shipment, handling, storage and installation. Maintain protective covering in place and in good repair until removal is necessary.
- C. Deliver signs only when the site and mounting services are ready for installation work to proceed.
- D. Store products in dry condition inside enclosed facilities.

1.07 QUALITY ASSURANCE

- A. Regulatory Requirements: Products shall meet requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and local amendments and modifications.
- B. 2019 CBC – California Building Code

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Signs of type, size and design shown on the drawings and as specified.
- B. Signs complete with lettering, framing and related components for a complete installation.
- C. Provide graphics items as completed units produced by a single manufacturer, including necessary mounting accessories, fittings and fastenings.
- D. Do not scale drawings for dimensions. Contractor to verify and be responsible for all dimensions and conditions shown by these drawings. Owner's Representative to be notified of any discrepancy in drawing, in field directions or conditions, and/or of any changes required for all such construction details.
- E. The Sign Contractor, by commencing work of this section, assumes overall responsibility, as part of his warranty of work, to assure that assemblies, components and parts shown or required within the work of the section, comply with the Contract Documents. The

Contractor shall further warrant: That all components, specified or required to satisfactorily complete the installation are compatible with each other and with conditions of installations.

2.02 SIGN MATERIALS

- A. General: For items exposed to view on completion, provide materials having flat, smooth surfaces without blemishes. Do not use materials whose surfaces exhibit pitting, seam marks, roller marks, rolled trade names or roughness.
- B. Aluminum:
 - 1. Sheet and Plate: ASTM B209.
 - 2. Extrusions and Tubing: ASTM B221.
 - 3. Castings: ASTM B26.
- C. Concrete Post Footings: See Section 03 30 00, CAST-IN-PLACE CONCRETE.
- D. Steel:
 - 1. Posts: ASTM A53 Grade B, Schedule 40 pipe, Galvanized G90.
 - 2. Sheet: ASTM A1008, ASTM A591 electrolytic zinc coated.
- E. Stainless Steel:
 - 1. Sheet: ASTM A480.
 - 2. Posts: ASTM 6063.
 - 3. Billets: ASTM A314.
- F. Sign Face: High impact polyester acrylate resins, pressure molded into a single polymerized component, using manufacturer's co-molding process.
- G. Tactile Graphics and Text: Provide tactile copy and grade 2 Braille raised 1/32 inch minimum from plaque surface using manufacturer's co-molding process.
 - 1. Provide lettering and graphics precisely formed, uniformly opaque to comply with relevant ADA regulations and requirements indicated for size, style, spacing, content, position, and colors.
- H. Colors: High contrast semi-matte integral colors for graphics. All integral resins are U.V. stabilized resins utilizing automotive grade pigments.
- I. Traffic Regulatory Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner, complying with the following minimum requirements:
 - 1. Steel Sheet: 0.0625 inch thick, painted.
- J. Posts: As shown on the drawings.

1. 3 inch square aluminum tubing, painted.
 2. 2 inch round standard pipe, galvanized.
- K. Accessories:
1. Anchors and inserts: Provide hot-dipped galvanized anchors and inserts for exterior installations. Use toothed steel devices for drilled in anchors. Furnish inserts to be set into concrete or masonry work. Furnish galvanized through bolts for attachment to posts.
- L. Letterforms: All letterforms and arrows shall be vinyl applied graphics. Clear film with printed graphics applied to the sign panel is not acceptable.
- M. Symbol of accessibility: Adhesive Mylar symbol at (4) four exterior aluminum doors.

2.03 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Baked Enamel: Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating and painting.
- D. Depth: 0.25-inch thickness.
- E. Panel Appearance: Colors per 2019 CBC requirements.
- F. Surface Texture: Matte Non-Glare.
- G. Letter Style: Sans Serif.

2.04 FABRICATION

- A. Design components to allow for expansion and contraction for a minimum material temperature range of 56 °C (100 °F), without causing buckling, excessive opening of joints or over stressing of adhesives, welds and fasteners.
- B. Form work to required shapes and sizes, with true curve lines and angles. Provide necessary rebates, lugs and brackets for assembly of units. Use concealed fasteners whenever and wherever possible.
- C. Shop fabricate so far as practicable. Joints fastened flush to conceal reinforcement, or welded where thickness or section permits.
- D. Contact surfaces of connected members be true. Assembled so joints will be tight and practically unnoticeable, without use of filling compound.
- E. Signs shall have fine, even texture and be flat and sound. Lines and miters sharp, arises unbroken, profiles accurate and ornament true to pattern. Plane surfaces be smooth flat and without oil-canning, free of rack and twist. Maximum variation from plane of surface plus or minus 0.3 mm (0.015 inches). Restore texture to filed or cut areas.

- F. Level or straighten wrought work. Members shall have sharp lines and angles and smooth surfaces.
- G. Extruded members to be free from extrusion marks. Square turns and corners sharp, curves true.
- H. Drill holes for bolts and screws. Conceal fastenings where possible. Exposed ends and edges mill smooth, with corners slightly rounded. Form joints exposed to weather to exclude water.
- I. Coat aluminum exterior signs with low VOC acrylic polyurethane. Paint coatings are to be UV and graffiti resistant and able to maintain a consistent color and durability.
- J. All painted surfaces properly primed. Finish coating of paint to have complete coverage with no light or thin applications allowing substrate or primer to show. Finished surface smooth, free of scratches, gouges, drips, bubbles, thickness variations, foreign matter and other imperfections. All exposed surfaces (front and back including edges) shall be painted.
- K. All signs are to be constructed in a manner where front faces are free of exposed fasteners.
- L. Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.
- M. No signs are to be manufactured until final sign message schedule and location review has been completed by the Owner & forwarded to contractor.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Site Verification of Conditions: Verify installation conditions previously established under other sections are acceptable for product installation in accordance with manufacturer's instructions.
- B. Scheduling of installation by the client implies that substrate and conditions are prepared and ready for product installation. Proceeding with installation implies installer's acceptance of substrate and conditions.

3.02 INSTALLATION

- A. Install product in accordance with supplier's instructions.
- B. Install product in locations indicated using mounting methods recommended by sign manufacturer and free from distortion, warp, or defect adversely affecting appearance.
- C. Install product level, plumb, and at heights indicated.
- D. Install product at heights to conform to Americans with Disabilities Act Accessibility Guidelines (ADAAG) and applicable local amendments and regulations.

- E. Install signs within the following tolerances and in accordance with manufacturer's recommendations:
 - 1. Interior Signs: Within 1/4 inch vertically and horizontally of intended location.

3.03 CLEANING AND PROTECTION

- A. Repair scratches and other damage which might have occurred during installation. Replace components where repairs were made but are still visible to the unaided eye from a distance of 5 feet.
- B. Remove temporary coverings and protection to adjacent work areas. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project in accordance with provisions in Division 1.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Section includes furnishing and installing a sliding-folding thermally broken, acoustically rated, aluminum-framed glass panel system that includes:
 - a. Aluminum frame.
 - b. Threshold.
 - c. Aluminum framed panels.
 - d. Sliding-folding and locking hardware.
 - e. Sound gasketing.
 - f. Panel Catch.
 - g. Glass and glazing.
 - h. Accessories as required for a complete working installation.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. Reference Standards in accordance with Division 01 and current editions from the following:
 - a. AAMA. American Architectural Manufacturers Association; www.aamanet.org
AAMA 205-15, In-Plant Testing Guidelines for Manufacturers and Independent Laboratories.
AAMA 502, Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
AAMA 611, Voluntary Specification for Anodized Architectural Aluminum.
AAMA 920-11, Specification for Operating Cycle Performance of Side-Hinged Door System.
AAMA 1304, Voluntary Specification of Forced Entry Resistance of Side-Hinged Door Systems.
AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
AAMA/WDMA/CSA 101/1.S.2/A440-17, NAFS, North American Fenestration Standard Specification for Windows, Doors and Skylights.
 - b. ANSI. American National Standards Institute; www.ansi.org
ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
 - c. ASTM. ASTM International; www.astm.org
ASTM C1036, Standard Specification for Flat Glass.

ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

ASTM E413-16, Classification for Rating Sound Insulation.

ASTM E2068-00 (2016), Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.

ASTM E987-88 (2017), Standard Test Methods for Deglazing Force of Fenestration Products.

ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.

d. CPSC. Consumer Product Safety Commission; www.cpsc.gov

CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate Folding Glass Partition system and framing R.O.
 - a. Pre-installation Meetings: See Division 01 (Special Provisions) in the specifications.

1.05 SUBMITTALS

- A. For Contractor submittal procedures see Division 01 (Special Provisions) in the specifications.
 - a. Product Data: Submit manufacturer's printed product literature for each Folding Glass Partition system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles, and colors.
 - b. Product Drawings: Indicate Folding Glass Partition system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
 - c. Manufacturers' Instructions: Submit Owner's Manual from manufacturer which includes installation instructions, operation, and maintenance data: Identify with project name, location and completion date, and type and size of unit installed.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with a minimum thirty (30) years' experience in the sale of folding-sliding door systems for large openings in the North American market.
- B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
 - a. Installer to be trained and certified by manufacturer.
- C. Single Source Responsibility: Furnish Folding Glass Partition system materials from one manufacturer for entire Project.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions and recommendations, Special Provisions specifications section, and as follows:
 - a. Deliver materials to job site in sealed, unopened cartons or crates.Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets

project requirements.

- b. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.08 FIELD CONDITIONS

- A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.) and threshold depressions to receive sill. Mark field measurements on product drawings submittal.

1.09 WARRANTY

- A. Manufacturer Warranty: Provide Folding Glass Partition system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.
 - a. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:
 - Rollers and Glass Seal Failure: Ten (10) years
 - All Other Components: Ten (10) years
 - 1). Exception: Five (5) years if NOT installed by manufacturer's specific system approved or certified trained installer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Manufacturer & Product:
 - a. Basis-of-Design Manufacturer:
 - b. Nana Wall Systems, Inc. (www.nanawall.com)
 - 100 Meadow Creek Drive, Corte Madera, CA 94925
 - Toll Free (800) 873-5673
 - Telephone: (415) 383-3148
 - Fax: (415) 383-0312
 - Email: info@nanawall.com
 - c. Basis-of-Design Product: NW Acoustical 645, folding glass partition (ALU)
 - d. Substitution Procedures: See Division 1 specifications section for substitution procedures.

2.02 PERFORMANCE / DESIGN CRITERIA

- A. Performance Criteria:
 - a. Acoustic Performance (STC)
 - System STC 35 with 1/4-inch (6 mm) STC 35 laminated glass.
 - b. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles
 - c. Forced Entry (AAMA 1304): Pass
 - d. Forced Entry Resistance (ASTM F842): Meets Grade 40: +F2
- B. Design Criteria:

- a. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing and folding panels, and number of panels stacking to the left and to the right.
- b. Unit Operation: Adjustable sliding & folding hardware with top & bottom tracks
- c. Mounting Type: Floor track supported with upper guide track
- d. Panel Configuration: Straight
- e. Stack Storage Configuration: Outswing type and stack storage outside jamb
- f. Sill Type: Minimal surface mounted flush sill - ADA compliant
- g. Swing Panel Type: Hinged, Without Entry/Egress panel hinged to side jamb.
- h. Panel Pairing Configuration: Bi-folding panels hinged to side jamb (See Drawings)

2.03 MATERIALS

- A. Basis of Design: Model NW Acoustical 645. Thermally Broken Aluminum Framed Folding Glass
Description: Nominal frame stile width of 3-7/8 inch (99 mm) between folding panels, floor track supported system. Manufacturer's standard thermally broken frame and panel profiles, with head track, side jambs, sill and panels with dimensions as shown on Drawings.
 - a. System Components: Aluminum frame, threshold, panels, sliding-folding and locking hardware, weather-stripping, glass and glazing, panel catch and thermal break.
 - b. Panels: Single lite; standard
 - c. Panel Size (W x H): As indicated on Drawings.
 - 1). Rail Depth: 2-5/8 inch (67 mm)
 - 2). Top Rail and Stile Width: 2-7/8 inch (73 mm)
 - 3). Bottom Rail Width: Manufacturer's standard kickplate on all panels (swing panel included). Height of 10 inches (254 mm)
 - 4). Frame Depth: 2-15/16 inch (74 mm)
 - 5). Head Track Width: 2-13/16 inch (72 mm) standard
 - 6). Side Jamb Width: 2 inches (51 mm)
 - 7). Sill Finish: Black anodized finish.
 - d. Aluminum Extrusion: AlMgSi0.5 alloy, 6063-T5
 - 1). Thickness: 0.078 inch (2.0 mm) nominal
 - 2). Acoustic Break: 1-1/4 inch (32 mm) wide glass fiber reinforced (GFR) polyamide for panels.
 - e. Aluminum Finish: One color inside and outside.
 - 1). Finish Type: Dark Anodized Bronze-T
- B. Glass and Glazing:
 - a. Safety Glazing: In compliance with ASTM C1036, ASTM C1048, and ANSI Z97.1.
 - b. Manufacturer's glass lites, dry glazed with glass stops on the inside.
 - 1). 1/4" (6 mm) STC 35 laminated glass to achieve unit System STC of 35.
- C. Locking Hardware and Handles:
 - a. Pairs of Folding Panels: Provide manufacturer's flat handles and concealed two-point locking hardware operated by 180° turn of handle between each pair. Face applied Surface Mounted

Minimal bolt locking NOT acceptable.

- 1). Handle Type: Flat handle stainless steel
 - i. Flat Handle Finish: Black titanium stainless steel, standard
 - b. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel.
 - c. Locking rods with standard end caps at the top and bottom. Rods to have a stroke of 15/16 inch (24 mm)
 - d. Additional profile cylinders to be **Keyed differently**.
 - e. Burglary Resistance to be **Standard**.
 - f. Panel Catch: Panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel.
- D. Sliding-Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks and threshold. All running carriages to be with sealed, self-lubricating, double ball bearing multi-rollers. Surface mounted hinges and running carriages NOT acceptable.
- a. Lower Running Carriage Carrying Capacity: 250 lb. (120 kg). Lower running carriage provided with two vertical stainless-steel wheels with double row of ball bearings and two horizontal polyamide wheels.
 - b. Vertical wheels with Gothic arch feature to ride on top of stainless-steel guide track covers over the full length of the sill track. Wheels riding on aluminum surfaces NOT acceptable.
 - c. Upper guide carriage with two horizontal polyamide guiding wheels. For configurations with pairs of panels that can slide left or right, additional concealed, additional vertical tilt protection hardware.
 - d. Rollers: **Black** double ball bearing stainless-steel wheels.
 - e. Hinges: **Black** anodized aluminum with stainless steel security hinge pins and set-screws.
 - f. Optional Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded- pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact.
 - 1). Pull Handle – Brushed satin finish.
- E. Sound Gasketing: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
- F. Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity.

2.04 FABRICATION

- A. Folding Glass Wall: Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and sound gasketing.
 - a. Each unit factory pre-assembled and shipped with complete system components and installation instructions.
 - b. Exposed work to be carefully matched to produce continuity of line and design with all joints.
 - c. No raw edges visible at joints.

2.05 ACCESSORIES

- A. Provide sidelights, transoms, corner posts, or single or double doors as indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examination and Acceptance of Conditions per Section 01 70 00 and as follows:
 - a. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.

Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer for readiness to receive Work.

Verify structural integrity of the header for deflection with live and dead loads limited to the lesser of $L/720$ of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.
 - b. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Install Folding Glass Partition system in accordance with the Drawings, approved submittals, manufacturer's recommendations, and installation instructions, and as follows:
 - a. Properly seal around opening perimeter to reduce sound infiltration from surroundings.
 - b. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb, and square. Install frame in proper elevation, plane, and location, and in proper alignment with other work.
 - c. Install panels, handles, lockset, gasketing and other accessories in accordance with manufacturer's recommendations and instructions.

3.03 FIELD QUALITY CONTROL

- A. Field Tests and Inspections per Section 01 40 00 of the following:
 - a. Verify the Folding Glass Partition system operates and functions properly. Adjust hardware for proper operation.
- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.04 CLEANING AND PROTECTION

- A. Keep units closed and protect Folding Glass Partition installation against damage from construction activities.
- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

PART 1 - GENERAL**1.1 DESCRIPTION**

- A. This section specifies corner guards.

1.2 RELATED WORK

- A. All Sections listed in the Table of Contents are a Condition of this Section.

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer with a minimum of three (3) years' experience in providing items of type specified.
 - 1. Obtain wall and door protection from single manufacturer.
- B. Installer's Qualifications: Installers are to have a minimum of three (3) years' experience in the installation of units required for this project.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: show design and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Corner Guards.
- D. Manufacturer's qualifications.
- E. Installer's qualifications.
- F. Manufacturer's warranty.

1.5 DELIVERY AND STORAGE

- A. Deliver materials to the site in original sealed packages or containers marked with the name and brand, or trademark of the manufacturer.
- B. Protect from damage from handling and construction operations before, during and after installation.
- C. Store in a dry environment of approximately 21 degrees C (70 degrees F) for at least 48 hours prior to installation.

1.6 WARRANTY

- A. Construction Warranty: Comply with FAR clause 52.246-21 "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their wall and door protection for a minimum of five (5) years from date of installation and final acceptance by the

Government. Submit manufacturer warranty.

1.7 APPLICABLE PUBLICATIONS

- A. publications listed below form a part of this specification to extent referenced. publications are referenced in text by basic designation only.
- B. ASTM International (ASTM):
 - A240/A240M-20 Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and For General Applications
 - E84-20 Surface Burning Characteristics of Building Materials
- C. American Architectural Manufacturers Association (AAMA):
 - 611-14 Voluntary Specification for Anodized Architectural Aluminum
- D. Code of Federal Regulation (CFR):
 - 40 CFR 59(2020) Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings
- E. The National Association of Architectural Metal Manufacturers (NAAMM):
 - AMP 500-06 Metal Finishes Manual
- F. National Fire Protection Association (NFPA):
 - 80-2019 Standard for Fire Doors and Other Opening Protectives
- G. Underwriters Laboratories Inc. (UL):
 - Annual Issue Building Materials Directory

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Stainless Steel: A240/A240M, Type 304.
 - 1. 16 gauge

2.2 CORNER GUARDS

- A. Basis of Design or approved equal:
 - 1. IPC Door and Wall Protection Systems, InPro Corporation; Stainless Steel Corner Guard:
 - a. 2" (51 mm) wing, 1/8" corner radius.
 - b. Height: See Specification Section 09 06 00 – Schedule for Finishes

2.3 FASTENERS AND ANCHORS

- A. Provide fasteners and anchors as required for each specific type of installation.
- B. Where type, size, spacing or method of fastening is not shown or specified in construction documents, submit shop drawings showing proposed installation details.

2.4 FINISH

- A. Stainless Steel: In accordance with NAAMM AMP 500 finish Number 4.

PART 3 - INSTALLATION**3.1 STAINLESS STEEL CORNER GUARDS**

- A. Mount guards on external corners of interior walls, partitions and columns as shown on construction documents.
- B. Where corner guards are installed on walls, partitions or columns finished with plaster or ceramic tile, anchor corner guards as shown on construction documents. Coat back surfaces of corner guards, where shown on construction documents, with a non-flammable, sound deadening material. Corner guards to overlap finish plaster surfaces.
- C. Where corner guards are installed on gypsum board, clean surface and anchor guards with a neoprene solvent-type contact adhesive specifically manufactured for use on gypsum board construction. Remove excess adhesive from around edge of guard and allow curing undisturbed for 24 hours.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Furnish labor, materials, equipment and services to install toilet and related accessories and components as shown on the Drawings, as specified herein and as required for a complete and proper installation, including, but not limited to the following:
 - 1. Toilet room accessories.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: Accessories and their installation shall conform to applicable requirements for the disabled.
- B. Design Criteria: Grab bars shall be capable of withstanding a force of 900 pounds, minimum, when installed in accordance with the manufacturer's instructions.
- C. Accessories shall be the product of a single manufacturer unless otherwise specified.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Manufacturer's descriptive and technical data and illustrations, marked to indicate specific product types, variations, and materials.
- C. Shop Drawings: Indicate layouts and installation details necessary for proper preparation of toilet partitions and other construction supporting grab bars or other accessory items.
- D. Test data or certification that grab bars meet the specified design criteria.
- E. Maintenance data, operating instructions, and keys required for each type of accessory and lock.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Quality designation and guarantee label shall be attached to each mirror, or manufacturer's certification that mirrors meet specified requirements shall be submitted.
- B. Protection:

1. Maintain protective coatings or coverings on units until installation is complete.
 2. Remove protective coverings at final cleanup of installation.
- C. Handle so as to prevent damage to finished surfaces.
- D. Store materials in original protective packaging to prevent soiling, physical damage, or wetting.

1.06 PROJECT CONDITIONS

- A. Coordinate submission of installation instructions so that backing, blocking, framing and formwork can be properly installed, and work of other trades will not be delayed.

1.07 WARRANTY

- A. Warrant mirrors for 5 years against silver spoilage.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Stainless Steel Sheet: ASTM A167, commercial grade, Type 304, standard gage.
- B. Stainless Steel Tubing: ASTM A269, commercial grade, seamless welded.
- C. Sheet Steel: ASTM A366, cold-rolled stretcher leveled; with G90 galvanized coating.
- D. Mirrors: ¼ inch thick polished float glass, silver-coated and electrolytically copper-plated.
1. Protect edges with vinyl tape or other protective coating.
 2. Channel Edged
- E. Adhesive: Epoxy type contact cement.
- F. Attachment Devices: Hot dip galvanized; furnish backing plates, brackets, and hardware required for a complete installation as recommended by accessory manufacturer for component and substrate.
1. Fastening shall be concealed and theft-proof when available.
- G. Locks: Provide locks and furnish keys for standard lockable items.
- H. Grab Bars: 1-1/4 to 1-1/2 inches O.D., mandrel bent, with welded end flanges, exposed mounting, and peened or other approved safety-grip finish; anchor plates for each bar.

2.02 FINISHES

- A. Provide manufacturer's finish for each item indicated in accessory schedule, stainless-steel where available.

1. Where there are choices of available finishes, not including satin stainless steel, provide chart for Architect's selection.
- B. Exposed Finishes: Stainless steel No. 4, satin finish; satin chrome finish acceptable where stainless steel not available for accessory item scheduled.

2.03 ACCESSORY SCHEDULE

- A. Model numbers indicated in the Schedule below are those of Bobrick Washroom Equipment, Inc. (unless noted otherwise) and are used to establish a standard of quality, utility. Equivalent products of other manufacturers may also be acceptable, subject to conformance with the requirements specified herein and indicated. All accessories brushed stainless steel, unless otherwise noted.
 1. Provide one item for each location indicated on Drawings.
 2. All items shall be satin finish, unless otherwise specified or indicated.
- B. Schedule (itemized below as referenced on Drawings):
 1. B-3944-130, Towel Mate – Semi Recessed combination towel dispenser waste receptacle (PTD).
 2. B-3013 – Recessed Toilet-Seat-Cover Dispenser. (SCD)
 3. B2888 – Surface Mounted Multi-Roll Toilet Tissue Dispenser. (TPD)
 4. B-5806 – 1-1/4 inch (32mm) Diameter Stainless Steel Grab Bars with Snap-Flange Cover. (GB1, GB2)
 5. B-165 – Mirror with Stainless Steel Channel Frame. Rectangular. (MR1)
 6. B254 – Partition Mounted Sanitary Napkin Disposal. (SND)
 7. B2112 – Surface Mounted 40 oz Soap Dispenser. (SD)
 8. Robe Hook (RH)
 9. ASI Model 0487 - Combination Toilet Paper Holder, Dispenser and Seat Cover Dispenser
 10. Shower Seat – “L” Shaped and sized per CBC Chapter 11B.

2.04 FABRICATION

- A. Corners: Weld and grind smooth; leave no open miters.
- B. Form exposed surfaces from one sheet of stock, free of joints.
- C. Provide steel anchor plates and anchor components for installation on building finish.
- D. Form surfaces flat without distortion; maintain flat surfaces without scratches or dents.
- E. Back paint components where contact is made with building finishes, to prevent electrolysis.

- F. Hot-dip galvanize components; package complete with anchors and fittings.
- G. Locked dispensing units: Key alike for all accessories.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Check openings scheduled to receive recessed units for correct dimensions, plumbness of blocking or frames, and preparation that would affect installation of accessories.
- B. Check areas to receive surface-mounted units for conditions that would affect quality and execution of Work.
- C. If unsatisfactory conditions exist, do not commence the installation until such conditions have been corrected.

3.02 INSTALLATION

- A. Install accessories in locations and at heights indicated.
- B. Install true, plumb and level, securely and rigidly anchor accessories to substrate in accordance with manufacturer's instructions.
- C. Use tamper-proof, security type fasteners.
- D. Attach grab bars to backing installed in wall to withstand loads prescribed by CBC.
- E. Install accessories in strict dimensional tolerance to CBC and Accessibility codes, diagrams and standards.

3.03 ADJUSTMENT AND CLEANING

- A. Remove protective coatings in accordance with the manufacturer's instructions.
- B. Adjust accessories for proper operation.
- C. After completion of installation, clean and polish all exposed surfaces.
- D. Deliver keys and instruction sheets to the Owner's Representative.

3.04 COMPLETION

- A. When complete, accessories shall be set plumb and level, accurately aligned, and securely attached.
- B. Exposed surfaces shall be clean and free from scratches, dents, tool marks, stains, discoloration, and other defects and damage.

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION**

- A. This section covers recessed fire extinguisher cabinets.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Manufacturer's Literature and Data: Fire extinguisher cabinet including installation instruction and rough opening required.

1.04 APPLICATION PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

- A. American Society of Testing and Materials (ASTM):
- D4802-10.....Poly (Methyl Methacrylate) Acrylic Plastic Sheet

PART 2 PRODUCTS**2.01 FIRE EXTINGUISHER CABINET**

- A. Semi-Recessed type with flat trim. See Section 09 06 00 as reference.

2.02 FABRICATION

- A. Form body of cabinet from 0.9 mm (0.0359 inch) thick sheet steel.
- B. Fabricate door and trim from 1.2 mm (0.0478 inch) thick sheet aluminum with all face joints fully welded and ground smooth.
1. Glaze doors with 6 mm (1/4 inch) thick ASTM D4802, clear acrylic sheet, Category B-1, Finish
 2. Design doors to open 180 degrees.

3. Provide continuous hinge, pull handle, and adjustable roller catch.

2.03 FINISH

- A. Finish interior of cabinet body with baked-on semigloss white enamel.
- B. Finish door, frame with manufacturer's standard clear satin anodized aluminum.

PART 3 EXECUTION

- A. Install fire extinguisher cabinets in prepared openings and secure in accordance with manufacturer's instructions.
- B. Install cabinet so that bottom of cabinet is 975 mm (39 inches) above finished floor.
- C. Install signage as required to indicate obscured extinguisher locations.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide seismic restraint in accordance with the requirements of this section in order to maintain the integrity of nonstructural components of the building so that they remain safe and functional in case of seismic event.
- B. Definitions: Non-structural building components are components or systems that are not part of the building's structural system whether inside or outside, above or below grade. Non-structural components of buildings include:
 - 1. Electrical Elements: Power and lighting systems; selector and controller panels; fire protection and alarm systems; and telephone and communication systems.
 - 2. Mechanical Elements: Heating, ventilating, and air-conditioning systems; roof drainage piping; sprinkler systems.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY CONTROL

- A. Shop-Drawing Preparation:
 - 1. Have seismic-force-restraint shop drawings and calculations prepared by a professional structural engineer experienced in the area of seismic force restraints. The professional structural engineer shall be registered in California.
 - 2. Submit design tables and information used for the design-force levels, stamped and signed by a professional structural engineer registered in California.
- B. Coordination:
 - 1. Do not install seismic restraints until seismic restraint submittals are approved by the Owner.
 - 2. Coordinate and install trapezes or other multi-pipe hanger systems prior to pipe installation.
- C. Seismic Certification: Permanent equipments and components are to have Special Seismic Certification in accordance with requirements of section 13.2.2 of ASCE 7, and shall comply with section 13.2.6 of ASCE 7.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Submit a coordinated set of equipment anchorage drawings prior to installation including:
 - 1. Description, layout, and location of items to be anchored or braced with anchorage or brace points noted and dimensioned.
 - 2. Details of anchorage or bracing at large scale with all members, parts brackets shown, together with all connections, bolts, welds etc. clearly identified and specified.
 - 3. Numerical value of design seismic brace loads.
 - 4. For expansion bolts, include design load and capacity if different from those specified.
- C. Submit prior to installation, a coordinated set of bracing drawings for seismic protection of piping, with data identifying the various support-to-structure connections and seismic bracing structural connections, include:
 - 1. Single-line piping diagrams on a floor-by-floor basis. Show all suspended piping for a given floor on the same plain.
 - 2. Type of pipe (Copper, steel, cast iron, insulated, non-insulated, etc.).
 - 3. Pipe contents.
 - 4. Structural framing.
 - 5. Location of all gravity load pipe supports and spacing requirements.
 - 6. Numerical value of gravity load reactions.
 - 7. Location of all seismic bracing.
 - 8. Numerical value of applied seismic brace loads.
 - 9. Type of connection (Vertical support, vertical support with seismic brace etc.).
 - 10. Seismic brace reaction type (tension or compression): Details illustrating all support and bracing components, methods of connections, and specific anchors to be used.
- D. Submit prior to installation, bracing drawings for seismic protection of suspended ductwork and suspended electrical and communication cables, include:
 - 1. Details illustrating all support and bracing components, methods of connection, and specific anchors to be used.
 - 2. Numerical value of applied gravity and seismic loads and seismic loads acting on support and bracing components.

3. Maximum spacing of hangers and bracing.
4. Seal of registered structural engineer responsible for design.
- E. Submit design calculations prepared and sealed by the registered structural engineer specified above in paragraph 1.03A.

1.05 APPLICABLE PUBLICATIONS

- A. The Publications listed below (including amendments, addenda revisions, supplements and errata) form a part of this specification to the extent referenced. The publications are referenced in text by basic designation only.
- B. American Society of Civil Engineers (ASCE 7) Latest Edition.
- C. California Building Code (CBC) 2019
- E. National Uniform Seismic Installation Guidelines (NUSIG)
- F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
Seismic Restraint Manual - Guidelines for Mechanical Systems, 1998 Edition and
Addendum

1.06 REGULATORY REQUIREMENT

- A. CBC, 2019.
- B. Exceptions: The seismic restraint of the following items may be omitted:
 1. Equipment weighing less than 400 pounds, which is supported directly on the floor or roof.
 2. Equipment weighing less than 20 pounds, which is suspended from the roof or floor or hung from a wall.
 3. Gas piping less than 2 ½ inches inside diameter.
 4. Piping in boiler plants and equipment rooms less than 1 ¼ inches inside diameter.
 5. All other piping less than 2 ½ inches inside diameter, except for automatic fire suppression systems.
 6. All piping suspended by individual hangers, 12 inches or less in length from the top of pipe to the bottom of the support for the hanger.
 7. All electrical conduits, less than 2 ½ inches inside diameter.
 8. All rectangular air handling ducts less than six square feet in cross sectional area.
 9. All round air handling ducts less than 28 inches in diameter.
 10. All ducts suspended by hangers 12 inches or less in length from the top of the duct to the bottom of support for the hanger.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION**3.01 CONSTRUCTION, GENERAL**

- A. Provide equipment supports and anchoring devices to withstand the seismic design forces, so that when seismic design forces are applied, the equipment cannot displace, overturn, or become inoperable.
- B. Provide anchorages in conformance with recommendations of the equipment manufacturer and as shown on approved shop drawings and calculations.
- C. Construct seismic restraints and anchorage to allow for thermal expansion.

3.02 EQUIPMENT RESTRAINT AND BRACING

- A. See drawings for equipment to be restrained or braced.

3.03 MECHANICAL DUCTWORK AND PIPING; ELECTRICAL BUSWAYS, CONDUITS, AND CABLE TRAYS; AND TELECOMMUNICATION WIRES AND CABLE TRAYS

- A. Support and brace mechanical ductwork and piping; conduits and cable trays; and telecommunication wires and cable trays to resist directional forces (lateral, longitudinal and vertical).
- B. Brace duct and breeching branches with a minimum of 1 brace per branch.
- C. Provide supports and anchoring so that, upon application of seismic forces, piping remains fully connected as operable systems which will not displace sufficiently to damage adjacent or connecting equipment, or building members.
- D. Piping Connections: Provide flexible connections where pipes connect to equipment. Make the connections capable of accommodating relative differential movements between the pipe and equipment under conditions of earthquake shaking.

3.04 CEILINGS AND LIGHTING FIXTURES

- A. At regular intervals, laterally brace suspended ceilings against lateral and vertical movements, and provide with a physical separation at the walls.
- B. Independently support and laterally brace all lighting fixtures.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: Holeless Hydraulic Elevator for a full and complete code compliant and operational elevator and associated building systems, including electrical, mechanical, fire protection, plumbing, shaft, structural and special systems. Includes smoke protection system at elevator hoist way openings.
- B. Products Supplied But Not Installed Under this Section:
 - 1. Pit Ladder
 - 2. Inserts mounted in concrete walls at pit and steel tube column supports at shaft partition walls for rail attachments.
 - 3. Any additional items required to meet operation and code requirements.
- C. Work Supplied Under Other Sections:
 - 1. Temporary lighting, including temporary lighting in hoistway for machine space with switch located in hoistway on the strike jamb side of top landing door.
 - 2. Hoistway ventilation shall be in accordance with local and national building code requirements.
 - 3. Guide Rail Support shall be structurally adequate to extend from pit floor to top of hoistway, with spans in accordance with requirements of authority having jurisdiction and final layouts.
 - 4. Removable barricades at all hoistway openings, in compliance with OSHA 29 CFR 1926.502 in addition to any local code requirements.
 - 5. Lifeline attachments capable of withstanding 5000 lb load in accordance with OSHA 29 CFR 1926.502. Provide a minimum of 2 at the top, front of each hoistway.
 - 6. Pit lighting: Fixture with switch and guards. Provide illumination level equal to or greater than that required by ASME A17.1/CSA B44 2000, or applicable version.
 - 7. Control space lighting with switch. Coordinate switch with lighting for machine space as allowable by code.
 - 8. Electrical service and disconnects.
 - 9. Ferromagnetic metal wrapped MDF header panel over elevator door.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.

2. All Specification Sections listed in the Table of Contents.

1.03 INDUSTRY AND GOVERNMENT STANDARDS:

- A. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
- B. ADAAG - Accessibility Guidelines for Buildings and Facilities
- C. ANSI/NFPA 70, National Electrical Code
- D. ANSI/NFPA 80, Standard for Fire Doors and Fire Windows
- E. ASME/ANSI A17.1, Safety Code for Elevators and Escalators.
- F. CBC, California Building Code, 2019
- G. American Society of Mechanical Engineers (ASME)
A17.2.....Inspectors Manual for Electric Elevators and Escalators
- H. National Fire Protection Association:
NFPA 72.....National Fire Alarm and Signaling Code
NFPA 252.....Fire Test of Door Assemblies
- I. NFPA 1784, ASTM E84 and UL 864.

1.04 DESCRIPTION OF ELEVATOR

- A. Elevator Equipment: Holeless Hydraulic Elevator
- B. Equipment Control: Per selected manufacturer
- C. Quantity of Elevators: 1
- D. Landings: 2
- E. Openings: 2 Front Openings
- F. Travel: 12 feet 0 inches, plus or minus
- G. Rated Capacity: 2500 lbs
- H. Rated Speed: 100 fpm
- I. Clear Inside Dimensions (W x D): Per plan
- J. Cab Height: 8' 0"
- K. Clear height under suspended ceiling: Cab Height + 60" to Max 16
- L. Entrance Width and Type: Side per plan
- M. Entrance Height: 7' 0" Entrance Width: 3' 0" minimum
- N. Main Power Supply: 208, 480 Volts + 10%, three-phase, per electrical drawings controls specification.

- O. Operation: Simplex
- P. Machine Location: Machine Room
- Q. Control Space Location: Machine Room
- R. Maintenance Service Period: 12 months

1.05 PERFORMANCE REQUIREMENTS

- A. The elevators shall be capable of meeting the highest standards of the industry and specifically the following:
 - 1. Contract speed is high speed in either direction of travel with rated capacity load in the elevator. Speed variation under all load conditions, regardless of direction of travel, shall not vary more than five (5) percent.
 - 2. The controlled rate of change of acceleration and retardation of the car shall not exceed 0.1G per second and the maximum acceleration and retardation shall not exceed 0.2G per second.
 - 3. Starting, stopping, and leveling shall be smooth and comfortable without appreciable steps of acceleration and deceleration.
- B. The door operator shall open the car door and hoistway door simultaneously at 2.5-feet
- C. Floor level stopping accuracy shall be within 3 mm (1/8 in.) above or below the floor, regardless of load condition.
- D. System Performance
 - 1. Vertical Vibration (maximum): 15-17 mg
 - 2. Horizontal Vibration (maximum): 10-12 mg
 - 3. Jerk Rate (maximum): 3.3 – 5.25 ft/sec³
 - 4. Acceleration (maximum) 1.6 – 2.6 ft/sec²
 - 5. In Car Noise: = 55 dB(A)
 - 6. Leveling Accuracy: ±0.1 inches
 - 7. Starts per hour (maximum): 240

1.06 SUBMITTALS

- A. Comply with Section 01 13 00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product literature for each proposed system.
 - 1. Cab design, dimensions and layout.
 - 2. Layout, finishes, and accessories and available options.
 - 3. Controls, signals and operating system.
 - 4. Color selection charts for cab and entrances.

5. Furnish certificates as required under: Paragraph "QUALIFICATIONS".

C. Shop Drawings:

1. Clearances and travel of car.
2. Clear inside hoistway and pit dimensions.
3. Location and layout of equipment and signals.
4. Car, guide rails, buffers and other components in hoistway.
5. Maximum rail bracket spacing.
6. Maximum loads imposed on building structure.
7. Hoist beam requirements.
8. Location and details of hoistway door and frames.
9. Electrical characteristics and connection requirements.
10. Controller
11. Starters and Overload Current Protection Devices.
12. Electric Door Operator; HP rating and RPM of motor.
13. Hoistway Door Interlocks.
14. Car Buffers; maximum and minimum rated load, maximum rated striking speed and stroke.
15. Cab Ventilation Unit; HP rating and CFM rating.
16. Sill details including sill support.
17. Door operator, infrared curtain units.
18. Cuts or drawings showing details of controllers and supervisory panels.
19. Door opening protection system.

D. WIRING DIAGRAMS

1. Provide three complete sets of field wiring and straight line wiring diagrams showing all electrical circuits in the hoistway, machine room and fixtures. Install one set coated with an approved plastic sealer and mounted in the elevator machine room as directed by the Owner.
2. In the event field modifications are necessary during installation, diagrams shall be revised to include all corrections made prior to and during the final inspection. Corrected diagrams shall be delivered to the Owner within 30 days of final acceptance.
3. Provide the following information relating to the specific type of microprocessor controls installed:

- a. Owner's information manual, containing job specific data on major components, maintenance, and adjustment.
 - b. System logic description.
 - c. Complete wiring diagrams needed for field troubleshooting, adjustment, repair and replacement of components. Diagrams shall be base diagrams, containing all changes and additions made to the equipment during the design and construction period.
 - d. Changes made during the warranty period shall be noted on the drawings in adequate time to have the finalized drawings reproduced for mounting in the machine room no later than six months prior to the expiration of the warranty period.
- E. Operation and maintenance data:
- 1. Provide manufacturer's standard maintenance and operation manual.
- F. Diagnostic Tools
- 1. Prior to seeking final acceptance for the completed project as specified by the Contract Documents, the Elevator Contractor shall deliver to the Owner any specialized tool(s) that may be required to perform diagnostic evaluations, adjustments, and/or parametric software changes and/or test and inspections on any piece of control or monitoring equipment installed. This shall include any specialized tool(s) required for monitoring, inspection and/or maintenance where the means of suspension other than conventional wire ropes are furnished and installed by the Elevator Contractor. Any and all such tool(s) shall become property of the Owner. Any diagnostic tool provided to the Owner by the Elevator Contractor shall be configured to perform all levels of diagnostics, systems adjustment and parametric software changes which are available to the Elevator Contractor. In those cases where diagnostic tools provided to the Owner require periodic recalibration/or re-initiation, the Elevator Contractor shall perform such tasks at no additional cost to the Owner for a period equal to the term of the maintenance agreement from the date of final acceptance of the completed project. During those intervals in which the Owner might find it necessary to surrender a diagnostic tool for recalibration, re-initiation, or repair, the Elevator Contractor shall provide a temporary replacement for the tool at no additional cost to the Owner. The Elevator Contractor shall deliver to the Owner, printed instructions for the proper use of any tool that may be necessary to perform diagnostic evaluations, system adjustment, and/or parametric software changes on any unit of microprocessor-based elevator control equipment and means of suspension other than standard elevator steel cables furnished and install by the Elevator Contractor. Accompanying the printed instructions shall be any and all access codes, password, or other proprietary information that is necessary to interface with the microprocessor-control equipment.

1.07 QUALITY ASSURANCE

- A. Manufacturer: Minimum of fifteen years experience in the fabrication, installation and service of elevators of the type and performance of the specified. The manufacturer shall have a documented quality assurance program.
- B. Installer: The equipment manufacturer shall install the elevator.
- C. Inspection and Testing: In accordance with requirements of local jurisdiction, obtain required permits, inspections and tests.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's recommendations for delivery, storage and handling.

1.09 WARRANTY

- A. Submit all labor and materials furnished in connection with elevator system. The one year Warranty shall commence after final inspection, completion of performance test, and upon full acceptance of the installation and shall concur with the guarantee period of service.

1.10 MAINTENANCE SERVICE

- A. The elevator manufacturer shall provide maintenance service consisting of regular examinations and adjustments of the elevator equipment for a period of 12 months after date of substantial completion. Replacement parts shall be produced by the original equipment manufacturer.
- B. Maintenance service be performed during regular working hours of regular working days and shall include emergency 24-hour call back service.
- C. Maintenance service shall not include adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Provide holeless hydraulic elevator systems subject to compliance with the design and performance requirements of this specification.
 - 1. Basis of Design: Schindler 330A.
 - 2. Other acceptable holeless hydraulic elevator manufacturer with minimum 15 years experience in manufacturing, installing, and servicing elevators of the type required for the project.

2.02 PUMP UNIT ASSEMBLY

- A. Completely integrate the pump unit for the control of the elevator and self-contain in a unit fabricated of structural steel. The unit shall consist of a hydraulic fluid pump driven by an induction motor together with oil control valves, piping, etc. Enclose unit on four open sides of the power unit frame with not less than 16 gauge steel removable panel sections. Provide a minimum 50 mm (2 in.) air space between the top of the panels and bottom of tank. Line panels on the interior side with one-inch rigid acoustical insulation board.
- B. Control valves shall be electronically controlled. Hydraulic fluid flow shall be controlled to insure speed variation of not more than five (5) percent under all load conditions.
- C. Hydraulic system working pressure shall not exceed 500 psi under any load condition.
- D. Pump shall be positive displacement, rotary screw type, specifically designed for hydraulic elevator service, having a steady discharge without pulsation to give smooth and quiet operation. Pump output shall be capable of lifting elevator car with

rated capacity, with a speed variation of no more than five (5) percent between no load and full load. Pump shall operate under flooded suction in an accurately machined case with the clearance required to assure maximum efficiency. Hydraulic fluid by-pass shall discharge directly into storage tank.

- E. Motor shall be squirrel-cage, drip proof, ball bearing, and induction type, with a synchronous speed not in excess of 1800 RPM. Design motor specifically for elevator service, not to exceed nameplate full load current by more than 10% and be continuously rated 120 starts per hour without exceeding a rise of 40 degrees C. Include closed transition SCR soft start.
- F. Connect motor and pump with multiple V-belt. Size belts and sheaves for duty involved and design to prevent any metallic contact between motor and pump shaft. Provide isolation units of rubber in shear to prevent transmission of pump and motor vibration to the building. Install expanded metal sheave guard that can be easily removed for servicing and inspection.
- G. Hydraulic equipment may be installed within the oil storage tank if applicable for elevator size, speed, and duty rating.
- H. Design motor, pump, tank, and piping to accommodate future travel, if specified.

2.03 HYDRAULIC SYSTEM

- A. Construct the storage tank of sheet steel, welded construction, and a steel cover with suitable means for filling, a minimum one-inch protected vent opening, an overflow connection, and a valve drain connection. Tank shall act as a storage tank only, and sized to pass through machine room door as shown on drawings. Provide marked gauge to monitor hydraulic fluid level. Tank shall be of capacity to hold volume of hydraulic fluid required to lift elevator to top terminal landing, plus a reserve of not less than ten gallons. Provide a baffle in the bottom of the tank to prevent entry of any sediment or foreign particles into hydraulic system. Baffle shall also minimize aeration of hydraulic fluid. Permissible minimum hydraulic fluid level shall be clearly indicated. Hydraulic fluid shall be of good grade to assure free flow when cool, and have minimum flash point of 400 degrees F. Provide initial supply of hydraulic fluid for operation of elevator.
 - 1. Thermostatically control the viscosity of the hydraulic fluid with thermal cooling unit and temperature thermostat to maintain the fluid temperature in the reservoir, pump and valves at a constant operating viscosity.
 - 2. Provide a data plate on the tank framing indicating the characteristics of the hydraulic fluid used.
- B. Furnish and install connections between the storage tank, pump, muffler, operating valves, and cylinder complete with necessary valves, pipe supports, and fittings. All connections between the discharge side of the pump, check valve, muffler, cylinder, lowering valves shall be of schedule 40 steel with threaded, flanged, or welded mechanical couplings. Size of pipe and couplings between cylinder and pumping unit shall be such that fluid pressure loss is limited to 10 percent.
- C. Do not subject valves, piping, and fittings to working pressure greater than those recommended by the manufacturer.
- D. Support all horizontal piping. Place hangers or supports within 305 mm (12 in.) on each side of every change of direction of pipeline and space supports not over 3.0 meters (10 ft) apart. Secure vertical runs properly with iron clamps at sufficiently close intervals to carry weight of pipe and contents. Provide supports under pipe to floor.

1. Provide all piping from machine room to hoistway, including necessary supports or hangers. If remote piping is underground or in damp inaccessible areas, install hydraulic piping thru PVC sleeve pipe.
- E. Install pipe sleeves where pipes pass through walls or floors. Set sleeves during construction. After installation of piping, equip the sleeves with snug fitting inner liner of either glass or mineral wool insulation.
- F. Install blowout-proof, non-hammering, oil-hydraulic muffler in the hydraulic fluid supply pressure line near power unit in machine room. Design muffler to reduce to a minimum any pulsation or noises that may be transmitted through the hydraulic fluid into the hoistway.
- G. Arrange control valves to operate so hydraulic fluid flow will be controlled in positive and gradual manner to ensure smooth starting and stopping of elevator.
- H. Provide safety check valve between cylinder and pump connection which will hold elevator with specified load at any point when pump stops or pressure drops below minimum operating levels.
- I. Provide an automatic shut-off valve in the oil supply line at the cylinder inlet. Weld pipe protruding from cylinder at inlet and thread to receive shut-off valve. Activate the automatic shut-off valve when there is more than a ten percent increase in high speed in the down direction. When activated, this device shall immediately stop the descent of the elevator and hold the elevator until it is lowered by use of the manual lowering feature of the valve. Arrange the manual lowering feature of the automatic shut-off valve to limit the maximum descending speed of the elevator to 15 fpm. The exposed adjustments of the automatic shut-off valve shall have their means of adjustment sealed after being set to their correct position.
- J. Provide external tank shut-off valve to isolate hydraulic fluid during maintenance operations.
- K. Provide all pump relief and other auxiliary valves to comply with the requirements of the ASME A17.1 Section 3.19 and to insure smooth, safe, and satisfactory operation of elevator.
- L. Furnish and adjust bypass and relief valve in accordance with ASME A17.1 Rule 3.19.4.2.
- M. Install check valve to hold the elevator car with rated load at any point when the pump stops.
- N. Provide shut-off valves in the pit near the cylinder and in the machine room capable of withstanding 150 percent of design operating pressure. Each manual valve shall have an attached handle.
- O. Conveniently locate the manual lowering valve, easily accessible, and properly identified with a red arrow and not concealed within the storage tank. Mark the operating handle in red.
- P. Provide a low oil control feature which shall shut off the motor and pump and return the elevator to the lowest landing. Upon reaching the lowest landing, doors will open automatically allowing passengers to leave the car. Then doors shall close. All control buttons, except the door open button, shall be made ineffective.
- Q. Provide oil-tight drip pan for assembled pumping unit, including storage tank. Pan shall be not less than 16 gauge sheet steel, with one-inch sides.

- R. The entire hydraulic system, including muffler, shall be tested to withstand a pressure equal to twice the calculated working pressure.
- S. Submit certification that test has been performed.

2.04 EQUIPMENT: HOISTWAY COMPONENTS

- A. Materials, devices and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items. Items not meeting this requirement, but meet technical specifications which can be established through reliable test reports or physical examination of representative samples, will be considered.
- B. When two or more devices of the same class of materials or equipment are required, these units shall be products of one manufacturer.
- C. Manufacturers of equipment assemblies which include components made by others shall assume complete responsibility for the final assembled unit.
- D. Motor nameplates shall state manufacturers' name, rated horsepower, speed, volts, amperes and other characteristics required by NEMA Standards and shall be securely attached to the item of equipment in a conspicuous location.
- E. The elevator equipment, including controllers, door operators, and supervisory system shall be non-proprietary, the product of manufacturers of established reputation, provided such items are capably engineered and produced under coordinated specifications to ensure compatibility with the total operating system. Mixing of manufactures related to a single system or group of components shall be identified in the submittals.
- F. Where key operated switches are furnished in conjunction with any component of this elevator installation, furnish four (4) keys for each individual switch or lock. Provide different key tumblers for different switch and lock functions. Each and every key shall have a tag bearing a stamped or etched legend identifying its purpose. Barrel key switches are not acceptable, except where required by code.

2.05 EQUIPMENT: HOISTWAY COMPONENTS

- A. Buffers: Car and Counterweight
- B. Hoistway Operating Devices:
 - 1. Emergency stop switch in the pit
 - 2. Terminal stopping switches.
 - 3. Emergency stop switch on the machine
 - 4. Emergency opening smoke protection system.
- C. Positioning System: System consisting of magnets and proximity switches.
- D. Guide Rails and Attachments: Steel rails with brackets and fasteners.
- E. The counterweight frame will be equipped with a safety device designed to stop the counterweight in the event of actuation of the over speed governor.

2.06 EQUIPMENT: HOISTWAY ENTRANCES

- A. Hoistway Entrances
 - 1. Frames: Sheet steel, bolted construction.
 - 2. Typical Sill Finish: Mill Aluminum
 - 3. Lobby Sill Finish: Mill Aluminum
 - 4. Doors: Hollow metal construction with vertical internal channel reinforcements.
 - 5. Fire Rating: Entrance and doors shall be UL fire-rated for 1-1/2 hour.
 - 6. Lobby Entrance Finish: Ferromagnetic. Min. 14 ga with 2-inch wide flat profile.
 - 7. Entrance Markings Jamb Plates: Provide standard entrance jamb tactile markings on both jambs, at all floors.
 - 8. Plate Mounting: Refer to manufacturer drawings.

2.07 EQUIPMENT: CAR COMPONENTS

- A. Car Frame: Provide car frame with adequate bracing to support the platform and car enclosure.
- B. Car Safeties: Device will be provided and mounted under the car platform, securely bolted to the Car Frame. The safety will be actuated by a centrifugal governor mounted at the top of the hoistway. The Safety is designed to operate in case the car attains excessive descending speed.
- C. Platform, Heavy Loading Type: The car platform shall be arranged to accommodate one-piece loads weighing up to 25% of the rated capacity.
- D. Car Guides: Provide guide-shoes mounted to top and bottom of both car and counterweight frame. Each roller guide assembly shall be arranged to maintain constant contact on the rail surfaces. Provide retainers in areas with Seismic design requirements.
- E. Canopy: Reinforced 16-gauge milled steel. White baked enamel finish standard.
- F. Cab Finish:
 - 1. Car Wall Panels: Plastic Laminate
 - 2. Baseboard: Stainless Steel - Satin
 - 3. Ceiling and Lighting:
 - a. Round LED Down Light Drop Ceiling - LF-88: Satin Finished Stainless Steel three panel suspended ceiling with two holes per panel for Round LED lights.
 - 4. Handrail:

- a. Flat Solid Metal handrail of 3/8-inch thick by 4 inches tall. Material to be satin stainless steel finish. Rails to be located on side and back wall of car enclosure.
 - b. Clearance between support rails and adjacent surfaces shall be 11/2 inches. Top of support rails shall be 32 inches above the floor of the car.
5. Flooring: Flooring per Schedule for Finishes.
 6. Threshold: Aluminum
 7. Protective pad hooks and quilted fire retardant protective pads: Pad Buttons will be provided with non-suspended ceiling.
 8. Provide electrical contact on the car-top exit.
- G. Emergency Car Signals
1. Emergency Siren: Siren mounted on top of cab that is activated when the alarm button in the car operating panel is engaged. Siren shall have rated sound pressure level of 80 dB(A) at a distance of three feet from device. Siren shall respond with a delay of not more than one second after activation of alarm button.
 2. Emergency Car Lighting: Provide emergency power unit employing a 12-volt sealed rechargeable battery and totally static circuits shall illuminate the elevator car and provide current to the alarm bell in the event of building power failure.
- H. Ventilation: Fan.

2.08 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

- A. Car Operating Panel: Provide vandal resistant car operating panel with all push buttons, key switches, and message indicators for elevator operation.
1. Flush mounted car operating panel shall contain a bank of round, mechanical, illuminated buttons marked to correspond to landings served, emergency call button, door open button, door close button, and key switches for lights, inspection, and exhaust fan. Buttons have white illumination (halo). All buttons to have raised text and Braille marking on left hand side. The car operating display panel shall be white DOT-matrix. All texts, when illuminated, shall be white. The car operating panel shall have a brushed stainless steel finish.
 2. Additional features of car operating panel shall include:
 - a. Car Position Indicator within operating panel white.
 - b. Elevator Data Plate marked with elevator capacity and car number on car top.
 - c. Help buttons with raised markings.
 - d. In car stop switch per local code.
 - e. Firefighter's hat.

- f. Firefighter's Phase II Key-switch.
 - g. Call Cancel Button.
 - h. Emergency Two Way Communication Device
 - i. Independent Service
 - j. Firefighter's Phase II emergency in-car operating instructions.
 - k. Landing Passing Signal
- B. Hall Fixtures: Wall mounted vandal resistant hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Wall mounted hall fixtures shall have a brushed stainless steel finish.
 - 1. Vandal Resistant Hall fixtures shall feature round, mechanical, illuminated buttons in flush fixture housings. Hall fixtures shall correspond to options available from that landing.
- C. Emergency Two Way Communication/Video Device: An Emergency Two Way Communication device shall be furnished in the car-operating panel. Necessary wires for the device shall be included and connected to the car traveling cable. (IBC 2018 and ASME A17.1-2019/CSA B44-19).
 - 1. Provide ADA compliant communication device. Communications equipment and connections to the building service system shall be furnished and installed by others. System shall include 24/7 video motoring capable system. Touch screen display with easy-to-read, 2-way messaging.
- D. Car Lantern and Chime: A [vandal resistant] directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel and a chime will sound. The chime will sound once for up and twice for down.
- E. Hall call cutout key-switches to disable activation of hall buttons, locate at landing
- F. Access key-switch at top floor in entrance jamb.
- G. Access key-switch at lowest floor in entrance jamb.
- H. Landing Passing Signal: A chime bell shall sound in the car to tell a passenger that the car is either stopping at or passing a floor served by the elevator.
- I. Open 3 seconds, fully open.

2.09 EQUIPMENT: ELEVATOR OPERATION AND CONTROLLER

- A. Elevator Operation: Provide microprocessor-based control system, which utilizes on-board diagnostics for servicing, trouble-shooting, and adjusting without requiring the use of an outside service tool. If an on-board diagnostic system is not provided, a handheld service tool (or laptop), owner's license, operation manual, and tool instructions must be provided in addition to the control system.
 - 1. Simplex Collective Operation: Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.

B. Car Operating Features

1. On/Off Light Switch
2. Car-Stall Protection
3. Firefighters
4. Ascending Car uncontrolled Movement Protection.
5. Top of Car Inspection
6. Load Weight Bypass
7. Intercom, video, and touchscreen provisions.
8. Provision for Card Reader in Car (Future Card Reader)
9. Express Priority Service with key switches at landing
10. Provisions for Elevator Management System
11. Automatic Standby Power Operation with Manual Override.
 - a. This operation shall return each car automatically to a designated landing when the system is initially switched to standby power. One or more cars are returned at a time. Preference is given to loaded cars over empty cars in order to reduce passenger-waiting times. A car must respond by beginning to move toward the designated landing within a pre-determined time. If a car does not respond, it is automatically placed in a "Not Available" mode while other cars are moved. If a car was not returned to the designated landing on the first try, a second attempt is made. If the second attempt is not successful, the car will remain in a "Not Available" mode and can only be moved by manual means. Once each car has returned to the designated landing, the doors will remain open for a predetermined amount of time.
 - b. When all cars have successfully returned to the designated landing or have attempted to move twice, automatic selection of the car(s) to run on normal operation will occur.
 - c. If for any reason a car selected for normal operation under stand by power is delayed for 60 seconds, the car will be placed in a "Not Available" mode and another car will be selected for normal operation based on the priorities listed above.
 - d. Manual Override of Standby Power Operation is achieved by a manual input for each car via a rotary selector, individual key switch for each car switch. A manually selected car may be run either in a return operation to a designated landing or in normal operation under standby power. If a manually selected car has not yet returned to the designated landing, it will perform this operation first then immediately go into normal operation.
 - e. If a manually selected car is delayed, no other car can be selected in the group unless it is manually selected.

- f. If Manual Override changes car selection while a car is running in return or normal operation under standby power, the newly selected car will not be permitted to run until the car that is running has stopped, opened its doors, and gone into the Standby Power Wait state.)

C. Elevator Control System for Inspections and Emergency

1. Provide devices within controller to run the elevator in inspection operation.
2. Provide devices on car top to run the elevator in inspection operation.
3. Provide within controller an emergency stop switch to disconnect power from the brake and prevents motor from running.
4. Provide the means from the controller to mechanically lift and control the elevator brake to safely bring car to nearest available landing when power is interrupted.
5. Provide the means from the controller to reset the governor over speed switch and also trip the governor.
6. Provide the means from the controller to reset the emergency brake when set because of an unintended car movement or ascending car over speed.
7. Provide the means for the control to reset elevator earthquake operation.

2.10 EQUIPMENT: DOOR OPERATOR AND CONTROL

- A. Door Operator: A closed loop permanent magnet PWM high-performance door operator shall be provided to open and close the car and hoist-way doors simultaneously. Door movement shall be cushioned at both limits of travel. Electro-mechanical interlock shall be provided at each hoist-way entrance to prevent operation of the elevator unless all doors are closed and locked. An electric contact shall be provided on the car at each car entrance to prevent the operation of the elevator unless the car door is closed.
- B. The door operator shall be arranged so that, in case of interruption or failure of electric power, the doors can be readily opened by hand from within the car, in accordance with applicable code. Emergency devices and keys for opening doors from the landing shall be provided as required by local code.
- C. Doors shall open automatically when the car has arrived at or is leveling at the respective landings. Doors shall close after a predetermined time interval or immediately upon pressing of a car button. A door open button shall be provided in the car. Momentary pressing of this button shall reopen the doors and reset the time interval.
- D. Door hangers and tracks shall be provided for each car and hoist-way door. Tracks shall be contoured to match the hanger sheaves. The hangers shall be designed for power operation with provisions for vertical and lateral adjustment. Hanger sheaves shall have polyurethane tires and pre-lubricated sealed-for-life bearings.
- E. Electronic Door Safety Device. The elevator car shall be equipped with an electronic protective device extending the full height of the car. When activated, this sensor shall prevent the doors from closing or cause them to stop and reopen if they are in the process of closing. The doors shall remain open as long as the flow of traffic continues and shall close shortly after the last person passes through the door opening.

2.11 TWO-STOP AUTOMATIC OPERATION

- A. Provide two-stop automatic operation for passenger elevators.
- B. Design system so that when the car is standing at either terminal landing, pressing on car button for the other terminal landing shall automatically dispatch car to that landing. Pressing a call button at either landing shall call the car automatically to that landing. If a call is registered while the car is making its trip that call shall remain registered until the car responds to that call. Provide time limit relay arranged to hold car at landing at which it has stopped for predetermined time after car stops. After all car and hall calls have been answered, car shall remain parked at landing where last used with car and hoist-way doors closed, until another call is registered.
- C. Pressing the call button at the floor at which car is parked shall automatically open car and hoist-way doors.
- D. Car lights and fan in the elevator shall not shut off when elevator is idle. Arrange circuits so that power to lights and outlets on top and bottom of car shall not be interrupted.

2.12 SEISMIC REQUIREMENTS

- A. Support and maintain pump unit, controller, rails, rail brackets, conduit, buffers, piping, scavenger pumps and jack unit assembly in place as to effectively prevent any part from sliding, rotating or overturning or jumping under conditions imposed by seismic forces not less than that required to produce an acceleration of gravity horizontally and 1/2 gravity vertically acting simultaneously. Design the total system to continue operation without interruption under specified seismic acceleration,
- B. Support all vertical conduits and duct systems within the hoistway at points above the center of gravity of riser. Provide lateral guides at regular intervals.
- C. Car guide rail brackets and rail clip bolts shall be guarded against snagging on the side of the rail adjacent to the point of suspension of the traveling cables.
- D. Provide car guide rails with at least one intermediate bracket between brackets located at each floor so that bracket spacing does not exceed 2400 mm (8 ft). If intermediate brackets cannot be installed because of lack of structural support, reinforce rails with 225 mm (9 in.) channel or approved equal backing.
- E. Guide rails shall not be less than 22.5 kg/m (15 lb/ft).
- F. The stresses in parts of structural members made of steel shall not exceed 88 percent of the minimum elastic strength of the material used in the fastenings.
- G. Provide car enclosure ceiling panels and fluorescent tubes with latching devices that shall restrain the panels and LEDs. Devices shall be readily removable for cleaning or replacing panels and re-lamping.
- H. Submittals are required for all equipment anchors, supports, restraints and detectors. Submittals shall include weight, dimensions, center of gravity, standard connections, calculations, manufacturer's recommendations, behavior problems (vibration, thermal, expansion, etc.,) so that design can be properly reviewed.
- I. Provide an Earthquake Detection device in machine room to activate "GO SLOW ELEVATORS" operation. The following are references:
 - 1. Emergency Service:
 - a. Earthquake emergency operation Section 304(d)

- b. Title 8, Industrial Relations, Division 01
- c. Department of Industrial Relations, Chapter 4
- d. Division of Industrial Safety, Sub Chapter 6, Elevator Safety Order

2.13 WORKMAN'S LIGHTS AND OUTLETS

- A. Provide duplex GFCI protected type receptacles and lamp, with guards on top of elevator car and beneath platform.
- B. The receptacles shall be in accordance with Fed. Spec. W-C-596 for Type D7, 2-pole, 3-wire grounded type rated for 15 amperes and 125 volts.

2.14 CAR LEVELING DEVICE

- A. Car shall be equipped with a two-way leveling device to automatically bring the car to within 3 mm (1/8 in.) of exact level with the landing for which a stop is initiated regardless of load in car or direction.
- B. If the car stops short or travels beyond the floor, the leveling device, within its zone shall automatically correct this condition and maintain the car within 3 mm (1/8 in.) of level with the floor landing regardless of the load carried.
- C. Provide encoded steel tape, steel tape with magnets or steel vanes with magnetic switches. Submit design for approval.

2.15 EMERGENCY STOP SWITCHES

- A. Provide an emergency stop switch for each top-of-car device, pit, machine spaces, service panel and firefighters' control panel inside the elevator. Mount stop switches in the pit adjacent to pit access door, at top of the pit ladder 1220 mm (48 in.) above the bottom landing sill and 1220 mm (48 in.) above the pit floor adjacent to the pit ladder.
- B. Each stop switch shall be red in color and shall have "STOP" and "RUN" positions legibly and indelibly identified.

2.16 MAIN CAR OPERATING PANEL

- A. Locate the main car operating panel in the car enclosure on the front return panel for passenger/service elevators and the front of the side wall for freight elevators. The top floor car call push button shall not be more than 1220 mm (48 in.) above the finished floor. Car call push buttons and indicator lights shall be round with a minimum diameter of 25 mm (1 in.), LED white light illuminated.
- B. One piece front faceplate, with edges beveled 15 degrees, shall have the firefighters' service panel recessed into the upper section and the service operation panel recessed into the lower section, fitted with hinged doors. Doors shall have concealed hinges, be in the same front plane as the faceplate and fitted with cylinder type key operated locks. Secure the faceplate with stainless steel tamperproof screws.
- C. All terminology on the main car operating panel shall be raised or engraved. Use 6 mm (1/4 in.) letters to identify all devices in upper section of the main car operating panel. The handicapped markings with contrasting background shall be recessed .030 inch in the faceplate, square or rectangular in shape, with the finished face of the 12 mm (1/2 in.) numerals and markings flush with the faceplates. Surface mounted plates are not acceptable.

- D. The upper section shall contain the following items in order listed from top to bottom:
1. Engrave elevator number, 25 mm (1 in.) high with black paint for contrast.
 2. Engrave capacity plate information with black paint for contrast with freight loading class and number of passengers allowed.
 3. Emergency car lighting system consisting of a rechargeable battery, charger, controls, and LED illuminated light fixture. The system shall automatically provide emergency light in the car upon failure or interruption of the normal car lighting service, and function irrespective of the position of the light control switch in the car. The system shall be capable of maintaining a minimum illumination of 1.0 foot-candle when measured 1220 mm (48 in.) above the car floor and approximately 305 mm (12 in.) in front of the car operating panel, for not less than four (4) hours.
 4. LED illuminated digital car position indicator with direction arrows. Digital display floor numbers and direction arrows shall be a minimum of 50mm (2 in.) high.
 5. Firefighters' Emergency Operation Panel shall conform to the requirements of ASME A17.1 Section 2.27. Firefighters' Panel shall be 1676 mm (66 in.) minimum to 1830 mm (72 in.) maximum to the top of the panel above finished floor.
 6. Firefighters' Emergency Indicator Light shall be round with a minimum diameter of 25 mm (1 in.).
 7. Independent Service switch, see Section 2.30 for detailed description.
 8. Provide a Door Hold button on the faceplate next to the independent service key switch. It shall have "DOOR HOLD" indelibly marked on the button. Button shall light when activated. When activated, the door shall stay open for a maximum of one minute. To override door hold timer, push a car call button or door close button. Door Hold button is not ADA required and Braille is not needed.
 9. Complete set of round car call push buttons, minimum diameter of 25 mm (1 in.), and LED white light illuminated, corresponding to the floors served. Car call buttons shall be legibly and indelibly identified by a floor number and/or letter not less than 12mm (1/2 in.) high in the face of the call button. Stack buttons in a single vertical column for low rise buildings up to six floors with front openings only.
 10. Door Open and Door Close buttons shall be located below the car call buttons. They shall have "OPEN" and "CLOSE" legibly and indelibly identified by letters in the face of the respective button. The Door Open button shall be located closest to the door jamb as required by ADA.
 11. Red Emergency Alarm button that shall be located below the car operating buttons. Mount the emergency alarm button not lower than 890 mm (35 in.) above the finished floor. It shall be connected to audible signaling devices as required by A17.1 Rule 2.27.1.2. Provide audible signaling devices including the necessary wiring.
 12. Emergency Help push button shall activate two way communications by Auto Dial telephone system as required by ASME A17.1 Rule 2.27.1.1.3. Help button shall be LED white light illuminated and flash when call is acknowledged. Legibly and indelibly label the button "HELP" in the face of the button with 12 mm (1/2 in.) high letters.

13. Provide a corresponding Braille plate on the left side of each button. The handicapped markings with contrasting background shall be recessed .030 inch in the faceplate, square or rectangular in shape, with the finished face of the 12 mm (1/2 in.) numerals and markings flush with the faceplates. Surface mounted plates are not acceptable.
- E. The service operation panel, in the lower section shall contain the following items:
1. Light switch labeled "LIGHTS" for controlling interior car lighting with its two positions marked "ON" and "OFF".
 2. Inspection switch that will disconnect normal operation and activate hoistway access switches at terminal landings. Switch shall be labeled "INSPECTION" with its two positions marked "ON" and "OFF".
 3. Three position switch labeled "FAN" with its positions marked "HIGH", "LOW" and "OFF" for controlling car ventilating blower.
 4. Two position, spring return, toggle switch or push button to test the emergency light and alarm device. It shall be labeled "TEST EMERGENCY LIGHT AND ALARM".

2.17 AUTO DIAL TELEPHONE SYSTEM

- A. Furnish and install a complete ADA compliant intercommunication system.
- B. Provide a two-way communication device in the car with automatic dialing, tracking and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
- C. "HELP" button shall illuminate and flash when call is acknowledged. Button shall match floor push button design.
- D. Provide "HELP" button tactile symbol engraved signage and Braille adjacent to button mounted integral with car operating panels.
- E. The auto dial system shall be located in the auxiliary car operating panel. The speaker and unit shall be mounted on the backside of the perforated stainless steel plate cover.
- F. Each elevator shall have an individual phone number.
- G. If the operator ends the call, the phone shall be able to redial immediately.

2.18 CORRIDOR OPERATING DEVICE FACEPLATES

- A. Fabricate faceplates for elevator operating and signal devices from not less than 3 mm (1/8 in.) thick flat stainless steel with all edges beveled 15 degrees. Install all faceplates flush with surface on which they are mounted.
- B. Corridor push button faceplates shall be at least 127 mm (5 in.) wide by 305 mm (12 in.) high. The centerline of the landing push buttons shall be 1067 mm (42 in.) above the corridor floor.
- C. Elevator Corridor Call Station Pictograph shall be engraved in the faceplate.
- D. Fasten all car and corridor operating device and signal device faceplates with stainless steel tamperproof screws.

- E. Design corridor push button faceplates so that pressure on push buttons shall be independent of pressure on push button contacts.
- F. Engraved legends in faceplates shall have lettering 6 mm (1/4 in.) high filled with black paint.
- G. Provide a corresponding Braille plate on the left side of each button. The handicapped markings with contrasting background shall be recessed .030 inch in the faceplate, square or rectangular in shape, with the finished face of the 12 mm (1/2 in.) numerals and markings flush with the faceplates. Surface mounted plates are not acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Field measure and examine substrates, supports, and other conditions under which elevator work is to be performed.
- B. Do not proceed with work until unsatisfactory conditions are corrected.
- C. Prior to start of Work, verify hoist-way is in accordance with shop drawings. Dimensional tolerance of hoist-way from shop drawings: -0 inches +2 inches. Do not begin work of this section until dimensions are within tolerances.
- D. Prior to start of Work, verify projections greater than 2 inches (4 inches if ASME A17.1/CSA B44 2000 applies) must be beveled not less than 75 degrees from horizontal.
- E. Prior to start of Work, verify landings have been prepared for entrance sill installation. Traditional sill angle or concrete sill support shall not be required.
- F. Prior to start of Work, verify elevator pit has been constructed in accordance with requirements, is dry and reinforced to sustain vertical forces, as indicated in approved submittal. Verify that sumps or sump pumps located within pit will not interfere with installed elevator equipment.
- G. Prior to start of Work, verify control space has been constructed in accordance with requirements, with access coordinated with elevator shop drawings, including Sleeves and penetrations.
- H. Verify installation of GFCI protected 15-amp in pit and adjacent to each signal control cabinet in control space.
- I. Before fabrication, take necessary job site measurements, and verify where work is governed by other trades. Check measurement of space for equipment, and means of access for installation and operation. Obtain dimensions from site for preparation of shop drawings.
- J. Ensure the following preparatory work, provided under other sections of the specification has been provided. If the Elevator Contractor requires changes in size or location of trolley beams, or their supports, trap doors, etc., to accomplish their work, he must make arrangements, subject to approval of the Owner and include cost in their bid. Where applicable, locate controller near and visible to its respective hydraulic pump unit. Work required prior to the completion of the elevator installation:
 - 1. Supply of electric feeder wires to the terminals of the elevator control panel, including circuit breaker.

2. Provide light and GFCI outlets in the elevator pit and machine room.
 3. Furnish electric power for testing and adjusting elevator equipment.
 4. Furnish circuit breaker panel in machine room for car and hoistway lights and receptacles.
 5. Supply power for cab lighting and ventilation from an emergency power panel specified in Division 26, ELECTRICAL.
 6. Machine room enclosed and protected from moisture, with self-closing, self-locking door and access stairs.
 7. Provide fire extinguisher in machine room.
- K. Supply for installation, inserts, anchors, bearing plates, brackets, supports and bracing including all setting templates and diagrams for placement.

L. Operating Devices

1. Provide one riser of landing call buttons located as shown on contract drawings.
2. Fixtures for intermediate landings shall contain "UP" and "DOWN" buttons. Fixtures for terminal landings shall contain a single "UP" or "DOWN" button.
3. Each button shall contain an integral registration LED white light which shall illuminate upon registration of a call and shall extinguish when that call is answered.
4. The direction of each button shall be legibly and indelibly identified by arrows not less than 12 mm (1/2 in.) high in the face of each button.
5. Two or more risers of landing call buttons, if specified, shall be cross-connected so that either "UP" or "DOWN" buttons at a floor shall be capable of registering a call to that floor for the entire elevator group. Registration of a landing call shall illuminate "UP" or "DOWN" buttons simultaneously, and upon satisfaction of that call, both buttons shall be extinguished simultaneously.
6. Landing push buttons shall not re-open the doors while the car and hoistway doors are closing at that floor, the call shall be registered for the next available elevator. Calls registered shall be canceled if closing doors are re-opened by means of "DOOR OPEN" button or infrared curtain unit.

M. Lantern/Position Indicator

1. Provide each car with combination corridor lantern/position indicator digital display mounted over the hoistway entrances at each and every floor. Provide each terminal landing with "UP" or "DOWN", minimum 64 mm (2 1/2 in.) high digital arrow lanterns and each intermediate landing with "UP" and "DOWN" digital arrow lanterns. Each lens shall be LED illuminated of proper intensity, so shielded to illuminate individual lens only. The lenses in each lantern shall be illuminated green to indicate "UP" travel and red to indicate "DOWN" travel. Lanterns shall signal in advance of car arrival at the landing indicating the direction of travel whether or not corridor button has been operated at that floor. Hall calls shall receive immediate assignment to individual cars and hall lantern shall sound and illuminate. Corridor lanterns shall not be illuminated when a car passes a floor without stopping. Each

lantern shall be equipped with a clearly audible electronic chime which shall sound once for "UPWARD" bound car and twice for "DOWNWARD" bound car. Audible signal shall not sound when a car passes the floor without stopping. Provide adjustable sound level on audible signal. Car riding lanterns are not acceptable.

2. Provide alpha-numeric digital position indicators directly over hoistway landing entranceways between the arrival lanterns at each and every floor. Indicator faceplate shall be stainless steel. Numerals shall be not less than 50 mm (2 in.) high with direction arrows. Cover plates shall be readily removable for re-lamping. The appropriate direction arrow shall be illuminated during entire travel of car in corresponding direction.
3. Provide LED illumination in each compartment to indicate the position and direction the car is traveling by illuminating the proper alpha-numeric symbol. When the car is standing at a landing without direction established, arrows shall not be illuminated.

3.02 PREPARATION

- A. Coordinate installation of anchors, bearing plates, brackets and other related accessories.

3.03 INSTALLATION

- A. Perform work with competent Certified Elevator Mechanics and Apprentices skilled in this work and under the direct supervision of the Elevator Contractor's experienced foreman.
- B. Set hoistway entrances in alignment with car openings, and true with plumb sill lines.
- C. Erect hoistway sills, headers and frames prior to erection of rough walls and doors. Erect fascias and toe guards after rough walls are finished.
- D. Install machinery, guides, controls, car and all equipment and accessories in accordance with manufacturer's instructions, applicable codes and standards.
- E. Isolate and dampen machine vibration with properly sized sound-reducing anti-vibration pads.
- F. Grout sills and hoistway entrance frames.

3.04 CONSTRUCTION

- A. Interface with Other Work:
 1. Guide rail brackets attached to steel shall be installed prior to application of fireproofing.
 2. Coordinate construction of entrance walls with installation of door frames and sills. Maintain front wall opening until elevator equipment has been installed.
 - a. Ensure adequate support for entrance attachment points at all landings.
 - b. Coordinate wall openings for hall push buttons, signal fixtures and sleeves. Each elevator requires sleeves within the hoistway wall.

- c. Coordinate emergency power transfer switch and power change pending signals as required for termination at the primary elevator signal control cabinet in each group.
- d. Coordinate interface of elevators and fire alarm system.
- e. Coordinate interface of dedicated telephone line.
- f. Coordination installation of pit ladder.
- g. Coordination installation of Shut Trip by electrical contractor.

3.05 WORKMANSHIP AND PROTECTION

- A. Installations shall be performed by Certified Elevator Mechanics and Apprentices to best possible industry standards. Details of the installation shall be mechanically and electrically correct. Materials and equipment shall be new and without imperfections.
- B. Recesses, cutouts, slots, holes, patching, grouting, refinishing to accommodate installation of equipment shall be included in the Contractor's work. All new holes in concrete shall be core drilled.
- C. Structural members shall not be cut or altered. Work in place that is damaged or defaced shall be restored equal to original condition.
- D. Finished work shall be straight, plumb, level, and square with smooth surfaces and lines. All machinery and equipment shall be protected against dirt, water, or mechanical injury. At final completion, all work shall be thoroughly cleaned and delivered in perfect unblemished condition.
- E. Sleeves for conduit and other small holes shall project 50 mm (2 in.) above concrete slabs.
- F. Exposed gears, sprockets, and sheaves shall be guarded from accidental contact in accordance with ASME A17.1 Section 2.10.

3.06 TESTING AND INSPECTIONS

- A. Perform recommended and required testing in accordance with authority having jurisdiction. Perform adjustments and modifications required by the authority having justification without and additional Cost to Owner weather or not specified or defined by the construction documents. This project (elevator, hoist way and elevator lobbies) shall be bid and constructed to meet all Federal, State and Local laws and regulatory requirements and technical requirements for this type of elevator regardless of items specified or defined in the drawings, including all electrical, mechanical, plumbing, fire protection and special systems. This shall include supports for elevator, guide rails, hoist beams, machine supports and elevator shaft construction.
- B. Pre-test the elevators and related equipment in the presence of the Owner or his authorized representative for proper operation before requesting final inspection. Conduct final inspection at other than normal working hours, if required by Owner.
 - 1. Procedure outlined in the Inspectors Manual for Hydraulic Elevators, ASME A17.2 shall apply.
 - a. Final test shall be conducted in the presence of and witnessed by an ASME QEI-1 Certified Elevator Inspector.

2. Contractor shall furnish the following test instruments and materials on-site and at the designated time of inspection: properly marked test weights, oil pressure gauge, voltmeter, amp probe, thermometers, direct reading tachometer, megohm meter, vibration meter, sound meter, light meter, stop watch, and a means of two-way communication.
 3. If during the inspection process the Inspector determines the need, the following instruments shall be available within a four-hour period: Megohm meter, vibration meter, sound meter, and a light meter.
- C. Inspection of workmanship, equipment furnished, and installation for compliance with specification.
- D. Full-Load Run Test: Elevators shall be tested for a period of one hour continuous run with full contract load in the car. The test run shall consist of the elevator stopping at all floors, in either direction of travel, for not less than five or more than ten seconds per floor.
- E. Speed Test: The actual speed of the elevator shall be determined in both directions of travel with full contract load and no load in the elevator. Speed shall be determined by certified tachometer. The actual measured speed of the elevator with all loads in either direction shall be within five (5) percent of specified rated speed. Full speed runs shall be quiet and free from vibration and sway.
- F. Temperature Rise Test: The temperature rise of the pump motor shall be determined during the full load test run. temperatures shall be measured by the use of thermometers. Under these conditions, the temperature rise of the equipment shall not exceed 50 degrees Centigrade above ambient temperature. Test shall start when all machine room equipment is within 5 degrees Centigrade of the ambient temperature. Other tests for heat runs on motors shall be performed as prescribed by the Institute of Electrical and Electronic Engineers.
- G. Car Leveling Test: Elevator car leveling devices shall be tested for accuracy of leveling at all floors with no load in car and with contract load in car in both directions of travel. Accuracy of floor level shall be within plus or minus 3 mm (1/8 in.) of level with any landing floor for which the stop has been initiated regardless of load in car or direction of travel. The car leveling device shall automatically correct over travel as well as under travel and shall maintain the car floor within plus or minus 3 mm (1/8 in.) of level with the landing floor regardless of change in load.
- H. Insulation Resistance Test: The elevator's complete wiring system shall be free from short circuits and ground faults and the insulation resistance of the system shall be determined by use of megohm meter, at the discretion of the Elevator Inspector conducting the test.
- I. Safety Devices Tests: Safety devices shall be tested as required by ASME A17.1 Section 8.10.
- J. Overload Devices: Test all overload current protection devices in the system at final inspection.
- K. Limit Stops:
1. The position of the car when stopped by each of the normal limit stops with no load and with contract load in the car shall be accurately measured.
 2. Final position of the elevator relative to the terminal landings shall be determined when the elevator has been stopped by the final limits. The lower limit stop shall be made with contract load in the elevator. Elevator shall be

operated at inspection speed for both tests. Normal limit stopping devices shall be inoperative for the tests.

- L. Setting of Car Door Contacts: The position of the car door at which the elevator may be started shall be measured. The distance from full closure shall not exceed that required by ASME A17.1. The test shall be made with the hoistway doors closed or the hoistway door contact inoperative.
- M. Setting of Interlocks: The position of the hoistway door at which the elevator may be started shall be measured and shall not exceed ASME A17.1 requirements.
- N. Operating and Signal System: The elevator shall be operated by the operating devices provided and the operation signals and automatic floor leveling shall function in accordance with requirements specified. Starting, stopping and leveling shall be smooth and comfortable without appreciable steps of acceleration or deceleration.
- O. Performance of the Elevator supervisory system shall be witnessed and approved by the representative of the Owner.
- P. Evidence of malfunction in any tested system or parts of equipment that occurs during the testing shall be corrected, repaired, or replaced at no additional cost to the Owner, and the test repeated.
- Q. If equipment fails test requirements and a re-inspection is required, the Contractor shall be responsible for the cost of re-inspection; salaries, transportation expenses, and per-diem expenses incurred by the representative of the Owner.

3.07 DEMONSTRATION

- A. Prior to substantial completion, instruct Owner's Representative on the proper function and required daily maintenance of elevators. Instruct personnel on emergency procedures.

3.08 INSTRUCTION OF PERSONNEL

- A. Provide competent instruction to the Owner regarding the operation of equipment and accessories installed under this contract, for a period equal to one eight hour work day. Instruction shall commence after completion of all work and at the time and place directed by the Owner.
- B. Written instructions in triplicate relative to care, adjustments and operation of all equipment and accessories shall be furnished and delivered to the Owner in independently bound folders. DVD recordings will also be acceptable. Written instructions shall include correct and legible wiring diagrams, nomenclature sheet of all electrical apparatus including location of each device, complete and comprehensive sequence of operation, complete replacement parts list with descriptive literature, and identification and diagrammatic cuts of equipment and parts. Information shall also include electrical operation characteristics of all circuits, relays, timers, and electronic devices, as well as R.P.M. values and related characteristics for all rotating equipment.
- C. Provide supplementary instruction for any new equipment that may become necessary because of changes, modifications or replacement of equipment or operation under requirements of paragraph entitled "Warranty of Construction".

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION****A. Definitions:**

1. Exposed: Piping and equipment exposed to view in finished rooms.
2. Option or optional: Contractor's choice of an alternate material or method.

1.02 RELATED WORK**A. All Related Documents and Sections:** Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE**A. Products Criteria:**

1. Standard Products: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products for at least 3 years. See other specification sections for any exceptions.
2. Equipment Service: Products shall be supported by a service organization which maintains a complete inventory of repair parts and is located reasonably close to the site.
3. Multiple Units: When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.
4. Assembled Units: Manufacturers of equipment assemblies, which use components made by others, assume complete responsibility for the final assembled product.
5. Nameplates: Nameplate bearing manufacturer's name or identifiable trademark shall be securely affixed in a conspicuous place on equipment, or name or trademark cast integrally with equipment, stamped or otherwise permanently marked on each item of equipment.
6. Asbestos products or equipment or materials containing asbestos shall not be used.

B. Manufacturer's Recommendations: Where installation procedures or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of these recommendations shall be furnished to the Owner prior to installation. Installation of the item will not be allowed to proceed until

the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

- C. Guaranty: Warranty of Construction, according to Division 01 requirements.
- D. Supports for sprinkler piping shall be in conformance with NFPA 13 and section 13 05 41.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Manufacturer's Literature and Data:
 - 1. Equipment and materials identification.
 - 2. Fire-stopping materials.
 - 3. Hangers, inserts, supports and bracing. Provide load calculations for variable spring and constant support hangers.
 - 4. Wall, floor, and ceiling plates.
- C. Coordination Drawings: Provide detailed layout drawings of all piping systems. Provide details of the following.
 - 1. Sprinkler head layout.
 - 2. Hangers, inserts, supports, and bracing.
 - 3. Pipe sleeves.
 - 4. Penetrations of floors, walls, or ceilings.
- D. Maintenance Data and Operating Instructions:
 - 1. Maintenance and operating manuals in accordance with Division 01, OPERATING AND MAINTENANCE MANUALS, for systems and equipment.
 - 2. Provide a listing of recommended replacement parts for keeping in stock supply, including sources of supply, for equipment.

1.05 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A36/A36M-2001 Carbon Structural Steel
 - A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
 - A575-96..... Steel Bars, Carbon, Merchant Quality, M-Grades R (2002)

E84-2003..... Standard Test Method for Burning Characteristics of Building Materials

E119-2000..... Standard Test Method for Fire Tests of Building Construction and Materials

C. National Fire Protection Association (NFPA):

13-2013 Installation of Sprinkler Systems

25-2014 Inspection, Testing and Maintenance of Water-Based Fire Protection Systems

101-2015 Life Safety Code

PART 2 PRODUCTS

2.01 EQUIPMENT AND MATERIALS IDENTIFICATION

A. Valve Tags and Lists:

1. Valve tags: Engraved black filled numbers and letters not less than 13 mm (1/2-inch) high for number designation, and not less than 6.4 mm (1/4-inch) for service designation on 19 gage 38 mm (1-1/2 inches) round brass disc, attached with brass "S" hook or brass chain.
2. Valve lists: Typed or printed plastic-coated card(s), sized 216 mm (8-1/2 inches) by 280 mm (11 inches) showing tag number, valve function and area of control, for each service or system. Punch sheets for a 3-ring notebook.
3. Provide detailed plan for each floor of the building indicating the location and valve number for each valve. Identify location of each valve with a color-coded thumb tack in ceiling.

2.02 FIRESTOPPING

- A. Section 07 84 00, FIRESTOPPING specifies an effective barrier against the spread of fire, smoke and gases where penetrations occur for piping.

2.03 GALVANIZED REPAIR COMPOUND

- A. Mil. Spec. DOD-P-21035B, paint form.

2.04 PIPE PENETRATIONS

- A. Install sleeves during construction for other than blocked out floor openings for risers in mechanical bays.
- B. To prevent accidental liquid spills from passing to a lower level, provide the following:
1. For sleeves: Extend sleeve 25 mm (one inch) above finished floor and provide sealant for watertight joint.

2. For blocked out floor openings: Provide 40 mm (1-1/2 inch) angle set in silicone adhesive around opening.
 3. For drilled penetrations: Provide 40 mm (1-1/2 inch) angle ring or square set in silicone adhesive around penetration.
- C. Penetrations are not allowed through beams or ribs or beam flanges. Any deviation from this requirement must receive prior approval of Structural Engineer.
- D. Sheet Metal, Plastic, or Moisture-resistant Fiber Sleeves: Provide for pipe passing through floors, interior walls, and partitions, unless brass or steel pipe sleeves are specifically called for below.
- E. Sleeves are not required for wall hydrants for fire department connections or in drywall construction.
- F. Sleeve Clearance: Sleeve through floors, walls, partitions, and beam flanges shall be one inch greater in diameter than external diameter of pipe. Sleeve for pipe with insulation shall be large enough to accommodate the insulation. Interior openings shall be caulked tight with fire stopping material and sealant to prevent the spread of fire, smoke, and gases.
- G. Sealant and Adhesives: Shall be as specified in Section 07 90 00, JOINT SEALER.

2.05 WALL, FLOOR AND CEILING PLATES

- A. Material and Type: Chrome plated brass or chrome plated steel, one piece or split type with concealed hinge, with set screw for fastening to pipe, or sleeve. Use plates that fit tight around pipes, cover openings around pipes and cover the entire pipe sleeve projection.
- B. Thickness: Not less than 2.4 mm (3/32-inch) for floor plates. For wall and ceiling plates, not less than 0.64 mm (0.025-inch) for up to 80 mm (3-inch pipe), 0.89 mm (0.035-inch) for larger pipe.
- C. Locations: Use where pipe penetrates floors, walls and ceilings in exposed locations, in finished areas only. Provide a watertight joint in spaces where brass or steel pipe sleeves are specified.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Coordinate location of piping, sleeves, inserts, hangers, and equipment. Locate piping, sleeves, inserts, hangers, and equipment clear of windows, doors, openings, light outlets, and other services and utilities. Follow manufacturer's published recommendations for installation methods not otherwise specified.
- B. Protection and Cleaning:
1. Equipment and materials shall be carefully handled, properly stored, and adequately protected to prevent damage before and during installation, in accordance with the manufacturer's recommendations and as approved by the

Owner. Damaged or defective items in the opinion of the Owner, shall be replaced.

- C. Concrete and Grout: Use concrete and shrink compensating grout 25 MPa (5000 psi) minimum, specified in Section 03 30 00, CAST-IN-PLACE CONCRETE.
- D. Install gages, valves, and other devices with due regard for ease in reading or operating and maintaining said devices. Locate and position gages to be easily read by operator or staff standing on floor or walkway provided. Servicing shall not require dismantling adjacent equipment or pipe work.
- E. Switchgear Drip Protection: Every effort shall be made to eliminate the installation of pipe above electrical and telephone switchgear. If this is not possible, encase pipe in a second pipe with a minimum of joints.
- F. Inaccessible Equipment:
 - 1. Where the Owner determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled or remedial action performed as directed at no additional cost to the Owner.
 - 2. The term "conveniently accessible" is defined as capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as motors, fans, pumps, belt guards, transformers, high voltage lines, piping, and ductwork.

3.02 OPERATING AND PERFORMANCE TESTS

- A. Prior to the final inspection, perform required tests as specified in section 01 00 00 General Requirement and submit the test reports and records to the Owner's Representative.
- B. Should evidence of malfunction in any tested system, or piece of equipment or component part thereof, occur during or as a result of tests, make proper corrections, repairs or replacements, and repeat tests at no additional cost to the Owner.

3.03 INSTRUCTIONS TO COUNTY PERSONNEL

- A. Provide in accordance with section 01 00 00 General Requirement.

END OF SECTION

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PART 1 GENERAL**1.01 SCOPE OF WORK**

- A. Provide all supervision, engineering, design, labor, materials and equipment necessary to install a complete wet-pipe sprinkler system.
- B. Design, installation and testing shall be in accordance with NFPA 13 except for specified exceptions.
- C. The design and installation of a hydraulically calculated automatic wet system complete and ready for operation, for all portions of building.
- D. Design, installation and testing shall be in accordance with utility, city and county connection requirements, including backflow, lateral, thrust blocks, valves, sensors, alarms and ports for complete, compliant for protecting system.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Installer Reliability: The installer shall possess a valid State of California C-16 fire sprinkler contractor's license. The installer shall have been actively and successfully engaged in the installation of commercial automatic sprinkler systems for the past ten years.
- B. Materials and Equipment: All equipment and devices shall be of a make and type listed by UL and approved by FM, or other nationally recognized testing laboratory for the specific purpose for which it is used. All materials, devices, and equipment shall be approved by the County.
- C. Submittals: Submit as one package in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES. Prepare detailed working drawings that are signed and stamped by a Registered Professional Engineer. As Owner review is for technical adequacy only, the installer remains responsible for correcting any conflicts with other trades and building construction that arise during installation. Partial submittals will not be accepted. Material submittals shall be approved prior to the purchase or delivery to the job site. Suitably bind submittals in notebooks or binders and provide index referencing the appropriate specification section. Submittals shall include, but not be limited to, the following:
 - 1. Qualifications:

- a. Provide a copy of the installing contractor's fire sprinkler and state contractor's license.
2. Drawings: Submit detailed 1:100 (1/8 inch) scale (minimum) working drawings conforming to NFPA 13. Include a site plan showing the piping to the water supply test location.
3. Manufacturers Data Sheets:
 - a. Provide for materials and equipment proposed for use on the system. Include listing information and installation instructions in data sheets. Where data sheet describes items in addition to that item being submitted, clearly identify proposed item on the sheet.
4. Calculation Sheets: Submit hydraulic calculation sheets in tabular form conforming to the requirements and recommendations of NFPA 13.
5. Valve Charts: Provide a valve chart that identifies the location of each control valve. Coordinate identification of control valve with the Owner. The chart shall include no less than the following: Tag ID No., valve size, service (control valve, main drain, aux. drain, inspections test valve, etc.), and location.
6. Final Document Submittals: Provide as-built drawings, testing and maintenance instructions in accordance with the requirements in Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES. Submittals shall include, but not be limited to, the following:
 - a. One complete set of reproducible as-built drawings showing the installed system with the specific interconnections between the waterflow switch or pressure switch and the fire alarm equipment.
 - b. Complete, simple, understandable, step-by-step, testing instructions giving recommended and required testing frequency of all equipment, methods for testing all equipment, and a complete trouble shooting manual. Provide maintenance instructions on replacing any components of the system including internal parts, periodic cleaning and adjustment of the equipment and components with information as to the address and telephone number of both the manufacturer and the local supplier of each item.
 - c. Material and Testing Certificate: Upon completion of the sprinkler system installation or any partial section of the system, including testing and flushing, provide a copy of a completed Material and Testing Certificate as indicated in NFPA 13.
 - d. Instruction Manual: Provide one copy of the instruction manual covering the system in a flexible protective cover and mount in an accessible location adjacent to the riser.
- D. Design Basis Information: Provide design, materials, equipment, installation, inspection, and testing of the automatic sprinkler system in accordance with the requirements of NFPA 13. Recommendations in appendices shall be treated as requirements.
 1. Perform hydraulic calculations in accordance with NFPA 13 utilizing the Area/Density method. Do not restrict design area reductions permitted for using

quick response sprinklers throughout by the required use of standard response sprinklers in the areas identified in this section.

2. Sprinkler Protection: The hazard classification examples of uses and conditions identified in the Annex. of NFPA 13 shall be mandatory. To determining spacing and sizing, apply the following coverage classifications:
 - a. Ordinary Hazard Group 1 Occupancies: Laboratories, Mechanical Equipment Rooms, Transformer Rooms, Electrical Switchgear Rooms, Electric Closets.
 - b. Request clarification from the Owner for any hazard classification not identified.
3. Hydraulic Calculations: Calculated demand including hose stream requirements shall fall no less than 10 percent below the available water supply curve.
4. Water Supply: Base water supply on a flow test made by the contractor. Report submitted to the Owner is to include:
 - a. Location: Nearest intersection & Address
 - b. Elevation Static Test Gauge: ____ ft.
 - c. Elevation Residual Test Gauge: ____ ft.
 - d. Static pressure: _ psi.
 - e. Residual pressure: _ psi.
 - f. Flow: _ gpm.
 - g. Date: ____.
 - h. Time: ____.
5. Contractor shall confirm allowable water flow and pressure by performing their own water flow test in the presence of authorities having jurisdiction prior to any design work.
6. Zoning:
 - a. For each sprinkler zone provide a control valve, flow switch and a test and drain assembly with pressure gauge.
 - b. Provide seismic protection in accordance with NFPA 13 and Section 13 05 41.

1.04 APPLICABLE PUIBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Codes and Standards: Provide a wet-pipe sprinkler system conforming to latest editions of Codes and Standards.

- C. National Fire Protection Association (NFPA), including all amendments and appendices:
 - 13 Installation of Sprinkler Systems
 - 101 Safety to Life from Fire in Buildings and Structures (Life Safety Code)
 - 101 Life Safety Code
 - 170 Fire Safety Symbols
- D. Underwriters Laboratories, Inc. (UL):
 - UL-FPED (Fire Protection Equipment Directory)
- E. Factory Mutual Engineering Corporation (FM):
 - Approval Guide
- F. California Building Code
- G. California Fire Code

PART 2 PRODUCTS

2.01 PIPING & FITTINGS

- A. Sprinkler systems in accordance with NFPA 13.

2.02 VALVES

- A. Valves in accordance with NFPA 13.
- B. Do not use quarter turn ball valves for 50 mm (2 inch) or larger drain valves.
- C. The wet system control valve shall be a listed indicating type valve. Control valve shall be UL Listed and FM Approved for fire protection installations. System control valve shall be rated for normal system pressure but in no case less than 175 PSI. (No Substitutions Allowed).

2.03 FIRE DEPARTMENT SIAMESE CONNECTION

- A. Use new brass flush wall type, exterior fire department connection with a minimum of two 65 mm (2-1/2 inch) connections threaded to match those on the local fire protection service, with polished brass caps and chains. Provide escutcheon with integral raised letters "Automatic Sprinkler" "Standpipe and Automatic Sprinkler". Install an automatic ball drip between fire department connection and check valve with drain piping routed to the exterior of the building.

2.04 SPRINKLERS

- A. All sprinklers shall be FM approved. Provide quick response recessed type fire sprinklers in all areas, except where specifically prohibited by their listing or approval.

1. In generator electrical and telecom rooms: Standard response sprinklers.
 2. Provide 'cages' to protect sprinkler heads from breakage/damage when the elevation of the head is less than 7 feet 6 inches above finished floor (mechanical rooms, janitor closets, etc).
 3. Sprinkler heads shall be installed in center of tile or center to center.
- B. Temperature Ratings: In accordance with NFPA 13:
1. Sprinklers in electrical rooms, telecom rooms, and "doghouses": High temperature rated.
- 2.05 SPRINKLER CABINET
- A. Provide sprinkler cabinet with the required number of sprinkler heads of all ratings and types installed, and a sprinkler wrench for each system. Locate adjacent to the riser.
- 2.06 FLEXIBLE SPRINKLER HOSE
- A. U.L. 2443 and FM 1637 approved type 304 stainless steel, 2'-0" to 6'-0" lengths, 1/2" or 3/4" outlets, 175 psi maximum rated pressure, fully welded non-mechanical fittings, braided, leak tested with minimum 1 inch true bore internal corrugated hose diameter. Provide elbow hose assembly as required.
- B. Ceiling. Brackets: Galvanized steel, multi-port style, self-securing integrated snap-on clip ends with tamper resistant screws, and removable hub type with set screw flexible hose attachment.
- 2.07 IDENTIFICATION SIGNS/HYDRAULIC PLACARDS
- A. Steel or aluminum signs with white lettering on a red background with holes for easy attachment. Enter pertinent data for each system on the hydraulic placard.
- 2.08 SWITCHES:
- A. Contain in a weatherproof die cast/red baked enamel, oil resistant, aluminum housing with tamper resistant screws, 13 mm (1/2 inch) conduit entrance and necessary facilities for attachment to the valves. Provide two SPDT switches rated at 2.5 amps at 24 VDC.
- B. Water flow Alarm Switches: Mechanical, non-coded, non-accumulative retard and adjustable from 0 to 60 seconds minimum. Set flow switches at an initial setting between 20 and 30 seconds.
- C. Valve Supervisory Switches for Ball and Butterfly Valves: May be integral with the valve.
- 2.09 ELECTRIC BELL:
- A. UL listed and Factory Mutual approved electric alarm bell.
- 2.10 GAUGES
- A. Provide gauges as required by NFPA 13.

2.11 PIPE HANGERS AND SUPPORTS

- A. Supports, hangers, etc., of an approved pattern placement to conform to NFPA 13. System piping shall be substantially supported to the building structure. The installation of hangers and supports shall adhere to the requirements set forth in NFPA 13, Standard for Installation of Sprinkler Systems. Materials used in the installation or construction of hangers and supports shall be listed and approved for such application. Hangers or supports not specifically listed for service shall be designed and bear the seal of a professional engineer.

2.12 WALL, FLOOR AND CEILING PLATES

- A. Provide chrome plated steel escutcheon plates for exposed piping passing through walls, floors or ceilings.

PART 3 EXECUTION**3.01 INSTALLATION**

- A. Installation shall be accomplished by the licensed contractor. Provide a qualified technician, experienced in the installation and operation of the type of system being installed, to supervise the installation and testing of the system.
- B. Installation of Piping: Accurately cut pipe to measurements established by the installer and work into place without springing or forcing. In any situation where bending of the pipe is required, use a standard pipe-bending template. Install concealed piping in spaces that have finished ceilings. Where ceiling mounted equipment exists, install sprinklers so as not to obstruct the movement or operation of the equipment. Sidewall heads may need to be utilized. Locate piping in stairways as near to the ceiling as possible to prevent tampering by unauthorized personnel, and to provide a minimum headroom clearance of 2250 mm (seven feet six inches). To prevent an obstruction to egress, provide piping clearances in accordance with NFPA 101.
- C. Welding: Conform to the requirements and recommendations of NFPA 13.
- D. Drains: Pipe drains to discharge at safe points outside of the building or to sight cones attached to drains of adequate size to readily carry the full flow from each drain under maximum pressure. Do not provide a direct drain connection to sewer system or discharge into sinks. Install drips and drains where necessary and required by NFPA 13.
- E. Supervisory Switches: Provide supervisory switches for sprinkler control valves.
- F. Waterflow Alarm Switches: Install waterflow switch and adjacent valves in easily accessible locations.
- G. Inspector's Test Connection: Install and supply in conformance with NFPA 13, locate in a secured area, and discharge to the exterior of the building.
- H. Affix cutout disks, which are created by cutting holes in the walls of pipe for flow switches and non-threaded pipe connections to the respective waterflow switch or pipe connection near to the pipe from where they were cut.

- I. Provide pressure gauge at each water flow alarm switch location and at each main drain connection.
- J. For each fire department connection, provide the symbolic sign given in NFPA 170 and locate 2400 to 3000 mm (8 to 10 feet) above each connection location. Size the sign to 450 by 450 mm (18 by 18 inches) with the symbol being at least 350 by 350 mm (14 by 14 inches).
- K. Securely attach identification signs to control valves, drain valves, and test valves. Locate hydraulic placard information signs at each sectional control valve where there is a zone water flow switch.
- L. Repairs: Repair damage to the building or equipment resulting from the installation of the sprinkler system by the installer at no additional expense to the Owner.

3.02 INSPECTION AND TEST

- A. Preliminary Testing: Flush newly installed systems prior to performing hydrostatic tests in order to remove any debris which may have been left as well as ensuring piping is unobstructed. Hydrostatically test system, including the fire department connections, as specified in NFPA 13, in the presence of the Owners or his designated representative. Test and flush underground water line prior to performing these hydrostatic tests.
- B. Final Inspection and Testing: Subject system to tests in accordance with NFPA 13, and when all necessary corrections have been accomplished, advise Owner to schedule a final inspection and test. Connection to the fire alarm system shall have been in service for at least ten days prior to the final inspection, with adjustments made to prevent false alarms. Furnish all instruments, labor and materials required for the tests and provide the services of the installation foreman or other competent representative of the installer to perform the tests. Correct deficiencies and retest system as necessary, prior to the final acceptance. Include the operation of all features of the systems under normal operations in test.

3.03 INSTRUCTIONS

- A. Furnish the services of a competent instructor for not less than two hours for instructing personnel in the operation and maintenance of the system, on the dates requested by the Owner.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. The requirements listed in this section are supplemental to the Division 01 General Requirements.
- B. It shall be the responsibility of the Plumbing and Mechanical Contractor to examine and refer to all Architectural, Civil, Structural, Electrical, and Landscape and specifications for construction conditions which may affect the scope of Plumbing and HVAC work. Inspect the building site and existing facilities for verification of present conditions. Make proper provisions for these conditions in performance of the work and cost thereof.
- C. Plumbing and Mechanical work for this project shall include all items, articles, materials and the associated labor mentioned, scheduled or shown in these specifications and in the accompanying drawings.
- D. Furnish and install all equipment, materials and any required incidental items required by good practice to complete the systems described herein.

1.2 CODES AND STANDARDS

- A. Work shall meet the requirements of the plans and specifications and shall not be less than the minimum requirements of applicable sections of the latest Codes and Standards of the following Organizations:
 - 1. American Gas Association (AGA)
 - 2. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
 - 3. American Society of Mechanical Engineers (ASME)
 - 4. Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA)
 - 5. American Water Works Association (AWWA)
 - 6. National Electrical Code (NEC)
 - 7. National Electrical Manufacturers Association (NEMA)
 - 8. National Fire Protection Association (NFPA)
 - 9. Uniform Plumbing Code (UPC)
 - 10. Occupational Safety & Health Act (OSHA)
 - 11. Plastic Pipe Institute (PPI)
 - 12. International Mechanical Code (IMC)
 - 13. International Fuel Gas Code (IFGC)
 - 14. International Building Code (IBC)
 - 15. International Energy Conservation Code (IECC)
 - 16. Requirements of the Serving Utility Company
 - 17. Local and State Codes and Ordinances

1.3 FEES AND PERMITS

- A. The Plumbing and Mechanical Contractors shall pay all fees and arrange all permits required for work done under their contract and under their supervision by subcontract.

- B. All usage contracts between the Owner and the serving utilities company, such as membership and usage charges or fees, etc., for the purpose of obtaining the services for the utility company shall be applied for and paid for by the Owner.

1.4 MATERIALS AND EQUIPMENT

- A. Manufacturer's trade names and catalog numbers listed are intended to indicate the quality of equipment or materials desired. Manufacturers not listed in the specification will be considered substitutions and must have prior approval.
- B. See Division 01 for Substitutions Procedures. Requests for substitution are to be submitted sufficiently ahead of the deadline, to give ample time for examination. Prior approval request for substitution must indicate the specific item or items to be furnished in lieu of those scheduled, together with complete technical and comparative data on scheduled items and items proposed for substitution.
- C. If the engineer approves any proposed substitution, the approved product will be listed in an addendum. Bidders shall not rely on approval made in any other manner.
- D. Mechanical equipment may be installed with manufacturer's standard finish and color except where specific color, finish or choice is indicated. If the manufacturer has no standard finish, equipment shall have a prime coat and two finish coats of gray enamel.
- E. High altitude operation: Capacity of all equipment is to be sized and manufactured to perform at the elevation of the project site. If not specifically indicated in the equipment schedule or in the specifications provide all required accessories and equipment for proper operation at elevation of the project site.
- F. This Contractor shall be responsible for materials and equipment installed under this contract. Contractor shall also be responsible for the protection of materials and equipment of others from damage as a result of his work.
- G. Manufactured material and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by manufacturer unless herein specified to the contrary.
- H. This Contractor shall make the required arrangement with the General Contractor or Construction Manager for the introduction into the building of equipment too large to pass through finished openings.
- I. Store materials and equipment indoors at the job site. If this is not possible, store on raised platforms and protect from the weather by means of waterproof covers. Coverings shall permit circulation of air around the materials to prevent condensation of moisture. Screen or cap openings in equipment to prevent the entry of vermin.

1.5 INTENT OF DRAWINGS

- A. The drawings are diagrammatic and do not necessarily show exact location of piping and ductwork unless specifically dimensioned. Riser and other diagrams are schematic and do not necessarily show the physical arrangement of the equipment. They shall not be used for obtaining lineal runs of piping or ductwork, nor shall they be used for shop drawings for piping and ductwork fabrication or ordering. Discrepancies shown on different plans, or between plans and actual field conditions shall be brought to the attention of the Architect/Engineer for resolution.

1.6 COMMISSIONING OF SYSTEMS

- A. Mechanical systems where the total mechanical equipment capacity is greater than 480,000 Btu/hr cooling capacity and 600,000 Btu/hr heating capacity shall be commissioned in accordance with the provisions of C408 of the International Energy Conservation Code by a registered professional. The mechanical contractor shall be responsible for all cost associated with commissioning.

1.7 RESPONSIBILITY

- A. Plumbing and HVAC work shall conform to requirements of all divisions 22 and 23 specifications.
- B. The Plumbing and Mechanical Contractors shall be responsible for the installation of a satisfactory and complete system in accordance with the intent of the drawing and specifications. Provide, at no extra cost, all incidental items, materials, accessories and labor required for completion of the work even though they are not specifically mentioned or indicated on the drawings or in the specifications.
- C. The drawings do not attempt to show complete details of the building construction which affect the mechanical and plumbing installation; and reference is therefore required to the Architectural, Civil, Structural, Landscape and Electrical drawings and specifications and to shop drawings of all trades for additional details which affect the installation of the work covered under this Division of the Contract.
- D. Location of mechanical and plumbing system components shall be checked for conflicts with openings, structural members and components of other systems having fixed locations. In the event of any conflicts, the Architect/Engineer shall be consulted and their decision shall govern. Necessary changes shall be made at the Contractor's expense.
- E. Determine, and be responsible for, the proper location and character of inserts for hangers, chases, sleeves, and other openings in the construction required for the work, and obtain this information well in advance of the construction progress so work will not be delayed.
- F. Final location of inserts, hangers, etc., required for each installation, must be coordinated with facilities required for other installations to prevent interference.
- G. Take extreme caution not to install work that connects to equipment until such time as complete Shop Drawings of such equipment have been approved by the Architect/Engineer. Any work installed by the Contractor, prior to approval of Shop Drawings, will be at the Contractor's risk.
- H. All modifications and changes required due to installation of equipment other than the scheduled equipment shall be made at the contractor's expense.
- I. It shall be the responsibility of the installing contractor to coordinate changes to work by other trades that result from the installation of equipment other than the scheduled equipment.
- J. If the provided equipment is heavier or larger than the scheduled or specified equipment, it shall be the responsibility of the installing contractor to coordinate the required structural changes and pay for any and all associated cost.
- K. If the provided equipment has different motor characteristics or electrical requirements than the scheduled or specified equipment, it shall be the responsibility of the installing contractor to coordinate the required changes and pay for any and all associated cost.

- L. If larger or additional electrical conduits, wire or breakers are required due to the installation of equipment other than the scheduled or specified equipment it shall be the responsibility of the installing contractor to coordinate the required changes and pay for any and all associated cost.
- M. If the provided equipment requires different fluid flow rates than the scheduled or specified equipment, it shall be the responsibility of the installing contractor to coordinate all required changes including but not limited to pumps, piping, valves, etc and pay for any and all associated cost.
- N. At all times during the performance of this Contract, properly protect work from damage and protect the Owner's property from injury or loss. Make good any damage, injury or loss, except such as may be directly due to errors in the Bidding Documents or caused by Agents or Employees of the Owner. Adequately protect adjacent property as provided by law and the Bidding Documents. Provide and maintain passageways, guard fences, lights and other facilities for protection required by Public Authority or Local conditions.
- O. The Contractor shall be responsible for damages incurred due to the work of their contractors, to the building or its contents, people, etc.

1.8 REVIEW

- A. All work and material is subject to review at any time by the Architect/Engineer or his representative. If the Architect/Engineer or his representative finds material that does not conform to these specifications or that is not properly installed or finished, correct the deficiencies in a manner satisfactory to the Architect/Engineer at the Contractor's expense.

1.9 WORKMANSHIP

- A. Work under this contract shall be performed by workmen skilled in the particular trade, including work necessary to properly complete the installation in a workmanlike manner to present a neat and finished appearance.
- B. Obtain Architect's/Engineer's approval before performing any cutting on structural members or patching of building surfaces. Any damage to the building or equipment by the Mechanical or Plumbing Contractor shall be the responsibility of the Mechanical or Plumbing Contractor and shall be repaired by skilled craftsmen of the trades involved at the Contractor's expense.
- C. Chases, openings, sleeves, hangers, anchors, recesses, equipment pads, and framing for equipment; shall be provided by others only if so noted on the drawings. Otherwise, they will be provided by the Mechanical or Plumbing Contractor for their work.

1.10 COORDINATION

- A. This Mechanical and Plumbing Contractors shall plan their work to proceed with a minimum interference with other trades and it shall be their responsibility to inform the General Contractor of all openings required in the building structure for installation of work, and to provide sleeves as required. Dimensions of equipment installed and/or provided by others shall be checked so that correct clearances and connections may be made.
- B. In general, pipelines requiring gravity drainage shall be installed first, followed by ductwork, large piping mains and electrical conduit. The location of fire protection piping and heads shall be coordinated with other trades to ensure that installations by other trades do not block heads.

- C. Leave sufficient space for the installation of insulation on piping and ductwork as specified. It is not acceptable to compress pipe or duct insulation for any reason.

1.11 CLEANING

- A. Keep the job site clean. The Mechanical and Plumbing Contractors shall remove all waste and rubbish associated with their work.
- B. Upon completion of work, remove materials, scraps and debris related to plumbing and mechanical work and leave all spaces including tunnels, crawlspaces, pipe or duct chases and ceiling plenums clean and orderly.
- C. The Mechanical and Plumbing contractors will be responsible for cleaning the exterior and interior of all equipment prior to start-up. Once all equipment has been cleaned it shall be inspected by the Architect/Engineer prior to start-up.
- D. The Mechanical and Plumbing Contractors shall provide dust protection of existing materials and equipment as well a new materials and equipment for the duration of the project. Protect existing materials and equipment from damage for the duration of the project. Clean the exterior and interior of all existing equipment at the completion of the project.

1.12 TEMPORARY FACILITIES

- A. Offices
 - 1. The Mechanical and Plumbing Contractor must have the permission of the Owner and General Contractor or Construction Manager to install a temporary office/job trailer on the project site.
 - 2. The Contractor shall completely remove his temporary installations when no longer needed and the premises shall be completely clean, disinfected, patched, and refinished to match adjacent areas.
- B. Ladders and Scaffolds
 - 1. The Mechanical and Plumbing Contractors shall provide their own ladders, scaffolds, etc. of substantial construction for access to their work in various portions of the building as may be required. When no longer needed, they shall be removed by the Contractor.
- C. Protection Devices
 - 1. The Mechanical and Plumbing Contractors shall provide and maintain his own necessary barricades, fences, signal lights, etc., required by all governing authorities or shown on the drawings. When no longer needed, they shall be removed by the Contractor.
- D. TEMPORARY FIRE PROTECTION
 - 1. The Mechanical and Plumbing Contractors shall provide all necessary first aid hand fire extinguishers for Class A, B, C and special hazards as may exist in his own work area only in accordance with good and safe practice and as required by jurisdictional safety authority.

1.13 SUBMITTALS

- A. Submittals will be required for each piece of equipment, material or product as noted in the table below. All submittals shall be submitted, reviewed and all discrepancies addressed prior to ordering equipment or starting work. Any equipment ordered without having first completed the

submittal process is done at the risk of the contractor. Any work performed prior to completing the submittal process is done at the risk of the contractor.

Specification Section	Product Data	Performance Data	Shop Drawing	Delegated Design	Wiring Diagram	Color Chart	Sustainability Compliance	Notes
220500	X			X				Provide Delegated Design per the requirements of this section
220523	X							
220529	X			X				Provide Delegated Design per the requirements of this section
220548	X			X				Provide Delegated Design per the requirements of this section
220553	X							
221116	X							
221119	X							
221316	X						X	
221319	X							
224100	X	X	X			X	X	
230593								Provide T&B Certifications
230713	X	X					X	
233113								
233300	X	X						
233346	X							
233713	X	X						

B. Submittal Definitions

1. Product Data: Provide manufacturers' cut sheets that include general product information including but not limited to, model number, physical data, nominal capacities, and rough-in requirements.
2. Performance Data: Provide detailed performance and capacities based on project specific requirements including but not limited to: flow rates, capacities, pressure loss, temperatures, fan curves, pump curves, part load performance, sound data, and electrical characteristics.
3. Shop Drawings: Provide detailed drawings of the equipment showing overall dimensions, location of electrical and piping connection, location of anchorage points, location of electrical and control panels, and all operating, service and maintenance clearances.
4. Delegated Design: Provide detailed drawings prepared and stamped by a registered Professional Engineer, that detail pertinent design criteria, the materials and products to be installed and the required installation locations.
5. Wiring Diagram: Provide diagrams that identify and detail required field wiring.
6. Color Chart: Provide a physical color chart of material samples required for selection of equipment colors.

7. Sustainability Compliance: Provide literature that indicates a products compliance with LEED or Green Globes. See Division 01 for additional information and requirements.

C. Submittal Formats:

1. Include the following information with each submittal:
 - a. Project Name
 - b. Submittal Date
 - c. Name of Architect
 - d. Name of Engineer
 - e. Name of General Contractor or Construction Manager
 - f. Name of Sub-Contractor
 - g. Name of firm or entity that prepared the submittal
 - h. Unique Submittal Number
 - i. Type of Submittal
 - j. Specification Section
 - k. Name or Mark of equipment or material and detail or drawings reference.
2. All Submittals with the exception of color charts or material samples shall be electronically transmitted PDFs.

D. Submittal Requirements

1. Submittals shall be submitted as a complete specification section. The submittal must include all materials and equipment for that specification section. Submittals for individual materials of equipment will be rejected without review.
2. Submittals shall be complete, clearly show item used, size, dimensions, capacity, rough in, etc., as required for complete check and installation. Manufacturer's literature showing more than one item shall be clearly marked as to which item is being furnished or it will be rejected and returned without review.
3. Each submittal shall be thoroughly checked by the Contractor for compliance with the Contract Document requirements, accuracy of dimensions, relationship to the work of other trades, and conformance with sound, safe practices as to erection and installation. Each submittal shall then bear a stamp evidencing such checking and shall show corrections made, if any. Submittals requiring extensive corrections shall be revised before submission. Each submittal not stamped and signed by the Contractor evidencing such checking will be rejected and returned without review.
4. On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations. Include relevant additional information and revisions, other than those requested on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
5. Review of the shop drawings and literature by the engineer shall not relieve the contractor for responsibility for deviations from the drawings or specifications, nor shall it relieve the contractor from responsibility for errors in the shop drawings or literature. It is the responsibility of the contractor to provide materials and equipment which meet the specifications and job requirements.

1.14 OPERATION AND MAINTENANCE MANUALS

- A. Operation and Maintenance Manuals (O&M Manuals) shall contain:

1. Names and contact information for the Project Architect, Project Engineer.
 2. Names and contact information for the General Contractor or Construction Manager.
 3. Names and contact information for sub-contractors.
 4. Installation, maintenance and operating instructions for each piece of equipment.
 5. Parts lists
 6. Wiring Diagrams
 7. Equipment Start-up and inspection certificates
 8. Test and Balance Reports
 9. Commissioning Reports
 10. Copies of Equipment Warranties
 11. Copies of Submittals
 12. Record Drawings.
- B. Prior to substantial completion, submit an electronic copy of the O&M manual in PDF format to the Architect, Engineer and Owner for Review and approval. The PDF shall be one file with an index and hyperlinks to each section. Individual bound PDFs without automated navigation will be rejected. All O&M data shall be grouped by the equipment type and ordered by the specification numbering.
- C. Prior to final payment a final electronic copy of the O&M manual on an archival quality DVD as well as two printed copies, shall be furnished to the owner. Printed copies shall have commercial quality 8-1/2" x 11" 3-ring binders with tabbed dividers for each section.

1.15 AS-BUILT RECORD DRAWINGS

- A. The Contractor shall furnish to the Owner and Architect/Engineer a marked print showing the location of all concealed or underground pipe or conduit runs and other equipment installed other than as shown on the drawings. Dimension underground lines from established building lines. Indicate all installed pull boxes in conduit runs.
- B. The Contractor shall furnish to the Architect/Engineer a marked print showing the location of all mechanical equipment, plumbing fixtures, piping, ductwork, diffusers, grilles, etc. The location of any item which deviates from the bid documents shall be accurately drawn and dimensioned.
- C. All underground piping and ductwork shall be dimensioned from nearest column and/or exterior walls. The location of all maintenance related items, such as duct access doors, fire dampers, isolation valves, filters, etc., shall be highlighted on the as built drawing.

1.16 PLACING SYSTEM INTO OPERATION

- A. Prior to the starting of equipment, the Mechanical or Plumbing Contractor shall thoroughly inspect the installation and any work completed by other trades and subcontractors to verify compliance with the contract documents.
- B. Start-up of all HVAC equipment shall be completed by factory trained representatives. At the completion of start-up, the factory representative shall submit to the architect and engineer, a start-up report that indicates any problems encountered, potential problems including installation issues, adjustments made or required to be made to ensure proper operation of the equipment. Any installation deficiencies identified shall be corrected at no additional cost to the owner.

1.17 OWNER TRAINING

- A. General
 - 1. The system training is intended to familiarize the Owner's operating and maintenance staff with all systems requiring maintenance. Training is to be provided after the systems are in place and operational, after issues noted during commissioning have been resolved, and before final acceptance.
 - 2. Provide second set of training sessions for automatic control systems about 6-9 months after the first sessions.
- B. Systems Requiring Training
 - 1. All mechanical, electrical, safety, standby, and automatic control systems in the project, and other systems specified elsewhere to have training.
- C. Attendance:
 - 1. Training is to be provided by contractor's representatives that are familiar with the system's operation and maintenance requirements. Individual training sessions (modules) shall be provided for each type or group of systems, separated roughly by trade group that will be performing maintenance on the system. The trades groups and systems typically requiring training are:
 - a. HVAC & Refrigeration (refrigeration, packaged cooling systems, packaged rooftop units, fan systems, controls)
 - b. Plumbers (Domestic and Sanitary Plumbing, packaged rooftop units, miscellaneous process piping systems)
- D. Schedule:
 - 1. Duplicate training sessions are to be provided for each training module, so that the Owner's operating personnel can be split into two groups during training. Duplicate training sessions shall be scheduled on different days. Length of training sessions will be determined by scope of training indicated below, and as coordinated with Owner after draft copy of training documents have been reviewed.
- E. Training Documentation:
 - 1. Contractor to submit draft copy of agenda and training documents to Owner for review at least two weeks prior to training date.
 - 2. Provide a copy of the following items for each person that will be attending the training sessions. Coordinate required number with the Owner.
 - a. Training agenda.
 - b. Summary of new systems and existing systems affected by this project.
 - c. Summary of work performed under this project.
 - d. Control system drawings and sequences of operation.
 - e. List of important maintenance and trouble-shooting operations for all systems.
 - 3. Provide minimum of 2 copies of following items:
 - a. Contract documents including all drawings, specifications, addendums, and change orders.
- F. Training Sessions:
 - 1. Assemble at location to be determined by the Owner.
 - 2. Distribute training documentation as indicated above.
 - 3. Provide classroom style training if required for orientation and discussion of new systems and existing systems affected by this project, and other issues appropriate for a classroom format.
 - 4. Visit site and review locations; and perform detailed review of operation and maintenance requirements for current systems.

1.18 WARRANTY

- A. The Contractor shall guarantee that all materials and labor installed are new and of first quality and that any material or labor found defective shall be replaced without cost to the Owner within one (1) year after substantial completion of the Contract or one (1) full season of heating and cooling operation, whichever is the greater. The guarantee shall list the date of the beginning of the one (1) year period, which shall be the date that the Substantial Completion Certificate is issued.
- B. Any damage to the building, caused by defective work or material of the Contractor within the above-mentioned period, shall be satisfactorily repaired without cost to the Owner.
- C. The guarantee does not include maintenance of equipment. The Owner shall accept full responsibility for proper operation and maintenance of equipment immediately upon substantial completion and occupancy of the building.
- D. Final acceptance by the Owner will not occur until all operating instructions are mounted in Equipment Rooms and Operating Personnel are thoroughly indoctrinated in the operation of all mechanical equipment by the Contractor.
- E. No equipment installed as part of this project shall be used for temporary heat during construction.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Section includes the following:
 - 1. Expansion Fittings and Loops for Piping Systems
 - 2. Alignment Guides and Anchors
 - 3. Dielectric Fittings
 - 4. Pipe Sleeves
 - 5. Sleeve Seals Systems for Piping
 - 6. Silicone Sealant
 - 7. Escutcheons for Piping
 - 8. Floor Plates

1.02 SUBMITTALS

- A. See Section 220000 "General Requirements of Plumbing and HVAC" for Submittal requirements.

1.03 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe and Pressure-Vessel Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

1.04 PERFORMANCE REQUIREMENTS

- A. Compatibility: Products shall be suitable for piping service fluids, materials, working pressures, and temperatures.
- B. Capability: Products to absorb 200 percent of maximum axial movement between anchors.

PART 2 PRODUCTS**2.01 EXPANSION FITTINGS AND LOOPS FOR PIPING SYSTEMS**

- A. Rubber Union Connector Expansion Joints
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Mason Industries, Inc.
 - b. MetraFlex.
 - c. Twin City Hose.
 - 2. Material: Twin reinforced-rubber spheres with external restraining cables.
 - 3. Minimum Pressure Rating: 150 psig at 170 deg F, unless otherwise indicated.
 - 4. End Connections for NPS 2 and Smaller: Threaded.

- B. Flexible-Hose Packless Expansion Joints:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Mason Industries, Inc.
 - b. Metraflex Company (The).
 - c. Twin City Hose Inc.
 2. Description: Manufactured assembly with inlet and outlet elbow fittings and two flexible-metal-hose legs joined by long-radius, 180-degree return bend or center section of flexible hose.
 3. Flexible Hose: Corrugated-metal inner hoses and braided outer sheaths.
 4. Expansion Joints for Copper Tubing NPS 2 and Smaller: Copper-alloy fittings with solder-joint end connections.
 - a. Bronze hoses and single-braid bronze sheaths with 450 psig at 70 deg F and 340 psig at 450 deg F ratings.
 5. Expansion Joints for Copper Tubing NPS 2-1/2 to NPS 4: Copper-alloy fittings with threaded end connections.
 - a. Stainless-steel hoses and single-braid, stainless-steel sheaths with 300 psig at 70 deg F and 225 psig at 450 deg F ratings.
 6. Expansion Joints for Steel Piping NPS 2 and Smaller: Carbon-steel fittings with threaded end connections.
 - a. Stainless-steel hoses and single-braid, stainless-steel sheaths with 450 psig at 70 deg F and 325 psig at 600 deg F ratings.
 7. Expansion Joints for Steel Piping NPS 2-1/2 to NPS 6: Carbon-steel fittings with flanged end connections.
 - a. Stainless-steel hoses and single-braid, stainless-steel sheaths with 200 psig at 70 deg F and 145 psig at 600 deg F ratings.

2.02 ALIGNMENT GUIDES AND ANCHORS

- A. Alignment Guides
1. Description: Steel, factory-fabricated alignment guide, with bolted two-section outer cylinder and base for attaching to structure; with two-section guiding slider for bolting to pipe.
- B. Anchor Materials:
1. Steel Shapes and Plates: ASTM A 36/A 36M.
 2. Bolts and Nuts: ASME B18.10 or ASTM A 183, steel hex head.
 3. Washers: ASTM F 844, steel, plain, flat washers.
 4. Mechanical Fasteners: Insert-wedge-type stud with expansion plug anchor for use in hardened portland cement concrete, with tension and shear capacities appropriate for application.
 - a. Stud: Threaded, zinc-coated carbon steel.
 - b. Expansion Plug: Zinc-coated steel.
 - c. Washer and Nut: Zinc-coated steel.
 5. Chemical Fasteners: Insert-type stud, bonding-system anchor for use with hardened portland cement concrete, with tension and shear capacities appropriate for application.
 - a. Bonding Material: ASTM C 881/C 881M, Type IV, Grade 3, two-component epoxy resin suitable for surface temperature of hardened concrete where fastener is to be installed.
 - b. Stud: ASTM A 307, zinc-coated carbon steel with continuous thread on stud, unless otherwise indicated.
 - c. Washer and Nut: Zinc-coated steel.
 - 6.

2.03 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
- B. Dielectric Unions:
1. Dielectric Unions are not allowed.
- C. Dielectric Flanges:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Capitol Manufacturing Company; member of the Phoenix Forge Group.
 - b. Central Plastics Company.
 - c. Matco-Norca.
 - d. Watts; a division of Watts Water Technologies, Inc.
 - e. Wilkins; a Zurn company.
 2. Standard: ASSE 1079.
 3. Factory-fabricated, bolted, companion-flange assembly.
 4. Pressure Rating: 175 psig.
 5. End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
- D. Dielectric-Flange Insulating Kits:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Advance Products & Systems, Inc.
 - b. Calpico, Inc.
 - c. Central Plastics Company.
 - d. Pipeline Seal and Insulator, Inc.
 2. Nonconducting materials for field assembly of companion flanges.
 3. Pressure Rating: 150 psig.
 4. Gasket: Neoprene or phenolic.
 5. Bolt Sleeves: Phenolic or polyethylene.
 6. Washers: Phenolic with steel backing washers.
- E. PEX Dielectric Separator:
1. Description: 6" long section of pex piping shall be installed between dis-similar piping materials.
 2. Pipe Material: PEX plastic according to ASTM F 876.
 3. Oxygen Barrier: O₂ permeability ≤ 0.32 mg/m²/day in accordance with DIN 4726.
 4. Fittings: ASTM F 1960, cold expansion fittings and reinforcing rings.
 5. Pressure/Temperature Rating: Minimum 100 psig and 180 deg F.

2.04 SLEEVES

- A. Galvanized-Steel Sheet Pipe Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.

2.05 SLEEVE-SEAL SYSTEMS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Advance Products & Systems, Inc.
 2. CALPICO, Inc.
 3. GPT; an EnPro Industries company.

4. Metraflex Company (The).

B. Description:

1. Modular sealing-element unit, designed for field assembly, for filling annular space between piping and sleeve.
2. Designed to form a hydrostatic seal of 20-psig.
3. Sealing Elements: EPDM-rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size.
4. Pressure Plates: Composite plastic.
5. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

2.06 SILICONE SEALANTS

A. Silicone, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT. Grade P Pourable (self-leveling) formulation is for opening in floors and other horizontal surfaces that are not fire rated.

2.07 ESCUTCHEONS

A. One-Piece, Cast-Brass Type: With polished, chrome-plated finish and setscrew fastener.

B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with chrome-plated finish and spring-clip fasteners.

C. One-Piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.

2.08 FLOOR PLATES

A. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.

PART 3 EXECUTION

3.01 EXPANSION JOINT INSTALLATION

A. Install expansion joints of sizes matching sizes of piping in which they are installed.

B. Install expansion joint per the manufacture's written instructions.

3.02 ALIGNMENT-GUIDE AND ANCHOR INSTALLATION

A. Install alignment guides to guide expansion and to avoid end-loading and torsional stress.

B. Install two guide(s) on each side of pipe expansion fittings and loops. Install guides nearest to expansion joint not more than four (4) pipe diameters from expansion joint.

C. Attach guides to pipe, and secure guides to building structure.

- D. Install anchors at locations to prevent stresses from exceeding those permitted by ASME B31.9 and to prevent transfer of loading and stresses to connected equipment.
- E. Anchor Attachments:
1. Anchor Attachment to Steel Pipe: Attach by welding. Comply with ASME B31.9 and ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 2. Anchor Attachment to Copper Tubing: Attach with pipe hangers. Use MSS SP-69, Type 24; U bolts bolted to anchor.
- F. Fabricate and install steel anchors by welding steel shapes, plates, and bars. Comply with ASME B31.9 and AWS D1.1/D1.1M.
1. Anchor Attachment to Steel Structural Members: Attach by welding.
 2. Anchor Attachment to Concrete Structural Members: Attach by fasteners. Follow fastener manufacturer's written instructions.
- G. Use grout to form flat bearing surfaces for guides and anchors attached to concrete.

3.03 DIELECTRIC FITTING INSTALLATION

- A. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
- B. Install Dielectric fittings per the manufacturers written instructions.
- C. Install pipe hangers immediately upstream and downstream of dielectric fittings.
- D. Install isolation valves immediately upstream and downstream of dielectric fittings.
- E. Dielectric Fittings for NPS 2 and Smaller: PEX Dielectric Separator.
- F. Dielectric Fittings for NPS 2-1/2 and Larger: Dielectric Flange.

3.04 SLEEVE INTALLATION

- A. Install sleeves for piping passing through penetrations in floors, partitions, roofs, and walls.
- B. For sleeves that will have sleeve-seal system installed, select sleeves of size large enough to provide 1-inch annular clear space between piping and concrete slabs and walls.
- C. Install sleeves in concrete floors, concrete roof slabs, and concrete walls as new slabs and walls are constructed.
1. Cut sleeves to length for mounting flush with both surfaces.
 - a. Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2 inches above finished floor level.
 2. Using silicone sealant, seal space outside of sleeves in slabs and walls without sleeve-seal system.
- D. Fire-Resistance-Rated Penetrations, Horizontal Assembly Penetrations, and Smoke-Barrier Penetrations: Maintain indicated fire or smoke rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with fire- and smoke-stop materials. Comply with requirements for firestopping and fill materials specified in Section 078413 "Penetration Firestopping."

3.05 SLEEVE-SEALS SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls at piping entries into building.
- B. Select type, size, and number of sealing elements required for piping material and size and for sleeve ID or hole size. Position piping in center of sleeve. Center piping in penetration, assemble sleeve-seal-system components, and install in annular space between piping and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make a watertight seal.

3.06 SLEEVE-SEAL SCHEDULE

- A. Use sleeve and sleeve-seals for the following piping-penetration applications:
 - 1. Exterior Concrete Walls Above Grade: Galvanized-Steel Sheet Pipe Sleeves with Sleeve-seal system
 - 2. Exterior Concrete Walls Below Grade: Galvanized-Steel Sheet Pipe Sleeves with Sleeve-seal system
 - 3. Interior or Exterior Concrete Slabs-on-Grade: Sleeve not required.
 - 4. Interior Concrete Slabs Above Grade: Galvanized-Steel Sheet Pipe Sleeves with Silicone Sealant or Fire calk
 - 5. Interior Partitions: Sleeve not require – fire calk penetrations of rated assemblies.

3.07 ESCUTCHEON INSTALLATION

- A. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.
- B. Install escutcheons with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.

3.08 FLOOR PLATE INSTALLATION

- A. Install floor plates for piping penetrations of equipment-room floors.
- B. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

A. Section includes:

1. Ball Valves
2. Butterfly Valves
3. Bronze Gate Valves
4. Iron Gate Valve
5. Bronze Check Valves
6. Iron Swing Check Valves
7. Iron Silent Check Valves

1.2 SUBMITTALS

A. See Section 220000 "General Requirements for Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 GENERAL REQUIREMENTS FOR VALVES**

A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.

B. ASME Compliance:

1. ASME B1.20.1 for threads for threaded-end valves.
2. ASME B16.1 for flanges on iron valves.
3. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
4. ASME B16.18 for solder-joint connections.
5. ASME B31.1 for power piping valves.
6. ASME B31.9 for building services piping valves.

C. Bronze valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.

D. Refer to valve schedule articles for applications of valves.

E. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.

F. Valve Sizes: Same as upstream piping unless otherwise indicated.

G. Valves in Insulated Piping:

1. Include 2-inch (50-mm) stem extensions.
2. Extended operating handle of nonthermal-conductive material, and protective sleeves that allow operation of valves without breaking the vapor seals or disturbing insulation.

3. Memory stops that are fully adjustable after insulation is applied.

2.2 BRONZE BALL VALVES, TWO-PIECE WITH FULL PORT AND STAINLESS-STEEL TRIM:

A. Manufacturers: Provide products from one of the following:

1. Apollo
2. Nibco
3. Milwaukee
4. Watts

B. Description:

1. Standard: MSS SP-110.
2. SWP Rating: 150 psig.
3. CWP Rating: 600 psig.
4. Body Design: Two piece.
5. Body Material: Bronze.
6. Ends: Solder or Threaded.
7. Seats: PTFE.
8. Stem: Stainless steel.
9. Ball: Stainless steel, vented.
10. Port: Full.

2.3 BRONZE GATE VALVES, NRS, CLASS 150:

A. Manufacturers: Provide products from one of the following:

1. Apollo
2. Nibco
3. Crane
4. Milwaukee

B. Description:

1. Standard: MSS SP-80, Type 1.
2. CWP Rating: 300 psig.
3. Body Material: ASTM B 62, bronze with integral seat and union-ring bonnet.
4. Ends: Threaded.
5. Stem: Bronze.
6. Disc: Solid wedge; bronze.
7. Packing: Asbestos free.
8. Handwheel: Malleable iron, bronze, or aluminum.

2.4 BRONZE SWING CHECK VALVES WITH BRONZE DISC, CLASS 125:

A. Manufacturer: Provide products from one of the following:

1. Apollo
2. Crane
3. Nibco
4. Watts

B. Description:

1. Standard: MSS SP-80, Type 3.
2. CWP Rating: 200 psig (1380 kPa).
3. Body Design: Horizontal flow.

4. Body Material: ASTM B 62, bronze.
5. Ends: Threaded or soldered. See valve schedule articles.
6. Disc: Bronze.

PART 3 - EXECUTION

3.1 VALVE INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.

3.2 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valves with specified SWP classes or CWP ratings are unavailable, the same types of valves with higher SWP classes or CWP ratings may be substituted.
- B. Select valves with the following end connections:
 1. For Copper Tubing, NPS ½" – 2" and Smaller: solder ends.
 2. For Steel Piping, NPS 2" and Smaller: Threaded ends.
 3. For Steel Piping NPS 2-1/2" and larger: Flanged or Grooved ends.

3.3 VALVE SCHEDULE

- A. Domestic Water ½" – 2" NPS: Ball Valve, Solder or Threaded Ends
- B. Domestic Water 2-1/2" NPS and Larger: Butterfly Valve, Lug Type

3.4 CHECK VALVE SCHEDULE

- A. Pump Discharge ½" – 2" NPS: Bronze Swing Check, Threaded or Solder Ends
- B. Pump Discharge 2-1/2" NPS and Larger: Iron Body Globe Style Silent Check, Flanged Ends

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Metal pipe hangers and supports.
2. Trapeze pipe hangers.
3. Thermal-hanger shield inserts.
4. Fastener systems.
5. Pipe positioning systems.
6. Equipment supports.

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design:** Design trapeze pipe hangers and equipment supports, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance:** Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
1. Design supports for multiple pipes capable of supporting combined weight of supported systems, system contents, and test water.
 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
 3. Design seismic-restraint hangers and supports for piping and equipment.

1.3 SUBMITTALS

- A.** See Section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.
- B. Shop Drawings:** Signed and sealed by a qualified professional engineer. Show fabrication and installation details and include calculations for the following; include Product Data for components:
1. Trapeze pipe hangers.
 2. Equipment supports.
- C. Delegated-Design Submittal:** For trapeze hangers indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Galvanized Metallic Coatings: Pre-galvanized or hot dipped.
 - 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
 - 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.
- B. Copper Pipe Hangers:
 - 1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
 - 2. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.

2.2 TRAPEZE PIPE HANGERS

- A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural carbon-steel shapes with MSS SP-58 carbon-steel hanger rods, nuts, saddles, and U-bolts.

2.3 THERMAL-HANGER SHIELD INSERTS

- A. Insulation-Insert Material for Cold Piping: ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength and vapor barrier.
- B. Insulation-Insert Material for Hot Piping: ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength.
- C. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.
- D. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.
- E. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.4 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
- B. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.5 PIPE POSITIONING SYSTEMS

- A. Description: IAPMO PS 42, positioning system of metal brackets, clips, and straps for positioning piping in pipe spaces; for plumbing fixtures in commercial applications.

2.6 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.7 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
 - 2. Design Mix: 5000-psi, 28-day compressive strength.

PART 3 - EXECUTION**3.1 HANGER AND SUPPORT INSTALLATION**

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.
 - 1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
 - 2. Field fabricate from ASTM A 36/A 36M, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.

- C. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- D. Fastener System Installation:
 - 1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
 - 2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- E. Pipe Positioning-System Installation: Install support devices to make rigid supply and waste piping connections to each plumbing fixture.
- F. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- G. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- H. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- I. Install lateral bracing with pipe hangers and supports to prevent swaying.
- J. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- K. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- L. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- M. Insulated Piping:
 - 1. Attach clamps and spacers to piping.
 - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
 - b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
 - 2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.

3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
4. Shield Dimensions for Pipe: Not less than the following:
 - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
 - b. NPS 4: 12 inches long and 0.06 inch thick.
 - c. NPS 5 and NPS 6: 18 inches long and 0.06 inch thick.
 - d. NPS 8 to NPS 14: 24 inches long and 0.075 inch thick.
 - e. NPS 16 to NPS 24: 24 inches long and 0.105 inch thick.
5. Pipes NPS 8 and Larger: Include wood or reinforced calcium-silicate-insulation inserts of length at least as long as protective shield.
6. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.2 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.
- B. Grouting: Place grout under supports for equipment and make bearing surface smooth.
- C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.3 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.4 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal are specified in Section 099113 "Exterior Painting.", Section 099123 "Interior Painting.", Section 099600 "High-Performance Coatings."
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.6 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports and metal trapeze pipe hangers and attachments for general service applications.
- F. Use copper-plated pipe hangers and copper attachments for copper piping and tubing.
- G. Use padded hangers for piping that is subject to scratching.
- H. Use thermal-hanger shield inserts for insulated piping and tubing.
- I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 - 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of non-insulated or insulated, stationary pipes NPS 1/2 to NPS 30.
 - 2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to 1050 deg F, pipes NPS 4 to NPS 24, requiring up to 4 inches of insulation.
 - 3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36, requiring clamp flexibility and up to 4 inches of insulation.
 - 4. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of non-insulated, stationary pipes NPS 1/2 to NPS 8.

5. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30.
 6. Pipe Saddle Supports (MSS Type 36): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
 7. Pipe Stanchion Saddles (MSS Type 37): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
 8. Single-Pipe Rolls (MSS Type 41): For suspension of pipes NPS 1 to NPS 30, from two rods if longitudinal movement caused by expansion and contraction might occur.
 9. Complete Pipe Rolls (MSS Type 44): For support of pipes NPS 2 to NPS 42 if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.
- J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.
- K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
 2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
- L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
 2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
 3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
 4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
 5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
 6. C-Clamps (MSS Type 23): For structural shapes.
 7. Welded-Steel Brackets: For support of pipes from below, or for suspending from above by using clip and rod. Use one of the following for indicated loads:
 - a. Light (MSS Type 31): 750 lb.
 - b. Medium (MSS Type 32): 1500 lb.
 - c. Heavy (MSS Type 33): 3000 lb.
 8. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
 9. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
- M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.

2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- N. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches.
 2. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41, roll hanger with springs.
 3. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.
- O. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.
- P. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.
- Q. Use pipe positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Elastomeric isolation pads.
2. Elastomeric isolation mounts.
3. Restrained elastomeric isolation mounts.
4. Open-spring isolators.
5. Housed-spring isolators.
6. Restrained-spring isolators.
7. Housed-restrained-spring isolators.
8. Pipe-riser resilient supports.
9. Resilient pipe guides.
10. Elastomeric hangers.
11. Spring hangers.
12. Snubbers.
13. Restraint channel bracings.
14. Restraint cables.
15. Seismic-restraint accessories.
16. Mechanical anchor bolts.

1.2 ACTION SUBMITTALS

- A. See Section 220000 "General Requirements for Plumbing and HVAC" for submittal requirements.
- B. Delegated-Design Submittal: For each vibration isolation and seismic-restraint device.
 1. Include design calculations and details for selecting vibration isolators and seismic restraints complying with performance requirements, design criteria, and analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 QUALITY ASSURANCE

- A. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Seismic-restraint devices shall have horizontal and vertical load testing and analysis and shall bear anchorage preapproval OPA number from OSHPD, preapproval by ICC-ES, or preapproval by another agency acceptable to authorities having jurisdiction, showing maximum seismic-restraint ratings. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are unavailable, submittals based on independent testing

are preferred. Calculations (including combining shear and tensile loads) to support seismic-restraint designs must be signed and sealed by a qualified professional engineer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic-Restraint Loading:

1. Design seismic restraints for components for seismic design forces defined in Chapter 13 of ASCE 7-10.
 - a. Design Spectral Response Acceleration at Short Periods, $S_{DS} = 42.70\%g$
 - b. Component Importance Factor, $I_P = 1.0$; except for components conveying, supporting, or otherwise containing natural gas or other flammable and/or explosive contents, $I_P = 1.5$.
 - c. Component Response Modification Factor, R_P : See Table 13.6-1 of ASCE 7-10
 - d. Component Amplification Factor, a_P : See Table 13.6-1 of ASCE 7-10

2.2 ELASTOMERIC ISOLATION PADS

A. Elastomeric Isolation Pads:

1. Fabrication: Single or multiple layers of sufficient durometer stiffness for uniform loading over pad area.
2. Size: Factory or field cut to match requirements of supported equipment.
3. Pad Material: Oil and water resistant with elastomeric properties.
4. Surface Pattern: Smooth, Ribbed or Waffle pattern.
5. Infused nonwoven cotton or synthetic fibers.
6. Load-bearing metal plates adhered to pads.

2.3 ELASTOMERIC ISOLATION MOUNTS

A. Double-Deflection, Elastomeric Isolation Mounts:

1. Mounting Plates:
 - a. Top Plate: Encapsulated steel load transfer top plates, factory drilled and threaded with threaded studs or bolts.
 - b. Baseplate: Encapsulated steel bottom plates with holes provided for anchoring to support structure.
2. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

2.4 RESTRAINED ELASTOMERIC ISOLATION MOUNTS

A. Restrained Elastomeric Isolation Mounts:

1. Description: All-directional isolator with seismic restraints containing two separate and opposing elastomeric elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.

- a. Housing: Cast-ductile iron or welded steel.
- b. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

2.5 OPEN-SPRING ISOLATORS

- A. Freestanding, Laterally Stable, Open-Spring Isolators:
 - 1. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 2. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 3. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 4. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 5. Baseplates: Factory-drilled steel plate for bolting to structure with an elastomeric isolator pad attached to the underside. Baseplates shall limit floor load to 500 psig (3447 kPa).
 - 6. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.

2.6 HOUSED-SPRING ISOLATORS

- A. Freestanding, Laterally Stable, Open-Spring Isolators in Two-Part Telescoping Housing:
 - 1. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 2. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 3. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 4. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 5. Two-Part Telescoping Housing: A steel top and bottom frame separated by an elastomeric material and enclosing the spring isolators.
 - a. Drilled base housing for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig.
 - b. Top housing with attachment and leveling bolt.

2.7 RESTRAINED-SPRING ISOLATORS

- A. Freestanding, Laterally Stable, Open-Spring Isolators with Vertical-Limit Stop Restraint:
 - 1. Housing: Steel housing with vertical-limit stops to prevent spring extension due to weight being removed.
 - a. Base with holes for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig.
 - b. Top plate with threaded mounting holes.
 - c. Internal leveling bolt that acts as blocking during installation.
 - 2. Restraint: Limit stop as required for equipment and authorities having jurisdiction.
 - 3. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 4. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 5. Lateral Stiffness: More than 80 percent of rated vertical stiffness.

6. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.8 HOUSED-RESTRAINED-SPRING ISOLATORS

- A. Freestanding, Steel, Open-Spring Isolators with Vertical-Limit Stop Restraint in Two-Part Telescoping Housing:
 1. Two-Part Telescoping Housing: A steel top and bottom frame separated by an elastomeric material and enclosing the spring isolators. Housings are equipped with adjustable snubbers to limit vertical movement.
 - a. Drilled base housing for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig.
 - b. Threaded top housing with adjustment bolt and cap screw to fasten and level equipment.
 2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.9 PIPE-RISER RESILIENT SUPPORT

- A. Description: All-directional, acoustical pipe anchor consisting of two steel tubes separated by a minimum 1/2-inch- thick neoprene.
 1. Vertical-Limit Stops: Steel and neoprene vertical-limit stops arranged to prevent vertical travel in both directions.
 2. Maximum Load Per Support: 500 psig on isolation material providing equal isolation in all directions.

2.10 RESILIENT PIPE GUIDES

- A. Description: Telescopic arrangement of two steel tubes or post and sleeve arrangement separated by a minimum 1/2-inch- thick neoprene.
 1. Factory-Set Height Guide with Shear Pin: Shear pin shall be removable and reinsertable to allow for selection of pipe movement. Guides shall be capable of motion to meet location requirements.

2.11 ELASTOMERIC HANGERS

- A. Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods:
 1. Frame: Steel, fabricated with a connection for an upper threaded hanger rod and an opening on the underside to allow for a maximum of 30 degrees of angular lower hanger-rod misalignment without binding or reducing isolation efficiency.

2. Dampening Element: Molded, oil-resistant rubber, neoprene, or other elastomeric material with a projecting bushing for the underside opening preventing steel to steel contact.

2.12 SPRING HANGERS

- A. Combination Coil-Spring and Elastomeric-Insert Hanger with Spring and Insert in Compression:
 1. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
 2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 6. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
 7. Adjustable Vertical Stop: Steel washer with neoprene washer "up-stop" on lower threaded rod.
 8. Self-centering hanger-rod cap to ensure concentricity between hanger rod and support spring coil.

2.13 SNUBBERS

- A. Description: Factory fabricated using welded structural-steel shapes and plates, anchor bolts, and replaceable resilient isolation washers and bushings.
 1. Anchor bolts for attaching to concrete shall be seismic-rated, drill-in, and stud-wedge or female-wedge type.
 2. Resilient Isolation Washers and Bushings: Oil- and water-resistant neoprene.
 3. Maximum 1/4-inch air gap, and minimum 1/4-inch- thick resilient cushion.

2.14 RESTRAINT CHANNEL BRACINGS

- A. Description: MFMA-4, shop- or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; rated in tension, compression, and torsion forces.

2.15 RESTRAINT CABLES

- A. Restraint Cables: ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

2.16 SEISMIC-RESTRAINT ACCESSORIES

- A. Hanger-Rod Stiffener: Reinforcing steel angle clamped to hanger rod.
- B. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings, and matched to type and size of anchor bolts and studs.
- C. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings, and matched to type and size of attachment devices used.
- D. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.
- E. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Multiple Pipe Supports: Secure pipes to trapeze member with clamps approved for application by an evaluation service member of ICC-ES.
- B. Hanger-Rod Stiffeners: Install hanger-rod stiffeners where indicated or scheduled on Drawings to receive them and where required to prevent buckling of hanger rods due to seismic forces.
- C. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength is adequate to carry present and future static and seismic loads within specified loading limits.

3.2 VIBRATION CONTROL AND SEISMIC-RESTRAINT DEVICE INSTALLATION

- A. Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points and with requirements for concrete reinforcement and formwork specified in Section 033000 "Cast-in-Place Concrete." or Section 033053 "Miscellaneous Cast-in-Place Concrete."
- B. Installation of vibration isolators must not cause any change of position of equipment, piping, or ductwork resulting in stresses or misalignment.
- C. Comply with requirements in Section 077200 "Roof Accessories" for installation of roof curbs, equipment supports, and roof penetrations.
- D. Equipment Restraints:
 - 1. Install seismic snubbers on plumbing equipment mounted on vibration isolators. Locate snubbers as close as possible to vibration isolators and bolt to equipment base and supporting structure.

2. Install resilient bolt isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch.
3. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES that provides required submittals for component.

E. Piping Restraints:

1. Comply with requirements in MSS SP-127.
2. Space lateral supports a maximum of 40 feet o.c., and longitudinal supports a maximum of 80 feet o.c.
3. Brace a change of direction longer than 12 feet.

F. Install cables so they do not bend across edges of adjacent equipment or building structure.

G. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES that provides required submittals for component.

H. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolt and mounting hole in concrete base.

I. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.

J. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.

K. Drilled-in Anchors:

1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Set anchors to manufacturer's recommended torque, using a torque wrench.
5. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

3.3 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

- A. Install flexible connections in piping where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where the connections terminate with connection to equipment that is anchored to a different structural element from the one supporting the connections as they approach equipment. Comply with requirements in Section 221116 "Domestic Water Piping" for piping flexible connections.

3.4 ADJUSTING

- A. Adjust isolators after piping system is at operating weight.
- B. Adjust limit stops on restrained-spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Equipment labels.
 - 2. Warning signs and labels.
 - 3. Pipe labels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS**2.1 EQUIPMENT LABELS**

- A. Plastic Labels for Equipment:
 - 1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
 - 2. Letter Color: White
 - 3. Background Color: Black
 - 4. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
 - 5. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
 - 6. Minimum Letter Size: 1/4 inch For name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
 - 7. Fasteners: Stainless-steel rivets or self-tapping screws.
 - 8. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- B. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.

2.2 WARNING SIGNS AND LABELS

- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
- B. Letter Color: White
- C. Background Color: Red
- D. Maximum Temperature: Able to withstand temperatures up to 160 deg F.

- E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
- F. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel rivets or self-tapping screws.
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Label Content: Include caution and warning information plus emergency notification instructions.

2.3 PIPE LABELS

- A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction.
- B. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- C. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; also include pipe size and an arrow indicating flow direction.
 - 1. Flow-Direction Arrows: Integral with piping-system service lettering to accommodate both directions or as separate unit on each pipe label to indicate flow direction.
 - 2. Lettering Size: At least 1/2 inch for viewing distances up to 72 inches and proportionately larger lettering for greater viewing distances.

PART 3 - EXECUTION

3.1 EQUIPMENT LABEL INSTALLATION

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.

3.2 PIPE LABEL INSTALLATION

- A. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
 - 1. Near each valve and control device.
 - 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
 - 3. Near penetrations and on both sides of through walls, floors, ceilings, and inaccessible enclosures.

4. At access doors, manholes, and similar access points that permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.
6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

B. Pipe Label Color Schedule:

1. Compressed Air Piping:
 - a. Background: Blue
 - b. Letter Colors: White
2. Natural Gas Piping:
 - a. Background: Yellow
 - b. Letters: Black:
3. Domestic Water Piping:
 - a. Background: Green
 - b. Letter Colors: White
4. Sanitary Waste and Storm Drainage Piping:
 - a. Background Color: Black
 - b. Letter Color: White

END OF SECTION

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes insulating requirements for equipment, piping:

1.2 SUBMITTALS

- A. See section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
- B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - 2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Comply with requirements in "Equipment Insulation Schedule" "Piping Insulation Schedule," and "Duct Insulation Schedule" articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
- D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- F. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Aeroflex USA, Inc.
- b. Armacell LLC.
- c. K-Flex USA.

- G. Mineral-Fiber, Pipe and Tank Insulation: Mineral or glass fibers bonded with a thermosetting resin. Semirigid board material with factory-applied ASJ complying with ASTM C 1393, Type II or Type IIIA Category 2, or with properties similar to ASTM C 612, Type IB. Nominal density is 2.5 lb/cu. ft. or more. Thermal conductivity (k-value) at 100 deg F is 0.29 Btu x in./h x sq. ft. x deg F or less. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. CertainTeed Corporation.
- b. Johns Manville; a Berkshire Hathaway company.
- c. Knauf Insulation.
- d. Owens Corning.

- H. Mineral-Fiber, Preformed Pipe Insulation:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Johns Manville; a Berkshire Hathaway company.
- b. Knauf Insulation.
- c. Owens Corning.

2. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

- I. Thermal Insulating Wool:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Owens Corning
- b. Prior Approved Equal

2. Type I, 1000 Deg F Materials: Inorganic glass fibers bonded with thermosetting resin. Comply with ASTM C553, TIW Type I.

2.2 INSULATING CEMENTS

- A. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.

2.3 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.
- B. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.
- C. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
- D. ASJ Adhesive, and FSK and PVDC Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.
- E. PVC Jacket Adhesive: Compatible with PVC jacket.

2.4 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
- B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below ambient services.
 - 1. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
 - 2. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 3. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
 - 4. Color: White.
- C. Breather Mastic: Water based; suitable for indoor and outdoor use on above ambient services.
 - 1. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
 - 2. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 3. Solids Content: 60 percent by volume and 66 percent by weight.
 - 4. Color: White.

2.5 SEALANTS

- A. Metal Jacket Flashing Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Fire- and water-resistant, flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 4. Color: Aluminum.
- B. ASJ Flashing Sealants, and PVC Jacket Flashing Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Fire- and water-resistant, flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 4. Color: White.

2.6 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.

2.7 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.
- B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Johns Manville; a Berkshire Hathaway company.
 - b. P.I.C. Plastics, Inc.
 - c. Proto Corporation.
 - d. Speedline Corporation.
 2. Adhesive: As recommended by jacket material manufacturer.
 3. Color: White.
 4. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
 - a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.
- C. Aluminum Jacket: Comply with ASTM B 209, Alloy 3003, 3005, 3105, or 5005, Temper H-14.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Childers Brand; H. B. Fuller Construction Products.
 - b. ITW Insulation Systems; Illinois Tool Works, Inc.
 - c. RPR Products, Inc.
 2. Sheet and roll stock ready for shop or field sizing or factory cut and rolled to size.
 3. Finish and thickness are indicated in field-applied jacket schedules.
 4. Moisture Barrier for Outdoor Applications: 3-mil-thick, heat-bonded polyethylene and kraft paper or 2.5-mil-thick polysurlyn.
 5. Factory-Fabricated Fitting Covers:
 - a. Same material, finish, and thickness as jacket.
 - b. Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
 - c. Tee covers.
 - d. Flange and union covers.
 - e. End caps.
 - f. Beveled collars.
 - g. Valve covers.
 - h. Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

- D. Underground Direct-Buried Jacket: 125-mil-thick vapor barrier and waterproofing membrane consisting of a rubberized bituminous resin reinforced with a woven-glass fiber or polyester scrim and laminated aluminum foil.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Pittsburgh Corning Corporation.
 - b. Polyguard Products, Inc.

2.8 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
 - 1. Width: 3 inches.
 - 2. Thickness: 11.5 mils.
 - 3. Adhesion: 90 ounces force/inch in width.
 - 4. Elongation: 2 percent.
 - 5. Tensile Strength: 40 lbf/inch in width.
 - 6. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.
 - 1. Width: 2 inches.
 - 2. Thickness: 6 mils.
 - 3. Adhesion: 64 ounces force/inch in width.
 - 4. Elongation: 500 percent.
 - 5. Tensile Strength: 18 lbf/inch in width.
- C. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.
 - 1. Width: 2 inches.
 - 2. Thickness: 3.7 mils.
 - 3. Adhesion: 100 ounces force/inch in width.
 - 4. Elongation: 5 percent.
 - 5. Tensile Strength: 34 lbf/inch in width.

2.9 SECUREMENTS

- A. Aluminum Bands: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 1/2 inch wide with wing seal or closed seal.
- B. Insulation Pins and Hangers:
 - 1. Metal, Adhesively Attached, Perforated-Base Insulation Hangers: Baseplate welded to projecting spindle that is capable of holding insulation, of thickness indicated, securely in position indicated when self-locking washer is in place.
 - a. Baseplate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
 - b. Spindle: Copper- or zinc-coated, low-carbon steel, fully annealed, 0.106-inch-diameter shank, length to suit depth of insulation indicated.
 - c. Adhesive: Recommended by hanger manufacturer. Product with demonstrated capability to bond insulation hanger securely to substrates indicated without damaging insulation, hangers, and substrates.

2. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick, galvanized-steel sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.
 - a. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in exposed locations.
 - C. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.
 - D. Wire: 0.062-inch soft-annealed, stainless steel.
- 2.10 CORNER ANGLES
- A. PVC Corner Angles: 30 mils thick, minimum 1 by 1 inch, PVC according to ASTM D 1784, Class 16354-C. White or color-coded to match adjacent surface.
 - B. Aluminum Corner Angles: 0.040 inch thick, minimum 1 by 1 inch, aluminum according to ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14.
- 2.11 PROTECTIVE SHIELDING GUARDS
- A. Protective Shielding Pipe Covers:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Plumberex Specialty Products, Inc.
 - b. Truebro.
 - c. Zurn Industries, LLC.
 2. Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) requirements.
 - B. Protective Shielding Piping Enclosures:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Truebro.
 - b. Zurn Industries, LLC.
 2. Description: Manufactured plastic enclosure for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with ADA requirements.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

- B. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.
- C. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item as specified in insulation schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- G. Keep insulation materials dry during application and finishing.
- H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- I. Install insulation with least number of joints practical.
- J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
 - 1. Install insulation continuously through hangers and around anchor attachments.
 - 2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
 - 3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
 - 4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
- K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- L. Install insulation with factory-applied jackets as follows:
 - 1. Draw jacket tight and smooth.
 - 2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.

3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.
 - a. For below ambient services, apply vapor-barrier mastic over staples.
 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints.
- M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.
- P. For above ambient services, do not install insulation to the following:
1. Vibration-control devices.
 2. Testing agency labels and stamps.
 3. Nameplates and data plates.
 4. Manholes.
 5. Handholes.
 6. Cleanouts.
- Q. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

3.3 PENETRATIONS

- A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
1. Seal penetrations with flashing sealant.
 2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches (50 mm) below top of roof flashing.
 4. Seal jacket to roof flashing with flashing sealant.
- B. Insulation Installation at Underground Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.
- C. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.

1. Seal penetrations with flashing sealant.
 2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.
 4. Seal jacket to wall flashing with flashing sealant.
- D. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- E. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.
- F. Insulation Installation at Floor Penetrations:
1. Pipe: Install insulation continuously through floor penetrations.
 2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.4 INSTALLATION OF EQUIPMENT, TANK, AND VESSEL INSULATION

- A. Mineral-Fiber, Pipe, and Tank Insulation Installation for Tanks and Vessels: Secure insulation with adhesive and anchor pins and speed washers.
1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 100 percent coverage of tank and vessel surfaces.
 2. Groove and score insulation materials to fit as closely as possible to equipment, including contours. Bevel insulation edges for cylindrical surfaces for tight joints. Stagger end joints.
 3. Protect exposed corners with secured corner angles.
 4. Install adhesively attached or self-sticking insulation hangers and speed washers on sides of tanks and vessels as follows:
 - a. Do not weld anchor pins to ASME-labeled pressure vessels.
 - b. Select insulation hangers and adhesive that are compatible with service temperature and with substrate.
 - c. On tanks and vessels, maximum anchor-pin spacing is 3 inches from insulation end joints, and 16 inches o.c. in both directions.
 - d. Do not over compress insulation during installation.
 - e. Cut and miter insulation segments to fit curved sides and domed heads of tanks and vessels.
 - f. Impale insulation over anchor pins and attach speed washers.
 - g. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.
 5. Secure each layer of insulation with stainless-steel or aluminum bands. Select band material compatible with insulation materials.

6. Where insulation hangers on equipment and vessels are not permitted or practical and where insulation support rings are not provided, install a girdle network for securing insulation. Stretch pre-stressed aircraft cable around the diameter of vessel and make taut with clamps, turnbuckles, or breather springs. Place one circumferential girdle around equipment approximately 6 inches from each end. Install wire or cable between two circumferential girdles 12 inches o.c. Install a wire ring around each end and around outer periphery of center openings, and stretch pre-stressed aircraft cable radially from the wire ring to nearest circumferential girdle. Install additional circumferential girdles along the body of equipment or tank at a minimum spacing of 48 inches o.c. Use this network for securing insulation with tie wire or bands.
 7. Stagger joints between insulation layers at least 3 inches.
 8. Install insulation in removable segments on equipment access doors, manholes, handholes, and other elements that require frequent removal for service and inspection.
 9. Bevel and seal insulation ends around manholes, handholes, ASME stamps, and nameplates.
 10. For equipment with surface temperatures below ambient, apply mastic to open ends, joints, seams, breaks, and punctures in insulation.
- B. Flexible Elastomeric Thermal Insulation Installation for Tanks and Vessels: Install insulation over entire surface of tanks and vessels.
1. Apply 100 percent coverage of adhesive to surface with manufacturer's recommended adhesive.
 2. Seal longitudinal seams and end joints.
- C. Insulation Installation on Pumps:
1. Fabricate metal boxes lined with insulation. Fit boxes around pumps and coincide box joints with splits in pump casings. Fabricate joints with outward bolted flanges. Bolt flanges on 6-inch centers, starting at corners. Install 3/8-inch-diameter fasteners with wing nuts. Alternatively, secure the box sections together using a latching mechanism.
 2. Fabricate boxes from galvanized steel, at least 0.050 inch thick.
 3. For below ambient services, install a vapor barrier at seams, joints, and penetrations. Seal between flanges with replaceable gasket material to form a vapor barrier.

3.5 INSTALLATION OF FLEXIBLE ELASTOMERIC INSULATION

- A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- B. Insulation Installation on Pipe Flanges:
1. Install pipe insulation to outer diameter of pipe flange.
 2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
 3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of sheet insulation of same thickness as pipe insulation.
 4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- C. Insulation Installation on Pipe Fittings and Elbows:
1. Install mitered sections of pipe insulation.

2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.6 INSTALLATION OF MINERAL-FIBER PREFORMED PIPE INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Fittings, Joints and Couplings:

1. All piping fittings shall be insulated by filling the total void over all fittings between straight runs of pipe insulation with thermal insulating wool, forming a uniform insulation thickness equal to, or exceeding, the adjacent pipe insulation.
2. Finish all insulated pipe fittings by applying PVC fitting covers overlapping the adjacent pipe insulation outer covering.
3. For hot service piping (105F and above), secure the PVC fitting covers stainless steel tack fasteners.
4. For cold service piping (60F and below), seal the ends of the adjacent pipe insulation with vapor barrier mastic, ensure that the PVC fitting cover overlaps the adjacent pipe insulation jacket by 2" minimum and secure PVC fitting covers to adjacent pipe insulation with 2" wide PVC Tape.
5. Fitting covers for grooved piping systems shall be the type specifically manufactured for grooved piping systems.

3.7 INSULATION INSTALLATION ON VALVES AND PIPE SPECIALTIES

A. Install removable insulation covers on all valves and specialties 1-1/2" and larger.

1. Valves, Strainers, and Unions 1-1/2 – 2 NPS: "No Sweat" re-usable valve covers or approved equal product.
2. Valves, Strainers and Unions 2-1/2" and larger use removable insulation jackets from Thermaxx or prior approved manufacturer.

3.8 FIELD-APPLIED JACKET INSTALLATION

- A. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints. Seal with manufacturer's recommended adhesive.
 - 1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.
- B. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.
- C. Where underground direct-buried jacket are indicated, install per the manufacturers instructions.

3.9 FINISHES

- A. Insulation with ASJ or Other Paintable Jacket Material and where Required: Paint jacket with paint system identified below and as specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
 - 1. Flat Acrylic Finish: Two finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.
 - a. Finish Coat Material: Interior, flat, latex-emulsion size.
- B. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two coats of insulation manufacturer's recommended protective coating.
- C. Do not field paint aluminum or PVC jacketing.

3.10 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. Inspect field-insulated equipment, randomly selected by Architect, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to one location(s) for each type of equipment defined in the "Equipment Insulation Schedule" Article. For large equipment, remove only a portion adequate to determine compliance.
- C. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.11 EQUIPMENT INSULATION SCHEDULE

- A. Insulation materials and thicknesses for Plumbing and HVAC equipment are identified in the table below. If more than one material is listed for a type of equipment, selection from materials listed is Contractor's option.

Equipment Type	System Temp	Insulation Type	Insulation Conductivity (Btu x in) / (hr x ft ² x F)	Insulation Thickness (in)	Vapor Barrier	Factory Installed Jacket Type
Tanks	Below 60F and above 105F	Glass Fiber or Flexible Elastomeric	0.27	2	Cold Service >60F only	ASJ

3.12 PIPING INSULATION SCHEDULE

- A. Insulation materials and thicknesses for Plumbing and HVAC piping are identified in the table below. If more than one material is listed for an application, selection from materials listed is at the Contractor's option.

Application	Nominal Pipe Size	Insulation Type	Insulation Conductivity (Btu x in) / (hr x ft ² x F)	Insulation Thickness (in)	Vapor Barrier	Factory Installed Jacket Type
Domestic Cold Water Piping	All	Glass Fiber or Flexible Elastomeric	0.27	1	Yes	ASJ
Domestic Hot Water and Recirc.	All	Glass Fiber or Flexible Elastomeric	0.27	1	No	ASJ
Plumbing Vents within 6ft of roof termination	All	Glass Fiber or Flexible Elastomeric	0.27	1	Yes	ASJ
Refrigeration Piping (Cooling Only)	All	Flexible Elastomeric	0.27	3/4	No	None
Refrigeration Piping (VRF or Heat Pump)	All	Flexible Elastomeric	0.27	1	No	None

3.13 FIELD APPLIED JACKETING SCHEDULE

- A. Field applied jackets for Plumbing and HVAC piping are identified in the table below. If more than one material is listed for an application, selection from materials listed is at the Contractor's option.

Application	Installation Location	Field Applied Jacketing
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Domestic Water Piping	Indoors	PVC when piping is exposed and within 7ft of the floor.
Domestic Water Piping	Outdoors	Aluminum Jacket

END OF SECTION 220716

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Copper tube and fittings.
 - 2. PEX tube and fittings.
 - 3. Piping joining materials.
 - 4. Transition fittings.
- B. Related Requirements:
 - 1. Section 220500 "General Provisions of Plumbing and HVAC"

1.2 ACTION SUBMITTALS

- A. See Section 220000 "General Requirement of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.
- B. Potable-water piping and components shall comply with NSF 14 and NSF 61 Annex G. and Plastic piping components shall be marked with "NSF-pw."
- C. Comply with NSF Standard 372 for low lead.

2.2 COPPER TUBE AND FITTINGS

- A. Hard Copper Tube: ASTM B 88, Type L water tube, drawn temper.
- B. Soft Copper Tube: ASTM B 88, Type K water tube, annealed temper.
- C. Cast-Copper, Solder-Joint Fittings: ASME B16.18, pressure fittings.
- D. Wrought-Copper, Solder-Joint Fittings: ASME B16.22, wrought-copper pressure fittings.
- E. Copper Unions:
 - 1. MSS SP-123.
 - 2. Cast-copper-alloy, hexagonal-stock body.
 - 3. Ball-and-socket, metal-to-metal seating surfaces.
 - 4. Solder-joint or threaded ends.

F. Copper Pressure-Seal-Joint Fittings:

1. Fittings for NPS 2 and Smaller: Wrought-copper fitting with EPDM-rubber, O-ring seal in each end.
2. Fittings for NPS 2-1/2 to NPS 4: Cast-bronze or wrought-copper fitting with EPDM-rubber, O-ring seal in each end.

2.3 PEX TUBE AND FITTINGS

- A. Tube Material: PEX plastic according to ASTM F 876 and ASTM F 877.
- B. Fittings: ASTM F 1960, cold expansion fittings and reinforcing rings.
- C. Manifold: Multiple-outlet, plastic or corrosion-resistant-metal assembly complying with ASTM F 876; with plastic or corrosion-resistant-metal valve for each outlet.

2.4 PIPING JOINING MATERIALS

- A. Pipe-Flange Gasket Materials:
 1. AWWA C110/A21.10, rubber, flat face, 1/8 inch thick or ASME B16.21, nonmetallic and asbestos free unless otherwise indicated.
 2. Full-face or ring type unless otherwise indicated.
- B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
- C. Solder Filler Metals: ASTM B 32, lead-free alloys.
- D. Flux: ASTM B 813, water flushable.
- E. Brazing Filler Metals: AWS A5.8M/A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing unless otherwise indicated.

2.5 TRANSITION FITTINGS

- A. General Requirements:
 1. Same size as pipes to be joined.
 2. Pressure rating at least equal to pipes to be joined.
 3. End connections compatible with pipes to be joined.
- B. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Comply with requirements in Section 312000 "Earth Moving" for excavating, trenching, and backfilling.

3.2 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install copper tubing under building slab according to CDA's "Copper Tube Handbook."
- C. Install shutoff valve, hose-end drain valve, strainer, pressure gage, and test tee with valve inside the building at each domestic water-service entrance. Comply with requirements for pressure gages in Section 220519 "Meters and Gages for Plumbing Piping" and with requirements for drain valves and strainers in Section 221119 "Domestic Water Piping Specialties."
- D. Install water-pressure-reducing valves downstream from shutoff valves. Comply with requirements for pressure-reducing valves in Section 221119 "Domestic Water Piping Specialties."
- E. Install domestic water piping level and plumb.
- F. Rough-in domestic water piping for water-meter installation according to utility company's requirements.
- G. Install seismic restraints on piping. Comply with requirements for seismic-restraint devices in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."
- H. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.
- I. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- J. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal, and coordinate with other services occupying that space.
- K. Install piping to permit valve servicing.
- L. Install nipples, unions, special fittings, and valves with pressure ratings the same as or higher than the system pressure rating used in applications below unless otherwise indicated.
- M. Install piping free of sags and bends.
- N. Install fittings for changes in direction and branch connections.
- O. Install PEX tubing with loop at each change of direction of more than 90 degrees.
- P. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
- Q. Install pressure gages on suction and discharge piping for each plumbing pump and packaged booster pump. Comply with requirements for pressure gages in Section 220519 "Meters and Gages for Plumbing Piping."

- R. Install thermometers on inlet and outlet piping from each water heater. Comply with requirements for thermometers in Section 220519 "Meters and Gages for Plumbing and HVAC Piping."
- S. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220500 "General Provisions of Plumbing and HVAC."
- T. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220500 "General Provisions of Plumbing and HVAC."
- U. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220500 "General Provisions of Plumbing and HVAC."

3.3 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- D. Brazed Joints for Copper Tubing: Comply with CDA's "Copper Tube Handbook," "Braze Joints" chapter.
- E. Soldered Joints for Copper Tubing: Apply ASTM B 813, water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828 or CDA's "Copper Tube Handbook."
- F. Flanged Joints: Select appropriate asbestos-free, nonmetallic gasket material in size, type, and thickness suitable for domestic water service. Join flanges with gasket and bolts according to ASME B31.9.
- G. Joints for PEX Tubing: Join according to ASTM F 1960 for cold expansion fittings and reinforcing rings.
- H. Joints for PEX Tubing: Join according to ASSE 1061 for push-fit fittings.
- I. Joints for Dissimilar-Material Piping: Make joints using adapters compatible with materials of both piping systems.

3.4 TRANSITION FITTING INSTALLATION

- A. Install transition couplings at joints of dissimilar piping.
- B. Transition Fittings in Underground Domestic Water Piping:

1. Fittings for NPS 1-1/2 and Smaller: Fitting-type coupling.
 2. Fittings for NPS 2 and Larger: Sleeve-type coupling.
- C. Transition Fittings in Aboveground Domestic Water Piping NPS 2 and Smaller: Plastic-to-metal transition fittings or unions.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements for seismic-restraint devices in Section 220548 "Vibration and Seismic Controls for Plumbing and HVAC Piping and Equipment."
- B. Comply with requirements for pipe hanger, support products, and installation in Section 220529 "Hangers and Supports for Plumbing and HVAC Piping and Equipment."
1. Vertical Piping: MSS Type 8 or 42, clamps.
 2. Individual, Straight, Horizontal Piping Runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.
 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- C. Support vertical piping and tubing at base and at each floor.
- D. Rod diameter may be reduced one size for double-rod hangers, to a minimum of 3/8 inch.
- E. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
 2. NPS 1 and NPS 1-1/4: 72 inches with 3/8-inch rod.
 3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 4. NPS 2-1/2: 108 inches with 1/2-inch rod.
 5. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
 6. NPS 6: 10 feet with 5/8-inch rod.
 7. NPS 8: 10 feet with 3/4-inch rod.
- F. Install supports for vertical copper tubing every 10 feet.
- G. Install vinyl-coated hangers for PEX tubing with the following maximum horizontal spacing and minimum rod diameters:
1. NPS 1 and Smaller: 32 inches with 3/8-inch rod.
- H. Install hangers for vertical PEX tubing every 48 inches.
- I. Support piping and tubing not listed in this article according to MSS SP-58 and manufacturer's written instructions.

3.6 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. When installing piping adjacent to equipment and machines, allow space for service and maintenance.
- C. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.
- D. Connect domestic water piping to water-service piping with shutoff valve; extend and connect to the following:
 - 1. Domestic Water Booster Pumps: Cold-water suction and discharge piping.
 - 2. Water Heaters: Cold-water inlet and hot-water outlet piping in sizes indicated, but not smaller than sizes of water heater connections.
 - 3. Plumbing Fixtures: Cold- and hot-water-supply piping in sizes indicated, but not smaller than that required by plumbing code.
 - 4. Equipment: Cold- and hot-water-supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection. Use flanges instead of unions for NPS 2-1/2 and larger.

3.7 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification materials and installation in Section 220553 "Identification for Plumbing and HVAC Piping and Equipment."
- B. Label pressure piping with system operating pressure.

3.8 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Piping Inspections:
 - a. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
 - b. During installation, notify authorities having jurisdiction at least one day before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
 - 1) Roughing-in Inspection: Arrange for inspection of piping before concealing or closing in after roughing in and before setting fixtures.
 - 2) Final Inspection: Arrange for authorities having jurisdiction to observe tests specified in "Piping Tests" Subparagraph below and to ensure compliance with requirements.
 - c. Reinspection: If authorities having jurisdiction find that piping will not pass tests or inspections, make required corrections and arrange for reinspection.
 - d. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
 - 2. Piping Tests:

- a. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
 - b. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.
 - c. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
 - d. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
 - e. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.
 - f. Prepare reports for tests and for corrective action required.
- B. Domestic water piping will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.9 ADJUSTING

- A. Perform the following adjustments before operation:
1. Close drain valves, hydrants, and hose bibbs.
 2. Open shutoff valves to fully open position.
 3. Open throttling valves to proper setting.
 4. Adjust balancing valves in hot-water-circulation return piping to provide adequate flow.
 - a. Manually adjust ball-type balancing valves in hot-water-circulation return piping to provide hot-water flow in each branch.
 - b. Adjust calibrated balancing valves to flows indicated.
 5. Remove plugs used during testing of piping and for temporary sealing of piping during installation.
 6. Remove and clean strainer screens. Close drain valves and replace drain plugs.
 7. Remove filter cartridges from housings and verify that cartridges are as specified for application where used and are clean and ready for use.
 8. Check plumbing specialties and verify proper settings, adjustments, and operation.

3.10 CLEANING

- A. Clean and disinfect potable domestic water piping as follows:
1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.
 2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:
 - a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
 - b. Fill and isolate system according to either of the following:

- 1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.
 - 2) Fill system or part thereof with water/chlorine solution with at least 200 ppm of chlorine. Isolate and allow to stand for three hours.
- c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
 - d. Repeat procedures if biological examination shows contamination.
 - e. Submit water samples in sterile bottles to authorities having jurisdiction.
- B. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.
 - C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

3.11 PIPING SCHEDULE

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.
- B. Flanges and unions may be used for aboveground piping joints unless otherwise indicated.
- C. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.

Application	Location	Size	Material	Fittings
Domestic Water Piping	Indoor Above Grade	All	PEX or Type L Copper	PEX: cold expansion fittings and reinforcing rings Copper: Sweat or Pressure Seal

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Vacuum breakers.
2. Backflow preventers.
3. Water pressure-reducing valves.
4. Temperature-actuated, water mixing valves.
5. Bronze, Calibrated-Orifice, Balancing Valves
6. Strainers.
7. Drain valves.
8. Water-hammer arresters.
9. Trap-seal primer valves.

B. Related Requirements:

1. Section 220500 "General Provisions of Plumbing and HVAC" for Expansion Loops, Alignment Guides, Dielectric Fittings, Sleeves and Sleeve Seals, Sealants, Escutcheons and floor plates.
2. Section 220519 "Meters and Gages for Plumbing and HVAC Piping" for thermometers, pressure gages.
3. Section 221116 "Domestic Water Piping" for piping and fittings.
4. Section 224500 "Emergency Plumbing Fixtures" for water tempering equipment.
5. Section 224713 "Drinking Fountains" for water filters for water coolers.
6. Section 224716 "Pressure Water Coolers" for water filters for water coolers.
7. Section 224723 "Remote Water Coolers" for water filters for water coolers.

1.2 ACTION SUBMITTALS

A. See Section 220000 "General Requirement of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES**

A. Potable-water piping and components shall comply with NSF 61 Annex G and NSF 14. Mark "NSF-pw" on plastic piping components.

2.2 PERFORMANCE REQUIREMENTS

A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 psig unless otherwise indicated.

2.3 VACUUM BREAKERS

A. Pipe-Applied, Atmospheric-Type Vacuum Breakers:

1. Standard: ASSE 1001.
2. Size: NPS 1/4 to NPS 3, as required to match connected piping.
3. Body: Bronze.
4. Inlet and Outlet Connections: Threaded.
5. Finish: Chrome plated.

B. Hose-Connection Vacuum Breakers:

1. Standard: ASSE 1011.
2. Body: Bronze, nonremovable, with manual drain.
3. Outlet Connection: Garden-hose threaded complying with ASME B1.20.7.
4. Finish: Chrome or nickel plated.

2.4 BACKFLOW PREVENTERS

A. Reduced-Pressure-Principle Backflow Preventers:

1. Manufacturers:
 - a. Watts
 - b. Zurn Wilkins
 - c. Prior approved Equal
2. Description:
 - a. Standard: ASSE 1013.
 - b. Operation: Continuous-pressure applications.
 - c. Pressure Loss: 12 psig maximum, through middle third of flow range.
 - d. Size: See Drawings – Line size of size not specifically listed.
 - e. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved for NPS 2-1/2 and larger.
 - f. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger.
 - g. Accessories:
 - 1) Valves NPS 2 and Smaller: Ball type with threaded ends on inlet and outlet.
 - 2) Valves NPS 2-1/2 and Larger: Outside-screw and yoke-gate type with flanged ends on inlet and outlet.
 - 3) Air-Gap Fitting: ASME A112.1.2, matching backflow-preventer connection.

B. Double-Check, Backflow-Prevention Assemblies:

1. Manufacturers:
 - a. Watts
 - b. Zurn Wilkins
 - c. Prior approved Equal
2. Description:
 - a. Standard: ASSE 1015.
 - b. Operation: Continuous-pressure applications unless otherwise indicated.
 - c. Pressure Loss: 5 psig maximum, through middle third of flow range.
 - d. Size: See Drawings – Line size of size not specifically listed.
 - e. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved for NPS 2-1/2 and larger.
 - f. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger.

g. Accessories:

- 1) Valves NPS 2 and Smaller: Ball type with threaded ends on inlet and outlet.
- 2) Valves NPS 2-1/2 and Larger: Outside-screw and yoke-gate type with flanged ends on inlet and outlet.

2.5 WATER PRESSURE-REDUCING VALVES

A. Water Regulators:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; Conbraco Industries, Inc.
 - b. Watts; a Watts Water Technologies company.
 - c. Zurn Industries, LLC.
2. Standard: ASSE 1003.
3. Pressure Rating: Initial working pressure of 150 psig.
4. Size: See Drawings – Line size of size not specifically listed.
5. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved for NPS 2-1/2 and NPS 3.
6. Valves for Booster Heater Water Supply: Include integral bypass.
7. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and NPS 3.

2.6 TEMPERATURE-ACTUATED, WATER MIXING VALVES

A. Water-Temperature Limiting Devices:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Leonard Valve Company.
 - b. Symmons Industries, Inc.
 - c. Watts; a Watts Water Technologies company.
 - d. Zurn Industries, LLC.
2. Standard: ASSE 1017.
3. Pressure Rating: 125 psig.
4. Type: Thermostatically controlled, water mixing valve.
5. Material: Bronze body with corrosion-resistant interior components.
6. Connections: Threaded union inlets and outlet.
7. Accessories: Check stops on hot- and cold-water supplies, and adjustable, temperature-control handle.
8. Valve Finish: Chrome plated.

B. Primary, Thermostatic, Water Mixing Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. Armstrong International, Inc.
 - b. Leonard Valve Company.
 - c. Symmons Industries, Inc.
 - d. Zurn Industries, LLC.
2. Standard: ASSE 1017.
3. Pressure Rating: 125 psig minimum unless otherwise indicated.
4. Type: Cabinet-type, thermostatically controlled, water mixing valve.
5. Material: Bronze body with corrosion-resistant interior components.
6. Connections: Threaded union inlets and outlet.
7. Accessories: Manual temperature control, check stops on hot- and cold-water supplies, and adjustable, temperature-control handle.
8. Valve Finish: Chrome plated.
9. Piping Finish: Chrome plated.
10. Cabinet: Factory fabricated, stainless steel, for surface mounting and with hinged, stainless-steel door.

2.7 BRONZE, CALIBRATED-ORIFICE, BALANCING VALVES

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bell & Gossett; a Xylem brand.
 - b. Flow Design, Inc.
 - c. Nexus Valve, Inc.
 - d. TACO Comfort Solutions, Inc.
2. Body: Bronze, ball or plug type with calibrated orifice or venturi.
3. Ball: Brass or stainless steel.
4. Plug: Resin.
5. Seat: PTFE.
6. End Connections: Threaded or socket.
7. Pressure Gage Connections: Integral seals for portable differential pressure meter.
8. Handle Style: Lever, with memory stop to retain set position.
9. CWP Rating: Minimum 125 psig.
10. Maximum Operating Temperature: 250 deg F.

2.8 STRAINERS FOR DOMESTIC WATER PIPING

A. Y-Pattern Strainers:

1. Pressure Rating: 125 psig minimum unless otherwise indicated.
2. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved, epoxy coated and for NPS 2-1/2 and larger.
3. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger.
4. Screen: Stainless steel with round perforations unless otherwise indicated.
5. Perforation Size:
 - a. Strainers NPS 2 and Smaller: 0.020 inch.
 - b. Strainers NPS 2-1/2 to NPS 4: 0.045 inch.
6. Drain: Factory-installed, hose-end drain valve with cap.

2.9 DRAIN VALVES

A. Ball-Valve-Type, Hose-End Drain Valves:

1. Standard: MSS SP-110 for standard-port, two-piece ball valves.
2. Pressure Rating: 400-psig minimum CWP.
3. Size: NPS 3/4.
4. Body: Copper alloy.
5. Ball: Chrome-plated brass.
6. Seats and Seals: Replaceable.
7. Handle: Vinyl-covered steel.
8. Inlet: Threaded or solder joint.
9. Outlet: Threaded, short nipple with garden-hose thread complying with ASME B1.20.7 and cap with brass chain.

2.10 WATER-HAMMER ARRESTERS

A. Water-Hammer Arresters:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg. Co.
 - b. Sioux Chief Manufacturing Company, Inc.
 - c. Watts; a Watts Water Technologies company.
 - d. Zurn Industries, LLC.
2. Standard: ASSE 1010 or PDI-WH 201.
3. Type: Metal bellows or Copper tube with piston.
4. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F.

2.11 TRAP-SEAL PRIMER DEVICE

A. Supply-Type, Trap-Seal Primer Device:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg. Co.
 - b. Sioux Chief Manufacturing Company, Inc.
 - c. Watts; a Watts Water Technologies company.
 - d. Zurn Industries, LLC.
2. Standard: ASSE 1018.
3. Pressure Rating: 125 psig minimum.
4. Body: Bronze.
5. Inlet and Outlet Connections: NPS 1/2 threaded, union, or solder joint.
6. Gravity Drain Outlet Connection: NPS 1/2 threaded or solder joint.
7. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.

PART 3 - EXECUTION**3.1 INSTALLATION**

A. Install double check backflow preventers in each water supply to mechanical equipment and systems and to other equipment and water systems that may be sources of contamination. Comply with authorities having jurisdiction.

1. Locate backflow preventers in same room as connected equipment or system.
2. Install drain for backflow preventers with atmospheric-vent drain connection with air-gap fitting, fixed air-gap fitting, or equivalent positive pipe separation of at least two pipe diameters in drain piping and pipe-to-floor drain. Locate air-gap device attached to or under backflow preventer. Simple air breaks are unacceptable for this application.
3. Do not install bypass piping around backflow preventers.

B. Install water regulators with inlet and outlet shutoff valves. Install pressure gages on inlet and outlet.

C. Install temperature-actuated, water mixing valves with check stops or shutoff valves on inlets and with shutoff valve on outlet.

1. Install cabinet-type units recessed in or surface mounted on wall as specified.

D. Install balancing valves at each hot water recirculation branch connection to the return main.

E. Install Y-pattern strainers for water on supply side of each water pressure-reducing valve, solenoid valve and pump.

F. Install water-hammer arresters in water piping according to PDI-WH 201.

G. Install supply-type, trap-seal primer valves with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.

3.2 CONNECTIONS

A. Comply with requirements for ground equipment in Section 260526 "Grounding and Bonding for Electrical Systems."

B. Fire-retardant-treated-wood blocking is specified in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for electrical connections.

3.3 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test each reduced-pressure-principle backflow preventer and double-check, detector-assembly backflow preventer according to authorities having jurisdiction and the device's reference standard.

B. Domestic water piping specialties will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports.

3.4 ADJUSTING

A. Set field-adjustable pressure set points of water pressure-reducing valves. Verify pressure set points with Engineer prior to setting

B. Set field-adjustable flow set points of balancing valves. Verify flow rates with Engineer prior to setting.

C. Set field-adjustable temperature set points of temperature-actuated, water mixing valves. Verify temperature setting with engineer prior to setting.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Pipe, tube, and fittings.
 - 2. Specialty pipe fittings.

1.2 ACTION SUBMITTALS

- A. See section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:
 - 1. Soil, Waste, and Vent Piping: 10-foot head of water.
- B. Seismic Performance: Soil, waste, and vent piping and support and installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7. See section 220548 "Vibration and Seismic Controls for Plumbing and HVAC Piping and Equipment"

2.2 PIPING MATERIALS

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

- A. Pipe and Fittings: ASTM A 888 or CISPI 301.
- B. CISPI, Hubless-Piping Couplings:
 - 1. Standards: ASTM C 1277 and CISPI 310.
 - 2. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

2.4 COPPER TUBE AND FITTINGS

- A. Copper Type DWV Tube: ASTM B 306, drainage tube, drawn temper.
- B. Copper Drainage Fittings: ASME B16.23, cast copper or ASME B16.29, wrought copper, solder-joint fittings.
- C. Copper Pressure Fittings:
 - 1. Copper Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 - 2. Copper Unions: MSS SP-123, copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- D. Copper Flanges: ASME B16.24, Class 150, cast copper with solder-joint end.
 - 1. Flange Gasket Materials: ASME B16.21, full-face, flat, nonmetallic, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - 2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
- E. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux.

2.5 PVC PIPE AND FITTINGS

- A. Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping and "NSF-sewer" for plastic sewer piping.
- B. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.
- C. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.
- D. Adhesive Primer: ASTM F 656.
- E. Solvent Cement: ASTM D 2564.

2.6 SPECIALTY PIPE FITTINGS

- A. Transition Couplings:
 - 1. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.
 - 2. Unshielded, Non-pressure Transition Couplings:
 - a. Standard: ASTM C 1173.
 - b. Description: Elastomeric, sleeve-type, reducing or transition pattern. Include shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.
 - c. End Connections: Same size as and compatible with pipes to be joined.
 - d. Sleeve Materials:
 - 1) For Cast-Iron Soil Pipes: ASTM C 564, rubber.

- 2) For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
 - 3) For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
3. Shielded, Non-pressure Transition Couplings:
 - a. Standard: ASTM C 1460.
 - b. Description: Elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.
 - c. End Connections: Same size as and compatible with pipes to be joined.

PART 3 - EXECUTION

3.1 EARTH MOVING

- A. Comply with requirements for excavating, trenching, and backfilling specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.
 1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
 2. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Install seismic restraints on piping. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."

- K. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends.
 - 1. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical.
 - 2. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe.
 - a. Straight tees, elbows, and crosses may be used on vent lines.
 - 3. Do not change direction of flow more than 90 degrees.
 - 4. Use proper size of standard increasers and reducers if pipes of different sizes are connected.
 - a. Reducing size of waste piping in direction of flow is prohibited.
- L. Lay buried building waste piping beginning at low point of each system.
 - 1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
 - 2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
 - 3. Maintain swab in piping and pull past each joint as completed.
- M. Install soil and waste and vent piping at the following minimum slopes unless otherwise indicated:
 - 1. Horizontal Sanitary Waste: 1/4" per foot downward in direction of flow. 1/8" per foot is allowable if necessitated by site conditions.
 - 2. Vent Piping: 1/8" per foot down toward vertical fixture vent or toward vent stack.
- N. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
- O. Install aboveground copper tubing according to CDA's "Copper Tube Handbook."
- P. Install aboveground PVC piping according to ASTM D 2665.
- Q. Install underground PVC piping according to ASTM D 2321.
- R. Plumbing Specialties:
 - 1. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers in sanitary waste gravity-flow piping.
 - a. Comply with requirements for cleanouts specified in Section 221319 "Sanitary Waste Piping Specialties."
- S. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- T. Install sleeves for piping penetrations of walls, ceilings, and floors.
 - 1. Comply with requirements for sleeves specified in Section 220500 "General Provisions of Plumbing and HVAC."

- U. Install sleeve seals for piping penetrations of concrete walls and slabs.
 - 1. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- V. Install escutcheons for piping penetrations of walls, ceilings, and floors.
 - 1. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.3 JOINT CONSTRUCTION

- A. Join hub-and-spigot, cast-iron soil piping with gasket joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.
- B. Join copper tube and fittings with soldered joints according to ASTM B 828. Use ASTM B 813, water-flushable, lead-free flux and ASTM B 32, lead-free-alloy solder.
- C. Grooved Joints: Cut groove ends of pipe according to AWWA C606. Lubricate and install gasket over ends of pipes or pipe and fitting. Install coupling housing sections, over gasket, with keys seated in piping grooves. Install and tighten housing bolts.
- D. Plastic, Non-pressure-Piping, Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 - 2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 appendixes.
 - 3. PVC Piping: Join according to ASTM D 2855 and ASTM D 2665 appendixes.

3.4 SPECIALTY PIPE FITTING INSTALLATION

- A. Transition Couplings:
 - 1. Install transition couplings at joints of piping with small differences in ODs.
 - 2. In Waste Drainage Piping: Shielded, nonpressure transition couplings.

3.5 VALVE INSTALLATION

- A. Comply with requirements in Section 220523.12 "Ball Valves for Plumbing Piping," Section 220523.13 "Butterfly Valves for Plumbing Piping," Section 220523.14 "Check Valves for Plumbing Piping," and Section 220523.15 "Gate Valves for Plumbing Piping" for general-duty valve installation requirements.
- B. Shutoff Valves:
 - 1. Install shutoff valve on each sewage pump discharge.
 - 2. Install gate or full-port ball valve for piping NPS 2 and smaller.
 - 3. Install gate valve for piping NPS 2-1/2 and larger.
- C. Check Valves: Install swing check valve, between pump and shutoff valve, on each sewage pump discharge.

3.6 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing and HVAC Piping and Equipment."
- B. Comply with requirements for pipe hanger and support devices and installation specified in Section 220529 "Hangers and Supports for Plumbing and HVAC Piping and Equipment."
 - 1. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 2. Install individual, straight, horizontal piping runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.
 - 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- C. Support horizontal piping and tubing within 12 inches of each fitting, valve, and coupling.
- D. Support vertical piping and tubing at base and at each floor.
- E. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.
- F. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/2 and NPS 2: 60 inches with 3/8-inch rod.
 - 2. NPS 3: 60 inches with 1/2-inch rod.
 - 3. NPS 4 and NPS 5: 60 inches with 5/8-inch rod.
 - 4. NPS 6 and NPS 8: 60 inches with 3/4-inch rod.
 - 5. NPS 10 and NPS 12: 60 inches with 7/8-inch rod.
 - 6. Spacing for 10-foot lengths may be increased to 10 feet. Spacing for fittings is limited to 60 inches.
- G. Install supports for vertical cast-iron soil piping every 15 feet.
- H. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/4: 72 inches with 3/8-inch rod.
 - 2. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 - 3. NPS 2-1/2: 108 inches with 1/2-inch rod.
 - 4. NPS 3 and NPS 5: 10 feet with 1/2-inch rod.
 - 5. NPS 6: 10 feet with 5/8-inch rod.
 - 6. NPS 8: 10 feet with 3/4-inch rod.
- I. Install supports for vertical copper tubing every 10 feet.
- J. Install hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/2 and NPS 2: 48 inches with 3/8-inch rod.
 - 2. NPS 3: 48 inches with 1/2-inch rod.
 - 3. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.

4. NPS 6 and NPS 8: 48 inches with 3/4-inch rod.
5. NPS 10 and NPS 12: 48 inches with 7/8-inch rod.

- K. Install supports for vertical PVC piping every 48 inches.
- L. Support piping and tubing not listed above according to MSS SP-58 and manufacturer's written instructions.

3.7 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.
- C. Connect waste and vent piping to the following:
 1. Plumbing Fixtures: Connect waste piping in sizes indicated, but not smaller than required by plumbing code.
 2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
 3. Plumbing Specialties: Connect waste and vent piping in sizes indicated, but not smaller than required by plumbing code.
 4. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.
 5. Equipment: Connect waste piping as indicated.
 - a. Provide shutoff valve if indicated and union for each connection.
 - b. Use flanges instead of unions for connections NPS 2-1/2 and larger.
- D. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.
- E. Make connections according to the following unless otherwise indicated:
 1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
 2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.

3.8 IDENTIFICATION

- A. Identify exposed sanitary waste and vent piping.
- B. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing and HVAC Piping and Equipment."

3.9 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Re-inspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for re-inspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary waste and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
 - a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 2. Leave uncovered and unconcealed new, altered, extended, or replaced waste and vent piping until it has been tested and approved.
 - a. Expose work that was covered or concealed before it was tested.
 3. Roughing-in Plumbing Test Procedure: Test waste and vent piping except outside leaders on completion of roughing-in.
 - a. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water.
 - b. From 15 minutes before inspection starts to completion of inspection, water level must not drop.
 - c. Inspect joints for leaks.
 4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight.
 - a. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1-inch wg.
 - b. Use U-tube or manometer inserted in trap of water closet to measure this pressure.
 - c. Air pressure must remain constant without introducing additional air throughout period of inspection.
 - d. Inspect plumbing fixture connections for gas and water leaks.
 5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
 6. Prepare reports for tests and required corrective action.

3.10 CLEANING AND PROTECTION

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect sanitary waste and vent piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

- C. Place plugs in ends of uncompleted piping at end of day and when work stops.
- D. Exposed PVC Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.
- E. Repair damage to adjacent materials caused by waste and vent piping installation.

3.11 PIPING SCHEDULE

- A. Piping system materials are identified in the table below. If more than one material is listed, selection from the materials listed is at the Contractor's option.

Application	Location	Size	Material	Fittings
Sanitary Waste and Vent	Below Grade	All	PVC	Solvent Joint
Sanitary Waste and Vent	Above Grade	All	Cast Iron	No-Hub
Condensate Drain	Above Grade	All	PVC	Solvent Joint

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Cleanouts.
2. Miscellaneous sanitary drainage piping specialties.

B. Related Requirements:

1. Section 221316 "Sanitary Waste and Vent Piping"

1.2 SUBMITTALS

A. See Section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 ASSEMBLY DESCRIPTIONS**

A. Sanitary waste piping specialties shall bear label, stamp, or other markings of specified testing agency.

B. Comply with NSF 14 for plastic sanitary waste piping specialty components.

2.2 CLEANOUTS**A. Above Grade Wall Cleanout**

1. Provide JR Smith 4422 or approved equal
2. Description: Cast iron caulked spigot ferrule with cast bronze taper thread plug and stainless steel round cover and screw.

B. Finished Floor Cleanout

1. Provide JR Smith 4100 or approved equal
2. Description: Cast iron cleanout with extra heavy duty round, adjustable, scoriated, secured nickel bronze top, and no-hub outlet, gasket seal bronze plug and flashing clamp for.

C. Outdoor Cleanout

1. Provide JR Smith 4241S or approved equal
2. Description: Cast iron floor level cleanout assembly with heavy duty, round, adjustable, scoriated cast iron top, non-tilt tractor cover, gasket seal bronze plug.

2.3 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

A. Open Drains or Hub Drains:

1. Description: Shop or field fabricate from ASTM A 74, Service class, hub-less, cast-iron soil-pipe fittings. Include P-trap, riser section; and where required, increaser fitting joined with ASTM C 564 rubber gaskets.
2. Size: See drawings. If not shown drain shall 2" minim or one size larger than piping discharging to the drain.

B. Floor-Drain, Trap-Seal Primer Fittings:

1. Description: Cast iron, with threaded inlet and threaded or spigot outlet, and trap-seal primer valve connection.
2. Size: Same as floor drain outlet with NPS 1/2 side inlet.

C. Floor-Drain, Trap Seal:

1. Barrier type floor drain or sink trap seal device.
2. IAPMO 7479 and ASSE std. 1072 listed.

D. Air-Gap Fittings:

1. Standard: ASME A112.1.2, for fitting designed to ensure fixed, positive air gap between installed inlet and outlet piping.
2. Body: Bronze or cast iron.
3. Inlet: Opening in top of body.
4. Outlet: Larger than inlet.
5. Size: Same as connected waste piping and with inlet large enough for associated indirect waste piping.

E. Expansion Joints:

1. Standard: ASME A112.6.4.
2. Body: Cast iron with bronze sleeve, packing, and gland.
3. End Connections: Matching connected piping.
4. Size: Same as connected soil, waste, or vent piping.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:

1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
2. Locate at each change in direction of piping greater than 45 degrees.
3. Locate at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping.
4. Locate at base of each vertical soil and waste stack.

B. For floor cleanouts for piping below floors, install cleanout with top flush with finished floor. It shall be the responsibility of the plumbing contractor to coordinate the installation of cleanouts with the general contractor and floor contractor to ensure that floor cleanouts are properly adjusted so that the top is flush and level with finished flooring material. Cleanout covers that are not flush and level with the finished floor will be rejected and the plumbing contractor will be

required to sawcut or core drill the floor, provide and install and new cleanout, coordination installation of new concrete and new finished flooring material.

C. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.

D. Coordinate installation of roof flashing assemblies on sanitary stack vents and vent stacks that extend through roof with the general contractor or construction manager.

E. Assemble open drain fittings and install with top of hub 2 inches above floor.

F. Install deep-seal traps on floor drains and other waste outlets, if indicated.

G. Install floor-drain, trap-seal primer fittings on inlet to floor drains that require trap-seal primer connection.

1. Exception: Fitting may be omitted if trap has trap-seal primer connection.
2. Size: Same as floor drain inlet.

H. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.

I. Install expansion joints on vertical stacks and conductors. Position expansion joints for easy access and maintenance.

J. Install wood-blocking reinforcement for wall-mounting-type specialties.

K. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.

3.2 CONNECTIONS

A. Comply with requirements in Section 221316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

C. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

D. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.3 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Commercial, electric, storage, domestic-water heaters.
2. Commercial, light-duty, storage, electric, domestic-water heaters.
3. Thermostat-control, electric, tankless, domestic-water heaters.
4. Domestic-water heater accessories.

1.2 SUBMITTALS

- A. See Section 220000 "General Requirements of Mechanical and Plumbing" for submittal requirements.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial, domestic-water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61 Annex, "Drinking Water System Components - Health Effects."

1.4 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of electric, domestic-water heaters that fail in materials or workmanship within specified warranty period.

1. Warranty Periods: From date of Substantial Completion.

a. Commercial, Electric, Storage, Domestic-Water Heaters:

- 1) Storage Tank: Three years.
- 2) Controls and Other Components: One years.

b. Commercial, Light-Duty, Storage, Electric, Domestic-Water Heaters:

- 1) Storage Tank: Three years.
- 2) Controls and Other Components: One years.

PART 2 - PRODUCTS**2.1 COMMERCIAL, ELECTRIC, DOMESTIC-WATER HEATERS****A. Commercial, Electric, Storage, Domestic-Water Heaters:**

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bradford White Corporation.
 - b. Lochinvar, LLC.
 - c. Rheem Manufacturing Company.
 - d. Smith, A. O. Corporation.
2. Standard: UL 1453.
3. Storage-Tank Construction: ASME-code, steel vertical arrangement.
 - a. Tappings: Factory fabricated of materials compatible with tank and piping connections. Attach tappings to tank before testing.
 - 1) NPS 2 and Smaller: Threaded ends according to ASME B1.20.1.
 - 2) NPS 2-1/2 and Larger: Flanged ends according to ASME B16.5 for steel and stainless-steel flanges, and according to ASME B16.24 for copper and copper-alloy flanges.
 - b. Pressure Rating: 150 psig.
 - c. Interior Finish: Comply with NSF 61 Annex barrier materials for potable-water tank linings, including extending lining material into tappings.
4. Factory-Installed Storage-Tank Appurtenances:
 - a. Anode Rod: Replaceable magnesium.
 - b. Drain Valve: Corrosion-resistant metal complying with ASSE 1005.
 - c. Insulation: Comply with ASHRAE/IESNA 90.1.
 - d. Jacket: Steel with enameled finish.
 - e. Heating Elements: Electric, screw-in or bolt-on immersion type arranged in multiples of three.
 - f. Temperature Control: Adjustable thermostat.
 - g. Safety Controls: High-temperature-limit and low-water cutoff devices or systems.
 - h. Relief Valves: ASME rated and stamped for combination temperature-and-pressure relief valves. Include one or more relief valves with total relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select one relief valve with sensing element that extends into storage tank.
5. Special Requirements: NSF 5 construction.

B. Commercial, Light-Duty, Storage, Electric, Domestic-Water Heaters:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bradford White Corporation.

- b. Lochinvar, LLC.
 - c. Rheem Manufacturing Company.
 - d. Smith, A. O. Corporation.
 - 2. Standard: UL 174.
 - 3. Storage-Tank Construction: Steel, vertical arrangement.
 - a. Tappings: ASME B1.20.1 pipe thread.
 - b. Pressure Rating: 150 psig.
 - c. Interior Finish: Comply with NSF 61 Annex barrier materials for potable-water tank linings, including extending lining material into tappings.
 - 4. Factory-Installed Storage-Tank Appurtenances:
 - a. Anode Rod: Replaceable magnesium.
 - b. Dip Tube: Required unless cold-water inlet is near bottom of tank.
 - c. Drain Valve: ASSE 1005.
 - d. Insulation: Comply with ASHRAE/IESNA 90.1.
 - e. Jacket: Steel with enameled finish.
 - f. Heat-Trap Fittings: Inlet type in cold-water inlet and outlet type in hot-water outlet.
 - g. Heating Elements: Two; electric, screw-in immersion type; wired for simultaneous operation unless otherwise indicated. Limited to 12 kW total.
 - h. Temperature Control: Adjustable thermostat.
 - i. Safety Control: High-temperature-limit cutoff device or system.
 - j. Relief Valve: ASME rated and stamped for combination temperature-and-pressure relief valves. Include relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select relief valve with sensing element that extends into storage tank.
 - 5. Special Requirements: NSF 5 construction with legs for off-floor installation.
- C. Capacity and Characteristics:
- 1. See Drawings.

2.2 DOMESTIC-WATER HEATER ACCESSORIES

A. Domestic-Water Compression Tanks:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. AMTROL, Inc.
 - b. Taco
 - c. Armstrong
 - d. John Wood
- 2. Description: AMSE rated, steel pressure-rated tank constructed with welded joints and factory-installed butyl-rubber diaphragm. Include air precharge to minimum system-operating pressure at tank.
- 3. Construction:
 - a. Tappings: Factory-fabricated steel, welded to tank before testing and labeling. Include ASME B1.20.1 pipe thread.

- b. Interior Finish: Comply with NSF 61 Annex barrier materials for potable-water tank linings, including extending finish into and through tank fittings and outlets.
 - c. Air-Charging Valve: Factory installed.
- 4. Capacity and Characteristics:
 - a. See Drawings.
- B. Drain Pans: Corrosion-resistant metal with raised edge. Comply with ANSI/CSA LC 3. Include dimensions not less than base of domestic-water heater, and include drain outlet not less than NPS 3/4 with ASME B1.20.1 pipe threads or with ASME B1.20.7 garden-hose threads.
- C. Piping-Type Heat Traps: Field-fabricated piping arrangement according to ASHRAE/IESNA 90.1.
- D. Heat-Trap Fittings: ASHRAE 90.2.
- E. Pressure-Reducing Valves: ASSE 1003 for water. Set at 25-psig-maximum outlet pressure unless otherwise indicated.
- F. Combination Temperature-and-Pressure Relief Valves: ASME rated and stamped. Include relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select relief valves with sensing element that extends into storage tank.
- G. Pressure Relief Valves: ASME rated and stamped. Include pressure setting less than domestic-water heater working-pressure rating.
- H. Vacuum Relief Valves: ANSI Z21.22/CSA 4.4.
- I. Shock Absorbers: ASSE 1010 or PDI-WH 201, Size A water hammer arrester.
- J. Domestic-Water Heater Stands: Manufacturer's factory-fabricated steel stand for floor mounting, capable of supporting domestic-water heater and water. Include dimension that will support bottom of domestic-water heater a minimum of 18 inches above the floor.
- K. Domestic-Water Heater Mounting Brackets: Manufacturer's factory-fabricated steel bracket for wall mounting, capable of supporting domestic-water heater and water.

2.3 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect domestic-water heaters specified to be ASME-code construction, according to ASME Boiler and Pressure Vessel Code.
- B. Hydrostatically test commercial domestic-water heaters to minimum of one and one-half times pressure rating before shipment.
- C. Electric, domestic-water heaters will be considered defective if they do not pass tests and inspections. Comply with requirements in Section 014000 "Quality Requirements" for retesting and reinspecting requirements and Section 017300 "Execution" for requirements for correcting the Work.
- D. Prepare test and inspection reports.

PART 3 - EXECUTION**3.1 DOMESTIC-WATER HEATER INSTALLATION**

A. Commercial, Electric, Domestic-Water Heater Mounting: Install commercial, electric, domestic-water heaters on concrete base. Comply with requirements for concrete bases specified in Section 033000 "Cast-in-Place Concrete."

1. Exception: Omit concrete bases for commercial, electric, domestic-water heaters if installation on stand, bracket, suspended platform is indicated.
2. Maintain manufacturer's recommended clearances.
3. Arrange units so controls and devices that require servicing are accessible.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
6. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
7. Install anchor bolts to elevations required for proper attachment to supported equipment.
8. Anchor domestic-water heaters to substrate.

B. Install electric, domestic-water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.

1. Install shutoff valves on domestic-water-supply piping to domestic-water heaters and on domestic-hot-water outlet piping. Comply with requirements for shutoff valves specified in Section 220523 "General Duty Valves for Plumbing and HVAC".

C. Install commercial, electric, domestic-water heaters with seismic-restraint devices. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."

D. Install combination temperature-and-pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic-water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

E. Install combination temperature-and-pressure relief valves in water piping for electric, domestic-water heaters without storage. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic-water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

F. Install water-heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains. Install hose-end drain valves at low points in water piping for electric, domestic-water heaters that do not have tank drains. Comply with requirements for hose-end drain valves specified in Section 221119 "Domestic Water Piping Specialties."

G. Install thermometers on outlet piping of electric, domestic-water heaters. Comply with requirements for thermometers specified in Section 220519 "Meters and Gages for Plumbing Piping."

H. Install piping-type heat traps on inlet and outlet piping of electric, domestic-water heater storage tanks without integral or fitting-type heat traps.

- I. Fill electric, domestic-water heaters with water.
- J. Charge domestic-water compression tanks with air.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Section 221116 "Domestic Water Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Where installing piping adjacent to electric, domestic-water heaters, allow space for service and maintenance of water heaters. Arrange piping for easy removal of domestic-water heaters.

3.3 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Electric, domestic-water heaters will be considered defective if they do not pass tests and inspections. Comply with requirements in Section 014000 "Quality Requirements" for retesting and reinspecting requirements and Section 017300 "Execution" for requirements for correcting the Work.
- C. Prepare test and inspection reports.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plumbing fixtures shown and scheduled on the drawings.

1.2 SUBMITTALS

- A. See section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS

- 2.1 PLUMBING FIXTURE MANUFACTURERS – The following manufacturers are approved. Fixtures and equipment other than those listed in the plumbing fixture schedule must be submitted for approval prior to bidding. Only products from the manufacturers listed below will be considered. Request for prior approval from manufacturers not listed below will not be considered.

- A. FLOOR DRAINS & SINKS

- 1. FIXTURES
 - a. JR SMITH
 - b. ZURN
 - c. JOSAM
 - 2. TRAP SEAL
 - a. TRAP GUARD
 - b. JR SMITH
 - 3. TRAP PRIMERS
 - a. JR SMITH
 - b. WATTS
 - c. ZURN

- B. LAVATORIES

- 1. FIXTURES
 - a. ACORN
 - b. JUST
 - 2. CARRIERS AND SUPPORTS
 - a. JR SMITH
 - b. ZURN
 - c. ACORN
 - 3. FAUCETS
 - a. MOEN COMMERCIAL
 - b. SLOAN
 - c. AMERICAN STANDARD

- 4. PIPING COVERS
 - a. TRUBRO
 - b. PLUMMEREX
- C. STAINLESS STEEL SINKS
 - 1. FIXTURES
 - a. ELKAY
 - b. JUST
 - c. KOHLER
 - d. ACORN
 - e. ADVANCE TABCO
 - 2. FAUCETS
 - a. MOEN COMMERCIAL
 - b. T&S BRASS
 - c. CHICAGO FAUCET
- D. STOP VALVES
 - 1. BRASSCRAFT
 - 2. WATTS
 - 3. KINGSTON BRASS
- E. URINALS
 - 1. FIXTURES
 - a. ACORN
 - b. ADVANCE TABCO
 - 2. FLUSH VALVES
 - a. MOEN
 - b. ZURN
 - c. SLOAN
 - 3. CARRIERS AND SUPPORTS
 - a. ACORN
 - b. JR SMITH
 - c. ZURN
- F. WATER CLOSETS
 - 1. FIXTURES
 - a. ACORN
 - 2. FLUSH VALVES
 - a. MOEN
 - b. ZURN
 - c. SLOAN
 - 3. SEATS
 - a. ACORN
 - 4. CARRIERS AND SUPPORTS
 - a. ACORN

- b. JR SMITH
- c. ZURN

2.2 GROUT

- A. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install plumbing fixtures level and plumb according to roughing-in drawings.
- B. Install floor-mounted water closets on closet flange attachments to drainage piping.
- C. Install counter-mounting fixtures in and attached to casework.
- D. Install pedestal lavatories on pedestals and secured to wood blocking in wall.
- E. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
 - 1. Exception: Use ball, gate, or globe valves if supply stops are not specified with fixture. Comply with valve requirements specified in Section 220523 "General-Duty Valves for Plumbing Piping."
- F. Install tanks for accessible, tank-type water closets with lever handle mounted on wide side of compartment.
- G. Install toilet seats on water closets.
- H. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- I. Install shower flow-control fittings with specified maximum flow rates in shower arms.
- J. Install traps on fixture outlets.
 - 1. Exception: Omit trap on fixtures with integral traps.
 - 2. Exception: Omit trap on indirect wastes unless otherwise indicated.
- K. Install disposer in outlet of each sink indicated to have disposer. Install switch where indicated or in wall adjacent to sink if location is not indicated.

- L. Install dishwasher air-gap fitting at each sink indicated to have air-gap fitting. Install in sink deck. Connect inlet hose to dishwasher and outlet hose to disposer.
- M. Set bathtubs and shower receptors in leveling bed of cement grout.
- N. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories and sinks.
- O. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings.
- P. Seal joints between plumbing fixtures, counters, floors, and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color.
- Q. The Plumbing contractor shall furnish a 24V control transformer to all hard wired optical/handsfree fixtures. The Plumbing contractor shall coordinate with the electrical contractor to install all line and low voltage wiring in compliance with section 260519 "Low-voltage Electrical Power Conductors and Cables", and section 260523 "Control-Voltage Electrical Power Cables".

3.2 CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
- D. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories and sinks.
- E. All electrical connections shall be coordinated by the plumbing contractor with the electrical contractor.

3.3 ADJUSTING

- A. Operate and adjust plumbing fixtures and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.
- B. Adjust water pressure at faucets to produce proper flow.

3.4 CLEANING AND PROTECTION

- A. After completing installation of plumbing fixtures, inspect and repair damaged finishes.
- B. Clean plumbing fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed plumbing fixtures and fittings.

- D. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Balancing Air Systems:
 - a. Constant-volume air systems.

1.2 DEFINITIONS

- A. AABC: Associated Air Balance Council.
- B. NEBB: National Environmental Balancing Bureau.
- C. TAB: Testing, adjusting, and balancing.
- D. TABB: Testing, Adjusting, and Balancing Bureau.
- E. TAB Specialist: An independent entity meeting qualifications to perform TAB work.
- F. TDH: Total dynamic head.

1.3 ACTION SUBMITTALS

- A. See Section 220000 "General Requirement of Plumbing and HVAC" for submittal requirements

1.4 QUALITY ASSURANCE

- A. TAB Specialists Qualifications: Certified by AABC, NEBB, TABB, or as approved by the Engineer prior to bidding.
- B. Certify TAB field data reports and perform the following:
 - 1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
 - 2. Certify that the TAB team complied with the approved TAB plan and the procedures specified and referenced in this Specification.
- C. TAB Report Forms: Use standard TAB contractor's forms.
- D. Instrumentation Type, Quantity, Accuracy, and Calibration: Comply with requirements in ASHRAE 111, Section 4, "Instrumentation."
- E. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6.7.2.3 - "System Balancing."

PART 2 - EXECUTION**2.1 EXAMINATION**

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems designs that may preclude proper TAB of systems and equipment.
- B. Examine installed systems for balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are applicable for intended purpose and are accessible.
- C. Examine the approved submittals for HVAC systems and equipment.
- D. Examine HVAC equipment and verify that bearings are greased, belts are aligned and tight, filters are clean, and equipment with functioning controls is ready for operation.
- E. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible and their controls are connected and functioning.
- F. Examine control valves for proper installation for their intended function of throttling, diverting, or mixing fluid flows.
- G. Examine heat-transfer coils for correct piping connections and for clean and straight fins.
- H. Examine system pumps to ensure absence of entrained air in the suction piping.
- I. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

2.2 PREPARATION

- A. Perform system-readiness checks of HVAC systems and equipment to verify system readiness for TAB work. Include, at a minimum, the following:
 - 1. Airside:
 - a. Duct systems are complete with terminals installed.
 - b. Volume, smoke, and fire dampers are open and functional.
 - c. Clean filters are installed.
 - d. Fans are operating, free of vibration, and rotating in correct direction.
 - e. Variable-frequency controllers' startup is complete and safeties are verified.
 - f. Automatic temperature-control systems are operational.
 - g. Ceilings are installed.
 - h. Windows and doors are installed.
 - i. Suitable access to balancing devices and equipment is provided.

2.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Total System Balance", NEBB's "Procedural

Standards for Testing, Adjusting, and Balancing of Environmental Systems" or SMACNA's "HVAC Systems - Testing, Adjusting, and Balancing" and in this Section.

- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures.
 - 1. After testing and balancing, patch probe holes in ducts with plastic plugs.
 - 2. Coordinate with the mechanical insulation contractor to Restore insulation, coverings, vapor barrier, and finish according to Section 230713 "Duct Insulation"
- C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.

2.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Cross-check the summation of required outlet volumes with required fan volumes.
- B. Prepare schematic diagrams of systems' "as-built" duct layouts.
- C. For variable-air-volume systems, develop a plan to simulate diversity.
- D. Determine the best locations in main and branch ducts for accurate duct-airflow measurements.
- E. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust-air dampers through the supply-fan discharge and mixing dampers.
- F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- G. Verify that motor starters are equipped with properly sized thermal protection.
- H. Check dampers for proper position to achieve desired airflow path.
- I. Check for airflow blockages.
- J. Check condensate drains for proper connections and functioning.
- K. Check for proper sealing of air-handling-unit components.
- L. Verify that air duct system is sealed as specified in Section 233113 "Metal Ducts."

2.5 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

- A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.
 - 1. Measure total airflow.
 - a. Set outside-air, return-air, and relief-air dampers for proper position that simulates minimum outdoor-air conditions.

- b. Where duct conditions allow, measure airflow by Pitot-tube traverse. If necessary, perform multiple Pitot-tube traverses to obtain total airflow.
 - c. Where duct conditions are not suitable for Pitot-tube traverse measurements, a coil traverse may be acceptable.
 - d. If a reliable Pitot-tube traverse or coil traverse is not possible, measure airflow at terminals and calculate the total airflow.
 2. Measure fan static pressures as follows:
 - a. Measure static pressure directly at the fan outlet or through the flexible connection.
 - b. Measure static pressure directly at the fan inlet or through the flexible connection.
 - c. Measure static pressure across each component that makes up the air-handling system.
 - d. Report artificial loading of filters at the time static pressures are measured.
 3. Review Record Documents to determine variations in design static pressures versus actual static pressures. Calculate actual system-effect factors. Recommend adjustments to accommodate actual conditions.
 4. Obtain approval from Engineer for adjustment of fan speed higher or lower than indicated speed. Comply with requirements in HVAC Sections for air-handling units for adjustment of fans, belts, and pulley sizes to achieve indicated air-handling-unit performance.
 5. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure that no overload occurs. Measure amperage in full-cooling, full-heating, economizer, and any other operating mode to determine the maximum required brake horsepower.
 - B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows.
 1. Measure airflow of submain and branch ducts.
 2. Adjust submain and branch duct volume dampers for specified airflow.
 3. Re-measure each submain and branch duct after all have been adjusted.
 - C. Adjust air inlets and outlets for each space to indicated airflows.
 1. Set airflow patterns of adjustable outlets for proper distribution without drafts.
 2. Measure inlets and outlets airflow.
 3. Adjust each inlet and outlet for specified airflow.
 4. Re-measure each inlet and outlet after they have been adjusted.
- 2.6 TOLERANCES
- A. Set HVAC system's airflow rates and water flow rates within the following tolerances:
 1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 10 percent.
 2. Air Outlets and Inlets: Plus or minus 10 percent.
 - B. Maintaining pressure relationships as designed shall have priority over the tolerances specified above.

2.7 FINAL REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
 - 1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
 - 2. Include a list of instruments used for procedures, along with proof of calibration.
 - 3. Certify validity and accuracy of field data.
- B. Final Report Contents: In addition to certified field-report data, include the following:
 - 1. Manufacturers' test data.
 - 2. Field test reports prepared by system and equipment installers.
 - 3. Other information relative to equipment performance; do not include Shop Drawings and Product Data.
- C. General Report Data: In addition to form titles and entries, include the following data:
 - 1. Title page.
 - 2. Name and address of the TAB specialist.
 - 3. Project name.
 - 4. Project location.
 - 5. Architect's name and address.
 - 6. Engineer's name and address.
 - 7. Contractor's name and address.
 - 8. Report date.
 - 9. Signature of TAB supervisor who certifies the report.
 - 10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
 - 11. Summary of contents including the following:
 - a. Indicated versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
 - 12. Nomenclature sheets for each item of equipment.
 - 13. Data for terminal units, including manufacturer's name, type, size, and fittings.
 - 14. Notes to explain why certain final data in the body of reports vary from indicated values.
 - 15. Test conditions for fans and pump performance forms including the following:
 - a. Settings for outdoor-, return-, and exhaust-air dampers.
 - b. Conditions of filters.
 - c. Face and bypass damper settings at coils.
 - d. Settings for supply-air, static-pressure controller.
 - e. Other system operating conditions that affect performance.
- D. Air-Handling-Unit Test Reports: For air-handling units with coils, include the following:
 - 1. Unit Data:
 - a. Unit identification.
 - b. Location.
 - c. Make and type.
 - d. Model number and unit size.

- e. Manufacturer's serial number.
 - f. Unit arrangement and class.
 - g. Discharge arrangement.
 - h. Sheave make, size in inches, and bore.
 - i. Center-to-center dimensions of sheave and amount of adjustments in inches.
 - j. Number, make, and size of belts.
 - k. Number, type, and size of filters.
 - 2. Motor Data:
 - a. Motor make, and frame type and size.
 - b. Horsepower and rpm.
 - c. Volts, phase, and hertz.
 - d. Full-load amperage and service factor.
 - e. Sheave make, size in inches, and bore.
 - f. Center-to-center dimensions of sheave and amount of adjustments in inches.
 - 3. Test Data (Indicated and Actual Values):
 - a. Total airflow rate in cfm.
 - b. Total system static pressure in inches wg.
 - c. Fan rpm.
 - d. Discharge static pressure in inches wg.
 - e. Filter static-pressure differential in inches wg.
 - f. Preheat-coil static-pressure differential in inches wg.
 - g. Cooling-coil static-pressure differential in inches wg.
 - h. Heating-coil static-pressure differential in inches wg.
 - i. Outdoor airflow in cfm.
 - j. Return airflow in cfm.
 - k. Outdoor-air damper position.
 - l. Return-air damper position.
- E. Fan Test Reports: For supply, return, and exhaust fans, include the following:
- 1. Fan Data:
 - a. System identification.
 - b. Location.
 - c. Make and type.
 - d. Model number and size.
 - e. Manufacturer's serial number.
 - f. Arrangement and class.
 - g. Sheave make, size in inches, and bore.
 - 2. Test Data (Indicated and Actual Values):
 - a. Total airflow rate in cfm.
 - b. Total system static pressure in inches wg.
 - c. Fan rpm.
 - d. Discharge static pressure in inches wg.
 - e. Suction static pressure in inches wg.
- F. Air-Terminal-Device Reports:
- 1. Unit Data:

- a. System and air-handling unit identification.
 - b. Location and zone.
 - c. Apparatus used for test.
 - d. Area served.
 - e. Make.
 - f. Number from system diagram.
 - g. Type and model number.
 - h. Size.
2. Test Data (Indicated and Actual Values):
 - a. Airflow rate in cfm.
 - b. Air velocity in fpm.
 - c. Preliminary airflow rate as needed in cfm.
 - d. Preliminary velocity as needed in fpm.
 - e. Final airflow rate in cfm.
 - f. Final velocity in fpm.

2.8 DUCT TESTING

- A. Duct Testing is required for supply, return or exhaust ductwork that will operate at 3 inWC static pressure or greater.
- B. Leakage test procedures shall follow the outlines and classifications in the SMANCA HVAC Air Duct Leakage Test Manual.
- C. The Owner and mechanical engineer shall select sections of ductwork from each air handling system for duct leakage testing. The sample shall include at least five transverse joints, typical seams, and access door connections. The sample will include all medium pressure supply ductwork between the air handling unit to within 2' of the connection to variable air volume terminal units.
- D. The Air handling systems shall be tested at 3 inches w.g. and shall meet leakage Class 3.
- E. If a section fails to meet allotted leakage level, the contractor shall modify the ductwork to bring it into compliance and shall retest the section until acceptable leakage is demonstrated. One retest shall will be provided by the TAB contractor. The mechanical contractor shall pay the TAB contractor for any additional retesting required.
- F. All testing and necessary repairs shall be completed prior to concealment of the ductwork.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section includes insulating the following duct services:
 - 1. Indoor, Duct Insulation.
- B. Related Sections:
 - 1. Section 220716 "Plumbing and HVAC Equipment and Piping Insulation."
 - 2. Section 233113 "Metal Ducts" for duct liners.

1.2 ACTION SUBMITTALS

- A. See Section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - 2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

PART 2 - PRODUCTS**2.1 INSULATION MATERIALS**

- A. Comply with requirements in "Duct Insulation Schedule, General," "Indoor Duct and Plenum Insulation Schedule," and "Aboveground, Outdoor Duct and Plenum Insulation Schedule" articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

- D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- F. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type III with factory-applied FSK jacket. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.
- G. Jacketed Mineral-Fiber Board Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IA or Type IB. For duct and plenum applications, provide insulation with factory-applied ASJ. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.
- H. Mineral-Fiber Board Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IA or Type IB. For duct and plenum applications, provide insulation without factory-applied jacket. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.

2.2 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.
- B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
- C. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

2.3 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
- B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below ambient services.
 - 1. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
 - 2. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 3. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
 - 4. Color: White.
- C. Breather Mastic: Water based; suitable for indoor and outdoor use on above ambient services.
 - 1. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
 - 2. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 3. Solids Content: 60 percent by volume and 66 percent by weight.
 - 4. Color: White.

2.4 SEALANTS

- A. FSK and Metal Jacket Flashing Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Fire- and water-resistant, flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 4. Color: Aluminum.
- B. ASJ Flashing Sealants, and Vinyl and PVC Jacket Flashing Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Fire- and water-resistant, flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 4. Color: White.

2.5 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
 - 1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
 - 2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
 - 3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

2.6 FIELD-APPLIED JACKETS

- A. Self-Adhesive Outdoor Jacket: 60-mil-thick, laminated vapor barrier and waterproofing membrane for installation over insulation located aboveground outdoors; consisting of a rubberized bitumen compound; heat applied to a multi-ply embossed UV-resistant aluminum foil/polymer laminate, and polyester/foil multiple layer laminate with acrylic adhesive.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Polyguard Products, Inc.
 - b. Prior Approved Equal

2.7 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
 1. Width: 3 inches.
 2. Thickness: 11.5 mils.
 3. Adhesion: 90 ounces force/inch in width.
 4. Elongation: 2 percent.
 5. Tensile Strength: 40 lbf/inch in width.
 6. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
 1. Width: 3 inches.
 2. Thickness: 6.5 mils.
 3. Adhesion: 90 ounces force/inch in width.
 4. Elongation: 2 percent.
 5. Tensile Strength: 40 lbf/inch in width.
 6. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.
- C. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.
 1. Width: 2 inches.
 2. Thickness: 3.7 mils.
 3. Adhesion: 100 ounces force/inch in width.
 4. Elongation: 5 percent.
 5. Tensile Strength: 34 lbf/inch in width.

2.8 SECUREMENTS

- A. Cupped Head Weld Pins:
 1. Material: Low carbon steel.
 2. Finish: Copper coated pins with galvanized washer
 3. Pin gauge: 12 Ga.
- B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.
- C. Wire: 0.080-inch nickel-copper alloy.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of ducts and fittings.
- B. Install insulation materials, vapor barriers or retarders, jackets, and thicknesses required for each item of duct system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Keep insulation materials dry during application and finishing.
- G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- H. Install insulation with least number of joints practical.
- I. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
 - 1. Install insulation continuously through hangers and around anchor attachments.
 - 2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
 - 3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
- J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- K. Install insulation with factory-applied jackets as follows:
 - 1. Draw jacket tight and smooth.
 - 2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
 - 3. Overlap jacket longitudinal seams at least 1-1/2 inches. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.
 - a. For below ambient services, apply vapor-barrier mastic over staples.
 - 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
 - 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to duct flanges and fittings.
- L. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

- M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.3 PENETRATIONS

- A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
 - 1. Seal penetrations with flashing sealant.
 - 2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 - 3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches below top of roof flashing.
 - 4. Seal jacket to roof flashing with flashing sealant.
- B. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.
 - 1. Seal penetrations with flashing sealant.
 - 2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 - 3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.
 - 4. Seal jacket to wall flashing with flashing sealant.
- C. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- D. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Terminate insulation at fire damper sleeves for fire-rated wall and partition penetrations. Externally insulate damper sleeves to match adjacent insulation and overlap duct insulation at least 2 inches.
 - 1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.
- E. Insulation Installation at Floor Penetrations:
 - 1. Duct: For penetrations through fire-rated assemblies, terminate insulation at fire damper sleeves and externally insulate damper sleeve beyond floor to match adjacent duct insulation. Overlap damper sleeve and duct insulation at least 2 inches.
 - 2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.4 INSTALLATION OF MINERAL-FIBER INSULATION

A. Blanket Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.

1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 100 percent coverage of duct and plenum surfaces.
2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
3. Install cupped-head, capacitor-discharge-weld pins on sides and bottom of horizontal ducts and sides of vertical ducts as follows:
 - a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
 - b. On duct sides with dimensions larger than 18 inches, place pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
 - c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
 - d. Do not overcompress insulation during installation.
 - e. Impale insulation over pins and attach speed washers.
 - f. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.
4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches from one edge and one end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch outward-clinching staples, 1 inch o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.
 - a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
 - b. Install vapor stops for ductwork and plenums operating below 50 deg F at 18-foot intervals. Vapor stops shall consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to two times the insulation thickness, but not less than 3 inches.
5. Overlap unfaced blankets a minimum of 2 inches on longitudinal seams and end joints. At end joints, secure with steel bands spaced a maximum of 18 inches o.c.
6. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
7. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch-wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

B. Board Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.

1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 100 percent coverage of duct and plenum surfaces.
2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.

3. Install either capacitor-discharge-weld pins and speed washers or cupped-head, capacitor-discharge-weld pins on sides and bottom of horizontal ducts and sides of vertical ducts as follows:
 - a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
 - b. On duct sides with dimensions larger than 18 inches, space pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
 - c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
 - d. Do not overcompress insulation during installation.
 - e. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.
4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches from one edge and one end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch outward-clinching staples, 1 inch o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.
 - a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
 - b. Install vapor stops for ductwork and plenums operating below 50 deg F at 18-foot intervals. Vapor stops shall consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to two times the insulation thickness, but not less than 3 inches.
5. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Groove and score insulation to fit as closely as possible to outside and inside radius of elbows. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
6. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch-wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

3.5 FINISHES

- A. Insulation with ASJ or Other Paintable Jacket Material: Paint jacket with paint system identified below and as specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- B. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.
- C. Do not field paint outdoor ductwork.

3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. Inspect ductwork, randomly selected by engineer, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to one location(s) for each duct system defined in the "Duct Insulation Schedule, General" Article.
- C. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.7 DUCT INSULATION SCHEDULE, GENERAL

- A. Duct insulation shall not be installed on any indoor, supply or return ductwork that is exposed to view unless otherwise indicated on the drawings.
- B. Insulation materials and thicknesses for ductwork are identified in the table below. If more than one material is listed for an application, selection from materials listed is at the Contractor's option. Ductwork that is not listed below or is exposed to view shall not be insulated.

Application	Insulation Type	Installed R-Value	Vapor Barrier	Factory Installed Jacket Type
Indoor Supply	Mineral-Fiber Blanket	6	YES	FSK
Indoor Exhaust *	Mineral-Fiber Blanket	8	YES	FSK
Indoor Fresh Air	Mineral-Fiber Board	8	YES	FSK

*Indoor Exhaust Ductwork shall be insulated from the penetration of the building envelope to 10ft upstream of a backdraft of shutoff damper.

3.8 FIELD APPLIED JACKETING SCHEDULE

- A. Field applied jackets for Plumbing and HVAC piping are identified in the table below. If more than one material is listed for an application, selection from materials listed is at the Contractor's option.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Refrigerant pipes and fittings.
 - 2. Refrigerant piping valves and specialties.
 - 3. Refrigerants.

1.2 SUBMITTALS

- A. See Section 220000 "General Requirements of Plumbing and HVAC"
- B. Shop Drawings:
 - 1. Show piping size and piping layout, including oil traps, double risers, specialties, and pipe and tube sizes to accommodate, as a minimum, equipment provided, elevation difference between compressor and evaporator, and length of piping to ensure proper operation and compliance with warranties of connected equipment.
 - 2. Show interface and spatial relationships between piping and equipment.
 - 3. Shop Drawing Scale: 1/4 inch equals 1 foot or 1/8 in equal 1 foot.

1.3 QUALITY ASSURANCE

- A. Comply with ASHRAE 15, "Safety Code for Refrigeration Systems."
- B. Comply with ASME B31.5, "Refrigeration Piping and Heat Transfer Components."

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Line Test Pressure for Refrigerant R-410A:
 - 1. Suction Lines for Air-Conditioning Applications: 300 psig.
 - 2. Suction Lines for Heat-Pump Applications: 535 psig.
 - 3. Hot-Gas and Liquid Lines: 535 psig.

2.2 COPPER TUBE AND FITTINGS

- A. Copper Tube: ASTM B 280, Type ACR.
- B. Wrought-Copper Fittings: ASME B16.22.
- C. Wrought-Copper Unions: ASME B16.22.

- D. Solder Filler Metals: ASTM B 32. Use 95-5 tin antimony or alloy HB solder to join copper socket fittings on copper pipe.
- E. Brazing Filler Metals: AWS A5.8/A5.8M.
- F. Flexible Connectors:
 - 1. Body: Tin-bronze bellows with woven, flexible, tinned-bronze-wire-reinforced protective jacket.
 - 2. End Connections: Socket ends.
 - 3. Offset Performance: Capable of minimum 3/4-inch misalignment in minimum 7-inch-long assembly.
 - 4. Working Pressure Rating: Factory test at minimum 500 psig.
 - 5. Maximum Operating Temperature: 250 deg F.

2.3 VALVES AND SPECIALTIES

- A. Diaphragm Packless Valves:
 - 1. Body and Bonnet: Forged brass or cast bronze; globe design with straight-through or angle pattern.
 - 2. Diaphragm: Phosphor bronze and stainless steel with stainless-steel spring.
 - 3. Operator: Rising stem and hand wheel.
 - 4. Seat: Nylon.
 - 5. End Connections: Socket, union, or flanged.
 - 6. Working Pressure Rating: 500 psig.
 - 7. Maximum Operating Temperature: 275 deg F.
- B. Packed-Angle Valves:
 - 1. Body and Bonnet: Forged brass or cast bronze.
 - 2. Packing: Molded stem, back seating, and replaceable under pressure.
 - 3. Operator: Rising stem.
 - 4. Seat: Nonrotating, self-aligning polytetrafluoroethylene.
 - 5. Seal Cap: Forged-brass or valox hex cap.
 - 6. End Connections: Socket, union, threaded, or flanged.
 - 7. Working Pressure Rating: 500 psig.
 - 8. Maximum Operating Temperature: 275 deg F.
- C. Check Valves:
 - 1. Body: Ductile iron, forged brass, or cast bronze; globe pattern.
 - 2. Bonnet: Bolted ductile iron, forged brass, or cast bronze; or brass hex plug.
 - 3. Piston: Removable polytetrafluoroethylene seat.
 - 4. Closing Spring: Stainless steel.
 - 5. Manual Opening Stem: Seal cap, plated-steel stem, and graphite seal.
 - 6. End Connections: Socket, union, threaded, or flanged.
 - 7. Maximum Opening Pressure: 0.50 psig.
 - 8. Working Pressure Rating: 500 psig.
 - 9. Maximum Operating Temperature: 275 deg F.
- D. Service Valves:
 - 1. Body: Forged brass with brass cap including key end to remove core.
 - 2. Core: Removable ball-type check valve with stainless-steel spring.
 - 3. Seat: Polytetrafluoroethylene.
 - 4. End Connections: Copper spring.
 - 5. Working Pressure Rating: 500 psig.

- E. Solenoid Valves: Comply with AHRI 760 and UL 429; listed and labeled by a National Recognized Testing Laboratory (NRTL).
 - 1. Body and Bonnet: Plated steel.
 - 2. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
 - 3. Seat: Polytetrafluoroethylene.
 - 4. End Connections: Threaded.
 - 5. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with 1/2-inch conduit adapter, and 24, 115, or 208-V ac coil as required by the installation.
 - 6. Working Pressure Rating: 400 psig.
 - 7. Maximum Operating Temperature: 240 deg F.
- F. Safety Relief Valves: Comply with 2010 ASME Boiler and Pressure Vessel Code; listed and labeled by an NRTL.
 - 1. Body and Bonnet: Ductile iron and steel, with neoprene O-ring seal.
 - 2. Piston, Closing Spring, and Seat Insert: Stainless steel.
 - 3. Seat: Polytetrafluoroethylene.
 - 4. End Connections: Threaded.
 - 5. Working Pressure Rating: 400 psig.
 - 6. Maximum Operating Temperature: 240 deg F.
- G. Thermostatic Expansion Valves: Comply with AHRI 750.
 - 1. Body, Bonnet, and Seal Cap: Forged brass or steel.
 - 2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
 - 3. Packing and Gaskets: Non-asbestos.
 - 4. Capillary and Bulb: Copper tubing filled with refrigerant charge.
 - 5. Suction Temperature: 40 deg F.
 - 6. Superheat: Adjustable.
 - 7. Reverse-flow option (for heat-pump applications).
 - 8. End Connections: Socket, flare, or threaded union.
 - 9. Working Pressure Rating: 700 psig.
- H. Hot-Gas Bypass Valves: Comply with UL 429; listed and labeled by an NRTL.
 - 1. Body, Bonnet, and Seal Cap: Ductile iron or steel.
 - 2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
 - 3. Packing and Gaskets: Non-asbestos.
 - 4. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
 - 5. Seat: Polytetrafluoroethylene.
 - 6. Equalizer: Internal or External.
 - 7. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with 1/2-inch conduit adapter and 24, 115, or 208-V ac coil as required for the application.
 - 8. End Connections: Socket.
 - 9. Set Pressure: Field Verify.
 - 10. Throttling Range: Maximum 5 psig.
 - 11. Working Pressure Rating: 500 psig.
 - 12. Maximum Operating Temperature: 240 deg F.
- I. Straight-Type Strainers:
 - 1. Body: Welded steel with corrosion-resistant coating.
 - 2. Screen: 100-mesh stainless steel.
 - 3. End Connections: Socket or flare.
 - 4. Working Pressure Rating: 500 psig.
 - 5. Maximum Operating Temperature: 275 deg F.
- J. Angle-Type Strainers:
 - 1. Body: Forged brass or cast bronze.

2. Drain Plug: Brass hex plug.
3. Screen: 100-mesh monel.
4. End Connections: Socket or flare.
5. Working Pressure Rating: 500 psig.
6. Maximum Operating Temperature: 275 deg F.

K. Moisture/Liquid Indicators:

1. Body: Forged brass.
2. Window: Replaceable, clear, fused glass window with indicating element protected by filter screen.
3. Indicator: Color coded to show moisture content in parts per million (ppm).
4. Minimum Moisture Indicator Sensitivity: Indicate moisture above 60 ppm.
5. End Connections: Socket or flare.
6. Working Pressure Rating: 500 psig.
7. Maximum Operating Temperature: 240 deg F.

L. Replaceable-Core Filter Dryers: Comply with AHRI 730.

1. Body and Cover: Painted-steel shell with ductile-iron cover, stainless-steel screws, and neoprene gaskets.
2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
3. Desiccant Media: High moisture capacity.
4. Designed for reverse flow (for heat-pump applications).
5. End Connections: Socket.
6. Access Ports: NPS 1/4 connections at entering and leaving sides for pressure differential measurement.
7. Working Pressure Rating: 500 psig.
8. Maximum Operating Temperature: 240 deg F.

M. Permanent Filter Dryers: Comply with AHRI 730.

1. Body and Cover: Painted-steel shell.
2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
3. Desiccant Media: High Moisture capacity.
4. Designed for reverse flow (for heat-pump applications).
5. End Connections: Socket.
6. Access Ports: NPS 1/4 connections at entering and leaving sides for pressure differential measurement.
7. Working Pressure Rating: 500 psig.
8. Maximum Operating Temperature: 240 deg F.

2.4 REFRIGERANTS

- A. ASHRAE 34, R-410A: Pentafluoroethane/Difluoromethane.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS FOR REFRIGERANT R-410A

- A. Suction Lines: Copper, Type ACR, annealed-temper tubing and wrought-copper fittings with brazed joints.
- B. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type ACR, annealed- or drawn-temper tubing and wrought-copper fittings with brazed joints.

- C. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type K, annealed- or drawn-temper tubing and wrought-copper fittings with brazed joints.
- D. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with 95-5 tin-antimony soldered joints.
- E. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.
- F. Safety-Relief-Valve Discharge Piping: Copper, Type ACR, annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.
- G. Safety-Relief-Valve Discharge Piping: Copper, Type K, annealed- or drawn-temper tubing and wrought-copper fittings with brazed or soldered joints.
- H. Safety-Relief-Valve Discharge Piping: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with 95-5 tin-antimony soldered joints.
- I. Safety-Relief-Valve Discharge Piping: Copper, Type ACR, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.

3.2 VALVE AND SPECIALTY APPLICATIONS

- A. Install diaphragm packless valves in suction and discharge lines of compressor.
- B. Install service valves for gage taps at inlet and outlet of hot-gas bypass valves and strainers if they are not an integral part of valves and strainers.
- C. Install a check valve at the compressor discharge and a liquid accumulator at the compressor suction connection.
- D. Except as otherwise indicated, install diaphragm packless valves on inlet and outlet side of filter dryers.
- E. Install a full-size, three-valve bypass around filter dryers.
- F. Install solenoid valves upstream from each expansion valve and hot-gas bypass valve. Install solenoid valves in horizontal lines with coil at top.
- G. Install thermostatic expansion valves as close as possible to distributors on evaporators.
 - 1. Install valve so diaphragm case is warmer than bulb.
 - 2. Secure bulb to clean, straight, horizontal section of suction line using two bulb straps. Do not mount bulb in a trap or at bottom of the line.
 - 3. If external equalizer lines are required, make connection where it will reflect suction-line pressure at bulb location.
- H. Install safety relief valves where required by 2010 ASME Boiler and Pressure Vessel Code. Pipe safety-relief-valve discharge line to outside according to ASHRAE 15.
- I. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.

- J. Install strainers upstream from and adjacent to the following unless they are furnished as an integral assembly for the device being protected:
 - 1. Solenoid valves.
 - 2. Thermostatic expansion valves.
 - 3. Hot-gas bypass valves.
 - 4. Compressor.
- K. Install filter dryers in liquid line between compressor and thermostatic expansion valve, and in the suction line at the compressor.
- L. Install receivers sized to accommodate pump-down charge.
- M. Install flexible connectors at compressors.

3.3 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems; indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Shop Drawings.
- B. Install refrigerant piping according to ASHRAE 15.
- C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping adjacent to machines to allow service and maintenance.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Select system components with pressure rating equal to or greater than system operating pressure.
- J. Refer to Section 230923 "Direct Digital Control (DDC) System for HVAC" and Section 230993.11 "Sequence of Operations for HVAC DDC" for solenoid valve controllers, control wiring, and sequence of operation.
- K. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.
- L. Arrange piping to allow inspection and service of refrigeration equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels as specified in Section 083113 "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.

- M. Install refrigerant piping in protective conduit where installed belowground.
- N. Install refrigerant piping in rigid or flexible conduit in locations where exposed to mechanical injury.
- O. Slope refrigerant piping as follows:
 - 1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
 - 2. Install horizontal suction lines with a uniform slope downward to compressor.
 - 3. Install traps and double risers to entrain oil in vertical runs.
 - 4. Liquid lines may be installed level.
- P. When brazing or soldering, remove solenoid-valve coils and sight glasses; also remove valve stems, seats, and packing, and accessible internal parts of refrigerant specialties. Do not apply heat near expansion-valve bulb.
- Q. Install piping with adequate clearance between pipe and adjacent walls and hangers or between pipes for insulation installation.
- R. Identify refrigerant piping and valves according to Section 220553 "Identification for Plumbing and HVAC Piping and Equipment."
- S. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220500 "General Provisions of Plumbing and HVAC."
- T. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220500 "General Provisions of Plumbing and HVAC."
- U. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220500 "General Provisions of Plumbing and HVAC."

3.4 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Soldered Joints: Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook."
- D. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
 - 1. Use Type BCuP (copper-phosphorus) alloy for joining copper socket fittings with copper pipe.
 - 2. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze or steel.

3.5 HANGERS AND SUPPORTS

- A. Comply with requirements for pipe hangers and supports specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."
- B. Install the following pipe attachments:
 - 1. Adjustable steel clevis hangers for individual horizontal runs less than 20 feet long.
 - 2. Roller hangers and spring hangers for individual horizontal runs 20 feet or longer.
 - 3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet or longer, supported on a trapeze.
 - 4. Spring hangers to support vertical runs.
 - 5. Copper-clad hangers and supports for hangers and supports in direct contact with copper pipe.
- C. Install hangers for copper tubing with the following maximum spacing and minimum rod diameters:
 - 1. NPS 1/2: Maximum span, 60 inches; minimum rod, 1/4 inch.
 - 2. NPS 5/8: Maximum span, 60 inches; minimum rod, 1/4 inch.
 - 3. NPS 1: Maximum span, 72 inches; minimum rod, 1/4 inch.
 - 4. NPS 1-1/4: Maximum span, 96 inches; minimum rod, 3/8 inch.
 - 5. NPS 1-1/2: Maximum span, 96 inches; minimum rod, 3/8 inch.
 - 6. NPS 2: Maximum span, 96 inches; minimum rod, 3/8 inch.
 - 7. NPS 2-1/2: Maximum span, 108 inches; minimum rod, 3/8 inch.
 - 8. NPS 3: Maximum span, 10 feet; minimum rod, 3/8 inch.
 - 9. NPS 4: Maximum span, 12 feet; minimum rod, 1/2 inch.
- D. Support multifloor vertical runs at least at each floor.

3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Comply with ASME B31.5, Chapter VI.
 - 2. Test refrigerant piping, specialties, and receivers. Isolate compressor, condenser, evaporator, and safety devices from test pressure if they are not rated above the test pressure.
 - 3. Test high- and low-pressure side piping of each system separately at not less than the pressures indicated in "Performance Requirements" Article.
 - a. Fill system with nitrogen to the required test pressure.
 - b. System shall maintain test pressure at the manifold gage throughout duration of test.
 - c. Test joints and fittings with electronic leak detector or by brushing a small amount of soap and glycerin solution over joints.
 - d. Remake leaking joints using new materials, and retest until satisfactory results are achieved.
- B. Prepare test and inspection reports.

3.7 SYSTEM CHARGING

- A. Charge system using the following procedures:
 - 1. Install core in filter dryers after leak test but before evacuation.
 - 2. Evacuate entire refrigerant system with a vacuum pump to 500 micrometers. If vacuum holds for 12 hours, system is ready for charging.
 - 3. Break vacuum with refrigerant gas, allowing pressure to build up to 2 psig.
 - 4. Charge system with a new filter-dryer core in charging line.

3.8 ADJUSTING

- A. Adjust thermostatic expansion valve to obtain proper evaporator superheat.
- B. Adjust high- and low-pressure switch settings to avoid short cycling in response to fluctuating suction pressure.
- C. Adjust set-point temperature of air-conditioning or chilled-water controllers to the system design temperature.
- D. Perform the following adjustments before operating the refrigeration system, according to manufacturer's written instructions:
 - 1. Open shutoff valves in condenser water circuit.
 - 2. Verify that compressor oil level is correct.
 - 3. Open compressor suction and discharge valves.
 - 4. Open refrigerant valves except bypass valves that are used for other purposes.
 - 5. Check open compressor-motor alignment and verify lubrication for motors and bearings.
- E. Replace core of replaceable filter dryer after system has been adjusted and after design flow rates and pressures are established.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Rectangular ducts and fittings.
2. Round ducts and fittings.
3. Sheet metal materials.
4. Sealants and gaskets.
5. Hangers and supports.
6. Seismic-restraint devices.

B. Related Sections:

1. Section 220529 "Hangers and Supports for Plumbing and HVAC Piping and Equipment."
2. Section 220548 "Vibration and Seismic Controls for Plumbing and HVAC Piping and Equipment"
3. Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing requirements for metal ducts.
4. Section 233300 "Air Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

C. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ANSI/ASHRAE 62.1.**1.2 SUBMITTALS****A. See Section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.****1.3 QUALITY ASSURANCE****A. ASHRAE Compliance:** Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."**B. ASHRAE/IES Compliance:** Applicable requirements in ASHRAE/IES 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."**PART 2 - PRODUCTS****2.1 RECTANGULAR DUCTS AND FITTINGS****A. General Fabrication Requirements:** Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.**B. Transverse Joints:** Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints,"

for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

2.2 ROUND DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on indicated static-pressure class unless otherwise indicated.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-1, "Round Duct Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
 - 1. Transverse Joints in Ducts Larger Than 24 in Diameter: Flanged.
- C. Tees and Laterals: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

2.3 SHEET METAL MATERIALS

- A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
 - 1. Galvanized Coating Designation: G90.
 - 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
- C. Carbon-Steel Sheets: Comply with ASTM A 1008/A 1008M, with oiled, matte finish for exposed ducts.

- D. Stainless-Steel Sheets: Comply with ASTM A 480/A 480M, Type 304 or 316, as indicated in the "Duct Schedule" Article; cold rolled, annealed, sheet. Exposed surface finish shall be No. 2B, No. 2D, No. 3, or No. 4 as indicated in the "Duct Schedule" Article.
- E. Aluminum Sheets: Comply with ASTM B 209 Alloy 3003, H14 temper; with mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.
- F. Reinforcement Shapes and Plates: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
 - 1. Where black- and galvanized-steel shapes and plates are used to reinforce aluminum ducts, isolate the different metals with butyl rubber, neoprene, or EPDM gasket materials.
- G. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch minimum diameter for lengths longer than 36 inches.

2.4 SEALANT AND GASKETS

- A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets shall be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested according to UL 723; certified by an NRTL.
- B. Water-Based Joint and Seam Sealant:
 - 1. Application Method: Brush on.
 - 2. Solids Content: Minimum 65 percent.
 - 3. Shore A Hardness: Minimum 20.
 - 4. Water resistant.
 - 5. Mold and mildew resistant.
 - 6. VOC: Maximum 75 g/L (less water).
 - 7. Maximum Static-Pressure Class: 10-inch wg, positive and negative.
 - 8. Service: Indoor or outdoor.
 - 9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
- C. Flanged Joint Sealant: Comply with ASTM C 920.
 - 1. General: Single-component, acid-curing, silicone, elastomeric.
 - 2. Type: S.
 - 3. Grade: NS.
 - 4. Class: 25.
 - 5. Use: O.
 - 6. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 7. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- D. Flange Gaskets: Butyl rubber, neoprene, or EPDM polymer with polyisobutylene plasticizer.
- E. Round Duct Joint O-Ring Seals:
 - 1. Seal shall provide maximum leakage class of 3 cfm/100 sq. ft. at 1-inch wg and shall be rated for 10-inch wg static-pressure class, positive or negative.

2. EPDM O-ring to seal in concave bead in coupling or fitting spigot.
3. Double-lipped, EPDM O-ring seal, mechanically fastened to factory-fabricated couplings and fitting spigots.

2.5 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.
- B. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
- C. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct."
- D. Steel Cables for Galvanized-Steel Ducts: Galvanized steel complying with ASTM A 603.
- E. Steel Cables for Stainless-Steel Ducts: Stainless steel complying with ASTM A 492.
- F. Steel Cable End Connections: Cadmium-plated steel assemblies with brackets, swivel, and bolts designed for duct hanger service; with an automatic-locking and clamping device.
- G. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.
- H. Trapeze and Riser Supports:
 1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
 2. Supports for Stainless-Steel Ducts: Stainless-steel shapes and plates.
 3. Supports for Aluminum Ducts: Aluminum or galvanized steel coated with zinc chromate.

PART 3 - EXECUTION

3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
- B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Install ducts in maximum practical lengths.
- D. Install ducts with fewest possible joints.
- E. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.

- F. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.
- G. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
- H. Install ducts with a clearance of 1 inch, plus allowance for insulation thickness.
- I. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.
- J. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches.
- K. Where ducts pass through fire-rated interior partitions and exterior walls, install fire dampers. Comply with requirements in Section 233300 "Air Duct Accessories" for fire and smoke dampers.
- L. Protect duct interiors from moisture, construction debris and dust, and other foreign materials. Comply with SMACNA's "IAQ Guidelines for Occupied Buildings Under Construction," Appendix G, "Duct Cleanliness for New Construction Guidelines."

3.2 INSTALLATION OF EXPOSED DUCTWORK

- A. Protect ducts exposed in finished spaces from being dented, scratched, or damaged.
- B. Trim duct sealants flush with metal. Create a smooth and uniform exposed bead. Do not use two-part tape sealing system.
- C. Grind welds to provide smooth surface free of burrs, sharp edges, and weld splatter. When welding stainless steel with a No. 3 or 4 finish, grind the welds flush, polish the exposed welds, and treat the welds to remove discoloration caused by welding.
- D. Maintain consistency, symmetry, and uniformity in the arrangement and fabrication of fittings, hangers and supports, duct accessories, and air outlets.
- E. Repair or replace damaged sections and finished work that does not comply with these requirements.

3.3 ADDITIONAL INSTALLATION REQUIREMENTS FOR COMMERCIAL KITCHEN HOOD EXHAUST DUCT

- A. Install commercial kitchen hood exhaust ducts without dips and traps that may hold grease, and sloped a minimum of 2 percent to drain grease back to the hood.
- B. Install fire-rated access panel assemblies at each change in direction and at maximum intervals of 20 feet in horizontal ducts, and at every floor for vertical ducts, or as indicated on Drawings. Locate access panel on top or sides of duct a minimum of 1-1/2 inches from bottom of duct.
- C. Do not penetrate fire-rated assemblies except as allowed by applicable building codes and authorities having jurisdiction.

3.4 DUCT SEALING

- A. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- B. Seal ducts at a minimum to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
 - 1. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
 - 2. Outdoor, Supply-Air Ducts: Seal Class A.
 - 3. Outdoor, Exhaust Ducts: Seal Class C.
 - 4. Outdoor, Return-Air Ducts: Seal Class C.
 - 5. Unconditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class B.
 - 6. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class A.
 - 7. Unconditioned Space, Exhaust Ducts: Seal Class C.
 - 8. Unconditioned Space, Return-Air Ducts: Seal Class B.
 - 9. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class C.
 - 10. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class B.
 - 11. Conditioned Space, Exhaust Ducts: Seal Class B.
 - 12. Conditioned Space, Return-Air Ducts: Seal Class C.
- C. Leakage Tests: (Engineer shall include or remove as required)
 - 1. Test 100 percent of installed ductwork for leakage in accordance with "System Pressure Testing for Leaks," published by United Sheet Metal Division of United McGill Corporation. Use prescribed test kit containing test blower, two U-tube manometers and calibrated curve attached to the orifice tube assembly.
 - 2. Pressurize installed duct system in 2 inch water gauge over design operating pressure. Total allowable leakage shall not exceed one percent of air handling capacity of system. If system is tested in sections, add leakage rates for individual sections to determine leakage for the whole system.
 - 3. Correct leaks found in excess of allowable limits. Retest.
 - 4. Have test results available for review on a progressive and final basis. Include test results in project closing file.
 - 5. For Bidding purposes, assume all leakage tests will be witnessed by Engineer. Notify Engineer of testing schedule a minimum of (7) days in advance.
 - 6. Disassemble, reassemble, and seal segments of systems to accommodate leakage testing and for compliance with test requirements.
 - 7. Test for leaks before applying external insulation.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 5, "Hangers and Supports."
- B. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
 - 1. Where practical, install concrete inserts before placing concrete.

2. Install powder-actuated concrete fasteners after concrete is placed and completely cured.
 3. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches thick.
 4. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches thick.
 5. Do not use powder-actuated concrete fasteners for seismic restraints.
- C. Hanger Spacing: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct," for maximum hanger spacing; install hangers and supports within 24 inches of each elbow and within 48 inches of each branch intersection.
- D. Hangers Exposed to View: Threaded rod and angle or channel supports.
- E. Support vertical ducts with steel angles or channel secured to the sides of the duct with welds, bolts, sheet metal screws, or blind rivets; support at each floor and at a maximum intervals of 16 feet.
- F. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

3.6 SEISMIC-RESTRAINT-DEVICE INSTALLATION

- A. Install ducts with hangers and braces designed to support the duct and to restrain against seismic forces required by applicable building codes. Comply with SMACNA's "Seismic Restraint Manual: Guidelines for Mechanical Systems." And ASCE/SEI 7.

3.7 CONNECTIONS

- A. Make connections to equipment with flexible connectors complying with Section 233300 "Air Duct Accessories."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

3.8 START UP

- A. Air Balance: Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."

3.9 DUCT SCHEDULE

- A. Fabricate ducts with galvanized sheet steel except as otherwise indicated and as follows:
- B. Supply Ducts:
1. Ducts Connected to Fan Coil Units, Furnaces, Heat Pumps, and Terminal Units:
 - a. Pressure Class: Positive 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.

- c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
 - 2. Ducts Connected to Constant-Volume Air-Handling Units:
 - a. Pressure Class: Positive 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
 - 3. Ducts Connected to Variable-Air-Volume Air-Handling Units:
 - a. Pressure Class: Positive 3-inch wg.
 - b. Minimum SMACNA Seal Class: B.
 - c. SMACNA Leakage Class for Rectangular: 8.
 - d. SMACNA Leakage Class for Round and Flat Oval: 4.
 - 4. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
- C. Return Ducts:
- 1. Ducts Connected to Fan Coil Units, Furnaces, Heat Pumps, and Terminal Units:
 - a. Pressure Class: Positive or negative 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
 - 2. Ducts Connected to Air-Handling Units:
 - a. Pressure Class: Positive or negative 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
 - 3. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive or negative 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: [3] [6] [12] <Insert value>.
- D. Exhaust Ducts:
- 1. Ducts Connected to Fans Exhausting (ASHRAE 62.1, Class 1 and 2) Air:
 - a. Pressure Class: Negative 2-inch wg.
 - b. Minimum SMACNA Seal Class: C if negative pressure, and A if positive pressure.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.

2. Ducts Connected to Air-Handling Units:
 - a. Pressure Class: Positive or negative 3-inch wg.
 - b. Minimum SMACNA Seal Class: B if negative pressure, and A if positive pressure.
 - c. SMACNA Leakage Class for Rectangular: 8.
 - d. SMACNA Leakage Class for Round and Flat Oval: 4.
- E. Outdoor-Air (Not Filtered, Heated, or Cooled) Ducts:
 1. Ducts Connected to Fan Coil Units, Furnaces, Heat Pumps, and Terminal Units:
 - a. Pressure Class: Positive or negative 2-inch wg.
 - b. Minimum SMACNA Seal Class: C.
 - c. SMACNA Leakage Class for Rectangular: 16.
 - d. SMACNA Leakage Class for Round and Flat Oval: 8.
 2. Ducts Connected to Air-Handling Units:
 - a. Pressure Class: Positive or negative 3-inch wg.
 - b. Minimum SMACNA Seal Class: B.
 - c. SMACNA Leakage Class for Rectangular: 8.
 - d. SMACNA Leakage Class for Round and Flat Oval: 4.
 3. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive or negative 3-inch wg.
 - b. Minimum SMACNA Seal Class: B.
 - c. SMACNA Leakage Class for Rectangular: 8.
 - d. SMACNA Leakage Class for Round and Flat Oval: 4.
- F. Intermediate Reinforcement:
 1. Galvanized-Steel Ducts: Galvanized steel.
 2. PVC-Coated Ducts:
 - a. Exposed to Airstream: Match duct material.
 - b. Not Exposed to Airstream: Galvanized.
 3. Stainless-Steel Ducts:
 - a. Exposed to Airstream: Match duct material.
 - b. Not Exposed to Airstream: Match duct material.
 4. Aluminum Ducts: Aluminum.
- G. Elbow Configuration:
 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
 - a. Velocity 1000 fpm or Lower:
 - 1) Radius Type RE 1 with minimum 0.5 radius-to-diameter ratio.
 - 2) Mitered Type RE 4 without vanes.

- b. Velocity 1000 to 1500 fpm:
 - 1) Radius Type RE 1 with minimum 1.0 radius-to-diameter ratio.
 - 2) Radius Type RE 3 with minimum 0.5 radius-to-diameter ratio and two vanes.
 - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
 - c. Velocity 1500 fpm or Higher:
 - 1) Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
 - 2) Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
 - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- 2. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
 - a. Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
 - b. Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
 - c. Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
 - 3. Round Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-4, "Round Duct Elbows."
 - a. Minimum Radius-to-Diameter Ratio and Elbow Segments: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 3-1, "Mitered Elbows." Elbows with less than 90-degree change of direction have proportionately fewer segments.
 - 1) Velocity 1000 fpm or Lower: 0.5 radius-to-diameter ratio and three segments for 90-degree elbow.
 - 2) Velocity 1000 to 1500 fpm: 1.0 radius-to-diameter ratio and four segments for 90-degree elbow.
 - 3) Velocity 1500 fpm or Higher: 1.5 radius-to-diameter ratio and five segments for 90-degree elbow.
 - 4) Radius-to Diameter Ratio: 1.5.
 - b. Round Elbows, 12 Inches and Smaller in Diameter: Stamped or pleated.
 - c. Round Elbows, 14 Inches and Larger in Diameter: Standing seam.
- H. Branch Configuration:
- 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-6, "Branch Connection."
 - a. Rectangular Main to Rectangular Branch: 45-degree entry.
 - b. Rectangular Main to Round Branch: Spin in.
 - 2. Round: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees." Saddle taps are permitted in existing duct.

- a. Velocity 1000 fpm or Lower: 90-degree tap.
- b. Velocity 1000 to 1500 fpm: Conical tap.
- c. Velocity 1500 fpm or Higher: 45-degree lateral.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Backdraft and pressure relief dampers.
 - 2. Manual volume dampers.
 - 3. Control dampers.
 - 4. Flange connectors.
 - 5. Turning vanes.
 - 6. Duct-mounted access doors.
 - 7. Flexible connectors.
 - 8. Duct accessory hardware.

1.2 SUBMITTALS

- A. See section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 ASSEMBLY DESCRIPTION**

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

2.2 MATERIALS

- A. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
 - 1. Galvanized Coating Designation: G90.
 - 2. Exposed-Surface Finish: Mill phosphatized.
- B. Stainless-Steel Sheets: Comply with ASTM A 480/A 480M, Type 304, and having a 2D finish for concealed ducts and 2BA finish for exposed ducts.
- C. Aluminum Sheets: Comply with ASTM B 209, Alloy 3003, Temper H14; with mill finish for concealed ducts and standard, 1-side bright finish for exposed ducts.
- D. Extruded Aluminum: Comply with ASTM B 221, Alloy 6063, Temper T6.

- E. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.
- F. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch minimum diameter for lengths longer than 36 inches.

2.3 BACKDRAFT AND PRESSURE RELIEF DAMPERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cesco Products; a division of MESTEK, Inc.
 - 2. Nailor Industries Inc.
 - 3. Ruskin Company.
- B. Description: Gravity balanced.
- C. Maximum Air Velocity: 1000 fpm.
- D. Maximum System Pressure: 4.5 inch wg.
- E. Frame: Hat-shaped, 0.063-inch-thick extruded aluminum, with welded corners or mechanically attached and mounting flange.
- F. Blades: Multiple single-piece blades, end pivoted, maximum 6-inch width, 0.025-inch-thick, roll-formed aluminum with sealed edges.
- G. Blade Action: Parallel.
- H. Blade Seals: Extruded vinyl, mechanically locked.
- I. Blade Axles:
 - 1. Material: Nonmetallic.
 - 2. Diameter: 0.20 inch.
- J. Bearings: synthetic pivot bushings.
- K. Accessories:
 - 1. Adjustment device to permit setting for varying differential static pressure.
 - 2. Counterweights and spring-assist kits for vertical airflow installations.
 - 3. Electric actuators.
 - 4. Chain pulls.
 - 5. Screen Mounting: Front mounted in sleeve.
 - a. Sleeve Thickness: 20 gage minimum.
 - b. Sleeve Length: 6 inches minimum.
 - 6. Screen Mounting: Rear mounted.
 - 7. Screen Material: Aluminum.
 - 8. Screen Type: Bird.
 - 9. 90-degree stops.

2.4 MANUAL VOLUME DAMPERS

A. Standard, Steel, Manual Volume Dampers:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Cesco Products; a division of MESTEK, Inc.
 - b. Nailor Industries Inc.
 - c. Ruskin Company.
2. Standard leakage rating.
3. Suitable for horizontal or vertical applications.
4. Frames:
 - a. Frame: 16 Gauge galvanized steel, 5 in deep
 - b. Mitered and welded corners.
 - c. Flanges for attaching to walls and flangeless frames for installing in ducts.
5. Blades:
 - a. Multiple or single blade.
 - b. Parallel- or opposed-blade design.
 - c. Stiffen damper blades for stability.
 - d. 16 gauge galvanized steel with V groove for stiffness.
6. Blade Axles: Galvanized steel.
7. Bearings:
 - a. Molded synthetic.
 - b. Dampers in ducts with pressure classes of 3-inch wg or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
8. Tie Bars and Brackets: Galvanized steel.

2.5 CONTROL DAMPERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cesco Products; a division of MESTEK, Inc.
2. Nailor Industries Inc.
3. Ruskin Company.

B. Frames:

1. U shaped.
2. 16 gage galvanized steel.
3. Interlocking, gusseted corners.

C. Blades:

1. Multiple blade with maximum blade width of 6 inches.
2. Parallel- and opposed-blade design.

3. 14 gage Galvanized-steel.
 4. Blade Edging: Closed-cell neoprene.
 5. Blade Edging: Inflatable seal blade edging, or replaceable rubber seals.
- D. Blade Axles: 1/2-inch-diameter; galvanized steel; blade-linkage hardware of zinc-plated steel and brass; ends sealed against blade bearings.
1. Operating Temperature Range: From minus 40 to plus 200 deg F.
- E. Bearings:
1. Oil-impregnated stainless-steel sleeve.
 2. Dampers in ducts with pressure classes of 3-inch wg or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
 3. Thrust bearings at each end of every blade.

2.6 FLANGE CONNECTORS

- A. Description: Roll-formed, factory-fabricated, slide-on transverse flange connectors, gaskets, and components.
- B. Material: Galvanized steel.
- C. Gage and Shape: Match connecting ductwork.

2.7 TURNING VANES

- A. Manufactured Turning Vanes for Metal Ducts: Curved blades of galvanized sheet steel; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
1. Acoustic Turning Vanes: Fabricate airfoil-shaped aluminum extrusions with perforated faces and fibrous-glass fill.
- B. Manufactured Turning Vanes for Nonmetal Ducts: Fabricate curved blades of resin-bonded fiberglass with acrylic polymer coating; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
- C. General Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figures 4-3, "Vanes and Vane Runners," and 4-4, "Vane Support in Elbows."
- D. Vane Construction: Double wall.

2.8 DUCT-MOUNTED ACCESS DOORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cesco Products; a division of MESTEK, Inc.
 2. Ductmate Industries, Inc.
 3. Flexmaster U.S.A., Inc.
 4. Nailor Industries Inc.

- B. Duct-Mounted Access Doors: Fabricate access panels according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figures 7-2, "Duct Access Doors and Panels," and 7-3, "Access Doors - Round Duct."
1. Door:
 - a. Double wall, rectangular.
 - b. Galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class.
 - c. Vision panel.
 - d. Hinges and Latches: 1-by-1-inch butt or piano hinge and cam latches.
 - e. Fabricate doors airtight and suitable for duct pressure class.
 2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
 3. Number of Hinges and Locks:
 - a. Access Doors Less Than 12 Inches Square: No hinges and two sash locks.
 - b. Access Doors up to 18 Inches Square: Continuous and two sash locks.
 - c. Access Doors up to 24 by 48 Inches: Continuous and two compression latches with outside and inside handles.
 - d. Access Doors Larger Than 24 by 48 Inches: Continuous and two compression latches with outside and inside handles.
- C. Pressure Relief Access Door:
1. Door and Frame Material: Galvanized sheet steel.
 2. Door: Double wall with insulation fill with metal thickness applicable for duct pressure class.
 3. Operation: Open outward for positive-pressure ducts and inward for negative-pressure ducts.
 4. Factory set at 3.0- to 8.0-inch wg.
 5. Doors close when pressures are within set-point range.
 6. Hinge: Continuous piano.
 7. Latches: Cam.
 8. Seal: Neoprene or foam rubber.
 9. Insulation Fill: 1-inch-thick, fibrous-glass or polystyrene-foam board.

2.9 FLEXIBLE CONNECTORS

- A. Materials: Flame-retardant or noncombustible fabrics.
- B. Coatings and Adhesives: Comply with UL 181, Class 1.
- C. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches wide attached to two strips of 2-3/4-inch-wide, 0.028-inch-thick, galvanized sheet steel or 0.032-inch-thick aluminum sheets. Provide metal compatible with connected ducts.
- D. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
1. Minimum Weight: 26 oz./sq. yd..
 2. Tensile Strength: 480 lbf/inch in the warp and 360 lbf/inch in the filling.
 3. Service Temperature: Minus 40 to plus 200 deg F.

- E. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.
 - 1. Minimum Weight: 24 oz./sq. yd..
 - 2. Tensile Strength: 530 lbf/inch in the warp and 440 lbf/inch in the filling.
 - 3. Service Temperature: Minus 50 to plus 250 deg F.

2.10 DUCT ACCESSORY HARDWARE

- A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.
- B. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless-steel accessories in stainless-steel ducts, and aluminum accessories in aluminum ducts.
- C. Install control dampers at inlet of exhaust fans or exhaust ducts as close as possible to exhaust fan unless otherwise indicated.
- D. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
- E. Set dampers to fully open position before testing, adjusting, and balancing.
- F. Install test holes at fan inlets and outlets and elsewhere as indicated.
- G. Install fire and smoke dampers according to UL listing.
- H. Install duct access doors on sides of ducts to allow for inspecting, adjusting, and maintaining accessories and equipment at the following locations:
 - 1. On both sides of duct coils.
 - 2. Upstream and downstream from duct filters.
 - 3. At outdoor-air intakes and mixed-air plenums.
 - 4. At drain pans and seals.
 - 5. Downstream from control dampers, backdraft dampers, and equipment.
 - 6. Adjacent to and close enough to fire or smoke dampers, to reset or reinstall fusible links. Access doors for access to fire or smoke dampers having fusible links shall be pressure

- relief access doors and shall be outward operation for access doors installed upstream from dampers and inward operation for access doors installed downstream from dampers.
7. At each change in direction and at maximum 50-foot spacing.
 8. Control devices requiring inspection.
 9. Elsewhere as indicated.
- I. Install access doors with swing against duct static pressure.
- J. Access Door Sizes:
1. One-Hand or Inspection Access: 8 by 5 inches.
 2. Two-Hand Access: 12 by 6 inches.
 3. Head and Hand Access: 18 by 10 inches.
 4. Head and Shoulders Access: 21 by 14 inches.
 5. Body Access: 25 by 14 inches.
 6. Body plus Ladder Access: 25 by 17 inches.
- K. Label access doors according to Section 230553 "Identification for HVAC Piping and Equipment" to indicate the purpose of access door.
- L. Install flexible connectors to connect ducts to equipment.
- M. Connect terminal units to supply ducts directly or with maximum 12-inch lengths of flexible duct. Do not use flexible ducts to change directions.
- N. Connect diffusers or light troffer boots to ducts directly or with maximum 60-inch lengths of flexible duct clamped or strapped in place.
- O. Connect flexible ducts to metal ducts with draw bands.
- P. Install duct test holes where required for testing and balancing purposes.
- 3.2 FIELD QUALITY CONTROL
- A. Tests and Inspections:
1. Operate dampers to verify full range of movement.
 2. Inspect locations of access doors and verify that purpose of access door can be performed.
 3. Operate fire and smoke dampers to verify full range of movement and verify that proper heat-response device is installed.
 4. Inspect turning vanes for proper and secure installation.

END OF SECTION

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PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes: Insulated flexible ducts.

1.2 SUBMITTALS

- A. See section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 ASSEMBLY DESCRIPTION**

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- C. Comply with the Air Diffusion Council's "ADC Flexible Air Duct Test Code FD 72-R1."
- D. Comply with ASTM E 96/E 96M, "Test Methods for Water Vapor Transmission of Materials."

2.2 INSULATED FLEXIBLE DUCTS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Flexmaster U.S.A., Inc.
 - 2. McGill AirFlow LLC.
 - 3. Thermaflex; a Flex-Tek Group company.
- B. Insulated, Flexible Duct: UL 181, Class 1, two-ply vinyl film supported by helically wound, spring-steel wire; fibrous-glass insulation; aluminized vapor-barrier film.
 - 1. Pressure Rating: 10-inch wg positive and 1.0-inch wg negative.
 - 2. Maximum Air Velocity: 4000 fpm.
 - 3. Temperature Range: Minus 10 to plus 160 deg F.
 - 4. Insulation R-Value: R6.

2.3 FLEXIBLE DUCT CONNECTORS

- A. Clamps: Stainless-steel band with cadmium-plated hex screw to tighten band with a worm-gear action in sizes 3 through 18 inches, to suit duct size.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install flexible ducts according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.
- B. Install in indoor applications only. Flexible ductwork should not be exposed to UV lighting.
- C. Connect terminal units to supply ducts with maximum 12-inch lengths of flexible duct. Do not use flexible ducts to change directions.
- D. Connect diffusers or light troffer boots to ducts with maximum 60-inch lengths of flexible duct clamped or strapped in place.
- E. Install duct test holes where required for testing and balancing purposes.
- F. Installation:
 - 1. Install ducts fully extended.
 - 2. Do not bend ducts across sharp corners.
 - 3. Bends of flexible ducting shall not exceed a minimum of one duct diameter.
 - 4. Avoid contact with metal fixtures, water lines, pipes, or conduits.
 - 5. Install flexible ducts in a direct line, without sags, twists, or turns.
- G. Supporting Flexible Ducts:
 - 1. Suspend flexible ducts with bands 1-1/2 inches wide or wider and spaced a maximum of 48 inches apart. Maximum centerline sag between supports shall not exceed 1/2 inch per 12 inches.
 - 2. Install extra supports at bends placed approximately one duct diameter from center line of the bend.
 - 3. Ducts may rest on ceiling joists or truss supports. Spacing between supports shall not exceed the maximum spacing per manufacturer's written installation instructions.
 - 4. Vertically installed ducts shall be stabilized by support straps at a maximum of 72 inches o.c.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Grilles, Registers and Diffusers.
- B. Related Requirements:
 - 1. Section 233300 "Air Duct Accessories" for fire and smoke dampers and volume-control dampers not integral to diffusers.

1.2 SUBMITTALS

- A. See Section 220000 "General Requirements of Plumbing and HVAC" for submittal requirements.

PART 2 - PRODUCTS**2.1 GRILLES, REGISTERS AND DIFFUSERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Krueger.
 - 2. Nailor Industries Inc.
 - 3. Price
- B. See the "Grilles Registers and Diffusers Schedule" on the drawings for grille, register or diffuser type, mounting, capacities, characteristics, finish, etc.
- C. Coordinate the color and finish of all grilles registers and diffusers with the architect if not specifically listed in the "Grilles Registers and Diffusers Schedule".
- D. Substituted grilles, registers and diffusers must meet or exceed the performance of the schedules diffuser.

PART 3 - EXECUTION**3.1 INSTALLATION**

- A. Install grilles, registers and diffusers level and plumb.
- B. Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practical. For units installed in lay-in ceiling panels, locate units in the center of panel.

Where architectural features or other items conflict with installation, notify Architect for a determination of final location.

- C. Install grilles, registers and diffusers with airtight connections to ducts and to allow service and maintenance of dampers, air extractors, and fire dampers.
- D. Provide all duct transitions and duct fittings required for a complete installation.

3.2 ADJUSTING

- A. After installation, adjust grilles, registers and diffusers to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes split-system air-conditioning and heat-pump units consisting of separate evaporator-fan and compressor-condenser components.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE Compliance:
 - 1. Fabricate and label refrigeration system to comply with ASHRAE 15, "Safety Standard for Refrigeration Systems."
 - 2. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 4 - "Outdoor Air Quality," Section 5 - "Systems and Equipment," Section 6 - "Procedures," and Section 7 - "Construction and System Start-up."
- C. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Daikin AC
- B. LG

2.2 INDOOR UNITS

A. General:

- 1. The indoor unit shall be factory assembled and pre-wired with all necessary electronic and refrigerant controls. Both liquid and suction lines must be individually insulated between the outdoor and indoor units.

B. Unit Cabinet:

- 1. The indoor unit shall have a white, "flat screen" finish.
- 2. The drain and refrigerant piping shall be concealed from view and enter the unit through the back panel.
- 3. The cabinet shall be supplied with a mounting plate to be installed onto a wall for securely mounting the cabinet.

C. Fan:

- 1. The evaporator fan shall be an assembly consisting of a direct-driven fan by a single motor.
- 2. The fan shall be statically and dynamically balanced and operate on a motor with permanent lubricated bearings.
- 3. An auto-swing louver for adjustable air flow (both vertically and horizontally).
- 4. The indoor fan shall offer a choice of five speeds, plus quiet and auto settings.

D. Filter:

- 1. The return air filter provided will be a mildew proof, removable and washable filter.

E. Coil:

- 1. The evaporator coil shall be a nonferrous, aluminum fin on copper tube heat exchanger.
- 2. All tube joints shall be brazed with silver alloy or phoscopper.
- 3. All coils will be factory pressure tested.
- 4. A condensate pan shall be provided under the coil with a drain connection.
- 5. Provide condensate pump where required and coordinate with electrical contractor for power requirements.

F. Electrical

- 1. Electrical connections shall be made. See drawings for voltage, phase requirements.

G. Control:

- 1. The unit shall have a wall mounted, wired controller. The controller shall have the following capabilities:
 - a. System On/Off
 - b. Fan: On/Auto
 - c. Mode: Cool/Dry/Heat/Auto
 - d. Schedule: 7 day programmable
 - e. Temperature adjustment
 - f. Auxiliary contacts to turn on/off supplemental heating equipment if applicable.

2.3 OUTDOOR UNITS

A. General:

- 1. The outdoor unit shall be complete factory assembled and pre-wired with all necessary electronic and refrigerant controls. The system shall have all provisions required to allow cooling operation to 5 outside air temperature.

B. Unit Cabinet:

- 1. The outdoor unit shall be completely weatherproof and corrosion resistant. The unit shall be constructed from rust-protected mild steel panels coated with a baked enamel finish.

C. Condenser Fan:

- 1. The fan shall be a direct drive, propeller type fan.
- 2. The motor shall be inverter driven, permanently lubricated type bearings, inherent.

3. A fan guard is provided on the outdoor unit to prevent contact with fan operation.
4. Airflow shall be horizontal discharge.
- D. Condenser Coil:
 1. The outdoor unit shall be completely weatherproof and corrosion resistant. The unit shall be constructed from rust-proofed mild steel panels coated with a baked enamel finish.
- E. Compressor:
 1. The compressor shall be a inverter driven compressor.
 2. The outdoor unit shall have an accumulator and four-way reversing valve.
 3. The compressor shall have an internal thermal overload.
 4. The outdoor unit can operate with a maximum vertical height difference of 66 feet and overall maximum length of 100 feet without any oil traps or additional components.
- F. Electrical
 1. The electrical power requirement is 208-230 volt, 1-phase, and 60 Hz power.
 2. The outdoor shall be controlled by a microprocessor located in the outdoor and indoor units via commands from the wired controller.
 3. Dedicated EEV's shall be provided for capacity control during part load of the indoor unit.
- G. Sound:
 1. The outdoor unit shall have a sound level of 54 dB(A) when in maximum cooling operation and measured 3ft from the outdoor unit.

2.4 ACCESSORIES

- A. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.
- B. Drain Hose: For condensate.
- C. Additional Monitoring:
 1. Monitor constant and variable motor loads.
 2. Monitor variable-frequency-drive operation.
 3. Monitor economizer cycle.
 4. Monitor cooling load.
 5. Monitor air distribution static pressure and ventilation air volumes.

2.5 CAPACITIES AND CHARACTERISTICS

- A. See Drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install units level and plumb.
- B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.
- C. Install roof-mounted, compressor-condenser components on equipment supports specified in Section 07 72 00 "Roof Accessories." Anchor units to supports with removable, cadmium-plated fasteners.
- D. Equipment Mounting:
 1. Comply with requirements for vibration isolation and seismic control devices specified in Section 23 05 48 "Vibration and Seismic Controls for HVAC."
 2. Comply with requirements for vibration isolation devices specified in Section 23 05 48.13 "Vibration Controls for HVAC."
- E. Install and connect precharged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

3.2 CONNECTIONS

- A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Where piping is installed adjacent to unit, allow space for service and maintenance of unit.

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Remove and replace malfunctioning units and retest as specified above.
- D. Prepare test and inspection reports.

3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION 238126

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sleeves for raceways and cables.
 - 2. Sleeve seals.
 - 3. Grout.
 - 4. Common electrical installation requirements.

1.2 SUBMITTALS

- A. Product Data: For sleeve seals.

PART 2 - PRODUCTS

2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
 - 1. Minimum Metal Thickness:
 - a. For sleeve cross-section rectangle perimeter less than 50 inches and no side more than 16 inches, thickness shall be 0.052 inch.
 - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches and 1 or more sides equal to, or more than, 16 inches, thickness shall be 0.138 inch.

2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Advance Products & Systems, Inc.
 - b. Calpico, Inc.

- c. Metraflex Co.
 - d. Pipeline Seal and Insulator, Inc.
- 3. Sealing Elements: EPDM or NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
 - 4. Pressure Plates: Stainless steel. Include two for each sealing element.
 - 5. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.3 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.

- F. Extend sleeves installed in floors 2 inches above finished floor level.
- G. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
 - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

END OF SECTION 260500

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PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.
 - 3. Sleeves and sleeve seals for cables.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. **Copper** Conductors: Comply with NEMA WC 70.
- B. Conductor Insulation: Comply with NEMA WC 70 for Types **THW** and **THHN-THWN**.

2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Hubbell Power Systems, Inc.
 - 3. O-Z/Gedney; EGS Electrical Group LLC.
 - 4. 3M; Electrical Products Division.
 - 5. Tyco Electronics Corp.

- C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SLEEVES FOR CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

2.4 SLEEVE SEALS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: Subject to compliance with requirements, provide **the product indicated on Drawings** or a comparable product by one of the following:
 - 1. Advance Products & Systems, Inc.
 - 2. Calpico, Inc.
 - 3. Metraflex Co.
 - 4. Pipeline Seal and Insulator, Inc.
- D. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.
 - 1. Sealing Elements: **EPDM** or **NBR** interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
 - 2. Pressure Plates: **Stainless steel**. Include two for each sealing element.
 - 3. Connecting Bolts and Nuts: **Stainless steel** of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: **Copper** Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-THWN, single conductors in raceway.
- B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN, single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- E. Exposed Branch Circuits, Including in Crawlspace: Type THHN-THWN, single conductors in raceway.
- F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway, OR Romex product NEC compliant for application and approved by AHJ. Contractor shall verify NEC and AHJ compliance prior to any rough-in.
- G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- I. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- J. Class 2 Control Circuits: Type THHN-THWN, in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- E. Support cables according to Division 26 Sections "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."
- G. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

- H. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.
- I. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.4 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- D. Cut sleeves to length for mounting flush with both wall surfaces.
- E. Extend sleeves installed in floors 2 inches above finished floor level.
- F. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless sleeve seal is to be installed.
- G. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.
- H. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and cable, using joint sealant appropriate for size, depth, and location of joint according to Division 07 Section "Joint Sealants."
- I. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at cable penetrations. Install sleeves and seal with firestop materials according to Division 07 Section "Penetration Firestopping."
- J. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.
- K. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- L. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch annular clear space between cable and sleeve for installing mechanical sleeve seals.

3.5 SLEEVE-SEAL INSTALLATION

- A. Install to seal underground exterior-wall penetrations.

- B. Use type and number of sealing elements recommended by manufacturer for cable material and size. Position cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Division 07 Section "Penetration Firestopping."

3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors, and conductors feeding the following critical equipment and service for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
 - a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
 - b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- C. Test Reports: Prepare a written report to record the following:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- D. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519

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PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Tinned Conductors: ASTM B 33.
 - 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
 - 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 - 6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
 - 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.
 - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad, 3/4 inch by 10 feet in diameter.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.
- C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- D. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.
 - 3. Connections to Ground Rods at Test Wells: Bolted connectors.
 - 4. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
 - 1. Feeders and branch circuits.
 - 2. Lighting circuits.
 - 3. Receptacle circuits.
 - 4. Single-phase motor and appliance branch circuits.
 - 5. Three-phase motor and appliance branch circuits.
 - 6. Flexible raceway runs.
 - 7. Armored and metal-clad cable runs.
 - 8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.

9. Computer and Rack-Mounted Electronic Equipment Circuits: Install insulated equipment grounding conductor in branch-circuit runs from equipment-area power panels and power-distribution units.
 10. X-Ray Equipment Circuits: Install insulated equipment grounding conductor in circuits supplying x-ray equipment.
- B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.
- C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.
- D. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch grounding bus.
 2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.
- E. Metal Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.
1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.
 2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.
- C. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Division 26 Section "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches deep, with cover.
1. Test Wells: Install at least one test well for each service, unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

- D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
 - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
 - 3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.
- E. Grounding and Bonding for Piping:
 - 1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
 - 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
 - 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- F. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 - 2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.
 - a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - b. Perform tests by fall-of-potential method according to IEEE 81.
- B. Report measured ground resistances that exceed the following values:
 - 1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.
 - 2. Power and Lighting Equipment or System with Capacity 500 to 1000 kVA: 5 ohms.
 - 3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
 - 4. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 ohm(s).
- C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.
- E. Comply with all Seismic Requirements.

1.3 SUBMITTALS

- A. Product Data: For steel slotted support systems.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following:
 - 1. Trapeze hangers. Include Product Data for components.
 - 2. Steel slotted channel systems. Include Product Data for components.
 - 3. Equipment supports.
- C. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit.
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. GS Metals Corp.
 - e. Thomas & Betts Corporation.
 - f. Unistrut; Tyco International, Ltd.
 - g. Wesanco, Inc.
 - 3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 - 4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 - 5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 - 6. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1) Hilti Inc.
 - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 3) MKT Fastening, LLC.
 - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit
2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
 - 2) Empire Tool and Manufacturing Co., Inc.
 - 3) Hilti Inc.
 - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 5) MKT Fastening, LLC.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted [or other] support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 1. To Wood: Fasten with lag screws or through bolts.
 2. To New Concrete: Bolt to concrete inserts.
 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 4. To Existing Concrete: Expansion anchor fasteners.
 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
 7. To Light Steel: Sheet metal screws.
 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements in Division 05 Section "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000-psi , 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 03 Section Miscellaneous Cast-in-Place Concrete.
- C. Anchor equipment to concrete base.
 - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
 - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Touchup: Comply with requirements in Division 09 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

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PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. See Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks and manholes, and underground handholes, boxes, and utility construction.

1.2 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Rigid Steel Conduit: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. FMC: Zinc-coated steel.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
 - 2. Fittings for EMT: Steel or die-cast, compression type.

2.2 NONMETALLIC CONDUIT AND TUBING

- A. ENT: NEMA TC 13.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, aluminum, Type FD, with gasketed cover.
- C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.
- D. Metal Floor Boxes: Cast metal, fully adjustable, rectangular.
- E. Nonmetallic Floor Boxes: Nonadjustable, round.
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- G. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover.
- H. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Nonmetallic Enclosures: Plastic.
- I. Cabinets:
 - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid steel conduit or IMC.
 - 2. Concealed Conduit, Aboveground: rigid steel conduit, IMC or EMT.

3. Underground Conduit: RNC, Type EPC-40PVC, direct buried.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Comply with the following indoor applications, unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit or IMC. Includes raceways in the following locations:
 - a. Loading dock.
 - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
 - c. Mechanical rooms.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Locations: Rigid steel conduit or IMC.
7. Raceways for Optical Fiber or Communications Cable: EMT.
8. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.2 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems." Comply with all Seismic requirements.
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

H. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Change from ENT to RNC, Type EPC-40-PVC, rigid steel conduit, or IMC before rising above the floor.

I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.

K. Raceways for Communications Cable: Install as follows:

1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.
2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.
3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

M. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet.

1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:
 - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
 - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
 - c. Indoor Spaces: Connected with the Outdoors without Physical Separation: 125 deg F temperature change.
 - d. Attics: 135 deg F temperature change.
2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change.
3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

- N. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC in damp or wet locations subject to severe physical damage.
 - 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- O. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.
- P. Set metal floor boxes level and flush with finished floor surface.
- Q. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
 - 1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 31 Section "Earth Moving" for pipe less than 6 inches in nominal diameter.
 - 2. Install backfill as specified in Division 31 Section "Earth Moving."
 - 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."
 - 4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
 - 5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
 - b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
 - 6. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits, placing them 24 inches o.c. Align planks along the width and along the centerline of conduit.

3.4 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

END OF SECTION 260533

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Warning labels and signs.
 - 6. Instruction signs.
 - 7. Equipment identification labels.
 - 8. Miscellaneous identification products.

1.2 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.

1.3 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system or service type.
- C. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

- D. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
 - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Colors for Raceways Carrying Circuits at 600 V and Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system or service type.
- C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
 - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.
- D. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

- E. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2.4 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- D. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
 - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.5 FLOOR MARKING TAPE

- A. 2-inch wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

2.6 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
 - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
 - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
 - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
 - 1. Comply with ANSI Z535.1 through ANSI Z535.5.
 - 2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
 - 3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

2.7 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.

- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Baked-Enamel Warning Signs:
 - 1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
 - 2. 1/4-inch grommets in corners for mounting.
 - 3. Nominal size, 7 by 10 inches.
- D. Metal-Backed, Butyrate Warning Signs:
 - 1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.
 - 2. 1/4-inch grommets in corners for mounting.
 - 3. Nominal size, 10 by 14 inches.
- E. Warning label and sign shall include, but are not limited to, the following legends:
 - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.8 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
 - 1. Engraved legend with black letters on white face.
 - 2. Punched or drilled for mechanical fasteners.
 - 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.
- B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

2.9 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.
- B. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- C. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.10 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in Division 09 painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Apply identification devices to surfaces that require finish after completing finish work.
- C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- F. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches overall.
- G. Painted Identification: Comply with requirements in Division 09 painting Sections for surface preparation and paint application.

3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30A, and 120v to ground: Install labels at 30-foot maximum intervals.
- B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
 - 1. Emergency Power.
 - 2. Power.
 - 3. UPS.

- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- D. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- E. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source.
- F. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
- G. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
1. Limit use of underground-line warning tape to direct-buried cables.
 2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- H. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Baked-enamel warning sign.

1. Comply with 29 CFR 1910.145.
 2. Identify system voltage with black letters on an orange background.
 3. Apply to exterior of door, cover, or other access.
 4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
 - a. Power transfer switches.
 - b. Controls with external control power connections.
- J. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- K. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- high letters for emergency instructions at equipment used for.
- L. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
 - a. Indoor Equipment: Adhesive film label. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1-1/2-inch high label; where two lines of text are required, use labels 2 inches high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label Stenciled legend 4 inches high.
 - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
 - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

END OF SECTION 260553

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PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following lighting control devices:
 - 1. Indoor occupancy sensors.
 - 2. Daylight sensors
 - 3. Lighting control systems and components
- B. See drawing details and notes for "Network Lighting Controls" for low-voltage, manual and programmable lighting control systems.
- C. See Division 26 Section "Wiring Devices" for wall-box dimmers, wall-switch occupancy sensors, and manual light switches.
- D. All systems, controls, devices, components etc. shall meet California Title 24 requirements.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.
- C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 LIGHTING CONTROL SYSTEMS AND COMPONENTS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product deemed equivalent by engineer::

2.2 INDOOR OCCUPANCY SENSORS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product deemed equivalent by engineer:
 - 1. Lithonia Lighting; Acuity Lighting Group, Inc.
 - 2. Sensor Switch, Inc.
 - 3. Watt Stopper (The).

- B. General Description: Wall- or ceiling-mounting, solid-state units with a separate relay unit.
1. Operation: As indicated on drawings and notes
 2. Sensor Output: Contacts rated to operate the connected relay, complying with UL 773A. Sensor shall be powered from the relay unit.
 3. Relay Unit: Dry contacts rated for 20-A ballast load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Power supply to sensor shall be 24-V dc, 150-mA, Class 2 power source as defined by NFPA 70.
 4. Mounting:
 - a. Sensor: Suitable for mounting in any position on a standard outlet box.
 - b. Relay: Externally mounted through a 1/2-inch knockout in a standard electrical enclosure.
 - c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
 5. Indicator: LED, to show when motion is being detected during testing and normal operation of the sensor.
 6. Bypass Switch: Override the on function in case of sensor failure.
 7. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc; Provide 0-10vdc dimming control with adjustable daylighting discount factor.
- C. PIR/SOUND Dual detection Type: Ceiling mounting; detect occupancy by sensing a combination of heat, movement and sound in area of coverage.
1. Detector Sensitivity: Detect occurrences of 6-inch minimum movement of any portion of a human body that presents a target of not less than 36 sq. in.
 2. Detection Coverage (Room): Detect occupancy anywhere in a circular area of 1000 sq. ft when mounted on a 96-inch high ceiling.
 3. Detection Coverage (Corridor): Detect occupancy within 90 feet when mounted on a 10-foot high ceiling.

2.3 OUTDOOR PHOTOELECTRIC SWITCHES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
1. Intermatic, Inc.
 2. Lithonia Lighting; Acuity Lighting Group, Inc.
 3. Paragon Electric Co.; Invensys Climate Controls.
 4. Square D; Schneider Electric.
 5. TORK.
 6. Watt Stopper (The).
- B. Description: Solid state, with SPST dry contacts rated for 1800-VA tungsten or 1000-VA inductive, to operate connected relay, contactor coils, or microprocessor input; complying with UL 773A.
1. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range, and a directional lens in front of photocell to prevent fixed light sources from causing turn-off.
 2. Time Delay: 15-second minimum, to prevent false operation.
 3. Surge Protection: Metal-oxide varistor, complying with IEEE C62.41.1, IEEE C62.41.2, and IEEE 62.45 for Category A1 locations.

4. Mounting: Twist lock complying with IEEE C136.10, with base-and-stem mounting or stem-and-swivel mounting accessories as required to direct sensor to the north sky exposure.
- C. Description: Solid state, with SPST dry contacts rated for 1800 VA to operate connected load, relay, or contactor coils; complying with UL 773.
1. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range.
 2. Time Delay: 30-second minimum, to prevent false operation.
 3. Lightning Arrester: Air-gap type.
 4. Mounting: Twist lock complying with IEEE C136.10, with base.
- D. Description: Electrically operated and electrically held, combination type with fusible switch, complying with NEMA ICS 2 and UL 508.
1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).
 2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation.
 3. Enclosure: Comply with NEMA 250.
 4. Provide with control and pilot devices as indicated on Drawings matching the NEMA type specified for the enclosure.

2.4 CONDUCTORS AND CABLES

- A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
- B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
- C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No.14AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 SENSOR INSTALLATION

- A. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.
- B. When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting sensors to suit actual occupied conditions. Provide up to two visits to Project during other than normal occupancy hours for this purpose.

3.2 WIRING INSTALLATION

- A. Wiring Method: Comply with Division 26 Section "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size shall be 1/2 inch.
- B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.
- C. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.
- D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.3 IDENTIFICATION

- A. Identify components and power and control wiring according to Division 26 Section "Identification for Electrical Systems."
 - 1. Identify controlled circuits in lighting contactors.
 - 2. Identify circuits or luminaries controlled by photoelectric and occupancy sensors at each sensor.
- B. Label components with a unique designation.

3.4 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. After installing time switches and sensors, and after electrical circuitry has been energized, adjust and test for compliance with requirements.
 - 2. Operational Test: Verify operation of each lighting control device, and adjust time delays.
- B. Lighting control devices that fail tests and inspections are defective work.

END OF SECTION 260923

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes distribution panelboards and lighting and appliance branch-circuit panelboards.

1.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Include evidence of NRTL listing for series rating of installed devices.
 - 6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 7. Include wiring diagrams for power, signal, and control wiring.
 - 8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards.
- C. Seismic Qualification Certificates: Submit certification that panelboards, overcurrent protective devices, accessories, and components will withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- D. Field quality-control reports.
- E. Panelboard schedules for installation in panelboards.
- F. Operation and maintenance data.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. Comply with NEMA PB 1.
- C. Comply with NFPA 70.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- B. Enclosures: Flush- and surface mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - b. Outdoor Locations: NEMA 250, Type 3R.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Directory Card: Inside panelboard door, mounted in transparent card holder.
- C. Incoming Mains Location: Top and bottom.
- D. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity.
- E. Conductor Connectors: Suitable for use with conductor material and sizes.
 - 1. Material: Hard-drawn copper, 98 percent conductivity.
 - 2. Main and Neutral Lugs: Compression type.
 - 3. Ground Lugs and Bus Configured Terminators: Compression type.
 - 4. Feed-Through Lugs: Compression type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
 - 5. Subfeed (Double) Lugs: Compression type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
- F. Service Equipment Label: NRTL labeled for use as service equipment for panelboards with one or more main service disconnecting and overcurrent protective devices.
- G. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

- H. Panelboard Short-Circuit Current Rating: Rated for series-connected system with integral or remote upstream overcurrent protective devices and labeled by an NRTL. Include size and type of allowable upstream and branch devices, and listed and labeled for series-connected short-circuit rating by an NRTL.
- I. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 DISTRIBUTION PANELBOARDS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Panelboards: NEMA PB 1, power and feeder distribution type.
- C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
- D. Mains: Circuit breaker.
- E. Branch Overcurrent Protective Devices: For Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.
- F. Branch Overcurrent Protective Devices: For Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.
- G. Branch Overcurrent Protective Devices: Fused switches.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Eaton Electrical Inc.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D;
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker or lug.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

- F. Column-Type Panelboards: Narrow gutter extension, with cover, to overhead junction box equipped with ground and neutral terminal buses.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- C. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
 - 2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
 - 3. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replicable electronic trip; and the following field-adjustable settings:
 - a. Instantaneous trip.
 - b. Long- and short-time pickup levels.
 - c. Long- and short-time time adjustments.
 - d. Ground-fault pickup level, time delay, and I^2t response.
 - 4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
 - 5. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
 - 6. Ground-Fault Equipment Protection (GFEF) Circuit Breakers: Class B ground-fault protection (30-mA trip).
 - 7. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Comply with UL 1699; 120/240-V, single-pole configuration.
 - 8. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
 - a. Standard frame sizes, trip ratings, and number of poles.
 - b. Lugs: Compression style, suitable for number, size, trip ratings, and conductor materials.
 - c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
 - d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
 - e. Communication Capability: Circuit-breaker-mounted communication module with functions and features compatible with power monitoring and control system specified in Division 26 Section "Electrical Power Monitoring and Control."

- f. Shunt Trip: 120V trip coil energized from separate circuit, set to trip at [55] [75] percent of rated voltage.
 - g. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in on or off position.
 - h. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.
- D. Fused Switch: NEMA KS 1, Type HD; clips to accommodate specified fuses; lockable handle.
 - 1. Fuses, and Spare-Fuse Cabinet: Comply with requirements specified in Division 26 Section "Fuses."

2.5 ACCESSORY COMPONENTS AND FEATURES

- A. Portable Test Set: For testing functions of solid-state trip devices without removing from panelboard. Include relay and meter test plugs suitable for testing panelboard meters and switchboard class relays.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Receive, inspect, handle, store and install panelboards and accessories according to NECA 407.
- B. Comply with mounting and anchoring requirements specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- C. Mount top of trim 90 inches above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install overcurrent protective devices and controllers not already factory installed.
 - 1. Set field-adjustable, circuit-breaker trip ranges.
- F. Install filler plates in unused spaces.
- G. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch empty conduits into raised floor space or below slab not on grade.
- H. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- I. Comply with NECA 1.

3.2 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."

- B. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Panelboards will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION 262416

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Wall-box motion sensors.
 - 3. Snap switches and wall-box dimmers.
 - 4. Solid-state fan speed controls.
 - 5. Wall-switch and exterior occupancy sensors.
 - 6. Communications outlets.
- B. See Division 27 Section "Communications Horizontal Cabling" for workstation outlets.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Samples: One for each type of device and wall plate specified, in each color specified.
- D. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
 - 1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
 - 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - 3. Leviton Mfg. Company Inc. (Leviton).
 - 4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 STRAIGHT BLADE RECEPTACLES

- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Cooper; 5351 (single), 5352 (duplex).
 - b. Hubbell; HBL5351 (single), CR5352 (duplex).
 - c. Leviton; 5891 (single), 5352 (duplex).
 - d. Pass & Seymour; 5381 (single), 5352 (duplex).

2.3 GFCI RECEPTACLES

- A. General Description: Straight blade, feed through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Cooper; GF20.
 - b. Pass & Seymour; 2084.

2.4 SNAP SWITCHES

- A. Comply with NEMA WD 1 and UL 20.
- B. Switches, 120/277 V, 20 A:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Products: Subject to compliance with requirements, provide switches as indicated on drawings and application.

2.5 WALL-BOX DIMMERS

- A. Switches as indicated on drawings.

2.6 WALL PLATES

- A. Single and combination types to match corresponding wiring devices.
 - 1. Plate-Securing Screws: Metal with head color to match plate finish.
 - 2. Material for Finished Spaces: Smooth, high-impact thermoplastic 0.035-inch.
 - 3. Material for Unfinished Spaces: Smooth, high-impact thermoplastic.

4. Material for Damp Locations: Thermoplastic with spring-loaded lift cover, and listed and labeled for use in "wet locations."
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant thermoplastic with lockable cover.

2.7 FINISHES

- A. Color: Wiring device catalog numbers in Section Text do not designate device color.
 1. Wiring Devices Connected to Normal Power System: As selected by Architect, unless otherwise indicated or required by NFPA 70 or device listing.
 2. Wiring Devices Connected to Emergency Power System: Red.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
 1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
 1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
 4. Existing Conductors:
 - a. Cut back and pigtail, or replace all damaged conductors.
 - b. Straighten conductors that remain and remove corrosion and foreign matter.
 - c. Pigtail existing conductors is permitted provided the outlet box is large enough.
- D. Device Installation:
 1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.

2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:

1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

3.2 IDENTIFICATION

A. Comply with Division 26 Section "Identification for Electrical Systems."

1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with white-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.

2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new, and retest as specified above.

END OF SECTION 262726

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fusible switches.
 - 2. Nonfusible switches.
 - 3. Receptacle switches.
 - 4. Shunt trip switches.
 - 5. Molded-case circuit breakers (MCCBs).
 - 6. Enclosures.

1.2 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.
- C. SPDT: Single pole, double throw.

1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to **ASCE/SEI 7**.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

1.4 SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated.
- B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Wiring Diagrams: For power, signal, and control wiring.
- C. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.
- D. Field quality-control reports.
- E. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 FUSIBLE SWITCHES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **product indicated on Drawings** or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Type GD, General Duty, Single Throw, 240-V ac, 800 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with cartridge fuse interiors to accommodate **indicated** fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- C. Accessories:
 - 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 - 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 - 3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
 - 4. Lugs: Suitable for number, size, and conductor material.
 - 5. Service-Rated Switches: Labeled for use as service equipment.

2.2 MOLDED-CASE CIRCUIT BREAKERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **product indicated on Drawings** or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.
- C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

- D. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
 - 1. Instantaneous trip.
 - 2. Long- and short-time pickup levels.
 - 3. Long- and short-time time adjustments.
 - 4. Ground-fault pickup level, time delay, and I^2t response.
- E. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- F. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.
 - 2. Lugs: Suitable for number, size, trip ratings, and conductor material.
 - 3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
 - 4. Ground-Fault Protection: Comply with UL 1053; **integrally mounted, self-powered** type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
 - 5. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
 - 6. Auxiliary Contacts: **One SPDT switch** with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.
 - 7. Alarm Switch: One **NO** contact that operates only when circuit breaker has tripped.

2.3 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
 - 1. Indoor, Dry and Clean Locations: NEMA 250, **Type 1**.
 - 2. Outdoor Locations: NEMA 250, **Type 3R**.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- B. Comply with mounting and anchoring requirements specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- D. Install fuses in fusible devices.
- E. Comply with NECA 1.

3.2 IDENTIFICATION

- A. Comply with requirements in Division 26 Section "Identification for Electrical Systems."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
 - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports, including a certified report that identifies enclosed switches and circuit breakers and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION 262816

PART 1 - GENERAL**1.1 SUMMARY****A. Section Includes:**

1. Diesel engine.
2. Diesel fuel-oil system.
3. Control and monitoring.
4. Generator overcurrent and fault protection.
5. Generator, exciter, and voltage regulator.
6. Load bank.
7. Outdoor engine generator enclosure.
8. Vibration isolation devices.

B. Related Requirements:

1. Section 263600 "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine generators.

1.2 DEFINITIONS**A. EPS: Emergency power supply.****B. EPSS: Emergency power supply system.****C. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.****1.3 ACTION SUBMITTALS****A. Product Data: For each type of product.**

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
2. Include thermal damage curve for generator.
3. Include time-current characteristic curves for generator protective device.
4. Include fuel consumption in gallons per hour at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
5. Include generator efficiency at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
6. Include airflow requirements for cooling and combustion air in cubic feet per minute at 0.8 power factor, with air-supply temperature of 95, 80, 70, and 50 deg F. Provide Drawings indicating requirements and limitations for location of air intake and exhausts.
7. Include generator characteristics, including, but not limited to, kilowatt rating, efficiency, reactances, and short-circuit current capability.

B. Shop Drawings:

1. Include plans and elevations for engine generator and other components specified. Indicate access requirements affected by height of subbase fuel tank.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Identify fluid drain ports and clearance requirements for proper fluid drain.
4. Design calculations for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams indicating terminal markings for engine generators and functional relationship between all electrical components.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data:

B. Seismic Qualification Data: Certificates, for engine generator, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: With engine and generator mounted on rails, identify center of gravity and total weight, including full fuel tank, supplied enclosure, external silencer, subbase-mounted fuel tank, and each piece of equipment not integral to the engine generator, and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

C. Source Quality-Control Reports: Including, but not limited to, the following:

1. Certified summary of prototype-unit test report.
2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
3. Report of factory test on units to be shipped for this Project, indicating evidence of compliance with specified requirements.
4. Report of sound generation.
5. Report of exhaust emissions indicating compliance with applicable regulations.
6. Certified Torsional Vibration Compatibility: Comply with NFPA 110.

D. Field quality-control reports.

E. Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
 - b. Operating instructions laminated and mounted adjacent to generator location.
 - c. Training plan.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
 2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
 3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.
 4. Tools: Each tool listed by part number in operations and maintenance manual.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Current certificate holder for compliance with ISO 9001.
- B. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- C. Testing Agency Qualifications: Accredited by NETA.
 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Generac Power Systems, Inc.; SD series or comparable product by one of the following:
- B. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Engine generator housing, subbase fuel tank, day tank, engine generator, batteries, battery racks, silencers, sound attenuating equipment, accessories, and components to withstand the effects of earthquake motions determined in accordance with ASCE/SEI 7 .
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
 - 2. Shake-table testing shall comply with ICC-ES AC156. Testing shall be performed with all fluids at worst-case normal levels.
 - 3. For life-safety components required to function after an earthquake (such as fire-sprinkler systems, components that contain hazardous content, and storage racks in structures open to the public), the Component Importance Factor is 1.5. For other components, the Component Importance Factor is 1.0 unless the structure is in Seismic Use Group III and component is necessary for continued operation of facility or failure of component could impair continued operation of facility, in which case the Component Importance Factor is 1.5.
 - 4. Component Importance Factor: 1.5
- B. NFPA Compliance:
 - 1. Comply with NFPA 37.
 - 2. Comply with NFPA 70.
 - 3. Comply with NFPA 99.
- C. UL Compliance: Comply with UL 2200.
- D. Engine Exhaust Emissions: Comply with EPA Tier 2 requirements and applicable state and local government requirements.
- E. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by engine generator including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.
- F. Environmental Conditions: Engine generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
 - 1. Ambient Temperature: **41 to 122 deg F**
 - 2. Relative Humidity: Zero to 95 percent.

2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION

- A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Power Rating: Standby.
- D. EPSS Class: Engine generator shall be classified as a Class 2 in accordance with NFPA 110.

- E. Service Load: 250 kVA.
- F. Power Factor: .8 lagging.
- G. Frequency: 60 Hz.
- H. Voltage: 208V ac.
- I. Phase: Three-phase, 4 wire,
- J. Induction Method: Turbocharged.
- K. Governor: Adjustable isochronous, with speed sensing.
- L. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.
 - 1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and engine generator center of gravity.
- M. Capacities and Characteristics:
 - 1. Power Output Ratings: Nominal ratings as indicated at 0.8 power factor excluding power required for the continued and repeated operation of the unit and auxiliaries[, with capacity as required to operate as a unit as evidenced by records of prototype testing].
 - 2. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- N. Engine Generator Performance:
 - 1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
 - 2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
 - 3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
 - 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
 - 5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
 - 6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined in accordance with NEMA MG 1, shall not exceed 50 percent.
 - 7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
 - 8. Start Time:
 - a. Comply with NFPA 110, Type 10 system requirements.

- b. 10 seconds.

2.4 DIESEL ENGINE

- A. Fuel: ASTM D975, diesel fuel oil, Grade 2-D S15.
- B. Rated Engine Speed: 1800 rpm.
- C. Lubrication System: Engine or skid-mounted.
 - 1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
 - 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
 - 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Jacket Coolant Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with UL 499 and with NFPA 110 requirements for Level 1 equipment for heater capacity.
- E. Integral Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine generator set mounting frame and integral engine-driven coolant pump.
 - 1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
 - 2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 - 3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gauge glass and petcock.
 - 4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
 - 5. Maximum Ambient Operating Temperature: 122 deg F.
 - 6. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, UV-, and abrasion-resistant fabric.
 - a. Rating: 50-psig maximum working pressure with coolant at 180 deg F, and non-collapsible under vacuum.
 - b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- F. Muffler/Silencer:
 - 1. Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
 - a. Sound level measured at a distance of 23 ft. from exhaust discharge after installation is complete shall be 76 dBA or less.
- G. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- H. Starting System: 24V electric, with negative ground.

1. Components: Sized so they are not damaged during a full engine-cranking cycle with ambient temperature at maximum specified in "Performance Requirements" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Lead acid, with capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle at least three times without recharging.
5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
7. Battery Charger: Current-limiting, automatic-equalizing, and float-charging type designed for lead-acid batteries. Unit shall comply with UL 1236 and include the following features:
 - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
 - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 to 140 deg to prevent overcharging at high temperatures and undercharging at low temperatures.
 - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
 - d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
 - e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
 - f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.5 DIESEL FUEL-OIL SYSTEM

- A. Comply with NFPA 37.
- B. Piping: Fuel-oil piping shall be Schedule 40 black steel, complying with requirements in Section 231113 "Facility Fuel-Oil Piping." Cast iron, aluminum, copper, and galvanized steel shall not be used in the fuel-oil system.
- C. Main Fuel Pump: Mounted on engine to provide primary fuel flow under starting and load conditions.
- D. Fuel Filtering: Remove water and contaminants larger than 1 micron.
- E. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
- F. Fuel-Oil Storage Tank: Comply with requirements in Consult tank manufacturers about capacities available for size of set in Project. See discussion of fuel tanks in the Evaluations.
- G. Subbase-Mounted, Double-Wall, Fuel-Oil Tank: Factory installed and piped, complying with UL 142 fuel-oil tank. Features include the following:

1. Tank level indicator.
2. Fuel-Tank Capacity: 24hrs at 100% load
3. Leak detection in interstitial space.
4. Vandal-resistant fill cap.
5. Containment Provisions: Comply with requirements of authorities having jurisdiction.

2.6 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of engine generator. When mode-selector switch is switched to the on position, engine generator starts. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts engine generator. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- C. Provide minimum run time control set for 15 minutes with override only by operation of a remote emergency-stop switch.
- D. Control panel must comply with UL 6200.
- E. Connectivity: Native Ethernet, WiFi, and Bluetooth connectivity.
- F. Web Browser Interface: All user interaction accomplished via standard web browser interface. Solutions requiring dedicated software for connectivity are not acceptable.
- G. Remote Connectivity: User interface available both internally and externally to the user's network, based on network security preferences. All remote connectivity may be disabled at any time by the user.
- H. Automated Notification: Controller capable of sending multiple automated email alerts without intermediate service provider.
- I. Notification Customization: User configurable allowing any operational or fault condition to initiate notification to any personnel including (but not limited to) generator service provider.
- J. Environmentally Hardened Design: Open circuit boards, edge cards, and PC ribbon cable connections are unacceptable.
- K. Circuit boards with surface-mounted components to provide vibration durability. Circuit boards utilizing large capacitors or heat sinks must utilize encapsulation methods to securely support these components.
- L. Configuration:
 1. Operating and safety indications, protective devices, basic system controls, and engine gauges shall be grouped in a common control and monitoring panel mounted on the engine generator. Mounting method shall isolate the control panel from engine generator vibration. Panel powered from the engine generator battery.

M. Control and Monitoring Panel:

1. Digital engine generator controller with integrated touch screen, controls, and microprocessor, capable of local and remote control, monitoring, and programming, with battery backup.
2. Instruments: Located on the control and monitoring panel and viewable during operation.
 - a. Engine lubricating-oil pressure gauge.
 - b. Engine-coolant temperature gauge.
 - c. DC voltmeter (alternator battery charging).
 - d. Running-time meter.
 - e. AC voltmeter, for each phase.
 - f. AC ammeter, for each phase.
 - g. AC frequency meter.
 - h. Generator-voltage adjusting feature.
3. Controls and Protective Devices: Controls, shutdown devices, and common alarm indication, including the following:
 - a. Cranking control equipment.
 - b. Run-Off-Auto switch.
 - c. Control switch not in automatic position alarm.
 - d. Overcrank alarm.
 - e. Overcrank shutdown device.
 - f. Low-water temperature alarm.
 - g. High engine temperature pre-alarm.
 - h. High engine temperature.
 - i. High engine temperature shutdown device.
 - j. Overspeed alarm.
 - k. Overspeed shutdown device.
 - l. Low fuel main tank.
 - 1) Low-fuel-level alarm shall be initiated when the level falls below that required for operation for duration required
 - m. Coolant low-level alarm.
 - n. Coolant low-level shutdown device.
 - o. Coolant high-temperature prealarm.
 - p. Coolant high-temperature alarm.
 - q. Coolant low-temperature alarm.
 - r. Coolant high-temperature shutdown device.
 - s. EPS load indicator.
 - t. Battery high-voltage alarm.
 - u. Low cranking voltage alarm.
 - v. Battery-charger malfunction alarm.
 - w. Battery low-voltage alarm.
 - x. Lamp test.
 - y. Contacts for local and remote common alarm.
 - z. Remote manual stop shutdown device.
 - aa. Generator overcurrent-protective-device not-closed alarm.
 - bb. Hours of operation.
 - cc. Engine generator metering, including voltage, current, hertz, kilowatt, kilovolt ampere, and power factor.

N. Connection to Datalink:

1. A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication.
 2. Provide connections for datalink transmission of indications to remote data terminals via Modbus Data system connections to terminals are covered in Section 260913 "Electrical Power Monitoring and Control."
- O. Common Remote Panel with Common Audible Alarm: Include necessary contacts and terminals in control and monitoring panel. Remote panel shall be powered from the engine generator battery.
- P. Remote Alarm Annunciator: An LED indicator light labeled with proper alarm conditions shall identify each alarm event, and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.
1. Overcrank alarm.
 2. Low water-temperature alarm.
 3. High engine temperature pre-alarm.
 4. High engine temperature alarm.
 5. Low lube oil pressure alarm.
 6. Overspeed alarm.
 7. Low fuel main tank alarm.
 8. Low coolant level alarm.
 9. Low cranking voltage alarm.
 10. Contacts for local and remote common alarm.
 11. Audible-alarm silencing switch.
 12. Air shutdown damper when used.
 13. Run-Off-Auto switch.
 14. Control switch not in automatic position alarm.
 15. Fuel tank derangement alarm.
 16. Fuel tank high-level shutdown of fuel supply alarm.
 17. Lamp test.
 18. Low-cranking voltage alarm.
 19. Generator overcurrent-protective-device not-closed alarm.
- Q. Remote Emergency-Stop Switch: Flush; wall mounted unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Overcurrent protective devices shall be coordinated to optimize selective tripping when a short circuit occurs.
1. Overcurrent protective devices for the entire EPSS shall be coordinated to optimize selective tripping when a short circuit occurs. Coordination of protective devices shall consider both utility and EPSS as the voltage source.
 2. Overcurrent protective devices for the EPSS shall be accessible only to authorized personnel.
- B. Generator Overcurrent Protective Device:

1. Insulated-case circuit breaker, electronic-trip type; 100 percent rated; complying with UL 489:
 - a. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
 - b. Trip Settings: Selected to coordinate with generator thermal damage curve.
 - c. Shunt Trip: Connected to trip breaker when engine generator is shut down by other protective devices.
 - d. Mounting: Adjacent to, or integrated with, control and monitoring panel.
 - C. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other engine generator protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector performs the following functions:
 1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other engine generator malfunction alarms. Contacts shall be available for load shed functions.
 2. Under single- or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
 3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the engine generator.
 4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.
 - D. Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground fault.
 1. Indicate ground fault with other engine generator alarm indications.
 2. Trip generator protective device on ground fault.
 - E. Arc Energy Reduction: Comply with NFPA 70 for arc energy reduction for circuit breakers 1200A and greater.
 1. Energy-reducing maintenance switch with local status indicator.
 2. Instantaneous override that is less than the available arcing current.
- 2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR
- A. Comply with NEMA MG 1.
 - B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
 - C. Electrical Insulation: Class H.
 - D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required. Provide 12 lead alternator.
 - E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

- F. Enclosure: Dripproof.
- G. Instrument Transformers: Mounted within generator enclosure.
- H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified and as required by NFPA 110.
 - 1. Voltage Adjustment on Control and Monitoring Panel: Provide plus or minus 5 percent adjustment of output-voltage operating band.
 - 2. Maintain voltage within 30 percent on one step, full load.
 - 3. Provide anti-hunt provision to stabilize voltage.
 - 4. Maintain frequency within 5 percent and stabilize at rated frequency within 5 seconds.
- I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
- J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- K. Subtransient Reactance: 15 percent maximum, based on the rating of the engine generator set.

2.9 OUTDOOR ENGINE GENERATOR ENCLOSURE

- A. Generator packaged within sound attenuated enclosure.
- B. Sound Insulation: Enclosure and air discharge hood completely lined with 3 inches of fiberglass and perforated aluminum.
- C. Enclosure Construction: Minimum 14 gauge steel with hinged, removable doors to allow access to the engine, alternator, and control panel. Adjustable hinges for door alignment. Hinges and all exposed fasteners must be stainless steel. Pop-rivets weaken the paint system and are not allowed on external painted surfaces. Each door equipped with lockable hardware and identical keys.
- D. Upward discharging enclosure ventilation exhaust hood.
- E. Enclosure Finish: Electrostatic applied powder paint, baked and finished to manufacturer's specifications.
- F. Enclosure Color: Manufacturer's standard color.
- G. Silencer mounted on top of enclosure.
- H. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.
 - 1. Louvers: Fixed-engine, cooling-air inlet and discharge. Stormproof and drainable louvers prevent entry of rain and snow.
 - 2. Ventilation: Provide temperature-controlled exhaust fan interlocked to prevent operation when engine is running.

- I. Interior Lights with Switch: Factory-wired, vapor-proof luminaires within housing; arranged to illuminate controls and accessible interior. Arrange for external electrical connection.
 - 1. AC lighting system and connection point for operation when remote source is available.
 - 2. DC lighting system for operation when remote source and generator are both unavailable.
- J. Convenience Outlets: Factory-wired, GFCI. Arrange for external electrical connection.

2.10 VIBRATION ISOLATION DEVICES

- A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
 - 1. Material: Standard neoprene separated by steel shims.
 - 2. Shore A Scale Durometer Rating: 70
 - 3. Number of Layers: 1
- B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
 - 1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment-mounting and -leveling bolt that acts as blocking during installation.
 - 2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
 - 3. Minimum Additional Travel: 50 percent of required deflection at rated load.
 - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 6. Minimum Deflection: 1 Inch
- C. Vibration isolation devices shall not be used to accommodate misalignments or to make bends.

2.11 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.
- B. Powder coated paint surfaces:
 - 1. Minimum Paint Thickness: 2.5 mil in accordance with ASTM D 1186-87.
 - 2. Material Hardness: ASTM D3363-92a.
 - 3. Resistance to Cracking: ASTM D522-B.
 - 4. Paint Adhesion: ASTM D3359-B.
 - 5. Resistance to Salt Water Corrosion: ASTM B117, ASTM D1654.
 - 6. Resistance to Humidity: ASTM D1735, ASTM D1654.
 - 7. Impact Resistance: ASTM 2784.
 - 8. UV Protection: SAE J1690.

2.12 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine generator using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
 - 1. Tests: Comply with IEEE 115 and with NFPA 110.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine generator and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
 - 1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
 - 2. Test generator, exciter, and voltage regulator as a unit.
 - 3. Full load run.
 - 4. Maximum power.
 - 5. Voltage regulation.
 - 6. Transient and steady-state governing.
 - 7. Single-step load pickup.
 - 8. Safety shutdown.
 - 9. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
 - 10. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.
- B. Examine roughing-in for piping systems and electrical connections. Verify actual locations of connections before packaged engine generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service in accordance with requirements indicated:
 - 1. Notify Construction Manager no fewer than 2 working days in advance of proposed interruption of electrical service.

3.3 INSTALLATION

- A. Comply with NECA 1 and NECA 404.

- B. Comply with packaged engine generator manufacturers' written installation and alignment instructions and with NFPA 110
- C. Equipment Mounting:
 - 1. Install packaged engine generators on cast-in-place concrete equipment bases. Comply with requirements for equipment bases and foundations specified in Section 033000 "Cast-in-Place Concrete."
 - 2. Coordinate size and location of concrete bases for packaged engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
- D. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

3.4 IDENTIFICATION

- A. Install a sign indicating the generator neutral is bonded to the main service neutral at the main service location.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency:
 - 1. Owner will engage a qualified testing agency to perform tests and inspections.
 - 2. Engage a qualified testing agency to perform tests and inspections.
 - 3. Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
 - 4. Perform tests and inspections with the assistance of a factory-authorized service representative.
- B. Tests and Inspections:
 - 1. Perform tests recommended by manufacturer and each visual and mechanical inspection and electrical and mechanical test listed in first two subparagraphs below, as specified in NETA ATS. Certify compliance with test parameters.
 - a. Visual and Mechanical Inspection:
 - 1) Compare equipment nameplate data with Drawings and the Specifications.
 - 2) Inspect physical and mechanical condition.
 - 3) Inspect anchorage, alignment, and grounding.
 - 4) Verify that the unit is clean.
 - b. Electrical and Mechanical Tests:
 - 1) Test protective relay devices.
 - 2) Verify phase rotation, phasing, and synchronized operation as required by the application.
 - 3) Functionally test engine shutdown for low oil pressure, overtemperature, overspeed, and other protection features as applicable.
 - 4) Perform vibration test for each main bearing cap.

- 5) Verify correct functioning of the governor and regulator.
2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here, including, but not limited to, single-step full-load pickup test.
3. Battery Tests: Equalize charging of battery cells in accordance with manufacturer's written instructions. Record individual cell voltages.
 - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
 - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
 - c. Verify acceptance of charge for each element of the battery after discharge.
 - d. Verify that measurements are within manufacturer's specifications.
4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Exhaust-System Back-Pressure Test (non-enclosed units): Use a manometer with a scale exceeding 40-inch wg. Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
7. Exhaust Emissions Test: Comply with applicable government test criteria.
8. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.
9. Harmonic-Content Tests: Measure harmonic content of output voltage at 25 and 100 percent of rated linear load. Verify that harmonic content is within specified limits.
- C. Coordinate tests with tests for transfer switches and run them concurrently.
- D. Test instruments shall have been calibrated within the past 12 months, traceable to NIST Calibration Services, and adequate for making positive observation of test results. Make calibration records available for examination on request.
- E. Leak Test: After installation, charge exhaust, coolant, and fuel systems and test for leaks. Repair leaks and retest until no leaks exist.
- F. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.
- G. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- H. Remove and replace malfunctioning units and retest as specified above.
- I. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.
- J. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

3.6 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of manufacturer's authorized service representative. Include quarterly preventive maintenance and exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Parts shall be manufacturer's authorized replacement parts and supplies.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

END OF SECTION

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PART 1 GENERAL**1.01 Scope**

Furnish and install automatic transfer switch(es) with number of poles, amperage, voltage, and withstand current ratings as shown on the plans. Basis of design is a Generac TX Transfer Switch Non Service Entrance Rated Delayed/Programmed Transition, 600A, 3 Pole 4 Wire 208V, Transfer Switch in a Nema 1 Enclosure. Each automatic transfer shall consist of a mechanically held power transfer switch unit and a microprocessor controller, interconnected to provide complete automatic operation. All transfer switches and control panels shall be the product of the same manufacturer.

1.02 Acceptable Manufacturers

Automatic transfer switches shall be Generac TX Series. Any alternate shall be submitted to the consulting engineer in writing at least 10 days prior to bid. Each alternate bid must list any deviations from this specification.

1.03 Codes and Standards

The automatic transfer switches and accessories shall conform to the requirements of:

- A. UL 1008 - Standard for Automatic Transfer Switches
- B. NFPA 70 - National Electrical Code (2017 version and later for start circuit monitoring)
- C. NEC Articles 700, 701, 702, 708
- D. NFPA 99 – Health Care Facilities
- E. NFPA 110 – Emergency and Standby Power Systems
- F. IEEE Standard 446 – IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- G. NEMA Standards ICS10, MG1, MG250, ICS6, AB1
- H. ANSI C62.41
- I. International Standards Organization: ISO 8528, 9001.
- J. Where seismic rating and/or certification is required: IBC 2018, OSHPD

PART 2 PRODUCTS**2.01 Mechanically Held Transfer Switch**

- A. The basis of design is the Generac TX Series Transfer switch that utilizes a knife blade mechanically latching design with maintenance free contacts. The transfer switch unit shall be an electrically operated and mechanically held. The open transition switch shall be mechanically interlocked to ensure only one of two possible positions, normal or emergency. The delayed transition switch shall be mechanically interlocked to ensure one of three possible position, normal and emergency.
- B. The switch shall be positively locked and unaffected by momentary outages so that contact pressure is maintained at a constant value and temperature rise at the contacts is minimized for maximum reliability and operating life.
- C. All main contacts shall be silver composition. Switches shall have segmented blow-on construction for high withstand current capability and be protected by separate arcing contacts.
- D. A manual operating handle shall be provided for maintenance purposes.
- E. Designs utilizing components of or parts thereof which are not intended for continuous duty, repetitive switching or transfer between two active power sources are not acceptable.

- F. Where neutral conductors must be switched, the ATS shall be provided with fully rated neutral transfer contacts.
- G. Where neutral conductors are to be solidly connected, a neutral terminal plate with fully rated AL-CU pressure connectors shall be provided.
- H. The switch shall be capable of the following methods of transfer: Open with In-Phase transition only, Time Delay in Neutral transition, or In-Phase transition with a default to Time Delay in Neutral.

2.02 ATS Control with Integrated User Interface Panel

- A. The basis of design is the Generac TXC-100 Controller with Integrated User Interface Panel which is voltage agnostic for service purposes removing the need for technicians to carry and support control panels for every available voltage. Any manufacturers that provide a controller or control panel that does not meet this requirement should notify the consulting engineer before bidding.
- B. The controller shall be connected to the transfer switch by an interconnecting wiring harness. The harness shall include a keyed disconnect plug to enable the controller to be disconnected from the transfer switch for routine maintenance.
- C. The controller shall direct the operation of the transfer switch. The controller's sensing and logic shall be controlled by a built-in microprocessor for maximum reliability, minimum maintenance, and include standard on-board serial communications capability.
- D. A user accessible USB port shall be provided to facilitate firmware updates, uploading of switch operational parameters, downloading of event history and switch operational statistics. This USB port shall be front accessible without opening the ATS door.
- E. The controller shall provide single and three phase capability for maximum application flexibility and minimal spare part requirements. Voltage sensing shall be true RMS type and shall be accurate to $\pm 1\%$ of nominal voltage. Frequency sensing shall be accurate to $\pm 0.1\text{Hz}$. Time delay settings shall be accurate to $\pm 0.5\%$ of the full-scale value of the time delay. The panel shall be capable of operating over a temperature range of -20 to $+70$ degrees C.
- F. The controller power supply shall be field-configurable to operate on 120V through 480V systems without the need for transformers.
- G. Control logic shall be backed up with a rechargeable, user-replaceable lithium-ion battery that shall also maintain control power for up to 60 minutes in the event no source power is available.
- H. The controller shall be enclosed with a protective cover and be mounted separate from the transfer switch unit for safety and ease of maintenance.
- I. The controller shall meet or exceed the requirements for Electromagnetic Compatibility (EMC) as follows:
 - 1. IEC 61000 – 4 – 3 Radiated RF Field Immunity
 - 2. IEC 61000 – 4 – 4 Electrical Fast Transient/Burst Immunity
 - 3. IEC 61000 – 4 – 5 Surge Immunity
 - 4. IEC 61000 – 4 – 6 Conducted RF Immunity
 - 5. IEC 61000 – 4 -11 Voltage Dips and Interruptions
 - 6. EN 61000 – 6 - 2 Industrial Immunity Requirements EN 61000-6-4 - Radiated Emissions
 - 7. EN 61000 – 6 - 4 Conducted Emissions
 - 8. CISPR 11 – Conducted RF Emissions and Radiated RF Emissions

2.03 Enclosure

The basis of design is a Generac TX Series Transfer Switch in a Nema 1 Enclosure, with dimensions no larger than Not SE Rated Inches in Height , 63.19 Inches in Width, and 28.22 Inches In Depth. Larger enclosures than the basis of design will need to be approved by the Consulting Engineer to ensure there is enough wall space and appropriate clearance.

- A. Provide a temperature and humidity controlled anti-condensation heater for all NEMA 3R and 4X enclosed units. Heater shall be an available option on NEMA 1 enclosures, when called for on plans. Heater cover to indicate a hot surface.
- B. The switch mechanism and controller shall be easily removable from the enclosure in the field. This requirement will facilitate easy single-person installation on wall mounted switches, conduit fitting, and cable pulling while minimizing risk of damage and/or contamination of ATS components during the install process.
- C. Controller human interface and USB port shall be visible and operational through the enclosure door, without the need for personal protective equipment, avoiding arc-flash hazard for routine checks of the controller status.

PART 3 OPERATIONS

3.01 Controller Display and Keypad

- A. A backlit four-line graphical LCD display and human interface shall be an integral part of the controller for viewing all available data and setting desired operational parameters. Operational parameters shall also be available for viewing and limited control through the RS-485 communications port.
- B. All instructions and controller settings shall be easily accessible, readable and accomplished without the use of codes, calculations, or instruction manuals.
- C. The user interface shall be provided with test/reset modes. The test mode will simulate a normal source failure. The reset mode shall bypass the time delays on either transfer to emergency or retransfer to normal.
- D. The following parameters shall only be adjustable only by authorized service personnel:
 - 1. Nominal line voltage and frequency
 - 2. Single or three phase sensing on normal
 - 3. Transfer operating mode configuration, (open transition, or delayed transition)

3.02 Voltage and Frequency Sensing

- A. Voltage and frequency on both the normal and emergency sources (as noted below) shall be continuously monitored, with the following pickup, dropout, and trip settings capabilities; values shown as percentage of nominal unless otherwise specified.

Voltage and Frequency Settings	Range	Default Value
Source 1 (Normal) is Genset	Yes or No	No
Source 1 Undervoltage Dropout	50-97%	85%
Source 1 Undervoltage Pickup	52-99%	90%
Source 1 Overvoltage Dropout	105-120%	110%

Source 1 Overvoltage Pickup	103-118%	105%
Source 1 Underfrequency Dropout	90-97%	90%
Source 1 Underfrequency Pickup	91-99%	95%
Source 1 Overfrequency Dropout	103-110%	105%
Source 1 Overfrequency Pickup	101-109%	102%
Source 1 Voltage Imbalance Drop	5-20%	5%
Source 1 Voltage Imbalance Pickup	3-18%	3%
Source 1 Warmup Time	0-1800s	3s
Source 1 Cooldown Time	0-1800s	1800s
Source 1 Minimum Run Time	300-1800s	1200s
Source 2 is Generator	Yes or No	Yes
Source 2 Undervoltage Dropout	50-97%	85%
Source 2 Undervoltage Pickup	52-99%	90%
Source 2 Overvoltage Dropout	105-120%	110%
Source 2 Overvoltage Pickup	103-118%	105%
Source 2 Underfrequency Dropout	90-97%	90%
Source 2 Underfrequency Pickup	91-99%	99%
Source 2 Overfrequency Dropout	103-110%	105%
Source 2 Overfrequency Pickup	101-109%	102%
Source 2 Voltage Imbalance Drop	5-20%	5%
Source 2 Voltage Imbalance Pickup	3-18%	3%
Source 2 Minimum Run Time	300-1800s	1200s
Source 2 Warmup Time	0-1800s	3s
Source 2 Cooldown Time	0-1800s	1800s
Phase Rotation Check	ABC, CBA, OFF	ABC
Supply Overvoltage	350 VAC	Fixed
Manual Return to Normal	Yes or No	
Time Delay Settings		

Transfer to Emergency	120s max	30s
Re-transfer to Normal	1,800s max	1,800s
Time Delay Neutral	120s max	30s
Engine Cool Down	300-1,800s	1,800s
Delayed Transition Time	120s max	120s
Elevator Signal	120s max	30s
In Phase Transfer	Yes or No	
In Phase Synchronization	Time 60-3600s	300s
Preferred Source	S1, S2	S1
Voltage Imbalance Enable	Yes or No	
Voltage Imbalance Timeout	10-30s max	20s

- B. Repetitive accuracy of all settings shall be within 1% at +25C
- C. Voltage and frequency settings shall be field adjustable in 1% increments either locally with the display and keypad or remotely via RS-485 communications port access.
- D. Source status screens shall be provided for both normal & emergency to provide digital readout of voltage and frequency.
- E. The backlit graphical display shall have multiple language capability. Languages can be selected from the user interface.

3.03 Time Delays

- A. A Line Interrupt delay shall be provided to override momentary normal source outages, delay all transfer and engine starting signals; adjustable 0 to 120 seconds. It shall be possible to bypass the time delay from the controller user interface.
- B. An Engine Warm Up delay shall be provided for extended engine RPM stabilization where fast transfer to the emergency source is not required; adjustable 0 to 1,800 seconds. It shall be possible to bypass the time delay from the controller user interface.
- C. A Transfer to Emergency delay shall be provided for controlled sequencing of loads to the emergency source; adjustable from 0 to 120 seconds. It shall be possible to bypass the time delay from the controller user interface.
- D. A Retransfer to Normal delay shall be provided to ensure stability of the normal source, adjustable from 0 to 1,800 seconds. Time delay shall be automatically bypassed if the emergency source fails and normal source is acceptable.
- E. An Engine Minimum Runtime delay shall be provided to reduce nuisance starts when the normal source power is unstable but does not trigger a transfer to the emergency source, adjustable from 5 to 30 minutes. Operates in conjunction with Engine Cool Down delay.
- F. An Engine Cool Down delay shall be provided; adjustable 300 – 1,800 seconds.

- G. An Elevator Signal Before Transfer output signal shall be provided to drive an external relay for selective load disconnect control. The controller shall have the ability to activate an adjustable 0 to 120 second delay in any of the following modes:
1. Prior to transfer only.
 2. Prior to and after transfer.
 3. Normal to emergency only.
 4. Emergency to normal only.
 5. Normal to emergency and emergency to normal.
 6. All transfer conditions or only when both sources are available.
- H. For special applications (i.e. three-sources), the option to select the Preferred Source.
- I. All adjustable time delays shall be field adjustable without the use of special tools or software.

Time Delay Summary Table:

Time Delay Description	Range	Default Value
Line Interrupt Delay	0 – 120 sec.	3 sec.
Engine Warm Up Delay	0 – 1,800 sec.	3 sec.
Transfer to Emergency	0 – 120 sec.	3 sec.
Retransfer to Normal	0 – 1,800 sec.	1,800 sec.
Engine Minimum Run Time	5 – 30 min.	5 min.
Engine Cool Down	300 – 1,800 sec.	1,800 sec.
Delayed Transition (Center Off Position)	0 – 120 sec.	120 sec.
Elevator Signal Before Transfer	0 – 120 sec.	0 sec.
Preferred Source	Normal (S1), Emerg. (S2)	Normal (S1)

3.04 External Control Interfaces and Indicators

- A. Communications connectors, user interface and display shall be accessible and usable without presenting an arc-flash hazard.
- B. Customer inputs shall be optically isolated for wider compatibility with external systems. This will protect the controller from external surges and transient voltages.
- C. Surge Protection for the ATS controls shall be provided.
- D. Replaceable fuses to protect the power supply to the ATS control panel.
- E. A set of contacts rated 5 amps, 30 VDC shall be provided for a low-voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the generator set to reach proper output and run for the duration of the Engine Minimum Runtime setting, regardless of whether the normal source restores before the load is transferred.
- F. Engine starting contacts shall facilitate start-circuit monitoring to comply with the 2017 and later versions of NFPA 70 Article 700.10 (D)(3).
- G. Two sets of Form-C auxiliary contacts, rated 10 amps, 250 VAC shall be provided to indicate the switch actuator position, including center-off for Time Delay Neutral switches or a Permissive (Emergency Inhibit) condition.
- H. A single General Alarm (summary alarm) indication shall light up the alert indicator and de-energize the configured common alarm output relay for external monitoring.
- I. LED indicating lights shall be provided; one to indicate when the ATS is connected to the normal source and one to indicate when the ATS is connected to the emergency source.
- J. LED indicating lights shall be provided and energized by controller outputs. The lights shall provide true source availability of the normal and emergency source, as determined by the voltage sensing trip and reset settings for each source.
- K. LED indicating light shall be provided to indicate switch not in automatic mode (manual).
- L. LED indicating light shall be provided to indicate any alarm condition.
- M. The controller shall have two programmable inputs and one programmable output as standard; with an optional expansion board to add up to four programmable input/outputs. Programmable I/O conditions shall include:

Programmable Output	Programmable Input
Source 1 – Two Wire Start	Permissive (Emergency Inhibit)
Source 2 – Two Wire Start	Remote Engine Fast Test
Engine Exercising	Remote Engine Normal Test
Engine Warmup	ATS Timer
Signal Before Transfer	Initiate Demand Response
General Alarm	
Source 1 Good	
Source 2 Good	

N. System Status - The controller LCD display shall include a System Status screen which shall be accessible from any point in the menu system by depressing the "ESC" key until you arrive at the System Status screen. This screen shall display a clear description of the active operating sequences and switch position. Operational status information displayed shall include:

1. Source 1 status (good or bad)
2. Source 2 status (good or bad)
3. Any active timer
4. Permissive (Emergency Inhibit when active)

3.05 Transfer and Exercise Controls

The following standard features shall be built into the controller, capable of being activated through keypad programming as required by the user:

- A. Provide the ability to select "commit/no commit to transfer" to determine whether the load should be transferred to the emergency generator if the normal source restores before the generator is ready to accept the load.
- B. An engine generator exercising timer shall be provided to configure daily, day of week, weekly, bi-weekly, or monthly testing of an engine generator set at a specified time of day with or without load for a programmable period of time (Engine Minimum Runtime).
- C. Terminals shall be provided for a remote contact to signal the ATS to transfer to emergency for remote test. Test signal can be enabled through the keypad or digital input. Transfer to emergency for demand response can be enabled by a digital input.
- D. For In-Phase Transfer Switch Designs: An in-phase monitor shall be provided in the controller such that the transfer occurs with less than ten degrees phase angle difference between sources. The monitor shall control transfer so that motor load inrush currents do not exceed normal starting currents and shall not require external control of power sources. In-phase switch transfer time shall not exceed 25ms.

PART 4 ADDITIONAL FEATURES AND ACCESSORIES

4.01 Additional Optional Features

- A. Expanded Input/Output Module. Expandable Input/Output Board Module Includes: 4 Relay Outputs and 4 Optically Isolated Inputs

PART 5 ADDITIONAL REQUIREMENTS

5.01 Withstand and Closing Ratings

- A. The ATS shall be rated to close on and withstand the available RMS symmetrical short circuit current at the ATS terminals with the type of overcurrent protection shown on the plans. The basis of design for this project is a Generac

TX Series Automatic Transfer Switch with a 50ka 3 Cycle Rating, 50ka (.05 seconds) Time Based Rating, and a 85ka Specific Breaker Rating Transfer switches from other manufacturers with ratings less than provided in this section will need to be

- B. Provide a temperature and humidity controlled anti-condensation heater for all NEMA 3R and 4X enclosed units. Heater shall be an available option on NEMA 1 enclosures, when called for on plans. Heater cover to indicate a hot surface.
- C. The switch mechanism and controller shall be easily removable from the enclosure in the field. This requirement will facilitate easy single-person installation on wall mounted switches, conduit fitting, and cable pulling while minimizing risk of damage and/or contamination of ATS components during the install process.
- D. Controller human interface and USB port shall be visible and operational through the enclosure door, without the need for personal protective equipment, avoiding arc-flash hazard for routine checks of the controller status.

5.02 Tests and Certification

- A. The complete ATS shall be factory tested to ensure proper operation of the individual components and correct overall sequence of operation and to ensure that the operating transfer time, voltage, frequency and time delay settings are in compliance with the specification requirements.
- B. The ATS manufacturer shall be certified to ISO 9001: 2015 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation and servicing in accordance with ISO 9001: 2015.

5.03 Service Representation

- A. The ATS manufacturer shall support a service organization of company-employed personnel located throughout the contiguous United States. The service center's personnel must be factory trained and must be on call 24 hours a day, 365 days a year.
- B. The manufacturer shall maintain records of switch shipments, by serial number, for a minimum of 10 years.

5.04 Warranty

- A. The basis of design is a Generac TX Series Automatic Transfer Switch with a Comprehensive 5 Year Warranty.
- B. A Basic Warranty is defined as the manufacturer covering replacement parts for the listed amount of the warranty period.
- C. The Comprehensive Warranty is defined as the manufacturer covering replacement parts, labor, and limited technician travel costs for covered warranty repairs during the listed warranty period.
- D. The switch mechanism and controller shall be easily removable from the enclosure in the field. This requirement will facilitate easy single-person installation on wall mounted switches, conduit fitting, and cable pulling while minimizing risk of damage and/or contamination of ATS components during the install process.
- E. Controller human interface and USB port shall be visible and operational through the enclosure door, without the need for personal protective equipment, avoiding arc-flash hazard for routine checks of the controller status.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior lighting fixtures, lamps.
2. Emergency lighting units.
3. Exit signs.
4. Lighting fixture supports.

B. Related Sections:

1. Division 26 Section "Lighting Control Devices" for automatic control of lighting, including time switches, photoelectric relays, occupancy sensors, and multipole lighting relays and contactors.

1.2 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, and finishes.
- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, from manufacturer.
- C. Field quality-control reports.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings. Substitutions shall be submitted to Engineer minimum (10) days prior to bid date for evaluation.

2.2 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage.
- E. Wires for Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage.
- F. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.
- G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture. Comply with all Seismic requirements.
- B. Comply with NFPA 70 for minimum fixture supports.
- C. Suspended Lighting Fixture Support:
 - 1. Pendants and Rods: Where longer than 48 inches brace to limit swinging.
 - 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
 - 3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
- D. Adjust aimable lighting fixtures to provide required light intensities.
- E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.2 FIELD QUALITY CONTROL

- A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265100

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PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Exterior luminaires with lamps.

1.2 SUBMITTALS

- A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, and finishes.
- B. Shop Drawings: Anchor-bolt templates keyed to specific poles and certified by manufacturer.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with IEEE C2, "National Electrical Safety Code."
- C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings. Substitutions shall be submitted to Engineer minimum (10) days prior to bid date for evaluation.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports. Comply with all Seismic Requirements.
 - 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
- C. Adjust luminaires that require field adjustment or aiming.

3.2 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Division 26 Section "Raceway and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch-thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.3 GROUNDING

- A. Ground metal poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding electrode for each pole unless otherwise indicated.
 - 2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.
- B. Ground nonmetallic poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding electrode for each pole.
 - 2. Install grounding conductor and conductor protector.
 - 3. Ground metallic components of pole accessories and foundations.

END OF SECTION 265600

PART 1 GENERAL**1.01 DESCRIPTION**

- A. This section specifies the finishing, installation, connection, testing of Physical Access Control System, hereinafter referred to as the PACS.

1.02 RELATED WORK

- A. All Sections listed in the Table of Contents are a Condition of this Section.

1.03 QUALITY ASSURANCE

- A. The Contractor shall be responsible for providing, installing, and the operation of the PACS as shown. The Contractor shall also provide certification as required.
- B. The security system will be installed and tested to ensure all components are fully compatible as a system and can be integrated with all associated security subsystems, whether the security system is stand-alone or a part of a complete Information Technology (IT) computer network.
- C. Contractor Qualifications:
 - 1. The Contractor or security sub-contractor shall be a licensed security Contractor with a minimum of five (5) years experience installing and servicing systems of similar scope and complexity.

1.04 SUBMITTALS

- A. Shop drawing and as-built packages shall include:
 - 1. Specification and scope of work pages for all individual security systems applicable to the design package that will:
 - a. Outline all general and job specific work required within the design package.
 - b. Provide a detailed device identification table outlining device Identification (ID) and use for all security systems equipment utilized in the design package.
 - 2. Drawing sheets that will be plotted on the individual floor plans or site plans shall:
 - a. Include a title block as defined above.
 - b. Clearly define the drawings scale in both standard and metric measurements.
 - c. Provide device identification and location.
 - d. Address all signal and power conduit runs and sizes that are associated with the design of the electronic security system and other security elements (e.g., barriers, etc.).
 - e. Identify all pull box and conduit locations, sizes, and fill capacities.

- B. Complete a full review process conducted by the Contractor along with the Owner's representative to ensure all work has been clearly defined and completed. All reviews shall be conducted in accordance with the project schedule.
- C. Provide manufacturer security system product cut-sheets. Submit for approval at least 30 days prior to commencement of formal testing, a Security System Operational Test Plan. Include procedures for operational testing of each component and security subsystem, to include performance of an integrated system test.
- D. Submit manufacture's certification of Underwriters Laboratories, Inc. (UL) listing as specified. Provide all maintenance and operating manuals per Section 01 00 00, GENERAL REQUIREMENTS.
- E. General: Submittals shall be in full compliance of the Contract Documents. All submittals shall be provided in accordance with this section. Submittals lacking the breadth or depth these requirements will be considered incomplete and rejected. Submissions are considered multidisciplinary and shall require coordination with applicable divisions to provide a complete and comprehensive submission package. Additional general provisions are as follows:
 - 1. The Contractor shall schedule submittals in order to maintain the project schedule. For coordination drawings refer to Specification Section 01 33 10 - DESIGN SUBMITTAL PROCEDURES, which outline basic submittal requirements and coordination. Section 01 33 10 shall be used in conjunction with this section.
 - 2. The Contractor shall identify variations from requirements of Contract Documents and state product and system limitations, which may be detrimental to successful performance of the completed work or system.
 - 3. Each package shall be submitted at one (1) time for each review and include components from applicable disciplines (e.g., electrical work, architectural finishes, door hardware, etc.) which are required to produce an accurate and detailed depiction of the project.
 - 4. Manufacturer's information used for submittal shall have pages with items for approval tagged, items on pages shall be identified, and capacities and performance parameters for review shall be clearly marked through use of an arrow or highlighting. Provide space for Resident Engineer and Contractor review stamps.
 - 5. Technical Data Drawings shall be in the latest version of AutoCAD®, drawn accurately, and in accordance with CAD Standards. FREEHAND SKETCHES OR COPIED VERSIONS OF THE CONSTRUCTION DOCUMENTS WILL NOT BE ACCEPTED. The Contractor shall not reproduce Contract Documents or copy standard information as the basis of the Technical Data Drawings. If departures from the technical data drawings are subsequently deemed necessary by the Contractor, details of such departures and the reasons thereof shall be submitted in writing to the Resident Engineer for approval before the initiation of work.
 - 6. Packaging: The Contractor shall organize the submissions according to the following packaging requirements:

- a. Manual Content: In each manual include information specified in the individual Specification section, and the following information for each major component of building equipment and controls:
 - 1) General system or equipment description.
 - 2) Design factors and assumptions.
 - 3) Copies of applicable Shop Drawings and Product Data.
 - 4) System or equipment identification including: manufacturer, model and serial numbers of each component, operating instructions, emergency instructions, wiring diagrams, inspection and test procedures, maintenance procedures and schedules, precautions against improper use and maintenance, repair instructions, sources of required maintenance materials and related services, and a manual index.
 - b. Manufacturer's Data: Where manufacturer's standard printed data is included in the manuals, include only those sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where more than one (1) item in tabular format is included, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information which is not applicable.
 - c. Where manufacturer's standard printed data is not available and the information is necessary for proper operation and maintenance of equipment or systems, or it is necessary to provide additional information to supplement the data included in the manual, prepare written text to provide the necessary information. Organize the text in a consistent format under a separate heading for different procedures. Where necessary, provide a logical sequence of instruction for each operating or maintenance procedure. Where similar or more than one product is listed on the submittal the Contractor shall differentiate by highlighting the specific product to be utilized.
- F. Operations and Maintenance Manuals: Final copies of the manuals shall be delivered to the Resident Engineer as part of the acceptance test. The draft copy used during site testing shall be updated with any changes required prior to final delivery of the manuals. Each manual's contents shall be identified on the cover. The manual shall include names, addresses, and telephone numbers of each sub-contractor installing equipment or systems, as well as the nearest service representatives for each item of equipment for each system. The manuals shall include a table of contents and tab sheets. Tab sheets shall be placed at the beginning of each chapter or section and at the beginning of each appendix. The final copies delivered after completion of the endurance test shall include all modifications made during installation, checkout, and acceptance. Six (6) hard-copies and one (1) soft copy on CD of each item listed below shall be delivered as a part of final systems acceptance.

1.05 APPLICABLE PUBLICATIONS

- A. The publications listed below (including amendments, addenda, revisions, supplement, and errata) form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

- B. American National Standards Institute (ANSI)/ Security Industry Association (SIA):
 - AC-03Access Control: Access Control Guideline Dye Sublimation
Printing Practices for PVC Access Control Cards
- C. National Fire Protection Association (NFPA):
 - 70-14 National Electrical Code

1.06 COORDINATION

- A. Coordinate arrangement, mounting, and support of electronic safety and security equipment.

PART 2 PRODUCTS

2.01 GENERAL

- A. All equipment and materials for the system will be compatible to ensure correct operation as outlined in FIPS 201, March 2006 and HSPD-12.
- B. The security system characteristics listed in this section will serve as a guide in selection of equipment and materials for the PACS. If updated or more suitable versions are available then the Contracting Officer will approve the acceptance of prior to an installation.
- C. PACS equipment shall meet or exceed all requirements listed below.

2.02 SURGE AND TAMPER PROTECTION

- A. Surge Protection: Protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads. Include surge protection for external wiring of each conductor-entry connection to components.
 - 1. Minimum Protection for Power Connections 120 V and More: Auxiliary panel suppressors complying with requirements in Division 26 Section "Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits."
 - 2. Minimum Protection for Communication, Signal, Control, and Low-Voltage Power Connections: Comply with requirements in Division 26 Section "Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits" as recommended by manufacturer for type of line being protected.
- B. Tamper Protection: Tamper switches on enclosures, control units, pull boxes, junction boxes, cabinets, and other system components shall initiate a tamper-alarm signal when unit is opened or partially disassembled. Control-station control-unit alarm display shall identify tamper alarms and indicate locations.

2.03 CARD READERS

- A. Power: Card reader shall be powered from its associated Controller, including its standby power source.

- B. Response Time: Card reader shall respond to passage requests by generating a signal that is sent to the Controller. Response time shall be 800ms or less, from the time the card reader finishes reading the credential card until a response signal is generated.
- C. Enclosure: Suitable for surface, semi-flush, or pedestal mounting. Mounting types shall additionally be suitable for installation in the following locations:
 - 1. Indoors, controlled environment.
 - 2. Indoors, uncontrolled environment.
 - 3. Outdoors, with built-in heaters or other cold-weather equipment to extend the operating temperature range as needed for operation at the site.
- D. Display: LED or other type of visual indicator display shall provide visual and audible status indications and user prompts. Indicate power on/off, whether user passage requests have been accepted or rejected, and whether the door is locked or unlocked.
- E. Shall be utilized for controlling the locking hardware on a door and allows for reporting back to the main control panel with the time/date the door was accessed, the name of the person accessing the point of entry, and its location.
- F. Will be fully programmable and addressable, locally and remotely, and hardwired to the system.
- G. Shall be individually home run to the main panel.
- H. Shall be installed in a manner that they comply with:
 - 1. The Uniform Federal Accessibility Standards (UFAS)
 - 2. The Americans with Disabilities Act (ADA)
 - 3. The ADA Standards for Accessible Design
- I. Shall support a variety of card readers that must encompass a wide functional range. The PACS may combine any of the card readers described below for installations requiring multiple types of card reader capability (i.e., card only, card and/or PIN, card and/or biometrics, card and/or pin and/or biometrics, supervised inputs, etc.). These card readers shall be available in the approved technology to meet FIPS 201, and is ISO 14443 A or B, ISO/IEC 7816 compliant. The reader output can be Wiegand, RS-22, 485 or TCP/IP.
- J. Shall be housed in an aluminum bezel with a wide lead-in for easy card entry.
- K. Shall contain read head electronics, and a sender to encode digital door control signals.
- L. LED's shall be utilized to indicate card reader status and access status.
- M. Shall be able to support a user defined downloadable off-line mode of operation (e.g. locked, unlocked), which will go in effect during loss of communication with the main control panel.
- N. Shall provide audible feedback to indicate access granted/denied decisions. Upon a card swipe, two audible tones or beeps shall indicate access granted and three tones or beeps shall indicate access denied. All keypad buttons shall provide tactile audible feedback.

- O. Shall have a minimum of two programmable inputs and two programmable outputs.
- P. All card readers that utilize keypad controls along with a reader and shall meet the following specifications:
 - 1. Entry control keypads shall use a unique combination of alphanumeric and other symbols as an identifier. Keypads shall contain an integral alphanumeric/special symbols keyboard with symbols arranged in ascending ASCII code ordinal sequence. Communications protocol shall be compatible with the local processor.
- Q. Shall include a Light Emitting Diode (LED) or other type of visual indicator display and provide visual or visual and audible status indications and user prompts. The display shall indicate power on/off, and whether user passage requests have been accepted or rejected. The design of the keypad display or keypad enclosure shall limit the maximum horizontal and vertical viewing angles of the keypad. The maximum horizontal viewing angle shall be plus and minus five (5) degrees or less off a vertical plane perpendicular to the plane of the face of the keypad display. The maximum vertical viewing angle shall be plus and minus 15 degrees or less off a horizontal plane perpendicular to the plane of the face of the keypad display.
 - 1. Shall respond to passage requests by generating a signal to the local processor. The response time shall be 800 milliseconds or less from the time the last alphanumeric symbol is entered until a response signal is generated.
 - 2. Shall be powered from the source as designed and shall not dissipate more than 150 Watts.
 - 3. Shall be suitable for surface, semi-flush, pedestal, or weatherproof mounting as required.
 - 4. Shall provide a means for users to indicate a duress situation by entering a special code.
- R. Contactless Smart Cards and Readers
 - 1. Smart card readers shall read credential cards whose characteristics of size and technology meet those defined by ISO/IEC 7816, 14443, 15693.
 - 2. The readers shall have "flash" download capability to accommodate card format changes.
 - 3. The card reader shall have the capability of reading the card data and transmitting the data to the main monitoring panel.

2.04 PUSH BUTTON SWITCHES

- A. Push-Button Switches: Momentary-contact back-lighted push buttons, with stainless-steel switch enclosures.
 - 1. Electrical Ratings:
 - a. Minimum continuous current rating of 10A at 240-VAC.

- b. Contacts that will make 720 VA at 60A and that will break at 720 VA at 10A.
- 2. Enclosures: Flush or surface mounting. Push buttons shall be suitable for flush mounting in the switch enclosures.
- 3. Enclosures shall additionally be suitable for installation in the following locations:
 - a. Indoors, controlled environment.
 - b. Indoors, uncontrolled environment.
 - c. Outdoors.
- 4. Power: Push-button switches shall be powered from their associated Controller, using dc control.

2.05 INTERFACES

A. Power Supplies:

- 1. Shall be UL rated and able to adequately power new and existing entry control devices on a continuous basis without failure.
- 2. Shall meet the following minimum technical characteristics:

INPUT POWER	110 VAC 60 HZ
OUTPUT VOLTAGE	12 VDC Nominal (13.8 VDC) 24 VDC Nominal (27.6 VDC) Filtered and Regulated
BATTERY	Dependent on Output Voltage shall provide up to 24 hours of unpowered operation
CHARGING CIRCUIT	Built-in standard

2.06 WIRES AND CABLES

- A. Provide device input cables as required by manufacturer.

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor shall install all system components and appurtenances in accordance with the manufacturers' instructions, ANSI C2, and shall furnish all necessary interconnections, services, and adjustments required for a complete and operable system as specified. Control signals, communications, and data transmission lines grounding shall be installed as necessary to preclude ground loops, noise, and surges from affecting system operation. Equipment, materials, installation, workmanship, inspection, and testing shall be in accordance with manufacturers' recommendations and as modified herein.
- B. Consult the manufacturers' installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation. Refer to the Riser/Connection diagram for all schematic system installation/termination/wiring data.
- C. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., sensors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

3.02 EXAMINATION

- A. Examine pathway elements intended for cables. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation.
- B. Examine roughing-in for control cable conduit systems, Controllers, card readers, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 CABLING

- A. Comply with NECA 1, "Good Workmanship in Electrical Contracting."
- B. Install cables without damaging conductors, shield, or jacket.
- C. Boxes and enclosures containing security system components or cabling, and which are easily accessible to employees or to the public, shall be provided with a lock. Boxes above ceiling level in occupied areas of the building shall not be considered to be accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public shall be covered with a suitable cover plate and secured with tamperproof screws.

3.04 CABLE APPLICATION

- A. Comply with EIA/TIA-569, "Commercial Building Standard for Telecommunications Pathways and Spaces."
- B. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.
- C. RS-232 Cabling: Install at a maximum distance of 50 feet.
- D. RS-485 Cabling: Install at a maximum distance of 4000 feet.
- E. Card Readers and Keypads:

1. Install number of conductor pairs recommended by manufacturer for the functions specified.
 2. Unless manufacturer recommends larger conductors, install No. 22 AWG wire if maximum distance from Controller to the reader is 250 feet, and install No. 20 AWG wire if maximum distance is 500 feet.
 3. For greater distances, install "extender" or "repeater" modules recommended by manufacturer of the Controller.
 4. Install minimum No. 18 AWG shielded cable to readers and keypads that draw 50 mA or more.
- F. Install minimum No. 16 AWG cable from Controller to electrically powered locks. Do not exceed 500 feet of cable.
- G. Install minimum No. 18 AWG ac power wire from transformer to Controller, with a maximum distance of 25 feet of cable.

3.05 INSTALLATION

- A. System installation shall be in accordance with UL 294, manufacturer and related documents and references, for each type of security device installed.
- B. Control Panels:
1. Connect power and signal lines to the controller.
 2. Program the panel as outlined by the design and per the manufacturer's programming guidelines.
- C. Card Readers:
1. Connect all signal inputs and outputs as shown and specified.
 2. Terminate input signals as required.
 3. Program and address the reader as per the design package.
 4. Readers shall be surface or flushed mounted and all appropriate hardware shall be provided to ensure the unit is installed in an enclosed conduit system.

3.06 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.
- B. Perform the following field tests and inspections and prepare test reports:
1. Test each circuit and component of each system. Tests shall include, but are not limited to, measurements of power supply output under maximum load, signal loop resistance, and leakage to ground where applicable.
 2. Operational Test: After installation of cables and connectors, demonstrate product capability and compliance with requirements. Test each signal path for

end-to-end performance from each end of all pairs installed. Remove temporary connections when tests have been satisfactorily completed.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Excavating for footings, slabs-on-grade, trenches, pits, curbs, and paving; backfill and compaction of sub-grade, base and trenches.
- B. Excavated materials shall be removed from site and costs for transportation and removal included in Bid.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Submit list and source of materials to be used in the Work.

1.04 QUALITY ASSURANCE

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.
- B. Comply with State of California Construction Safety Orders (CAL/OSHA)

1.05 UTILITY DISCONNECTS

- A. Coordinate directly with County for any utility disconnects.
- B. Notify Owner 72 hours prior to any excavation.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. General: Fill material will be subject to approval of the Geotechnical Engineer.
- B. Backfill and Fill Materials: Satisfactory soil materials free of clay, rock or gravel larger than 2 inches in any dimension, debris, waste, vegetation, and other unsuitable materials. Local and import fill should have less than 15% fines and a plasticity index (PI) of less than 20.

- C. Aggregate Base: Class 2 conforming to Caltrans Specification Section 26, maximum size 3/4 inches; compact to minimum of 95 percent.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain from damage.
- C. Notify utility company to remove and relocate utilities if required.
- D. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.02 EXCAVATION AND COMPACTING

- A. Saw cut all cuts into asphalt and/or concrete surfaces.
- B. Excavate subsoil to accommodate building foundations, paving and site structures, construction operations, and as indicated on Drawings and/or in attached Project Geotechnical Report.
- C. Cover soils stockpiles. Stockpiles shall be covered daily and covers maintained as well as perimeter erosion control.
- D. Compact disturbed load-bearing soil in direct contact with foundations to original bearing capacity; perform compaction as directed by Geotechnical Engineer.
- E. Support trench excavations in compliance with local codes and safety regulations.
- F. Sheet Pile or shore all excavations as required.
- G. Do not interfere with 45 degree bearing splay under foundations except at pile foundations or where shoring is designed to resist earth and foundation pressures without permitting any settlements of foundations, slabs, or similar structures.
- H. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- I. Hand trim excavation. Remove loose matter.
- J. Remove lumped subsoil, boulders, and rock larger than 2 inches in diameter.
- K. Correct areas over-excavated as directed by Geotechnical Engineer.
- L. Do not backfill trenches until tests and inspections have been made.
- M. Compact to minimum of 95 percent dry density (ASTM 1557) in planted areas and a minimum of 95 percent dry density (ASTM 1557) in paved areas.

- N. Footing bottoms should be free of loose debris and should be firm and unyielding as approved by the project Geotechnical Engineer prior to placement of steel and concrete.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This Section describes the requirements for providing and installing temporary erosion control structures.

1.02 RELATED SECTIONS

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE

- A. Reference Standards
 - 1. California Stormwater Quality Association (CASQA) "Stormwater Best Management Practice Handbook for Construction".
 - 2. State Water Resources Control Board (SWRCB) standards
 - 3. California Stormwater Quality Association "Stormwater Best Management Practice Handbook" for Construction and Industrial and Commercial Development, latest edition.
 - 4. County of Mendocino, California "Small Construction Site Stormwater Erosion and Sediment Control Plan Template", latest edition.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Data, Reports and Certifications:
 - 1. Materials used.
 - 2. Erosion Control Point of Contract

PART 2 PRODUCTS**2.01 MATERIALS**

- A. Furnish and install the following as specified herein and required to eliminate potential erosion and sedimentation during construction works.

1. Outlet structure, basins, ditches
2. Filter fabric, and/or mesh
3. Concrete washout
4. Fiber rolls
5. Inlet protection
6. Stabilized construction entrance
7. Straw waddles

PART 3 EXECUTION**3.01 PROCEDURES.**

- A. Erosion and sedimentation control measures are to be installed in areas as indicated and as directed by governing regulations.
- B. Erosion and sedimentation control measures shall be adjusted, relocated or new controls established for each phase of construction and for specific construction activities that may disturb soils and contribute to erosion.

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION**

- A. This section shall cover site work concrete constructed upon the prepared subgrade and in conformance with the lines, grades, thickness, and cross sections shown. Construction shall include the following:
1. Curb, gutter, and combination curb and gutter.
 2. Pedestrian Pavement: Walks and curb ramps.
 3. Transformer and Emergency Generator slabs, walls, and footings.
 4. Exterior retaining walls.
 5. Exterior stairs and landings.
 6. Light, sign and bollard foundations.
 7. Site furnishings foundations.
 8. Fencing and gate foundations.
 9. Vehicle charging equipment foundations.
 10. Accessible Parking Stalls
 11. Miscellaneous exterior formed and unformed concrete.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 DESIGN REQUIREMENTS

- A. Design all elements with the latest published version of applicable codes.

1.04 WEATHER LIMITATIONS

- A. Placement of concrete shall be in conformance with ACI as specified under Section 03 30 00, CAST-IN-PLACE CONCRETE.

1.05 SELECT SUBBASE MATERIAL JOB-MIX

- A. The Contractor shall retain and reimburse a testing laboratory to design a select subbase material mixture and submit a job-mix formula to the Owner's Representative, in writing, for approval. The formula shall include the source of materials, gradation, plasticity index, liquid limit, and laboratory compaction curves indicating maximum density at optimum moisture.

1.06 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Manufacturers' Certificates and Data certifying that the following materials conform to the requirements specified.
 - 1. Expansion joint filler
 - 2. Hot poured sealing compound
 - 3. Reinforcement
 - 4. Curing materials
- C. Data and Test Reports: Select subbase material.
 - 1. Job-mix formula.
 - 2. Source, gradation, liquid limit, plasticity index, percentage of wear, and other tests as specified and in referenced publications.

1.07 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. Refer to the latest edition of all referenced Standards and codes.
- B. American Association of State Highway and Transportation Officials (AASHTO):
 - M031MM031-07-UL Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement (ASTM A615/A615M-09)
 - M055MM055-09-UL Steel Welded Wire Reinforcement, Plain, for Concrete (ASTM A185)
 - M147-65-UL Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses (R 2004)
 - M148-05-UL Liquid Membrane-Forming Compounds for Curing Concrete (ASTM C309)
 - M171-05-UL Sheet Materials for Curing Concrete (ASTM C171)
 - M182-05-UL Burlap Cloth Made from Jute or Kenaf and Cotton Mats

M213-01-UL Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Type) (ASTM D1751)

M233-86-UL Boiled Linseed Oil Mixer for Treatment of Portland Cement Concrete

T099-09-UL Moisture-Density Relations of Soils Using a 2.5 kg. (5.5 lb) Rammer and a 305 mm (12 in.) Drop

T180-09-UL Moisture-Density Relations of Soils Using a 4.54 kg (10 lb.) Rammer and a 457 mm (18 in.) Drop

C. American Society for Testing and Materials (ASTM):

C94/C94M-09 Ready-Mixed Concrete

C143/C143M-09 Slump of Hydraulic Cement Concrete

PART 2 PRODUCTS

2.01 GENERAL

- A. Concrete shall be Type C, air-entrained as specified in Section 03 30 00, CAST-IN-PLACE CONCRETE, with the following exceptions:

TYPE	MAXIMUM SLUMP*
Curb & Gutter	75 mm (3")
Pedestrian Pavement	75 mm (3")
* For concrete to be vibrated: Slump as determined by ASTM C143. Tolerances as established by ASTM C94.	

2.02 REINFORCEMENT

- A. The type, amount, and locations of steel reinforcement shall be as shown on the drawings and in the specifications.
- B. Welded wire-fabric shall conform to AASHTO M55.
- C. Dowels shall be plain steel bars conforming to AASHTO M31. Tie bars shall be deformed steel bars conforming to AASHTO M31.

2.03 SELECT SUBBASE (WHERE REQUIRED)

- A. Subbase material shall conform to Section 31 23 00 "Excavating Backfilling and Compacting" and as shown on the Drawings.
- B. Subbase material shall produce a compacted, dense-graded course, meeting the density requirement specified in these specifications and drawings.

2.04 FORMS

- A. Use metal or wood forms that are straight and suitable in cross-section, depth, and strength to resist springing during depositing and consolidating the concrete, for the work involved.
- B. Do not use forms if they vary from a straight line more than 3 mm (1/8 inch) in any 3000 mm (ten foot) long section, in either a horizontal or vertical direction.
- C. Wood forms should be at least 50 mm (2 inches) thick (nominal). Wood forms shall also be free from warp, twist, loose knots, splits, or other defects. Use approved flexible or curved forms for forming radii.

2.05 CONCRETE CURING MATERIALS

- A. Concrete curing materials shall conform to one of the following:
 - 1. Burlap conforming to AASHTO M182 having a weight of 233 grams (seven ounces) or more per square meter (yard) when dry.
 - 2. Impervious Sheeting conforming to AASHTO M171.
 - 3. Liquid Membrane Curing Compound conforming to AASHTO M148 (ASTM C309), and shall be free of paraffin or petroleum.

2.06 EXPANSION JOINT FILLERS

- A. Material shall conform to AASHTO M213.

PART 3 EXECUTION

3.01 SUBGRADE PENETRATION

- A. Prepare, construct, and finish the subgrade as specified in Section 31 23 00, Excavating Backfilling and Compacting.
- B. Maintain the subgrade in a smooth, compacted condition, in conformance with the required section and established grade until the succeeding operation has been accomplished.

3.02 SELECT SUBBASE (WHERE REQUIRED)

- A. Mixing: Proportion the select subbase by weight or by volume in quantities so that the final approved job-mixed formula gradation, liquid limit, and plasticity index requirements will be met after subbase course has been placed and compacted. Add water in approved quantities, measured by weight or volume, in such a manner to produce a uniform blend.
- B. Placing:
 - 1. Place the mixed material on the prepared subgrade in a uniform layer to the required contour and grades, and to a loose depth not to exceed 200 mm (8

inches), and that when compacted, will produce a layer of the designated thickness.

2. When the designated compacted thickness exceeds 150 mm (6 inches), place the material in layers of equal thickness. Remove unsatisfactory areas and replace with satisfactory mixture, or mix the material in the area.
3. In no case will the addition of thin layers of material be added to the top layer in order to meet grade.
4. If the elevation of the top layer is 13 mm (1/2 inch) or more below the grade, excavate the top layer and replace with new material to a depth of at least 75 mm (3 inches) in compacted thickness.

C. Compaction:

1. Perform compaction with approved equipment (hand or mechanical) well suited to the material being compacted.
2. Moisten or aerate the material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used.
3. Compact each layer to at least 95 percent or 100 percent of maximum density as determined by AASHTO T180 or AASHTO T99 respectively.

D. Smoothness Test and Thickness Control:

Test the completed subbase for grade and cross section with a straight edge.

1. The surface of each layer shall not show any deviations in excess of 10 mm (3/8 inch).
2. The completed thickness shall be within 13 mm (1/2 inch) of the thickness as shown.

E. Protection:

1. Maintain the finished subbase in a smooth and compacted condition until the concrete has been placed.
2. When Contractor's subsequent operations or adverse weather disturbs the approved compacted subbase, excavate, and reconstruct it with new material meeting the requirements herein specified, at no additional cost to the Owner.

3.03 SETTING FORMS

A. Base Support:

1. Compact the base material under the forms true to grade so that, when set, they will be uniformly supported for their entire length at the grade as shown.
2. Correct imperfections or variations in the base material grade by cutting or filling and compacting.

B. Form Setting:

1. Set forms sufficiently in advance of the placing of the concrete to permit the performance and approval of all operations required with and adjacent to the form lines.
 2. Set forms to true line and grade and use stakes, clamps, spreaders, and braces to hold them rigidly in place so that the forms and joints are free from play or movement in any direction.
 3. Forms shall conform to line and grade with an allowable tolerance of 3 mm (1/8 inch) when checked with a straightedge and shall not deviate from true line by more than 6 mm (1/4 inch) at any point.
 4. Do not remove forms until removal will not result in damaged concrete or at such time to facilitate finishing.
 5. Clean and oil forms each time they are used.
- C. The Contractor's Registered Professional Land Surveyor shall establish and control the alignment and the grade elevations of the forms or concrete slipforming machine operations.
1. Make necessary corrections to forms immediately before placing concrete.
 2. When any form has been disturbed or any subgrade or subbase has become unstable, reset and recheck the form before placing concrete.

3.04 EQUIPMENT

- A. The Owner's Representative shall approve equipment and tools necessary for handling materials and performing all parts of the work prior to commencement of work.
- B. Maintain equipment and tools in satisfactory working condition at all times.

3.05 PLACING REINFORCEMENT

- A. Reinforcement shall be free from dirt, oil, rust, scale or other substances that prevent the bonding of the concrete to the reinforcement.
- B. Before the concrete is placed, the Owner's Representative shall approve the reinforcement, which shall be accurately and securely fastened in place with suitable supports and ties. The type, amount, and position of the reinforcement shall be as shown.

3.06 PLACING CONCRETE - GENERAL

- A. Obtain approval of the Owner's Representative before placing concrete.
- B. Remove debris and other foreign material from between the forms before placing concrete. Obtain approval of the Owner's Representative before placing concrete.
- C. Before the concrete is placed, uniformly moisten the subgrade, base, or subbase appropriately, avoiding puddles of water.
- D. Convey concrete from mixer to final place of deposit by a method which will prevent segregation or loss of ingredients. Deposit concrete so that it requires as little handling as possible.

- E. While being placed, spade or vibrate and compact the concrete with suitable tools to prevent the formation of voids or honeycomb pockets. Vibrate concrete well against forms and along joints. Over-vibration or manipulation causing segregation will not be permitted. Place concrete continuously between joints without bulkheads.
- F. Install a construction joint whenever the placing of concrete is suspended for more than 30 minutes and at the end of each day's work.
- G. Workmen or construction equipment coated with foreign material shall not be permitted to walk or operate in the concrete during placement and finishing operations.

3.07 PLACING CONCRETE FOR CURB AND GUTTER, PEDESTRIAN PAVEMENT, AND EQUIPMENT PADS

- A. Place concrete in the forms in one layer of such thickness that, when compacted and finished, it will conform to the cross section as shown.
- B. Deposit concrete as near to joints as possible without disturbing them but do not dump onto a joint assembly.
- C. After the concrete has been placed in the forms, use a strike-off guided by the side forms to bring the surface to the proper section to be compacted.
- D. Consolidate the concrete thoroughly by tamping and spading, or with approved mechanical finishing equipment.
- E. Finish the surface to grade with a wood or metal float.
- F. All Concrete pads and pavements shall be constructed with sufficient slope to drain properly.

3.08 PLACING CONCRETE FOR VEHICULAR PAVEMENT

- A. Deposit concrete into the forms as close as possible to its final position.
- B. Place concrete rapidly and continuously between construction joints.
- C. Strike off concrete and thoroughly consolidate by a finishing machine, vibrating screed, or by hand-finishing.
- D. Finish the surface to the elevation and crown as shown.
- E. Deposit concrete as near the joints as possible without disturbing them but do not dump onto a joint assembly. Do not place adjacent lanes without approval by the Owner's Representative.

3.09 CONCRETE FINISHING - GENERAL

- A. The sequence of operations, unless otherwise indicated, shall be as follows:
 - 1. Consolidating, floating, straight-edging, troweling, texturing, and edging of joints.
 - 2. Maintain finishing equipment and tools in a clean and approved condition.

3.10 CONCRETE FINISHING CURB AND GUTTER

- A. Round the edges of the gutter and top of the curb with an edging tool to a radius of 1/4 inch or as otherwise detailed.
- B. Float the surfaces and finish with a smooth wood or metal float until true to grade and section and uniform in textures.
- C. Finish the surfaces, while still wet, with a bristle type brush with longitudinal strokes.
- D. Immediately after removing the front curb form, rub the face of the curb with a wood or concrete rubbing block and water until blemishes, form marks, and tool marks have been removed. Brush the surface, while still wet, in the same manner as the gutter and curb top.
- E. Except at grade changes or curves, finished surfaces shall not vary more than 1/8 inch for gutter and 1/4 inch for top and face of curb, when tested with a 10 foot straightedge.
- F. Remove and reconstruct irregularities exceeding the above for the full length between regularly scheduled joints.
- G. Correct any depressions which will not drain.
- H. Visible surfaces and edges of finished curb, gutter, and combination curb and gutter shall be free of blemishes, form marks, and tool marks, and shall be uniform in color, shape, and appearance.

3.11 CONCRETE FINISHING PEDESTRIAN PAVEMENT

- A. Walks, Wheelchair Curb Ramps:
 - 1. Finish the surfaces to grade and cross section with a metal float, trowled smooth and finished with a broom moistened with clear water.
 - 2. Medium brooming shall be transverse to the line of traffic.
 - 3. Finish all slab edges, including those at formed joints, carefully with an edger having a radius as shown on the Drawings.
 - 4. Unless otherwise indicated, edge the transverse joints before brooming. The brooming shall eliminate the flat surface left by the surface face of the edger. Execute the brooming so that the corrugation, thus produced, will be uniform in appearance and not more than 1/16 inch in depth.
 - 5. The completed surface shall be uniform in color and free of surface blemishes, form marks, and tool marks. The finished surface of the pavement shall not vary more than 3/16 inch when tested with a 10 foot straightedge.
 - 6. The thickness of the pavement shall not vary more than 1/4 inch.
 - 7. Remove and reconstruct irregularities exceeding the above for the full length between regularly scheduled joints.

3.12 JOINTS - GENERAL

- A. Place joints, where shown, conforming to the details as shown, and perpendicular to the finished grade of the concrete surface.
- B. Joints shall be straight and continuous from edge to edge of the pavement.

3.13 EXPANSION JOINTS

- A. Use a preformed expansion joint filler material of the thickness as shown to form expansion joints.
- B. Material shall extend the full depth of concrete, cut and shaped to the cross section as shown, except that top edges of joint filler shall be below the finished concrete surface where shown to allow for sealing.
- C. Anchor with approved devices to prevent displacing during placing and finishing operations.
- D. Round the edges of joints with an edging tool.
- E. Form expansion joints as follows:
 - 1. Without dowels, about structures and features that project through, into, or against any site work concrete construction.
 - 2. Using joint filler of the type, thickness, and width as shown.
 - 3. Installed in such a manner as to form a complete, uniform separation between the structure and the site work concrete item.

3.14 CONSTRUCTION JOINTS

- A. Locate longitudinal and transverse construction joints between slabs as shown.
- B. Place transverse construction joints of the type shown, where indicated and whenever the placing of concrete is suspended for more than 30 minutes.
- C. Use a butt-type joint with dowels in curb and gutter if the joint occurs at the location of a planned joint.
- D. Use keyed joints with tiebars if the joint occurs in the middle third of the normal curb and gutter joint interval.

3.15 FORM REMOVAL

- A. Forms shall remain in place at least 12 hours after the concrete has been placed. Remove forms without injuring the concrete.
- B. Do not use bars or heavy tools against the concrete in removing the forms. Promptly repair any concrete found defective after form removal.

3.16 CURING OF CONCRETE

- A. Cure concrete by one of the following methods appropriate to the weather conditions and local construction practices, against loss of moisture, and rapid temperature changes for at least seven days from the beginning of the curing operation. Protect unhardened concrete from rain and flowing water. All equipment needed for adequate curing and protection of the concrete shall be on hand and ready to install before actual concrete placement begins. Provide protection as necessary to prevent cracking of the pavement due to temperature changes during the curing period. If any selected method of curing does not afford the proper curing and protection against concrete cracking, remove and replace the damaged pavement and employ another method of curing as directed by the Owner's Representative.
- B. Burlap Mat: Provide a minimum of two layers kept saturated with water for the curing period. Mats shall overlap each other at least 150 mm (6 inches).
- C. Impervious Sheeting: Use waterproof paper, polyethylene-coated burlap, or polyethylene sheeting. Polyethylene shall be at least 0.1 mm (4 mils) in thickness. Wet the entire exposed concrete surface with a fine spray of water and then cover with the sheeting material. Sheets shall overlap each other at least 300 mm (12 inches). Securely anchor sheeting.
- D. Liquid Membrane Curing:
 - 1. Apply pigmented membrane-forming curing compound in two coats at right angles to each other at a rate of 5 m²/L (200 square feet per gallon) for both coats.
 - 2. Do not allow the concrete to dry before the application of the membrane.
 - 3. Cure joints designated to be sealed by inserting moistened paper or fiber rope or covering with waterproof paper prior to application of the curing compound, in a manner to prevent the curing compound entering the joint.
 - 4. Immediately re-spray any area covered with curing compound and damaged during the curing period.

3.17 CLEANING

- A. After completion of the curing period:
 - 1. Remove the curing material (other than liquid membrane).
 - 2. Sweep the concrete clean.
 - 3. After removal of all foreign matter from the joints, seal joints as herein specified.
 - 4. Clean the entire concrete of all debris and construction equipment as soon as curing and sealing of joints has been completed.

3.18 PROTECTION

- A. The contractor shall protect the concrete against all damage prior to final acceptance by the Owner. Remove concrete containing excessive cracking, fractures, spalling, or other defects and reconstruct the entire section between regularly scheduled joints, when

directed by the Owner's Representative, and at no additional cost to the Owner. Exclude traffic from vehicular pavement until the concrete is at least seven days old, or for a longer period of time if so directed by the Owner's Representative.

3.19 FINAL CLEAN-UP

- A. Remove all debris, rubbish and excess material from the site.

END OF SECTION

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PART 1 GENERAL**1.01 DESCRIPTION**

- A. This work shall cover the composition, mixing, construction upon the prepared subgrade, and the protection of hot asphalt concrete pavement. The hot asphalt concrete pavement shall consist of an aggregate or asphalt base course and asphalt surface course constructed in conformity with the lines, grades, thickness, and cross sections as shown. Each course shall be constructed to the depth, section, or elevation required by the drawings and shall be rolled, finished, and approved before the placement of the next course.
- B. This Section includes specifications for constructing new asphalt concrete wearing surface Type A, 1/2-inch maximum with medium grading.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 ALIGNMENT AND GRADE CONTROL

- A. The Contractor's Registered Professional Land Surveyor shall establish and control the pavement (aggregate or asphalt base course and asphalt surface course) alignments, grades, elevations, and cross sections as shown on the Drawings.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Data and Test Reports:
 - 1. Aggregate Base Course: Sources, gradation, liquid limit, plasticity index, percentage of wear, and other tests required by Section 39 of Caltrans Standard Specifications (CTSS).
 - 2. Asphalt Base/Surface Course: Aggregate source, gradation, soundness loss, percentage of wear, and other tests required by Section 39 of CTSS.
 - 3. Job-mix formula.
- C. Certifications:
 - 1. Asphalt prime and tack coat material certificate of conformance to Section 39 of CTSS requirements.

2. Asphalt cement certificate of conformance to CTSS requirements.
3. Job-mix certification - Submit plant mix certification that mix equals or exceeds Section 39 of CTSS.
4. Prior to starting construction, the Contractor shall submit the asphalt concrete mix design including the amount of asphalt binder to be mixed with the dry aggregate to the Engineer for approval. No resurfacing work will be allowed prior to the approval of the mix design. Asphalt concrete mix design shall conform to Section 39 of CTSS.
5. The Contractor shall submit electronic copies of manufacturer's literature, specifications, applications and installations for filler and/or sealer material to the Owner's Representative for approval at least five (5) calendar days in advance of performing the filling and/or sealing work.

1.05 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. Refer to the latest edition of all referenced Standards and codes.
- B. State of California Department of Transportation (CalTrans):
 1. Standard Specifications (CTSS)

PART 2 PRODUCTS

2.01 GENERAL

- A. Aggregate base, Asphaltic base and asphalt concrete materials shall conform to the requirements of the following and other appropriate sections of the latest version of Section 39 of CTSS, including amendments, addenda and errata. Where the term "Engineer" is referenced in Section 39 of CTSS, it shall mean the Owner's Representative.

2.02 MATERIALS

- A. Asphalt: In accordance with the requirements of Section 39-2.01 of CTSS, except that asphalt shall be either PG 64-10 or AR-4000.
- B. Aggregate: In accordance with the requirements of Section 39-2.02 of CTSS, except that aggregate grading shall be as follows:

Sieve Sizes	Limits of Proposed Gradation	Operating Range	Contract Compliance
3/4"	-----	100	100
1/2"	-----	95-100	89-100
3/8"	-----	80-95	75-100
No. 4	59-66	X±5	X±8

No. 8	43-49	X±5	X±8
No. 30	22-27	X±5	X±8
No. 200	-----	3-8	0-11

C. Minimum Durability Index: When tested in accordance with Caltrans Test Method 229 shall be 50.

D. Tack coat in accordance with Section 39 of CTSS.

2.03 EQUIPMENT

A. Spreading Equipment: In accordance with the requirements of Section 39 of CTSS.

B. Compacting Equipment: In accordance with the requirements of Section 9 of CTSS.

PART 3 EXECUTION

3.01 GENERAL

A. The Asphalt Concrete Paving equipment, weather limitations, job-mix formula, mixing, construction methods, compaction, finishing, tolerance, and protection shall conform to the requirements of the appropriate sections of Section 39 of CTSS for the type of material specified.

3.02 MIXING ASPHALTIC CONCRETE MATERIALS

A. Provide hot plant-mixed asphaltic concrete paving materials.

1. Temperature leaving the plant: 143 degrees C (290 degrees F) minimum, 160 degrees C (320 degrees F) maximum.
2. Temperature at time of placing: 138 degrees C (280 degrees F) minimum.

3.03 SUBGRADE

- A. Shape to line and grade and compact with self-propelled rollers.
- B. All depressions that develop under rolling shall be filled with acceptable material and the area re-rolled.
- C. Soft areas shall be removed and filled with acceptable materials and the area re-rolled.
- D. Should the subgrade become rutted or displaced prior to the placing of the subbase, it shall be reworked to bring to line and grade.
- E. Proof-roll the subgrade with maximum 50 ton gross weight dump truck as directed by Owner's Representative. If pumping, pushing, or other movement is observed, rework the area to provide a stable and compacted subgrade.

3.04 BASE COURSES

A. Base:

1. Spread and compact to the thickness shown on the drawings.
2. Rolling shall begin at the sides and continue toward the center and shall continue until there is no movement ahead of the roller.
3. After completion of the base rolling there shall be no hauling over the base other than the delivery of material for the top course.

C. Thickness tolerance: Provide the compacted thicknesses shown on the Drawings within a tolerance of minus 0.0mm (0.0") to plus 12.7mm (0.5").

D. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 5mm in 3m (3/16 inch in ten feet).

E. Moisture content: Use only the amount of moisture needed to achieve the specified compaction.

3.05 PLACEMENT OF ASPHALTIC CONCRETE PAVING

A. Remove all loose materials from the compacted base.

B. Apply the specified prime coat, and tack coat where required, and allow to dry in accordance with the manufacturer's recommendations as approved by the Owner.

C. Receipt of asphaltic concrete materials:

1. Do not accept material unless it is covered with a tarpaulin until unloaded, and unless the material has a temperature of not less than 130 degrees C (280 degrees F).
2. Do not commence placement of asphaltic concrete materials when the atmospheric temperature is below 10 degrees C (50 degrees F), not during fog, rain, or other unsuitable conditions.

D. Spreading:

1. Spread material in a manner that requires the least handling.
2. Where thickness of finished paving will be 76mm (3") or less, spread in one layer.

E. Rolling:

1. After the material has been spread to the proper depth, roll until the surface is hard, smooth, unyielding, and true to the thickness and elevations shown on the drawings.
2. Roll in at least two directions until no roller marks are visible.
3. Finished paving smoothness tolerance:
 - a. No depressions which will retain standing water.

- b. No deviation greater than 3mm in 1.8m (1/8" in six feet).

3.06 APPLICATION OF SEAL COAT

- A. Prepare the surfaces, mix the seal coat material, and apply in accordance with the manufacturer's recommendations as approved by the Owner.
- B. Apply one coat of the specified sealer.
- C. Achieve a finished surface seal which, when dry and thoroughly set, is smooth, tough, resilient, of uniform black color, and free from coarse textured areas, lap marks, ridges, and other surface irregularities.

3.07 PROTECTION

- A. Protect the asphaltic concrete paved areas from traffic until the sealer is set and cured and does not pick up under foot or wheeled traffic.

3.08 FINAL CLEAN-UP

- A. Remove all debris, rubbish, and excess material from the work area.

END OF SECTION

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PART 1 GENERAL**1.01 DESCRIPTION**

- A. Section includes specifications for precast concrete wheel stops for vehicular parking stalls in parking structures and parking lots as indicated.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCE STANDARDS

- A. State of California, Department of Transportation Caltrans, Standard Specifications (CTSS)

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Submit manufacturers' product data of precast stops and epoxy adhesive for approval.

1.05 QUALITY ASSURANCE:

- A. Precast wheel stops shall be manufactured for the intended purpose by a company or firm specializing in the manufacture of precast concrete parking appurtenances.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. Wheel Stops: Precast, 3.5% minimum air-entrained concrete; 4000 psi minimum compressive strength. Each stop shall be reinforced with two No. 4 deformed steel reinforcing bars, minimum. Provide chamfered corners and drainage slots on underside, and provide holes for dowel-anchoring to substrate. Unless indicated otherwise, provide stops of half octagonal configuration and 30-inch length.
- B. Adhesive for Anchoring Stops to Concrete Slabs, At-Grade Concrete Pavements, and At-Grade Asphalt Pavements: Epoxy adhesive manufactured for the purpose, similar and equal to the adhesives specified in Caltrans Standard Specifications, Section 95-2.04 or 95-2.05.

- C. Adhesive for Bonding Dowel to Wheel Stop: As proposed by Contractor and approved by the Engineer, suitable for application.
- D. Steel Bars for Installation: Galvanized 5/8" diameter steel dowels or galvanized

PART 3 EXECUTION

3.1 INSTALLATION

- A. Securely attach wheel stops into at-grade concrete and at-grade asphalt pavement with not less than two galvanized steel dowels embedded in holes cast into wheel stops. Firmly bond each dowel to wheel stop and to pavement.
- B. At concrete pavement, drill holes in pavement for dowels.

END OF SECTION

PART 1 GENERAL**1.01 DESCRIPTION**

- A. This work shall consist of furnishing and applying paint areas restricted to accessible stalls, crosswalks, energy stalls, and other detail pavement markings, in accordance with the details as shown or as prescribed by the Owner's Representative. Conform to the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the U.S. Department of Transportation, Federal Highway Administration, CBC 2016, 11B and ADAAG 2010 for details not shown.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples
- B. Furnish Manufacturer's Certificates and Data certifying that the following materials conform to the requirements specified:
 - 1. Paint.

1.04 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
 - TT-B-1325CBeads (Glass Spheres); Retro-Reflective
 - TT-P-1952DPaint, Traffic Black, and Airfield Marking, Waterborne
- C. Master Painters Institute (MPI):
 - Approved Product List – 2019

PART 2 PRODUCTS**2.01 PAINT**

- A. Paint for marking pavement (parking lot and zone marking) shall conform to MPI No. 97, color as shown. Paint for obliterating existing markings shall conform to Fed. Spec. TT-P-1952D. Paint shall be in containers of at least 5 gallons. A certificate shall accompany each batch of paint stating compliance with the applicable publication.

2.02 PAINT APPLICATOR

- A. Apply all marking by approved mechanical equipment. The equipment shall provide constant agitation of paint and travel at controlled speeds. Synchronize one or more paint "guns" to automatically begin and cut off paint flow in the case of skip lines. The equipment shall have manual control to apply continuous lines of varying length and marking widths as shown. Provide pneumatic spray guns for hand application of paint in areas where a mobile paint applicator cannot be used. If the equipment does not have a glass bead dispenser, use a separate piece of equipment. An experienced technician that is thoroughly familiar with equipment, materials, and marking layouts shall control all painting equipment and operations.

PART 3 EXECUTION**3.01 SURFACE PREPARATION**

- A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of marking materials.
- B. Thoroughly clean all surfaces to be marked before application of paint. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods. Completely remove rubber deposits, existing paint markings, and other coatings adhering to the pavement with scrapers, wire brushings, sandblasting, mechanical abrasion, or approved chemicals as directed by the Owner's Representative. The application of paint conforming to Fed. Spec. TT-P-1952D is an option to removal of existing paint markings on asphalt pavement. Apply the black paint in as many coats as necessary to completely obliterate the existing markings. Where oil or grease are present on old pavements to be marked, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application. After cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint. Pavement marking shall follow as closely as practicable after the surface has been cleaned and dried, but do not begin any marking until the Owner's Representative has inspected the surface and gives permission to proceed. The Contractor shall establish control points for marking and provide templates to control paint application by type and color at necessary intervals. The Contractor is responsible to preserve and apply marking in conformance with the established control points.

3.02 APPLICATION

- A. Apply uniformly painted and reflective pavement marking of required color(s), length, and width with true, sharp edges and ends on properly cured, prepared, and dried surfaces in conformance with the details as shown and established control points. The length and width of lines shall conform within a tolerance of plus or minus 3 inches and plus or minus

1/8 inch, respectively, in the case of skip markings. The length of intervals shall not exceed the line length tolerance. Temperature of the surface to be painted and the atmosphere shall be above 50 degrees F and less than 95 degrees F. Apply the paint at a wet film thickness of 0.015 inch. Disperse reflective glass beads evenly on the wet paint at a rate of 6 pounds per gallon of paint. Apply paint in one coat. At the direction of the Owner's Representative, markings showing light spots may receive additional coats. The maximum drying time requirements of the paint specifications will be strictly enforced, to prevent undue softening of asphalt, and pick-up, displacement, or discoloration by tires of traffic. If there is a deficiency in drying of the marking, discontinue paint operations until cause of the slow drying is determined and corrected. Remove and replace marking that is applied at less than minimum material rates; deviates from true alignment; exceeds stipulated length and width tolerances; or shows light spots, faulty distribution of beads, smears, or other deficiencies or irregularities. Use carefully controlled sand blasting, approved grinding equipment, or other approved method to remove marking so that the surface to which the marking was applied will not be damaged.

3.03 PROTECTION

- A. Conduct operations in such a manner that necessary traffic can move without hindrance. Protect the newly painted markings so that, insofar as possible, the tires of passing vehicles will not pick up paint. Place warning signs at the beginning of the wet line, and at points well in advance of the marking equipment for alerting approaching traffic from both directions. Place small flags or other similarly effective small objects near freshly applied markings at frequent intervals to reduce crossing by traffic. Efface and replace damaged portions of markings at no additional cost to the Owner.

3.04 DETAIL PAVEMENT MARKING

- A. Use Detail Pavement Markings, exclusive of actual traffic lane marking, at exit and entrance islands and turnouts, on curbs, at crosswalks, at parking bays, and at such other locations as shown. Show the International Accessibility Symbol at indicated parking spaces. Color shall be as shown. Apply paint for the symbol using a suitable template that will provide a pavement marking with true, sharp edges and ends. Place detail pavement markings of the color(s), width(s) and length(s), and design pattern at the locations shown.

3.05 FINAL CLEAN-UP

- A. Remove all debris, rubbish and excess material from the site.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This Section specifies furnishing and installing Cast In Place Detectable/Tactile Warning Surface Tiles where indicated. Not recommended for asphalt applications.

1.02 RELATED SECTIONS: Section(s) related to this section include:

- A. Drawings All Sections listed in the Table of Contents are a Condition of this Section.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.
- B. Samples for Verification Purposes: Submit two (2) tile samples minimum 12"x12" of the kind proposed for use.
- C. Shop drawings are required for products specified showing fabrication details, composite structural system, tile surface profile, sound on cane contact amplification feature, plans of tile placement including joints, and material to be used as well as outlining installation materials and procedure.
- D. Material Test Reports: Submit complete test reports from qualified accredited independent testing laboratories to qualify that materials proposed for use are in compliance with requirements and meet or exceed the properties indicated on the specifications. All tests shall be conducted on a Cast In Place Detectable/Tactile Warning Surface Tile system as certified by a qualified independent testing laboratory.
- E. Maintenance Instructions: Submit copies of manufacturer's specified installation and maintenance practices for each type of Detectable Warning Surface Tile and accessory as required.

1.04 QUALITY ASSURANCE

- A. Provide Cast In Place Detectable/Tactile Warning Surface Tiles and accessories as produced by a single manufacturer with a minimum of five (5) years' experience in the manufacturing of Cast In Place Detectable/Tactile Warning Surface Tiles.
- B. Installer's Qualifications: Engage an experienced Installer certified in writing by Cast In Place Detectable/Tactile Warning Surface Tile manufacturer as qualified for installation, who has successfully completed installations similar in material, design, and extent to that indicated for Project.
- C. Americans with Disabilities Act (ADA): Provide Surface Applied Detectable/Tactile Warning Surface Tiles which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).
- D. California Code of Regulations (CCR): Provide only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Chapter 2,

Section 202 definition of "Detectable Warning". Section 11B-247 and 11B-705 "Detectable Warnings And Detectable Directional Texture"

- E. Vitrified Polymer Composite (VPC) Cast in Place Warning tiles shall include continuous strand woven fiberglass sheet matrix embedded within an epoxy polymer composition with a ultra-violet coating employing aluminum oxide particles in the truncated domes. The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.9" base diameter, and 0.45" top diameter, spaced center-to-center 2.35" to 2.40 as measured "In Line". For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40 - 90° raised points 0.045" high, per square inch.
1. Dimensions: Cast In Place Detectable/Tactile Warning Surface Tiles shall be held within the following dimensions and tolerances:

Length and Width: 36" x 60"

Nominal Depth: 1.375 (1-3/8") (+/-) 5% max.

Face Thickness: 0.1875 (1 3/8") (+/-) 5% max.

Warpage of Edge: 0.5% max.

Embedment Flange Spacing: shall be no greater than 3.1"
 2. Water Absorption of Tile when tested by ASTM D 570-98 not to exceed 0.05%.
 3. Slip Resistance of Tile when tested by ASTM C 1028-96 the combined Wet and Dry Static Co-Efficients of Friction not to be less than 0.80 on top of domes and field area.
 4. Compressive Strength of Tile when tested by ASTM D 695-02a not to be less than 28,000 psi.
 5. Tensile Strength of Tile when tested by ASTM D 638-03 not to be less than 19,000 psi.
 6. Flexural Strength of Tile when tested by ASTM D 790-03 not to be less than 25,000 psi.
 7. Chemical Stain Resistance of Tile when tested by ASTM D 543-95 (re approved 2001) to withstand without discoloration or staining - 10% hydrochloric acid, urine, saturated calcium chloride, black stamp pad ink, chewing gum, red aerosol paint, 10% ammonium hydroxide, 1% soap solution, turpentine, Urea 5%, diesel fuel and motor oil.
 8. Abrasive Wear of Tile when tested by BYK - Gardner Tester ASTM D 2486-00 with reciprocating linear motion of 37± cycles per minute over a 10" travel. The abrasive medium, a 40 grit Norton Metallite sand paper, to be fixed and leveled to a holder. The combined mass of the sled, weight and wood block is to be

3.2 lb. Average wear depth shall not exceed 0.060 after 1000 abrasion cycles when measured on the top surface of the dome representing the average of three measurement locations per sample.
 9. Resistance to Wear of Unglazed Ceramic Tile by Taber Abrasion per ASTM C501-84 (re approved 2002) shall not be less than 500.
 10. Gardner Impact to Geometry "GE" of the standard when tested by ASTM D 5420-04 to have a mean failure energy expressed as a function of specimen thickness of

not less than 550 in. lbf/in. A failure is noted when a crack is visible on either surface or when any brittle splitting is observed on the bottom plaque in the specimen.

11. Accelerated Weathering of Tile when tested by ASTM G 155-05a for 3000 hours shall exhibit the following result – $\Delta E < 4.5$, as well as no deterioration, fading or chalking of surface of tile color No 33538
12. Accelerated Aging and Freeze Thaw Test of Tile and Adhesive System when tested to ASTM D 1037-99 shall show no evidence of cracking, delamination, warpage, checking, blistering, color change, loosening of tiles or other detrimental defects.
13. Salt and Spray Performance of Tile when tested to ASTM B 117-03 not to show any deterioration or other defects after 200 hours of exposure.
14. AASHTO HB-17 single wheel HS20-44 loading “Standard Specifications for Highways and Bridges”. The Cast In Place Tile shall be mounted on a concrete platform with a ½” airspace at the underside of the tile top plate then subjected to the specified maximum load of 10,400 lbs., corresponding to an 8000 lb individual wheel load and a 30% impact factor. The tile shall exhibit no visible damage at the maximum load of 10,400 lbs.
15. Embedment flange spacing shall be no greater than 3.1” center to center spacing as illustrated on the product Cast In Place drawing.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Cast In Place Detectable/Tactile Warning Surface Tiles shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy plastic wrappings to protect tile from concrete residue during installation and tile type shall be identified by part number.
- B. Cast In Place Detectable/Tactile Warning Surface Tiles shall be delivered to location at building site for storage prior to installation.

1.06 SITE CONDITIONS

- A. Environmental Conditions and Protection: Maintain minimum temperature of 40°F in spaces to receive Cast In Place Detectable/Tactile Warning Surface Tiles for at least 24 hours prior to installation, during installation, and for not less than 24 hours after installation.
- B. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the general public. Provide barricades or screens to protect the general public.

1.07 GUARANTEE

- A. Cast In Place Detectable/Tactile Warning Surface Tiles shall be guaranteed in writing for a period of five (5) years from date of final completion. The guarantee includes defective work, breakage, deformation, fading and loosening of tiles.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis-Of-Design Manufacturer: "Armor-Tile" as manufactured by Engineered Plastics Inc., Tel: 800-682-2525, or approved equal.
- B. Product: The Vitrified Polymer Composite (VPC) Cast In Place Detectable/Tactile Warning Surface Tile.
- C. Color: Yellow conforming to Federal Color No. 33538. Color shall be homogeneous throughout the tile.

PART 3 EXECUTION

3.01 INSTALLATION

- A. During Cast In Place Detectable/Tactile Warning Surface Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- B. Prior to placement of the Cast In Place Detectable/Tactile Warning Surface Tile system, review manufacturer and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.
- C. The specifications of the structural embedment flange system and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers. Not recommended for asphalt applications.
- D. The physical characteristics of the concrete shall be consistent with the contract specifications while maintaining a slump range of 4 - 7 to permit solid placement of the Cast In Place Detectable/Tactile Warning Surface Tile system. An overly wet mix will cause the tile to float. Under these conditions, suitable weights such as 2 concrete blocks or sandbags (25 lb) shall be placed on each tile.
- E. The concrete pouring and finishing operations require typical mason's tools, however, a 4' long level with electronic slope readout, 25 lb. weights, and a large non-marring rubber mallet are specific to the installation of the Cast In Place Detectable/Tactile Warning Surface Tile system. A vibrating mechanism such as that manufactured by Vibco can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 1 foot square.
- F. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.
- G. When preparing to set the tile, it is important that no concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Holes in the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the tile. This will lock the tile solidly into the cured concrete.
- H. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed true and square to the curb edge in accordance with the contract drawings. The Cast In Place

Detectable/Tactile Warning Surface Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the tile as this may cause uneven setting which can result in air voids under the tile surface. The contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.

- I. In cold weather climates it is recommended that the Cast In Place Detectable/Tactile Warning Surface Tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp and that the base of domes to allow water drainage. This installation will reduce the possibility of damage due to snow clearing operations.
- J. Immediately after placement, the tile elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates. Ensure that the field surface of the tile is flush with the surrounding concrete and back of curb so that no ponding is possible on the tile at the back side of curb.
- K. While concrete is workable, a 3/8" radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the tile's perimeter, flush to the field level of the tile.
- L. During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external forces placed on the tile that may rock the tile causing a void between the underside of tile and concrete.
- M. Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Two suitable weights of 25 lb each may be required to be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.
- N. Following the concrete curing stage, protective plastic wrap is to be removed from the tile surface by cutting the plastic with a sharp knife, tight to the concrete/tile interface. If concrete bled under the plastic, a soft brass wire brush will clean the residue without damage to the tile surface.
- O. If desired, individual tiles can be bolted together using 1/4 inch or equivalent hardware. This can help to ensure that adjacent tiles are flush to each other during the installation process. Tape or caulking can be placed on the underside of the bolted butt joint to ensure that concrete does not rise up between the tiles during installation. Any protective plastic wrap which was peeled back to facilitate bolting or cutting, should be replaced and taped to ensure that the tile surface remains free of concrete during the installation process.
- P. Tiles can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini-grinder. Use of a straightedge to guide the cut is advisable where appropriate.
- Q. Any sound-amplifying plates on the underside of the tile, which are dislodged during handling or cutting, should be replaced and secured with construction adhesive. The air gap created between these plates and the bottom of the tile is important in preserving the sound on cane audible properties of the Armor-Tile system as required in various jurisdictions.

3.02 CLEANING, PROTECTING AND MAINTENANCE

- A. Protect tiles against damage during construction period to comply with Tactile Tile

manufacturer's specification.

- B. Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.
- C. Clean Tactile Tiles not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean Tactile Tile by method specified by Tactile Tile manufacturer.
- D. Comply with manufacturers maintenance manual for cleaning and maintaining tile surface and it is recommended to perform annual inspections for safety and tile integrity.

END OF SECTION

*****ATTENTION: This section contains multiple sections*****

SECTION 33 05 31.11 - POLYVINYL CHLORIDE (PVC) GRAVITY PIPE

PART 1 – GENERAL

1.01 THE REQUIREMENT:

The Contractor shall furnish and install PVC pipe and all appurtenances as specified, complete and in place, as shown on the Plans, as specified in this Section and *Section 33 31 00 - Sanitary Sewerage Piping* and *Section 33 31 16 - Sanitary Sewer Gravity Service Laterals*.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

A. Commercial Standards:

AWWA C900-07: Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In. (100 mm through 300 mm), for Water Transmission and Distribution

AWWA C905-08: Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In. (350 mm Through 1,200 mm), for Water Transmission and Distribution

ASTM D 1784: Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

ASTM D 2241: Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR-Series)

ASTM D 2321: Practice for Underground Installation of Thermoplastic Sewer Pipe for Sewers and Other Gravity-Flow Applications

ASTM D 3034: Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings

ASTM F 477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM F 1674: Test Method for Joint Restraint Products

1.04 QUALITY ASSURANCE:

- A. Except as modified in this Section, all materials used in the manufacture or installation of the pipe shall be tested in accordance with the requirements of the referenced standards.
- B. Submittals and testing shall be done in compliance with *Section 33 01 30.11 - Inspection of Sewers*.

PART 2 – PRODUCTS

2.01 GENERAL:

All PVC pipe shall be continuously and permanently marked with the manufacturer's name, pipe size and pressure rating in psi.

2.02 PIPE:

- A. All PVC pipe shall be joined by compression, solvent-welded, thermo-fusion welded or mechanical restrained joints as shown on the Plans.
- B. Polyvinyl chloride pipe (PVC) shall conform to the requirements of ASTM D 3034, SDR-26, or AWWA C900 or C905, Class 100, 150, 165, 200, 253, or 305. Material for PVC pipe shall conform to the requirements of ASTM D 1784 for Class 12454-B or 12454-C as defined therein.
- C. Flexible rubber rings for compression type joints for PVC pipe and fittings shall conform to the requirements of ASTM F 477.
- D. All sun-faded pipe or pipe with noticeable surface defects will be rejected and shall be replaced by the Contractor.

2.03 COUPLINGS AND FITTINGS:

- A. Couplings shall be as listed in the Approved Materials List.
- B. All fittings for PVC pipe shall conform to the requirements of ASTM D 2241. The ring groove and gasket ring shall be compatible with PVC pipe ends.
- C. The strength class of fittings shall be no less than the strength class of any adjoining pipe.
- D. PVC fittings shall, at a minimum, conform to the requirements of ASTM D 3034 as they apply to type SDR-26 PVC Sewer Pipe using an Elastomeric Gasket Joint in a bell and spigot assembly system. Rubber sealing gaskets shall meet the requirements of ASTM F 477.
- E. All PVC pipe entering or leaving a concrete structure shall have a rubber sealing gasket, as supplied by the pipe manufacturer, firmly seated perpendicular to the pipe axis, around the pipe banded and cast into the structure base or near the structure wall center as a water stop. Said water stop may also consist of a manhole coupling with rubber sealing rings cast into the structure base (see DWG 20-05).

2.04 RESTRAINED JOINTS FOR C900 PVC PIPE:

All restrained joints used in sanitary sewer applications shall meet or exceed the requirements of ASTM F 1674. All restrained joints shall be per the Approved Materials List.

PART 3 – EXECUTION

3.01 GENERAL:

- A. Sewer pipelines shall be constructed in compliance with the requirements of this Section and *Section 33 31 00 - Sanitary Sewerage Piping* and *Section 33 31 16 - Sanitary Sewer Gravity Service Laterals*.
- B. Work shall meet the specified requirements of these Specifications unless the requirements of the local agency having jurisdiction are greater, in which case the greater requirements shall govern.

3.02 INSTALLATION:

PVC pipe shall be installed in accordance with the requirements of ASTM D 2321; as specified herein and shown on the Plans

3.03 HORIZONTAL CURVES:

Horizontal curves shall be installed using straight pipe segments, each a minimum of five feet in length and joint deflections or fittings in accordance with the requirements of DWG 21-01, or with forced bends where the radius of the curve exceeds the minimums specified in the table below:

SDR-26 PVC Pipe (Forced Bends)				
Pipe Diameter	4"	6"	8"	10"
Minimum Radius	135'	200'	260'	322'

3.04 FIELD JOINTING:

- A. Each pipe compression-type joint shall be joined with a lock-in rubber ring and a ring groove that is designed to resist displacement during pipe insertion.
- B. The ring and the ring seat inside the bell shall be wiped clean before the gasket is inserted. A thin film of lubricant shall be applied to the exposed surface of the ring and to the outside of the clean pipe end. Lubricant other than that furnished with the pipe shall not be used.
- C. Joints shall not be deflected either vertically or horizontally in excess of the printed recommendations of the pipe manufacturer.

END OF SECTION

SECTION 33 05 19 - DUCTILE IRON PIPE (DIP)**PART 1 – GENERAL****1.01 THE REQUIREMENT:**

The Contractor shall furnish and install ductile iron pipe (DIP) and all appurtenances as specified, complete and in place, as shown on the Plans, as specified in this Section and in *Section 33 31 00 - Sanitary Sewerage Piping* and *Section 33 31 16 - Sanitary Sewer Gravity Service Laterals*.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

A. Commercial Standards:

ANSI/AWWA C110/A21.10: Ductile-Iron and Gray-Iron Fittings, 3 in. through 48 in. for Water and Other Liquids

ANSI/AWWA C111/A21.11: Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings

ANSI/AWWA C115/A21.15: Flanged Ductile-Iron and Gray-Iron Pipe with Threaded Flanges

ANSI/AWWA C150/A21.50: Thickness Design of Ductile-Iron Pipe

ANSI/AWWA C151/A21.51: Ductile-Iron Pipe, Centrifugally Cast

ANSI/AWWA C153/A21.53: Ductile-Iron Compact Fittings, 3 in. through 12 in. for Water and Other Liquids

AWWA C600: Installation of Ductile-Iron Water Mains and Their Appurtenances

1.05 QUALITY ASSURANCE:

- A. Except as modified in this Section, all materials used in the manufacture or installation of the pipe shall be tested in accordance with the requirements of the referenced standards.
- B. Submittals and testing shall be done in compliance with Section 33 01 30.11 - Inspection of Sewers.

PART 2 – PRODUCTS**2.01 GENERAL:**

- A. Ductile-iron pipe (DIP) shall conform to the latest revision of ANSI/AWWA C150/A21.50 subject to the following supplemental requirements. The pipe shall be furnished complete with rubber gaskets, and all special fittings shall be provided as shown on the Plans.
- B. Bell and spigot joints and mechanical joints are acceptable for underground applications. As an alternative to bell and spigot joints the use of mechanical and flanged joints will be permitted for above ground applications only.

2.02 PIPE:

Ductile iron pipe shall be of the diameter indicated at a minimum Class 52 and shall be manufactured with standard bell and spigot joints in accordance with the latest revision of ANSI/AWWA C151/A21.51.

2.03 LINING AND COATING:

Pipe shall have standard asphaltic coating on the exterior and be epoxy lined on the interior with Protecto 401™ ceramic epoxy lining as manufactured by U.S. Pipe, or approved equal.

2.04 FITTINGS:

- A. Fittings shall be ductile iron at a minimum of Class 52. Fittings shall conform to the latest revision of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Fittings and accessories shall be furnished with either Push-on or Mechanical Type Joints in accordance with ANSI/AWWA C111/A21.11.
- B. Ductile-iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, and/or restrained joints, as required. Bolted joints shall not be used for underground installations.
 - 1. Mechanical and push-on bell and spigot joints shall conform to ANSI/AWWA C111/A21.11 and be furnished complete with all necessary accessories.
 - 2. Flanged joints shall conform to ANSI/AWWA C115/A21.15.
 - 3. Restrained joints shall be per the Approved Materials List.

PART 3 – EXECUTION**3.01 GENERAL:**

- A. Sewer pipelines shall be constructed in compliance with the requirements of this Section and *Section 33 31 00 - Sanitary Sewerage Piping* and *Section 33 31 16 - Sanitary Sewer Gravity Service Laterals*.
- B. Work shall meet or exceed the requirements of these Specifications unless applicable requirements of an agency having jurisdiction (including the terms and conditions of an encroachment permit issued by a city or county) are greater, in which case the greater requirements shall govern.

3.02 INSTALLATION OF PIPE:

- A. All pipe shall be installed in accordance with ANSI/AWWA C600.

3.03 RUBBER-GASKETED JOINTS:

- A. Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket, lubricated with an approved vegetable-based lubricant, shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and pushed into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

END OF SECTION

SECTION 31 23 16 - EXCAVATION, BEDDING AND BACKFILL**PART 1 – GENERAL**

1.01 THE REQUIREMENT:

The Contractor shall provide all labor, materials, and equipment necessary to perform all excavation, bedding, backfill and grading operations required for construction of the work.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

A. Commercial Standards:

ASTM D 1556: Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method

ASTM D 1557: Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kNm/m³))

ASTM D 2419: Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregates

ASTM D 2487: Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 6938: Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

ASTM D 4253: Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table

ASTM D 4254 Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

1.04 CONTRACTOR SUBMITTALS:

- A. Compaction testing of bedding and backfill materials shall be required for all main sewer extensions and laterals in public streets.
- B. Compaction testing of bedding and backfill for side sewer work on private property may be required at the discretion of the Inspector.
- C. The required compaction testing shall be conducted under the direction of a Civil or Geotechnical Engineer licensed by the State of California. As a condition of Central San's Final Inspection, a Certification Report indicating that compaction results meet or exceed the requirements of these Specifications shall be submitted by the engineer in responsible charge of the compaction testing with a cover letter bearing the engineer's professional stamp.
- D. Compaction testing shall be completed prior to the acceptance televising of the sewer and installation of final paving.

1.05 QUALITY ASSURANCE:

- A. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 1556, ASTM D 6938, or by such other means acceptable to Central San. At a minimum, compaction tests shall be conducted for each 50 feet of trench and for each 2 feet of trench depth, unless otherwise specified by the agency with jurisdiction for the roadway.
- B. If a first test and a subsequent re-test of the bedding or backfill show noncompliance with the density required under this Section, the Contractor shall remove and re-compact the material represented by the test/retest as necessary to ensure compliance.
- C. The Contractor shall provide access in the excavation for the soil compaction testing technician or Inspector. This shall include providing site-specific safety equipment and temporary shoring to enable compaction testing at each required level within the excavation. Should the Contractor have backfilled to an elevation above that required to be tested, he shall excavate the backfill down to the necessary level for testing and provide shoring at his cost. Subsequent backfilling shall also be at the Contractor's cost.

PART 2 – PRODUCTS**2.01 SUITABLE BEDDING AND BACKFILL MATERIAL:**

- A. Bedding and backfill material shall be selected or processed clean, free from grass, roots, brush, other vegetation, debris, refuse or other deleterious material of any kind.
- B. The following types of bedding and backfill materials are designated and defined as follows:
 - 1. Type I Bedding and Backfill Material (Class 2 Aggregate Base): Shall be newly quarried or recycled material (not mined alluvial material), and shall be certified by the quarry or recycler as complying with the provisions of Caltrans Specifications Section 26 (Class 2 Aggregate Base) for 3/4" maximum grading.
 - 2. Type III Bedding and Backfill Material (native material from trench excavation): Shall be free from vegetable matter, debris and refuse, shall contain no concrete, stones or clods larger than 3" in any dimension and shall contain sufficient fines so that all voids will be filled when compacted, and shall be so constituted that compaction requirements can be met.
 - 3. Select Type III Bedding and Backfill Material (native material from trench excavation): Shall meet all requirements of the above described Type III Bedding and Backfill Material with the additional requirement that the maximum particle size shall be 3/4" in diameter.
 - 4. Coarse Bedding Material (Drain Rock/Foundation Rock): Shall be crushed stone or gravel (not mined alluvial material), with a minimum of 95% crushed particles per CTM 205, durable and free from slaking or decomposition under action of alternate wetting and drying with minimum Durability Index of 40 per CTM 229. The material shall meet the following gradation requirements:

Sieve Size	Percentage Passing
2-inch	100
1-1/2-inch	90-100
3/4-inch	5-30
3/8-inch	0-5
No. 200	0-2

- C. Controlled Low Strength Material shall conform to the requirements of *Section 03 34 13 - Controlled Low-Strength Material (CLSM)*.

2.02 UNSUITABLE MATERIAL:

- A. Unsuitable materials for bedding and backfill shall include soils, which when classified under ASTM D 2487 fall in the classifications of PT, OH, CH, MH, or OL. In addition, any soil that cannot be sufficiently compacted to achieve the percentage of maximum density specified for the intended use shall be considered unsuitable.
- B. Chemical testing for corrosivity shall be performed for all materials proposed for use as bedding and backfill for metallic or reinforced concrete pipe. The testing shall be in accordance with the requirements of CTM 417, CTM 422 and CTM 643. Bedding and backfill materials shall be considered unsuitable when the chloride concentration exceeds 500 ppm, sulfate concentration exceeds 1,500 ppm, resistivity is less than 2,000 ohm-cm

or pH is less than 6.5. Testing shall be performed by a qualified laboratory approved by Central San, and the data shall be submitted to the Inspector for acceptance prior to use of the material in the work.

- C. Type III materials which are too wet to be compacted to specified compaction shall not be rejected solely because they are too wet for proper compaction. The Contractor may at its option, dry these materials in accordance with Paragraph 3.8.G of this section prior to compaction. Alternatively, the Contractor may remove the Type III materials and provide imported backfill material.
- D. Backfill placed within 6" of any structure or pipe shall be free of rocks or unbroken clods of earth larger than 3" in any dimension.
- E. All material that is determined to be unsuitable for use as bedding and backfill or that is in excess of the amount required shall be removed immediately and disposed of properly by the Contractor.

2.03 USE OF SUITABLE BEDDING AND BACKFILL MATERIAL:

Backfill types shall be used in accordance with the following provisions:

- A. Pipe zone backfill (bedding, haunching and shading), as defined under paragraph 3.6 Bedding and Backfill herein, shall be Type I Bedding and Backfill Material (Class 2 Aggregate Base) unless otherwise specified on the Plans.
- B. Trench zone backfill, as defined under paragraph 3.6 Bedding and Backfill herein, for pipelines in public and private streets and other paved areas shall be Type I Bedding and Backfill Material (Class 2 Aggregate Base).
- C. Trench zone backfill in future roadway or street rights-of-way or in off road locations (e.g., easements) may be Type III Bedding and Backfill Material (native trench soil) so long as specified compaction is achieved.
- D. Final Backfill as defined under "Pipe and Utility Trench Backfill herein, for pipelines in public and private streets and other paved areas shall be Type I Bedding and Backfill Material (Class 2 Aggregate Base).
- E. Backfill around structures, vaults, and valve boxes shall be Type I Bedding and Backfill Material (Class 2 Aggregate Base).
- F. Backfill used to replace structure and pipeline trench over-excavation of wet or soft trench bottom conditions shall be Coarse Bedding and Backfill Material (Drain Rock/Foundation Rock) with a geotextile envelope (minimum one-foot overlap) around the rock to prevent migration of fines.
- G. Controlled Low Strength Material may be used for pipe zone backfill and trench zone backfill whenever pre-approved in writing by Central San or shown on the Plans.
- H. Trenches in landscaped or cultivated areas shall have the top 12" inches backfilled with topsoil.

2.04 FILTER FABRIC:

Filter fabric shall be as specified in *Section 31 05 19 - Geosynthetics for Earthwork*.

2.05 TRENCH DAMS, AND PIPE ANCHORS:

Trench Dams and Pipe Anchors shall be provided at the locations shown on the Plans and shall be constructed as shown in the Standard Drawings as follows:

- *DWG 20-05 Trench Dams*
- *DWG 21-03 Pipe Anchor Detail*

Trench dams shall be of the length and width dimensions shown in the detail, shall extend below finished grade as shown in the detail, and shall be constructed of controlled low strength material (CLSM) as specified in *Section 03 34 13 - Controlled Low-Strength Material (CLSM)*.

PART 3 – EXECUTION**3.01 GENERAL:**

- A. Work shall meet or exceed the requirements of these Specifications unless applicable requirements of an agency having jurisdiction (including the terms and conditions of an encroachment permit issued by a city or county) are greater, in which case the greater requirements shall govern.
- B. Prior to any excavation and backfill work, the Contractor shall obtain and provide Central San with copies or other evidence of acquisition thereof, all required permits for the work, including but not limited to: County and/or City encroachment permits, Central San permits, Cal OSHA Excavation Permit, and Competent Person certification.
- C. Material to be used for backfill shall be laid alongside of the trench and kept trimmed so as to cause as little inconvenience as possible to public travel and the normal use of adjacent properties. However, stockpiled material shall be kept a minimum of two feet from the edge of the trench and the face of the stockpile shall be sloped as needed. Free access shall be provided to all fire hydrants, water gates, meters, and private drives. Gutters or other drainage ways shall be kept clear unless other temporary provisions are made for maintaining drainage.
- D. In advance of placing sewer pipe or structures, material within the area where such pipe or structures are to be placed, which in the opinion of the Inspector is unsuitable including, but not limited to vegetable matter, garbage, and junk piles, either on the surface or buried, shall be removed and disposed of.
- E. Water to control dust resulting from grading operations, excavation, backfill, and the passage of traffic through the work area shall be applied by means that will ensure a uniform application of water with no runoff.
- F. The Contractor shall remove and dispose of all excess excavated material at a suitable preferred site(s). The Contractor shall obtain all necessary fill and grading permits and a written release from property owners upon completion of use of said sites.

3.02 STRUCTURE EXCAVATION:

- A. Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the work. The removal of

these materials shall conform to the lines and grades shown on the Plans or as directed by the Inspector. Unless otherwise provided, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. The Contractor shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations, and all pumping, ditching, or other measures required for the removal or exclusion of water, including storm water, groundwater, and wastewater reaching the site of the work from any source so as to provide dry working conditions and to prevent damage to the work or adjoining property. Excavations shall be benched, sloped, shored or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

- F. Excavation under structures, manholes, vaults and others: Except where otherwise specified for a particular structure or directed by the Inspector, excavation shall be carried to the grade of the bottom of the bedding. Where shown on the Plans or directed by the Inspector, areas beneath structures shall be over-excavated. The exposed surface shall be scarified to a depth of 6", brought to optimum moisture content, and compacted to 95% relative compaction. Where over-excavation is directed by the Inspector to provide for the placement of foundation rock over wet or soft soils, scarification and recompaction shall not be performed.

3.03 TRENCH EXCAVATION:

- A. Excavation for sewers shall be made only after pipe and other necessary materials are delivered on the site of the work. After such delivery, trench excavation shall proceed as rapidly as possible, and the pipe installed and the trench backfilled without undue delay. In public street areas, excavation and pipe installation shall be coordinated to the end that a minimum of interference with traffic will result.
- B. Refer to table below for required trench widths according to nominal pipe size.

Pipe Size (in)	Trench Width (in)
2-4	18
6-8	24
10-12	30
14-18	36
24	42

- C. The pipe bedding shall be given a final trim, using a laser for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the bottom of the pipe. The Contractor shall excavate bell holes at pipe joints.
- D. For trenching in existing streets, excavation and pipe installation shall be coordinated so that no more than 100 linear feet of trench shall be open at any time. Backfilling operations shall closely follow pipe installation. In new subdivisions more than 100 feet of trench may be opened if allowed by the Inspector and if the excavation is properly shored, sloped or benched. All trenches shall be fully backfilled at the end of each day or, properly shored and covered by heavy steel plates adequately braced and capable of supporting H-20 vehicle loads in those locations subject to traffic and with 1- 1/8" plywood in off road locations where it is impractical to backfill at the end of each day. Use of steel traffic plates is subject to the prior approval of the agency issuing the encroachment permit. Traffic plates shall be staked in place, with adjacent plates tack-welded together, and shall be provided with non-skid coating. Compacted cold mix asphalt shall be placed around the plate perimeter to provide a smooth transition from adjacent pavement.

- E. Where the bottom of the trench becomes soft or is unstable due to groundwater and/or movement of construction equipment, the Contractor shall over-excavate unsuitable material to a minimum depth of 9" below the base elevation to establish a stable foundation for the bedding or to a depth as otherwise directed by the Inspector. Geotextile shall be placed on the overexcavated trench bottom and staked to the trench walls, coarse bedding material in conformance with these specifications shall be placed on the fabric, and the fabric shall then be un-staked from the trench wall and wrapped over the coarse bedding material forming a closed envelope with a minimum 1-foot overlap at the top edges of the fabric.
- F. Any over-excavation carried below the grade ordered, specified, or shown, shall be backfilled and compacted to the required grade with the specified material.

3.04 EMBANKMENT EXCAVATION:

- A. The relative compaction of the natural ground area upon which embankments are to be constructed, for a depth of not less than 2 feet below finished grade, shall be not less than 90% relative compaction.
- B. If finished grade is less than 3 feet, above natural ground, the natural ground shall be excavated to a depth of not less than 3 feet below finished grade and re-compacted to a relative compaction of not less than 90%.
- C. When embankments are to be made and compacted on hillsides, or where new fill is to be compacted against existing embankments, the slopes of the original hillside, old or new fill, shall be cut into a minimum of 6 feet horizontally as the work is brought up in layers. Material thus cut out shall be re-compacted along with the new fill. Fill shall be compacted to a relative compaction of not less than 90%.

3.05 BEDDING AND BACKFILL:

- A. Except for required foundation material (in an envelope of geotextile) coarse bedding material being placed in over-excavated areas, where water or soft ground is present, backfill shall not be placed until after all water is removed from the excavation.
- B. Pipe zone bedding and backfill operations shall be performed in accordance with the following requirements:
 - 1. Type I Bedding and Backfill Material (Class 2 Aggregate Base) shall be placed and properly compacted in the pipe zone. The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane 4 to 6" below the bottom surface of the pipe, i.e., the trench sub-grade, and a plane at a point 12" above the top outside surface of the pipe. The subzones of the pipe zone are defined as follows:
 - a) "Bedding is that portion of the Pipe Zone between the bottom of the trench or the top of required foundation material and the lowest point on the outside surface of the pipe barrel excepting bells;
 - b) "Haunching" is that portion of the Pipe Zone between the top of the Bedding and the horizontal centerline of the pipe;
 - c) "Shading" is that portion of the Pipe Zone between the top of the Haunching and a horizontal plane 12" above the highest point on the outside surface of the pipe barrel excepting bells.

2. Controlled Low Strength Material (CLSM) shall be provided in lieu of Type I Bedding and Backfill Material where indicated on the Plans Contractor shall provide a method to prevent pipe from floating during backfill. (The remaining portions of the trench shall be backfilled as specified elsewhere in this Section.)
 3. After compacting the bedding, the Contractor shall perform a final trim using a laser for establishing grade, such that each pipe section when laid will be continually in contact with the bedding along the bottom of the pipe. The Contractor shall provide bell holes at each pipe joint.
 4. Backfill in trenches shall be placed uniformly on each side of the pipe to prevent displacement. The Contractor shall exercise care to prevent damage to the pipeline coating, cathodic bonds, or the pipe itself during the installation and backfill operations. The Contractor shall hand shovel slice the bedding along the sides of the pipe in order to ensure filling any voids under the pipe haunches.
- C. Warning Tape: A colored detectable metallic foil core plastic tape, at least 3" in width, shall be placed on top of the pipe zone backfill wherever sewers are installed. The tape shall have printed on it the words "Caution: Sewer Buried Below." The warning tape shall be utilized for all pipes (mains and laterals).
- D. After the pipe zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the trench excavation between the top of the shading and the ground surface in unpaved areas, and the horizontal plane at lowest point of the pavement structural section in paved areas.
- E. "Final Backfill" is that portion of the Trench Zone in paved areas between the top of the trench backfill and the lowest point of the pavement structural section.
- F. Joint utility trench excavations shall conform to the requirements shown on *DWG 20-06*.

3.06 PLACING AND SPREADING OF BACKFILL AND EMBANKMENT MATERIALS:

- A. Backfill materials shall be placed and spread evenly in layers. The backfill layers shall be evenly spread so that each layer shall not exceed 8" in uncompacted thickness. Backfill layers greater than 8" but no more than 24" may be used after the Contractor demonstrates by compaction testing as specified in 3.8 below, that required compaction levels will be achieved.
- B. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so that when compacted, the pipe zone backfill will provide uniform bearing and side support.
- C. Where the backfill material moisture content is below the optimum moisture content, water shall be added before or during spreading until the proper moisture content is within the range where the specified compaction can be achieved.
- D. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be bladed, aerated or dried and/or mixed with dryer material until the moisture content is satisfactory.

- E. Whenever selection is possible, embankment material having a sand equivalent value of less than 10 shall be deposited in the lower portions of embankments and no such material shall be placed within 3 feet of planned finished grade.
- F. When the embankment material consists of large rocky material, or hard lumps such as hardpan or cemented gravel which cannot be broken readily, such material shall be well distributed throughout the embankment, and sufficient earth or other fine material shall be placed around the large material as it is deposited so as to fill the interstices and produce a dense compact embankment, but in no case shall any material exceed 24" in any dimension.

3.07 COMPACTION OF BACKFILL AND EMBANKMENT MATERIALS:

- A. The Contractor shall provide a minimum of one compaction test per day, and an additional compaction test for each 500 sf completed and at each structure (e.g. manholes), and as required on the Plans or at the direction of the Central San Inspector.
- B. Each layer of backfill material as defined herein, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content. Compaction at the top of the pipe zone shall be done using a plate compactor.
- C. Flooding, ponding, or jetting shall not be used.
- D. Equipment weighing more than 10,000 pounds shall not be used within a horizontal distance equal to the depth of the trench. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- E. The following compaction requirements shall be in accordance with ASTM D 1557 except for free draining materials (i.e., Coarse Bedding Material/Drain Rock/Foundation Material), which shall be in accordance with ASTM D 4253 and D 4254 for cohesionless free draining type materials. Where other public agency, utility company or encroachment permit requirements govern, the highest compaction standards shall apply.

Percent (%) Location or Use of Fill	Relative Compaction
Pipe zone backfill including bedding and over excavated foundation zone	90
Final backfill beneath paved areas or structures.	95
Trench backfill in unpaved easement or future street areas.	90
Trench Zone backfill.	90
Backfill under structures.	95
Backfill around structures under paved areas.	95
Backfill around structures in landscaped areas.	90
Embankment material	90

- F. The Contractor shall maintain the indicated trench cross section at a minimum of 12" above the top of the pipe (the top of the "pipe zone").
- G. Embankments shall be constructed as recommended by the geotechnical engineer in compacted layers of uniform thickness.
- H. At the time of compaction, the moisture content of embankment material shall be such that the relative compactions specified will be obtained and the embankment will be in a

firm and stable condition. Embankment material which contains less than the required moisture content shall be watered and material which contains excessive moisture shall not be compacted until the material is dry enough to obtain the required compaction.

3.08 TEMPORARY PAVING:

A minimum of 2" of cold or hot mix temporary asphalt shall be placed in finished trenches and rolled to a smooth surface at the end of each day unless final paving can be completed, or steel plates are used to cover trenches in paved streets. Traffic plates shall be subject to the requirements of 3.3 above. The temporary asphalt shall be placed within 1/4" of finished pavement grade.

END OF SECTION

SECTION 33 01 30.11 - INSPECTION OF SEWERS

PART 1 – GENERAL

1.01 THE REQUIREMENT:

- A. The Contractor shall furnish all labor, materials, tools, and equipment necessary to clean, perform testing, and provide for televising of completed sewer pipelines.
- B. The Contractor shall call the Central San Inspection Office at least one business day in advance to arrange for an Inspector to be present for the preinstallation CCTV inspection.
- C. The Contractor shall notify the Inspector at least one business day prior to any cleaning, testing, or televising work. All final testing and cleaning of sewer lines shall be done in the presence of the Inspector.
- D. The Contractor shall complete cleaning and testing of sewer lines as required in this Section prior to requesting CCTV inspection.
- E. No testing will be allowed until all utilities have been installed.
- F. If deficiencies are identified during testing, the Contractor shall re-test after the deficiencies have been corrected.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

A. Commercial Standards:

ASTM C 969: Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines

ASTM C 1091-03a: Test Method for Hydrostatic Infiltration Testing of Vitrified Clay Pipe Lines

AWWA C600-54T: Installation of Ductile-Iron Water Mains and Their Appurtenances

ASTM D 3034: Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings

ASTM F 679: Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings

PART 2 – PRODUCTS

2.01 MATERIAL REQUIREMENTS:

- A. Mandrels, temporary plugs, low-pressure testing equipment and all other necessary materials shall be provided by the Contractor, subject to the Inspector's approval.
- B. No materials shall be used which would be injurious to the public, personnel, adjacent improvements or the pipeline.
- C. Air test gauges shall be laboratory-calibrated test gauges and shall be recalibrated by a certified laboratory prior to the leakage test. Gauge shall be easy to read in no more than 1 psi per increment and have a maximum full-scale range of 5 psi.

PART 3 – EXECUTION

3.01 GENERAL:

- A. The Contractor shall clean pipelines by balling and flushing or hydroflushing prior to deflection and pressure testing.
- B. The Contractor shall perform deflection and pressure tests after submittal of compaction reports demonstrating compliance with the backfill compaction requirements and before CCTV inspections.
- C. Work shall meet or exceed the requirements of these Specifications unless applicable requirements of an agency having jurisdiction (including the terms and conditions of an encroachment permit issued by a city or county) are greater, in which case the greater requirements shall govern.

3.02 CLEANING:

- A. After the pipeline installation has been completed to the satisfaction of Central San, the Contractor shall clean the pipe in the presence of the Inspector.
- B. The Contractor shall clean all sewer installations, deemed necessary by the Inspector, with a cleaning ball or device in accordance with the device manufacturer's instructions or recommendations and flushed. Hydroflush-pressure shall be maintained below 2,000 psi. Traps with screens in accordance with DWG 21-08 shall be used to trap debris. The Contractor shall remove all debris from the manhole prior to removing the trap.
- C. Release of water during and/or after cleaning and testing has been completed, shall be performed in a manner approved by the Inspector. The Contractor shall be responsible for the proper disposal of water released.

- D. The Contractor shall perform an additional cleaning of the pipeline after the installation of final paving, top block, frames and covers, and after all other required inspections, if required by the Inspector due to a reasonable determination that additional debris may have accumulated in the pipeline after initial cleaning.

3.03 PIPELINE DEFLECTION TESTING:

PVC and HDPE pipe 8" in diameter or larger shall be tested for deflection, joint displacement, or other obstruction by passing a rigid mandrel through the pipe. Deflection shall be tested after submittal of daily compaction reports demonstrating compliance with, but prior to, permanent resurfacing. The mandrel shall be a full circle, rigid, non-adjustable, an odd-numbered leg (9 leg minimum), acceptable to the Inspector as to design and manufacturer. Mandrel size shall meet the minimum requirements set forth in ASTM D 3034 and ASTM F 679. The circular cross section of the mandrel shall have a diameter of at least 95% of the specified average inside diameter of the pipe and the minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. Where obstructions and excessive deflection encountered by the mandrel, the Contractor shall remove, replace and retest the deficient section. Re-rounding will not be allowed.

3.04 PIPELINE LEAKAGE TESTING:

- A. Repaired pipelines shall be re-tested as follows:

Sewer Type/Size	Acceptable Tests
Gravity $\leq$ 16"	low-pressure air test or a water pressure test
Gravity $>$ 16"	water pressure test only
Pressurized (force mains)	air-over-water pressure test at 120% of maximum design operating pressure, measured at the lowest point of the pipeline section being tested.

- B. Air Testing

- Each section of main sewer and its appurtenant connected laterals shall be tested between successive manholes by plugging and bracing all openings in the sewer lines. If any leaks are found, the air pressure shall be released, the leaks eliminated, and the test procedure started over again.
- Air tests shall be conducted in accordance with the following procedure and the table below:

Pipe Diameter (in)	Length of Line (ft)	Length of test (minutes)
4 to 8	All	4
10	0 to 215	4
	> 215	5
12	0 to 155	4
	155 to 190	5
	> 190	6
15 & 16	0 to 120	5
	120 to 165	7
	> 165	8
>16	Hydrostatically test in accordance with Paragraph C	
<u>Note:</u> All tests shall be performed at 4 psi using a 5 lb gage.		

All necessary test equipment shall be in proper working order and tests shall be made in the presence of the Inspector. Test plugs shall be carefully placed at each end of the section of line to be tested. When all necessary test equipment is in place, a compressed air supply shall be attached to the air fitting on the test equipment and the air pressure within the line increased to 4 psi. After the air supply is securely turned off or disconnected, there shall be a 2-minute waiting period to allow stabilization of air within the sewer line before the actual test period begins. In no case shall the air pressure within the line be less than 3-1/2 psi at the beginning of the test period. The allowable air pressure loss shall not exceed 1 psi. When testing side sewers, or portions thereof, the test period shall be 4 minutes and the allowable loss shall not exceed 1 psi. After completion of a test, the air pressure shall be released slowly through the valve, which is incorporated in the test equipment. Air test plugs shall not be removed until the air pressure is no longer measurable.

- C. New sewers larger than 16" diameter shall be hydrostatically tested in accordance with the following procedure:

1. After installation, all new trunk sewer pipelines shall be thoroughly cleaned prior to pressure testing. A section of trunk sewer shall be prepared for testing between two structures by plugging the inlet side of the discharge manhole and all openings in the upstream manhole except the discharge opening. All plugs shall be properly braced against the manhole wall to withstand the forces of the test in order to prevent loss in the event of a failure.
2. A section of the trunk sewer prepared as above shall be tested by filling it with water to an elevation 5 feet above the top of pipe at the upstream end of the test section, or 5 feet above the existing groundwater elevation, whichever is greater. The water shall be introduced into the test section at least one hour in advance of the test period and refilled as necessary prior to commencement of the test period to allow the pipe and joint material to become saturated. The loss in water may be determined by measuring the rate of fall of the water level, but the level shall not be allowed to fall more than one foot below the specified head during the test period.
3. For RCP, the pressure shall be maintained for not less than 4 hours and the leakage rate shall not exceed 200 gallons per inch of diameter per mile of pipe for 24 hours (ASTM C 969-02). For VCP, the pressure shall be maintained for not less than one hour and the leakage rate shall not exceed 200 gallons per inch diameter per mile for 24 hours (ASTM C 1091-03a). For DIP, the pressure shall be maintained for not less than one hour and the leakage rate shall not exceed 70 gallons per inch diameter per mile of pipe of 24 hours (AWWA C600-54T).

- D. When leakage exceeds the amount allowed by the specifications, the Contractor shall locate the leaks, submit a repair procedure for the Inspector's review, and make the necessary repairs.

3.05 MANHOLE TESTING:

- A. Hydrostatic Testing: Central San may require hydrostatic testing for leakage after installation and prior to backfilling. Prior to hydrostatic testing, all manholes shall be visually inspected. All defects shall be repaired by the Contractor, with non-shrink grout, to the satisfaction of the Inspector. All pipes entering the manhole shall be sealed at a point outside the manhole walls to include testing of the pipe/manhole joints. Safety lines shall be secured to all plugs utilized. The manhole shall be filled with water to a level 2" below the top of the frame. After a period of at least one hour to allow the water level to stabilize, the manhole shall be refilled and the water level shall be checked. The water level shall again be checked after a period of 4 hours. If the water level drops by more

than 1", the leakage shall be considered excessive, and the Contractor shall make necessary repairs and retest the manhole.

- B. Vacuum Testing: As an alternative to manhole hydrostatic testing, the Inspector may allow the use of vacuum testing. A vacuum of 10" of mercury shall be drawn on the manhole, the valve on the vacuum line of the test hood closed and the vacuum pump shut off. The manhole shall be deemed to have passed the test if the vacuum drop is less than 1" of mercury during a one-minute test period.

3.06 CCTV INSPECTION:

- A. Central San will perform a CCTV inspection of the sanitary sewer upon substantial completion of the work.
 - 1. The Contractor shall coordinate with the Inspector to arrange for an acceptable time to conduct the inspection.
 - 2. Defects discovered by the CCTV inspection shall be corrected and the line re-inspected at the Contractor's cost.
 - 3. If a portion of an entire job is to be CCTV inspected, a separate fee will be due as established by Central San. Inspection fees are payable prior to the date of the partial CCTV inspection.
 - 4. The Contractor shall request CCTV inspection once the following have been completed:
 - a) Sewer pipelines are installed, backfilled, and compacted.
 - b) Structures are in place, channeling is complete, and pipelines are accessible from structures.
 - c) All other underground facilities, utility piping, and conduits in the vicinity are installed.
 - d) For street locations, placement of aggregate base has been completed.
 - e) Pipelines to be inspected have been cleaned and flushed.
 - f) Final pressure test has been completed.
 - g) Mandrel testing is complete.
- B. The procedure outlined below will be repeated until all deficiencies observed by CCTV inspection have been corrected to the satisfaction of Central San.
 - 1. The Contractor shall request Central San to schedule the CCTV inspection.
 - a) If Central San's CCTV crew arrives at the jobsite and the work is not ready or accessible, the Contractor will be billed the cancellation fee payable to Central San prior to the date of rescheduled CCTV inspection. The Contractor shall reschedule CCTV inspection as outlined above.
 - 2. Central San will televise the job.

- a) If no deficiencies are observed, the work will be considered satisfactory.
 - b) If deficiencies are observed, a recording will be made and defects serious enough to require correction will be identified by the Inspector who will provide written notification. If corrective work is indicated and viewing of the recording is desired, the Contractor shall contact the Inspector to set a time for the viewing. All corrective work will be subject to approval by Central San. Central San reserves the right to require cleaning and additional leak testing of the repaired pipeline. Those portions of the pipeline where deficiencies have been corrected shall be re-televised. Payment of re-television inspection fees shall be paid to Central San prior to the scheduled date of the inspection.
- C. The following observations from CCTV inspections will require correction:
- 1. Low spot 0.0625 x diameter of pipe or greater (e.g., 0.5" for an 8" pipe).
 - 2. Joint separations (3/4" or greater opening between pipe sections).
 - 3. Cocked joints present in straight runs or on the inside of pipe curves.
 - 4. Chips in pipe ends.
 - 5. Cracked or damaged pipe.
 - 6. Offset joints.
 - 7. Infiltration.
 - 8. Debris or other foreign objects.
 - 9. Other obvious deficiencies.
- D. CCTV inspection of the work and the correction of observed defects shall not relieve the Contractor of its responsibility for the warranty period.

END OF SECTION

SECTION 33 05 13 - MANHOLES AND STRUCTURES

PART 1 – GENERAL

1.01 THE REQUIREMENT:

The Contractor shall furnish and install manholes and structures, complete with precast manhole bases or cast-in-place (if approved during Plan Review), pipe connections, barrel and cone components, preformed joint sealant, grade rings, frames, covers and other appurtenances shown on the Plans or specified in this Section.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

A. Commercial Standards:

ASTM C 150: Specification for Portland Cement

ASTM C 478: Specification for Precast Reinforced Manhole Sections

1.04 CONTRACTOR SUBMITTALS:

Upon request by Central San, the Contractor shall submit complete shop drawings for all precast manhole bases to Central San and shall receive favorable review prior to ordering the bases.

1.05 QUALITY ASSURANCE:

After installation, the Contractor shall demonstrate that all manholes have been properly installed, level, with tight joints, at the correct elevations and orientations and that the backfilling has been carried out in accordance with the Plans and these Specifications. Vacuum testing of manholes may be required at Central San's sole discretion.

PART 2 – PRODUCTS

2.01 MATERIALS:

- A. Manhole bases may be either cast-in-place or precast. Channels and shelves shall conform to the requirements DWG 19-01 through 19-07. Manhole channels shall be shaped to form a smooth transition of uniform cross-section from inlet pipes to the outlet pipe, both horizontally and vertically.
- B. Precast Concrete Components: Only components listed in the Approved Materials List shall be used in the construction of manholes.
 1. Precast manhole bases, and barrel and cone sections shall be manufactured by a process that will produce dense homogeneous reinforced concrete of high quality in conformance with ASTM C 478. Cement shall be Type V Portland Cement as specified in ASTM C 150.
 2. Precast manhole components shall be designed to support vertical AASHTO H-20 truck loading, plus the weight of soil above the cone section.

3. Pipe connections at precast bases shall be pipe bells of the size, material and class of inlet and outlet pipes, integrally cast into the base by the manufacturer.
 4. The minimum wall thickness for barrel and cone sections (in inches) shall be calculated by dividing the nominal diameter of the barrel (in inches) by twelve (i.e., $D/12$).
 5. Manhole throats shall be constructed of reinforced concrete grade rings.
- C. Preformed plastic sealing gasket for sealing joints between the manhole base, barrel and cone sections shall be as listed in the Approved Materials List.
 - D. Non-shrink grout shall conform to the requirements *Section 03 60 00 – Grout*.
 - E. Castings for manhole frames and covers shall conform to the requirements of *Section 05 50 00 - Miscellaneous Metal Work*.
 - F. Primer and sealant tape for sealing exterior joints between precast components shall be as listed in the Approved Materials List.
 - G. Concrete for cast-in-place manhole and rodding inlet components (bases and top blocks) shall conform to *Section 03 30 00 - Cast-In-Place Concrete*.

2.02 TEMPORARY COVERS:

Temporary covers for new construction or reconstruction of manholes shall be fabricated as detailed in *DWG 19-12*.

2.03 TEMPORARY PLUGS:

Temporary plugs shall be of the mechanical expanding type. Pneumatic are not acceptable.

PART 3 – EXECUTION

3.01 GENERAL:

- A. Work shall meet or exceed the requirements of these Specifications unless applicable requirements of an agency having jurisdiction (including the terms and conditions of an encroachment permit issued by a city or county) are greater, in which case the greater requirements shall govern.
- B. An All-Weather Access Road as specified in this Section is required for access to all structures in off-road locations (e.g., easements).

3.02 INSTALLATION:

A. Temporary Plugs

1. Mechanical expanding-type temporary plugs shall be installed and removed, as specified below, in the presence of an Inspector. Plugs shall be secured by tethering with a $\frac{1}{4}$ " nylon rope attached to the top of a wood 2'x4' of sufficient length to extend from the shelf to a point in the throat within 6" of the underside of the cover.

- a) When a manhole exists or a new manhole is constructed at the beginning of a new main extension, a temporary plug shall be installed at the inlet of the new pipe at the existing manhole or new manhole.
- b) When a new main extension begins at an existing rodding inlet or stub, a temporary plug shall be installed on the outlet of the first manhole upstream from the beginning of the new main extension.

B. Cast-in-Place Manhole Bases

1. Cast-in-place manhole bases over existing sewers shall be poured against undisturbed native soil, which has been excavated to the dimensions shown on the Plans. For new sewer installations, the cast-in-place manhole base shall be poured over 6" Type 1 Backfill. See *DWG 19-01* through *19-08*. If the excavation extends beyond the dimensions shown on the Standard Drawings, the Contractor shall construct forms and pour the base to the specified dimensions.
2. If water or soft ground is encountered at the bottom of the excavation, a minimum lift of 9" of coarse-bedding material in a geotextile wrap shall be used as shown on *DWG 19-01*.
3. A joint forming ring shall be used to form a level joint groove in the manhole base while the concrete is fresh to receive the first precast barrel section. The metal forming ring may be removed as soon as the concrete has set sufficiently to eliminate any slump in the joint groove.
4. Manhole channels shall be shaped to form a smooth transition from inlet pipes to the outlet pipe, both horizontally and vertically.

C. Precast Manhole Bases (on all new main sewer extensions)

1. Precast manhole bases shall be placed to the lines and grades shown on the Plans as an integral part of the pipe laying operation on a minimum thickness of 6" of Type I Bedding and Backfill Material compacted to 95% relative compaction. Where soft ground or water is present, a minimum thickness of 9" of Coarse Bedding Material in a wrap of geotextile, per the requirements of *Section 31 05 19 - Geosynthetics for Earthwork*, shall be placed below the course of Type I Bedding and Backfill Material.
2. Inlet and outlet pipe connections at precast bases shall be pipe bells cast into the base by the manufacturer.
3. All precast concrete manholes shall be installed in strict conformance with the manufacturer's written instructions on a well-compacted foundation.

D. Setting Precast Barrel and Cone Sections

1. All joint surfaces of precast manhole bases, barrel and cone sections shall be thoroughly cleaned and dried prior to setting, and shall be sealed with a preformed plastic sealing gasket listed in the Approved Materials List at each joint as follows:
 - a) Remove the paper wrapper from one side of the gasket, retaining the outside paper in place to protect the gasket and assure against stretching.
 - b) Place the plastic gasket strip in the joint, forming a continuous gasket around the entire circumference of the manhole joint.

- c) Remove the paper wrapper from the exposed side of the gasket and place the next manhole component.
 - d) Care shall be taken in the handling of barrel and cone sections after the plastic gasket has been affixed to avoid displacing the gasket or contaminating the joint or gasket with dirt or other foreign material. Any displaced or soiled gaskets shall be removed and replaced.
 - e) Care shall be taken to properly align the manhole section with the previously set section before it is lowered into position.
 - f) During cold or wet weather, the joint surfaces shall be heated with hot air until ice, frost, and moisture are removed and surface to be primed is dry and warm. Hot air shall also be passed over plastic gasket strips immediately prior to attaching them to joint surfaces and immediately prior to setting the section.
- E. Manhole frames and covers shall not be set to final grade until the pavement has been completed, unless otherwise approved by Central San. Precast concrete grade rings shall be installed as shown in the Standard Drawings. Paving around the manhole shall be in accordance with local jurisdiction requirements. Openings in manholes shall be protected from construction loads, debris and unauthorized entry.
- F. When new piping is installed in existing structures, the Contractor shall accurately position core-drilled openings in the concrete as shown on the job Plans and Standard Drawings or otherwise directed by the Inspector. Openings shall be of sufficient size to permit a final alignment of pipelines and fittings without deflection of any part and to allow adequate space for satisfactory placement of mechanical seals or packing with non-shrink grout where the pipe passes through the wall to ensure the resulting structure is watertight. Before placing the non-shrink grout, concrete surfaces shall be sandblasted, thoroughly cleaned of sand and any other foreign matter, and coated with epoxy bonding compound. After connection of the new inlet pipe, the Contractor shall re-channel the inside of the existing manhole base to provide a smooth flow channel to the new exit pipe.
- G. The throat shall be constructed using appropriately sized reinforced concrete grade rings to bring the manhole cover to finished grade surface. No plastic sealing gaskets shall be used for jointing grade or extension rings.
- H. Manhole top blocks shall be poured against forms constructed to the specified dimensions shown on *DWG 19-01*.
- I. All manholes located on slopes steeper than 3:1 (horizontal to vertical) in easement areas shall be constructed with a reinforced concrete, reinforced concrete masonry unit or interlocking masonry unit retaining wall as shown on *DWG 19-11*.
- J. All manholes shall be tested in accordance with *Section 33 01 30.11 - Inspection of Sewers*.
- K. Temporary covers shall be used during construction until permanent frames and covers are installed.

3.03 RECONSTRUCTION OF EXISTING STRUCTURES:

A. General

1. Reconstruction work on any particular structure shall be diligently prosecuted so as to be completed within 3 calendar days after work is begun on that particular structure. The Contractor shall provide continuous access for Central San maintenance forces to the structure at all times.
2. When removing existing structures, the Contractor shall take precautions to ensure that no foreign material enters the structure or the downstream system. Before any work is started, the base shall be covered with a plywood ("false bottom") as shown on *DWG 19-13*, and then the false bottom shall be covered with a drop cloth of heavy canvas. The drop cloth and false bottom shall be kept in place during the work to catch debris, and upon completion, shall be removed with the collected debris. No debris shall enter the downstream system or be allowed to remain in the manhole.

B. Structure Adjustments and Repairs

1. All workmanship and materials for structure adjustments shall conform to the requirements of these Specifications. In the case of existing brick or cast-in-place concrete structures, repair or adjustments shall be accomplished with materials in-kind or with precast elements as detailed on the Plans.
2. Existing structure precast elements, adjustment rings, frames, and covers removed for adjustments and/or repairs may be reinstalled only when such undamaged items are permitted by the Inspector for reuse.
3. Manhole adjustments shall be accomplished by one of the methods specified below or as shown on the Plans:
 - a) Upward adjustments of manholes to finish grade surface may be accomplished with reinforced concrete grade rings, formed concrete and/or a single cast iron extension ring when the adjusted manhole throat will not exceed 12" in height. In no case shall multiple cast iron extension rings be used in adjustments. When adjustments are made that position the bottom of the cast iron manhole frame above the existing concrete top block, the top block shall be reconstructed in accordance with the requirements of *DWG 19-01* through *19-08*.
 - b) Whenever upward adjustment of manholes would result in a completed manhole throat section exceeding 12" in height, the upper manhole section, including the top block and cone section, shall be removed and the adjustment shall be made by reconstructing the structure using manhole barrel and cone sections, grade rings and frames and covers in accordance with the requirements of these Specifications and *DWG 19-01* through *19-08*.
 - c) Downward adjustments of manholes shall be accomplished by removal of existing grade or extension rings and cone and barrel sections as required, and reconstructing the structure using manhole barrel and cone sections, grade rings and frames and covers in accordance with the requirements of these Specifications and *DWG 19-01* through *19-08*.
4. Rodding inlet adjustments shall be accomplished by one of the methods specified below or as detailed on the Plans:
 - a) Upward adjustments of rodding inlets shall be accomplished with formed concrete or cast-iron extension rings where the extension will not exceed 8", including any previous adjustments. When adjustments are made that position the bottom of the cast iron frame above the existing concrete top block, the top

block shall be reconstructed in accordance with the requirements of these Specifications and *DWG 19-14*.

- b) Upward adjustments of rodding inlets exceeding 8" shall be accomplished by removing the structure's frame, cover, and top block, and reconstructing the structure in accordance with the requirements of these Specifications and *DWG 19-14*. Pipe used for such adjustments shall be as required for pipeline repair and shall be installed to extend the line and grade of the existing pipe.
- c) Downward adjustments of rodding inlets shall be accomplished by removal and reconstructions of the entire upper section of the structure including the top block.

END OF SECTION



300 Seminary Av., Ukiah CA 95482

Hydrant Flow Test Report

Name: Corner of Clay/Main	
Address:	
Tested by: Robby Hulbert	Date: 8/8/2023
Requested By: Daniel Flores	Time: 7:00 AM
Location of test: Clay/Main	
Hydrant ID Number: 287	
Residual hydrant location: 506 Main St	
Flow hydrant(s) Location: SW Corner of Clay/Main	
Static pressure (residual hydrant): 100 psi Hydrant 288	
Residual pressure (residual hydrant): 96 psi	
Nozzle size (flow hydrant): 2 1/2	
Hydrant pressure (flow hydrant): 75 psi	
Projected hydrant flow:	1455 GPM

Remarks and comments:

BID RESULTS - SPEC 25-04 REMODEL OF 501 SOUTH STATE STREET															
BID OPENING: 2 PM, AUGUST 19, 2025															
	BASE BID			DMR BUILDERS		CUPPLES AND SONS CONSTRUCTION		ACGC		FRC		MIDSTATE CONSTRUCTION		KIRBY CONSTRUCTION	
				SANTA ROSA, CA		UKIAH, CA		EUREKA, CA		WINDSOR, CA		PETALUMA, CA		SANTA ROSA, CA	
Item #	Description	UOM	QTY	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
1	Temporary Controls, Fencing & Signage	LS	1	\$65,000.00	\$65,000.00	\$541,780.00	\$541,780.00	\$7,000.00	\$7,000.00	\$6,462.76	\$6,462.76	\$10,000.00	\$10,000.00	\$110,500.00	\$110,500.00
2	Mobilization	LS	1	\$15,000.00	\$15,000.00	\$2,500.00	\$2,500.00	\$20,000.00	\$20,000.00	\$20,580.08	\$20,580.08	\$10,000.00	\$10,000.00	\$75,900.00	\$75,900.00
3	Div 02 - Demolition	LS	1	\$55,000.00	\$55,000.00	\$82,005.00	\$82,005.00	\$42,000.00	\$42,000.00	\$94,212.55	\$94,212.55	\$184,000.00	\$184,000.00	\$86,700.00	\$86,700.00
4	Div 03 - Concrete	LS	1	\$147,205.00	\$147,205.00	\$65,330.00	\$65,330.00	\$121,000.00	\$121,000.00	\$205,628.89	\$205,682.89	\$250,000.00	\$250,000.00	\$152,000.00	\$152,000.00
5	Div 05 - Metal Fabrications	LS	1	\$44,759.00	\$44,759.00	\$19,350.00	\$19,350.00	\$56,000.00	\$56,000.00	\$58,975.76	\$58,975.76	\$110,000.00	\$110,000.00	\$88,500.00	\$88,500.00
6	Div 06 - Wood	LS	1	\$363,842.00	\$363,842.00	\$317,500.00	\$317,500.00	\$281,000.00	\$281,000.00	\$435,438.96	\$435,438.96	\$363,000.00	\$363,000.00	\$576,000.00	\$576,000.00
7	Div 07 - Insulation & Waterproofing	LS	1	\$54,879.00	\$54,879.00	\$55,682.00	\$55,682.00	\$16,000.00	\$16,000.00	\$147,097.84	\$147,097.84	\$144,000.00	\$144,000.00	\$100,500.00	\$100,500.00
8	Div 08 - Doors & Windows	LS	1	\$316,613.00	\$316,613.00	\$313,442.00	\$313,442.00	\$410,000.00	\$410,000.00	\$439,352.24	\$439,352.24	\$432,000.00	\$432,000.00	\$463,500.00	\$463,500.00
9	Div 09 - Finishes	LS	1	\$464,393.00	\$464,393.00	\$442,132.00	\$442,132.00	\$835,370.00	\$835,370.00	\$528,060.39	\$528,060.39	\$534,000.00	\$534,000.00	\$571,600.00	\$571,600.00
10	Div 10 - Signage & Accessories	LS	1	\$28,512.00	\$28,512.00	\$65,278.00	\$65,278.00	\$24,000.00	\$24,000.00	\$38,132.75	\$38,132.75	\$138,000.00	\$138,000.00	\$49,500.00	\$49,500.00
11	Div 13 - Non-Structural Seismic Restraints	LS	1	\$30,000.00	\$30,000.00	\$0.00	\$0.00	\$21,000.00	\$21,000.00	\$12,286.62	\$12,286.62	\$5,000.00	\$5,000.00	\$0.00	\$0.00
12	Div 14 - Elevator	LS	1	\$220,000.00	\$220,000.00	\$386,975.00	\$386,975.00	\$238,000.00	\$238,000.00	\$228,260.78	\$228,260.78	\$266,000.00	\$266,000.00	\$263,000.00	\$263,000.00
13	Div 21 - Wet Pipe Sprinkler Systems	LS	1	\$113,454.00	\$113,454.00	\$103,140.00	\$103,140.00	\$121,000.00	\$121,000.00	\$126,724.17	\$126,724.17	\$169,000.00	\$169,000.00	\$220,000.00	\$220,000.00
15	Div 22 - Plumbing	LS	1	\$217,754.00	\$217,754.00	\$155,640.00	\$155,640.00	\$146,000.00	\$146,000.00	\$147,175.25	\$147,175.25	\$209,000.00	\$209,000.00	\$159,000.00	\$159,000.00
17	Div 23 - Mechanical	LS	1	\$200,000.00	\$200,000.00	\$199,990.00	\$199,990.00	\$218,000.00	\$218,000.00	\$245,720.06	\$245,720.06	\$266,000.00	\$266,000.00	\$260,000.00	\$260,000.00
21	Div 26 - Electrical	LS	1	\$990,000.00	\$990,000.00	\$735,000.00	\$735,000.00	\$973,000.00	\$973,000.00	\$1,111,460.94	\$1,111,460.94	\$786,000.00	\$786,000.00	\$1,018,800.00	\$1,018,800.00
22	Div 28 - Access Control	LS	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23	Div 31 - Earthwork	LS	1	\$51,194.00	\$51,194.00	\$57,875.00	\$57,875.00	\$32,000.00	\$32,000.00	\$53,465.22	\$53,465.22	\$218,000.00	\$218,000.00	\$110,000.00	\$110,000.00
24	Div 32 - Site Improvements	LS	1	\$34,125.00	\$34,125.00	\$109,468.00	\$109,468.00	\$161,000.00	\$161,000.00	\$29,672.18	\$29,672.18	\$30,000.00	\$30,000.00	\$38,000.00	\$38,000.00
25	Div 33 - Sanitary Sewer	LS	1	\$76,120.00	\$76,120.00	\$77,845.00	\$77,845.00	\$9,000.00	\$9,000.00	\$85,023.39	\$85,023.39	\$15,000.00	\$15,000.00	\$36,500.00	\$36,500.00
		TOTAL BASE BID:		\$3,487,850.00		\$3,730,932.00		\$3,731,370.00		\$4,013,784.83		\$4,139,000.00		\$4,380,000.00	
Bid Alternate															
Item #	Description	UOM	QTY	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
1	New Transformer - including Demo of Existing Transformer & Site Work	LS	1	\$250,000.00	\$250,000.00	\$50,000.00	\$50,000.00	\$51,000.00	\$51,000.00	\$58,486.22	\$58,486.22	\$68,000.00	\$68,000.00	\$250,000.00	\$250,000.00
		TOTAL BID:		\$3,737,850.00		\$3,780,932.00		\$3,782,370.00		\$4,072,271.05		\$4,207,000.00		\$4,630,000.00	
				Sub:	Work:	Sub:	Work:	Sub:	Work:	Sub:	Work:	Sub:	Work:	Sub:	Work:
				NORTH COUNTIES DRYWALL	DRYWALL	ALCAL SPEACIALTY CONTRACTING	FOLDING GLASS PARTITIONS	SONOMA ELECTRIC	ELECTRICAL	PARC ENVIRONMENTAL	DEMOLITION	ASBESTOS MANAGEMENT OF CA	SELECTIVE DEMOLITION AND SAWCUTTING	AGD GENERAL ENG	HEAVY CIVIL AND CONCRETE
				NORTH COSAT FABRICATORS	GUARD + HAND RAILS	AMERICAN SHEET METAL PARTITION CO	PARTITIONS/ACCESSORIES	JMS MECHANICAL	HVAC	AGD GENERAL ENGINEERING	CONCRETE	PETERS EXCAVATING	GRADING, PAVING AND UTILITIES	PETERSEN BUILDERS	WOOD FRAMING
				CEILING EXPERTS	ACOUSTICAL	B&L GLASS	STOREFRONT AND GLAZING	COLEMAN PLUMBING	PLUMBING	WELLANDER STEEL BUILT	STEEL FRAMING	ELITE CONCRETE	CONCRETE AND REBAR	NORTH COUNTIES DRYWALL	DRYWALL
				BNT TILE	TILE	DT FABRICATION	RAILINGS	CORTLAND ROOFING	ROOFING	JR STEPHENS	INTERIOR ARCHITECTURAL WOODOWRK	LHL CONSTRUCTION	STRUCTURAL AMD MISC STEEL	SONOMA MARIN	ELECTRICAL
				ELLIS FLOORING	FLOORING	DUNN RIGHT PAINT	PAINTING	PROGRESS GLASS CO	STOREFRONT	COAST BUILDING PRODUCTS	BUILDING INSULATION	TORRES BROTHERS	ROUGH CARPENTRY	JMS	HVAC
				OTIS	ELEVATOR	JMS MECHANICAL	MECHANICAL	ELLIS FLOORING	FLOORING	SOLANO COUNTY ROOFING	ROOFING	REDHAWK GLASS	GLAZING, WINDOWS	COLEMAN	PLUMBING
				AGD	CONCRETE + SITEWORK	MENDOCINO STRIPING	STRIPING	BNT TILE	TILING	REDHAWK GLASS	ENTANCES & STOREFRONTS	NORTH COUNTIES DRYWALL	DRYWALL AND METAL STUDS	APPLIED FINISHES	PAINTING
				WIPF	FIRE SPRINKLER	NORTH COUNTIES DRYWALL	DRYWALL	JR STEPHENS	CASEWORK	NORTH COUNTIES DRYWALL	GYPNUM BOARD	BNT TILE	CERAMIC TILE	GLASS N SASH	GLAZING
				RG PLUMBING	PLUMBING	PACIFIC COAST CUTTERS	CONCRETE CUTTING	CEILING EXPERTS	ACOUSTICAL CEILINGS	BNT TILE	PORCELAIN TILE	DS BAXLEY	FLOORING	DSB	FLOORING
				CORE ELECTRIC	ELECTRICAL	SOLANO COUNTY ROOFING	ROOFING	EG PAVING CONSTRUCTION	SITE CONCRETE, SITE WORK, UNDERGROUND UTILITIES	NORTH BAY ACOUSTICS	ACOUSTICAL CEILINGS	JASON MANUEL CAMBRA DBA MIKE'S PAINTING	PAINTING	BNT	CERMIC TILE
				JR STEPHENS	CASEWORK	ULTRA CEILINGS	ACOUSTICAL PANELS	NORTH COUNTIES DRYWALL	DRYWALL	BT MANCINI	RESILIENT FLOORING	CEILING EXPERTS	ACOUSTICAL	TK ELEVATOR	ELEVATOR
				TOP NOTCH	HVAC	VALLEY PAVING WIPF	PAVING	WIPF CONSTRUCTION	FIRE SPRINKLERS	APPLIED FINISHES	PAINTING	SCHINDLER ELEVATOR	HYDRAULIC ELEVATOR	WIPF	FIRE SPRINKLER
				REDHAWK GLASS	GLAZING	CONSTRUCTION	UNDERGROUND/FIRE SPRINKLERS	TK ELEVATOR	ELEVATORS	SCHINDLER	HYDRAULIC ELEVATOR	GROFF PLUMBING	PLUMBING	COAST BLDG PRODUCTS	INSULATION
						WM LINN ELECTRICAL CTING	ELECTRICAL	APPLIED FINISHES	PAINTING	WIPF CONSTRUCTION	FIRE SUPPRESSION	WIPF CONSTRUCTION	FIRE SPRINKLERS	CORTLAND	ROOFING
						BNT TILE	TILE	LNS WELDING & FABRICATION	METAL FABRICATIONS	COLEMAN PLUMBING	PLUMBING	JMS MECHANICAL	HVAC	AHLBORN	STEEL
						UNIVERSAL FLOORING	FLOORING			JMS MECHANICAL	HVAC	CONSTRUCTION	ELECTRICAL	JR STEPHENS	CABS AND COUNTERS
						NATIONWIDE LIFTS	ELEVATOR			O'ROURKE ELETRIC	ELECTRICAL	CORTLAND ROOFING	ROOFING	CEILING EXPERTS	ACOUSTICAL CEILING
										AGD GENERAL ENGINEERING	EARTHWORK				
										PACIFIC COAST CUTTERS	HARD DEMO				

Cupples and Sons Construction Inc.
221 Olive Lane, Suite G
Ukiah, CA 95482
707-972-7331
caseyc@cupplesandsons.com



August 22, 2025

Via Email Only

City of Ukiah
Department of Community Development
300 Seminary Avenue
Ukiah, California 95482

Attn:
Myles Fisette- mfisette@cityofukiah.com
Kristine Lawler- cityclerk@cityofukiah.com

Subject: Protest of Bid
Project: Remodel of 501 South State Street

To whom it may concern,

This letter is to formally protest the bid submitted by the apparent low bidder, DMR Builders for the project referenced above. DMR Builders has submitted a bid that is non-responsive and should be rejected pursuant to California law, including the Subletting and Subcontracting Fair Practices Act (Public Contract Code §§ 4100–4114). Specifically:

1. Failure to List Required Subcontractors

The bid form required the listing of subcontractors for all portions of work exceeding one-half of one percent (0.5%) Roofing and painting both clearly fall within this statutory requirement and DMR Builders failed to list any subcontractor for either roofing or painting. These trades represent significant scopes of work that exceed the statutory threshold. In addition, upon investigation of past projects and clients, DMR Builders does not appear to self-perform either the roofing or painting scope of work.

2. Violation of Public Contract Code § 4104

Section 4104 mandates that bidders disclose the name and location of subcontractors who will perform more than the stated thresholds. By failing to identify subcontractors for roofing and painting, DMR Builders has violated this requirement. This omission prevents the City of Ukiah from properly evaluating subcontractor responsibility, prevailing wage compliance, and overall project readiness. It also could undermine fair competition by allowing the bidder to "bid shop" or "bid peddle" after bid opening.

For the reasons stated above, we respectfully request that the City reject the apparent low bidder's bid as non-responsive and award the contract to the lowest responsive and responsible bidder, which is Cupples & Sons Construction Inc.

Thank you for your prompt attention to this matter. Please confirm receipt of this protest.

Sincerely,

A handwritten signature in black ink, appearing to read "Casey Cupples", is written over a horizontal line.

Casey Cupples
Vice-President
Cupples and Sons Construction Inc.

c.c.
DMR Builders- info@dmrbuildercorp.com



Attn:

Myles Fiset- mfisette@cityofukiah.com
Kristine Lawler- cityclerk@cityofukiah.com

City of Ukiah
Department of Community Development
300 Seminary Avenue
Ukiah, California 95482

Re: Bid Protest

Dated: 8/25/2025

Subject: Response to Bid Protest for Remodel of 501 South State Street

Dear Myles Fiset,

We are in receipt of Cupples and Sons Construction Inc. Bid Protest, dated August 22, 2025, for the Remodel of 501 South State Street Project that formally bid on 08/19/25 at 2:00pm.

Cupples and Sons Construction Inc. is contending that DMR Builders' bid proposal is invalid due to not listing a subcontractor for painting or roofing.

DMR Builders will self-perform the painting for this project.

DMR Builders will be using subcontractor, Cortlandt Roofing for the TPO roof system and roof patching who was not listed as the roofing proposal was below .5% at \$15,578.00 which makes the total percentage .44% of our bid total.

After review of Cupples and Sons protest, the facts prove there is no ground to substantiate any claim and that their bid protest should be rejected.

As evidenced, DMR Builders has thoroughly examined the project plans and specs and have submitted a complete and responsive bid package. Thus, the project should be awarded to the lowest responsive bidder, DMR Builders.

Respectfully,



Godemar Da Silva Jr, President

DMR BUILDERS
707.596.7575
415.521.6906



8/18/2025

Proposal

Proposal submitted to:

DMR Builders
info@dmrbuildercorp.com
707-596-7575

Work to be performed at:

501 South State Street
Ukiah, CA
95482

We hereby propose to furnish the materials and perform the labor necessary of:

Cortlandt Roofing will provide and install the necessary materials to patch the existing roof around the newly framed 'Penthouse'. This includes rigid insulation, ½" coverboard, and single membrane roofing. We will also patch around one (1) removed condenser unit.

On the new 'Penthouse' roof, we will supply and install a 60 mil. TPO roofing membrane, over ½" coverboard, over tapered insulation. TPO compatible flashing will be used at the perimeter.

We will provide and install Box Rib metal panels on 'Penthouse walls, over 2" rigid insulation, including appurtenant flashings and cleats.

Note: An alternate price to demo of the existing roof is included in this proposal. It can be removed if you choose to have the framers do the demo.

Addendums 1-4 are acknowledged.

Cortlandt Roofing will haul away all roofing debris from the jobsite.

TPO roof system and roof patching: \$15,578.00

Box rib metal panel system on penthouse walls: \$9,762.00

Demo existing roof to facilitate penthouse structure: \$2,975.00

All material is guaranteed to be as specified, and the above work to be performed in accordance with the drawings and specifications submitted for above work and completed in a workmanlike manner for the sum of **\$ABOVE** Dollars, with payments to be made according to the payment schedule on page three of this proposal.

Address: PO Box 6678 Santa Rosa, CA 95406 – **Phone:** 951-805-6152

Email: dan@cortlandtroofing.com – **Web:** www.cortlandtroofing.com



“Notice To Owner” **(Section 7018.5 – Contractors License Law)**

Under the Mechanics Lien Law, any Contractor, Subcontractor, Laborer, Materialman or other person who helps to improve your property and is not paid for his labor, services or material, has the right to enforce his claim against your property.

Under the law, you may protect yourself against such claims by filing, before improvement or modification thereof, in the office of the county recorder of the county where the property is situated and requiring that a contractor's payment bond be recorded in such office. Said bond shall be in an amount not less than fifty percent (50%) of the contract price and shall, in addition to any conditions for the performance of the contract, be conditioned for the payments in full of the claims of all persons furnishing labor, services, equipment or materials for the work described in said contract.

LIMITATIONS.

The parties herein agree that any statute of limitations period applicable to the enforcement or breach of this Agreement, shall be shortened to the term of one year. In any action, arbitration or other legal action allowed by law, either party, under the terms of this Agreement, shall be limited to initiating such action or proceeding no later than one year from the date of any breach or other wrong recognized by law. Regardless of any other limitation period allowing for a greater time period including any statutory or California case authority which would allow extended time periods recognized by law.



Proposal Submitted to: DMR Builders

Any alterations or deviation from this proposal involving extra costs, will be executed only upon written orders signed by the owner, and will become an extra charge over and above the estimate contained in this proposal. All agreements shall be contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance upon above work. Workman's compensation and Public Liability Insurance coverage on above work to be taken out by Cortlandt Roofing.

Respectfully Submitted: _____
Cortlandt Roofing, Inc.
State License #922894

NOTE: THIS PROPOSAL MAY BE WITHDRAWN BY CORTLANDT ROOFING, IF NOT ACCEPTED WITHIN 30 DAYS

PAYMENT SCHEDULE

1. Deposit at time of acceptance of proposal: **\$ 0.00**
2. Payment at time of delivery of materials: **\$ 55%**
3. **Balance due upon completion: \$ 45%**

WORK AUTHORIZATION FOR PAYMENT OF THIS INVOICE

Authorization to proceed with proposed work: I, the undersigned, am owner/authorized representative/tenant of the premises at which the materials and work, indicated herein, are to be performed. I hereby authorize Cortlandt Roofing to perform said work according to the specifications contained herein.

A monthly service charge of 1.5% of the amount due will be added after ten days. I agree to pay reasonable attorney's fees and court costs in the event of legal action or reasonable bank costs if my check fails to clear. I have read, agree to, and have received a copy of this contract.

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature
Date: _____

Signature
Date: _____

Contractors are required by law to be licensed and regulated by the Contractors State License Board. Any questions concerning a contractor may be referred to the Registrar, Contractor State License Board [9835 Goethe Road Sacramento, California] Mailing Address [PO Box 26000 Sacramento, California 95827].

Address: PO Box 6678 Santa Rosa, CA 95406 – **Phone:** 951-805-6152
Email: dan@cortlandtroofing.com – **Web:** www.cortlandtroofing.com

Law Offices Of

RAPPORT AND MARSTON

Sole Practitioners

405 W. Perkins Street

P.O. Box 488

Ukiah, California 95482

e-mail: drapport@pacbell.net

David J. Rapport
Darcy Vaughn

(707) 462-6846
FAX 462-4235

MEMORANDUM

TO: Honorable Mayor and City Councilmembers
FROM: David J. Rapport, City Attorney
DATE: September 10, 2025
SUBJECT: Bid Protest

The City Council continued the hearing of the bid protest from Cupples Construction to allow the City Attorney's office to research the issues raised by the protest. This memorandum and the accompanying proposed alternative decisions results from that research.

CONCLUSION

As requested at the hearing, I have prepared alternative decisions, one granting and one rejecting the bid protest. (See Attachment 1 Rejecting the Protest and Attachment 2 Upholding the Protest.) Based on the deferential standard governing judicial review of the decision, on the record before it, the City Council could adopt either decision.

ANALYSIS

Case law establishes a very deferential standard of review of a City Council decision awarding a public works contract. As stated in *MCM Construction, Inc. v. City and County of San Francisco* (1998) 66 Cal. App. 4th 359 at 363 ("MGM"):

Judicial review of the award of a public contract is governed by certain well-established principles. In a mandamus action arising under Code of Civil Procedure section 1085, we limit our review to an examination of the proceedings before the agency to determine

To: Honorable Mayor and City Council Members
Subject: Bid Protest
Date: August 10, 2025

Page 2

whether its findings and actions are supported by substantial evidence. (E.g., *Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal. App. 4th 897, 903-904 [53 Cal. Rptr. 2d 389] (*Ghilotti*); *Valley Crest Landscape, Inc. v. City Council* (1996) 41 Cal. App. 4th 1432, 1437 [49 Cal. Rptr. 2d 184]; *Konica Business Machines U.S.A., Inc. v. Regents of University of California* (1988) 206 Cal. App. 3d 449, 453-454 [253 Cal. Rptr. 591] (*Konica*); *Taylor Bus Service, Inc. v. San Diego Bd. of Education* (1987) 195 Cal. App. 3d 1331, 1340-1341 [241 Cal. Rptr. 379].)

"Our review is limited to an examination of the proceedings to determine whether the City's actions were arbitrary, capricious, entirely lacking in evidentiary support or inconsistent with proper procedure. There is a presumption that the City's actions were supported by substantial evidence, and [petitioner/plaintiff] has the burden of proving otherwise. We may not reweigh the evidence and must view it in the light most favorable to the City's actions, indulging all reasonable inferences in support of those actions. [Citations.] Mandamus is an appropriate remedy to compel the exercise of discretion by a government agency, but does not lie to control the exercise of discretion unless under the facts, discretion can only be exercised in one way. [Citations.]" (*Ghilotti, supra*, 45 Cal. App. 4th 897, 903-904, fn. omitted.)

Cities are required to put significant contracts out for competitive bidding and to award the contract to the lowest responsible bidder. (See, e.g., Pub. Contract Code, § 20162.) A bidder is responsible if it can perform the contract as promised. A bid is responsive if it promises to do what the bidding instructions require. (Ibid.) Usually, whether a bid is responsive can be determined from the face of the bid without outside investigation or information. (*Valley Crest Landscape, Inc. v. City Council*, 41 Cal. App. 4th 1432, 1438.)

In this case, in my opinion, for the reasons stated in both alternative decisions, the evidence before the City Council does not support a finding that DMR's bid is non-responsive for failing to list a painting subcontractor.

It is a closer call whether Cortlandt Roofing should have been listed as a subcontractor in DMR's Proposed Subcontractor's List. A combination of Cortlandt's proposal and Mr. Da Silva's written statement that DMR is only subcontracting with Cortlandt to perform the "Penthouse" roofing work would sustain a finding that DMR was not required to include Cortlandt on the list. The inclusion of the metal siding work in Cortlandt's proposal supports, but does not require, a finding that Cortlandt's proposal exceeds the .5% threshold, requiring its listing in the Proposed Subcontractor's List.

[Proposed Findings Alternative 1]

PROPOSED CITY COUNCIL DECISION DENYING BID PROTEST

The City Council rejects the bid protest to the apparent low bid by DMR Construction filed by Cupples Construction and awards the contract to DMR Construction.

FINDINGS

The City Council finds that the alleged failure to list subcontractors for painting and roofing work does not render the bid non-responsive as a matter of law, because any work not performed by subcontractors on the List of Proposed Subcontractors or by a subcontractor performing work for less than .5% of the Contractor's full bid must be performed by the General Contractor.

BID PROTEST AND RESPONSE

Cupples Construction has filed a bid protest against the low bidder DMR Construction based on its alleged failure to list roofing and painting subcontractors on its List of Proposed Subcontractors in compliance with Public Contract Code Section 4104 and Section 1-09 of the Request for Bids at p. 39. It alleges that Public Contract Code Section 4104 and Section 1-09 of the Request for Bids requires the listing of subcontractors for all portions of work exceeding one-half of one percent (0.5%) of the general contractor's total bid and the roofing and painting required by the specifications exceed the statutory threshold. Cupples also alleges that upon investigation of past projects and clients, DMR Builders does not appear to self-perform either the roofing or painting scope of work.

On August 25, 2025, Godemar Da Silva Jr, President of DMR BUILDERS submitted a written response to the bid protest stating that DMR would self-perform the painting work and Cortlandt Roofing will perform the TPO roof system and roof patching for \$15,578 which is .44% of its total bid for the project. To substantiate his response, Mr. Da Silva voluntarily enclosed a Proposal from Cortlandt Roofing & Waterproofing.

The bid from Cortlandt proposed:

1. to supply and install on the new "Penthouse" roof a 60 mil. TPO roofing membrane, over ½" cover board, over tapered insulation and TPO compatible flashing at the perimeter for \$15,578;
2. to install Box Rib metal panels on 'Penthouse walls, over 2" rigid appurtenant flashings and cleats for \$9,762;
3. Demo existing roof to facilitate penthouse structure for \$2,975

The Proposal notes that No. 3 is an alternate price which DMR can remove if it chooses to have the framers do the demo.

Under the heading “Payment Schedule” the Cortlandt proposal specifies when payments are due and includes “Acceptance of Proposal” which states: “The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.”

The proposal and the acceptance of the proposal are unsigned.

HEARING

Mr. Casey Cupples, Vice-President of Cupples and Sons Construction Inc. appeared at the hearing. Neither Mr. Da Silva nor any other representative from DMR Construction appeared at the hearing either in person or remotely. Mr. Cupples testified that before filing his written bid protest he called DMR Construction. He asked the person who answered his call if DMR Construction self-performed painting or roofing work. He was told that they do not. He didn’t get that person’s name or position with the firm. He testified that painting represents a significant portion of the work given the size of the interior of the building and that it is unusual for a general contractor to self-perform painting of that magnitude. He also testified that DMR has both a B-general contractor’s license which authorizes DMR to contract to perform painting and an A-Engineering license which authorizes it to perform earthwork and undergrounding. He finds it unlikely that a general contractor would self-perform painting but subcontract all other significant portions of the work which the general contractor is licensed to perform.

DISCUSSION

Based on the written response to the protest by Mr. Da Silva, DMR intends to accept the bid to have Cortlandt perform the Penthouse roof work for \$15,578, which is less than the trigger amount, and to self-perform the painting. His written response to the protest doesn’t say how the Penthouse walls will be constructed.

Here, DMR, the prime contractor, represents that it has listed all subcontractors who will perform work under the prime construction contract in excess of the trigger amount. By failing to list subcontractors performing roofing or painting costing more than the trigger amount, DMR is required to perform that work itself.

Public Contract Code Section 4104(a)(1) provides that any prime contractor “ . . . making a bid [on a public works project], shall, in his or her bid or offer, set forth . . . [t]he name, the location [and other specified information about] each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work . . . in an amount in excess of one-half of 1 percent of the prime contractor’s total bid.”

Under Public Contract Code Section 4106 “. . . if a prime contractor fails to specify a subcontractor in excess of one-half of 1 percent of the prime contractor’s total bid, the prime contractor agrees that he or she is fully qualified to perform that portion himself or herself, and that the prime contractor shall perform that portion himself or herself.”

Under Public Contract Code Section 4107 (c): [A prime contractor whose bid is accepted may not:] “. . . , sublet or subcontract any portion of the work in excess of one-half of 1 percent of the prime contractor’s total bid as to which his or her original bid did not designate a subcontractor.”

In Cupples bid protest, Mr. Cupples contends that DMR failed to list subcontractors who will perform roofing and painting work costing more than .5% of DMR’s total bid (“the trigger amount”). He bases this allegation on his phone call to DMR and his experience as a general contractor. That is his only evidence that DMR at the time it submitted its bid did not intend to self-perform the painting or roofing work.

1. Failing to list a subcontractor to perform painting work does not constitute failure to submit a responsive bid warranting a rejection of the low bid by DMR.

As a consequence of not listing a painting subcontractor, DMR is required to self-perform the painting work. (PRC §4106.) He is prohibited from using an unlisted subcontractor to perform work, other than change order work. (PCC §4107(c). Failing to list a painting subcontractor does not make DMR’s bid a non-responsive bid that warrants disqualifying the bid. (See *MCM Constr., Inc. v. City & Cty. of S.F.* (1998) 66 Cal. App. 4th 359, 365, footnote 2: “It appears MCM’s failure to list work to be performed by one of the subcontractors ultimately was not a basis for determining the bid nonresponsive, as MCM agreed it would do that work itself, as permitted by the Public Contract Code. (Pub. Contract Code, § 4106.)

Here, Mr. Da Silva, in his response to the bid protest, agrees to self-perform the painting work as required by Public Contract Code Sections 4106 and 4107(c).

If DMR attempts to use an unlisted painting subcontractor, under Public Contract Code Section 4110, the City can either terminate the construction contract or impose a penalty equal to 10% of the subcontract. In addition, violation of Section 4106 constitutes grounds for disciplinary action by the Contractors State Licensing Board. (Public Contract Code §4110.)

2. Failure to list a roofing subcontractor.

Mr. Da Silva’s written response to the bid protest states that Cortlandt, a roofing subcontractor, bid under the .5% threshold and, for that reason, DMR was not required to

list Cortlandt as a roofing subcontractor. At the suggestion of the Purchasing Manager, Mr. da Silva subsequently submitted the bid from Cortlandt to substantiate the amount Cortlandt proposed to perform the roofing work on the “Penthouse”.

The bid from Cortlandt proposes to perform roofing work for \$15,578, which is under the threshold amount, but it also bids \$9,762 for installation of Box Rib metal panels on ‘Penthouse walls, over 2” rigid appurtenant flashings and cleats and \$2975 for demolition of the existing roof to facilitate the penthouse structure with a note that the demolition work is an alternate price which DMR can remove if it chooses to have the framers do the demo.

Understandably, DMR’s response to the bid protest doesn’t indicate how the additional two items on Cortlandt’s proposal will be performed. Mr. Da Silva’s response states that DMR proposes to subcontract with Cortlandt to install the roof on the new Penthouse for \$15,578. The bid from Cortlandt to perform that work is below the threshold amount for listing it on the Proposed Subcontractors List.

Under Public Contract Code Section 4104(b) the Subcontractors’ List must include the portion of the work that will be done by each subcontractor and the prime contractor shall list only one subcontractor for each portion of the Work as is defined by the prime contractor in his or her bid. If he uses a listed subcontractor to perform either or both items in Cortlandt’s proposal that work would have to be included in the description of work for that listed subcontractor as listed in DMR’s bid.

The bid at p.33 includes as Division 7 Insulation and Waterproofing for \$54,879. According to the Specifications that Division includes roof and deck insulation (07-22), Thermoplastic Polyolefin (TPO) Roofing (07-62), Sheet Metal Flashing and Trim (07-62) and Roofing Specialties (07-71). All the work described in Cortlandt’s \$15,578 proposal is Division 7 work. The installation of the metal siding and rigid insulation on the “Penthouse” walls also appears to be part of Division 7. None of the listed subcontractors are shown as performing work included in Division 7 of the specifications.

In responding to the bid protest DMR represents that Cortlandt will only perform the roofing work for less than the threshold requiring its inclusion in the Proposed Bidders List. As an unlisted subcontract Cortlandt cannot perform the metal siding work since that in combination with the roofing work would exceed the threshold. Since Cortlandt can’t perform that work, under Public Contract Code Section 4106, as with the painting work, DMR represents that it will self-perform it and that it is fully qualified to perform that portion. Mr. Da Silva is not required to explain how the Box Rib metal panels and demolition will be performed. Under Section 4106, as a matter of law, DMR will be required to self-

perform that work and is deemed to represent that it is fully qualified to perform that work, unless that work is within the scope of work for any of the listed subcontractors.

[Proposed Findings Alternative 2]

PROPOSED CITY COUNCIL DECISION UPHOLDING BID PROTEST

The City Council upholds the bid protest filed by Cupples Construction to the apparent low bid by DMR Construction and awards the bid to Cupples Construction, as the apparent second lowest bidder.

FINDINGS

The City Council finds that the alleged failure to list subcontractors for painting work does not render the bid non-responsive as a matter of law, because any work not performed by subcontractors on the List of Proposed Subcontractors must be performed by the General Contractor. Based on the wording of the proposal from Cortlandt Roofers¹ both to roof the “Penthouse” for \$15,578 and to install siding on the Penthouse for \$9,762 the proposal exceeds .5% of DMR’s total bid, requiring DMR to include Cortlandt on its Proposed Bidder’s List. The failure to include Cortlandt on the List of Proposed Subcontractors renders the bid non-responsive.

BID PROTEST AND RESPONSE

Cupples Construction has filed a bid protest against the low bidder DMR Construction based on its alleged failure to list roofing and painting subcontractors on its List of Proposed Subcontractors in compliance with Public Contract Code Section 4104 and Section 1-09 of the Request for Bids at p. 39. It alleges that Public Contract Code Section 4104 and Section 1-09 of the Request for Bids requires the listing of subcontractors for all portions of work exceeding one-half of one percent (0.5%) of the general contractor’s total bid and the roofing and painting required by the specifications exceed the statutory threshold. Cupples also alleges that upon investigation of past projects and clients, DMR Builders does not appear to self-perform either the roofing or painting scope of work.

On August 25, 2025, Godemar Da Silva Jr, President of DMR BUILDERS submitted a written response to the bid protest stating that DMR would self-perform the painting work and Cortlandt Roofing will perform the TPO roof system and roof patching for \$15,578 which is .44% of its total bid for the project. At the suggestion of the City’s Purchasing Manager, he subsequently submitted the Proposal from Cortland Roofing & Waterproofing to substantiate his written response.

The bid from Cortlandt proposed:

¹ voluntarily submitted by DMR Construction in its response to the bid protest

1. to supply and install on the new “Penthouse” roof a 60 mil. TPO roofing membrane, over ½” cover board, over tapered insulation and TPO compatible flashing at the perimeter for \$15,578;
2. to install Box Rib metal panels on ‘Penthouse walls, over 2” rigid appurtenant flashings and cleats for \$9,762;
3. Demo existing roof to facilitate penthouse structure for \$2,975

The Proposal notes that No. 3 is an alternate price which DMR can remove if it chooses to have the framers do the demo.

Under the heading “Payment Schedule” the Cortlandt proposal specifies when payments are due and includes “Acceptance of Proposal” which states: “The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.”

The proposal and the acceptance of the proposal are unsigned.

HEARING

Mr. Casey Cupples, Vice-President of Cupples and Sons Construction Inc. appeared at the hearing. Neither Mr. Da Silva nor any other representative from DMR Construction appeared at the hearing either in person or remotely. Mr. Cupples testified that before filing his written bid protest he called DMR Construction. He asked the person who answered his call if DMR Construction self-performed painting or roofing work. He was told that they do not. He didn’t get that person’s name or position with the firm. He testified that painting represents a significant portion of the work given the size of the interior of the building and that it is unusual for a general contractor to self-perform painting of that magnitude. He also testified that DMR has both a B-general contractor’s license which authorizes DMR to contract to perform painting and an A-Engineering license which authorizes it to perform earthwork and undergrounding. He finds it unlikely that a general contractor would self-perform painting but subcontract all other significant portions of the work which the general contractor is licensed to perform.

DISCUSSION

Based on the written response to the protest by Mr. Da Silva, DMR intends to accept the bid to have Cortlandt perform the Penthouse roof work for \$15,578, which is less than the trigger amount, and to self-perform the painting. His written response to the protest doesn’t say how the Penthouse walls will be constructed.

Here, DMR, the prime contractor, represents that it has listed all subcontractors who will perform work under the prime construction contract in excess of the trigger amount. By

failing to list subcontractors performing roofing or painting costing more than the trigger amount, DMR is required to perform that work itself.

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Under Public Contract Code Section 4106 “. . . if a prime contractor fails to specify a subcontractor in excess of one-half of 1 percent of the prime contractor’s total bid, the prime contractor agrees that he or she is fully qualified to perform that portion himself or herself, and that the prime contractor shall perform that portion himself or herself.”

Under Public Contract Code Section 4107 (c): [A prime contractor whose bid is accepted may not:] “. . . , sublet or subcontract any portion of the work in excess of one-half of 1 percent of the prime contractor’s total bid as to which his or her original bid did not designate a subcontractor.”

In Cupples bid protest, Mr. Cupples contends that DMR failed to list subcontractors who will perform roofing and painting work costing more than .5% of DMR’s total bid (“the trigger amount”). He bases this allegation on his phone call to DMR and his experience as a general contractor. That is his only evidence that DMR at the time it submitted its bid did not intend to self-perform the painting or roofing work.

1. Failing to list a subcontractor to perform painting work does not constitute failure to submit a responsive bid warranting a rejection of the low bid by DMR.

As a consequence of not listing a painting subcontractor, DMR is required to self-perform the painting work. (PRC §4106.) He is prohibited from using an unlisted subcontractor to perform work, other than change order work. (PCC §4107(c). Failing to list a painting subcontractor does not make DMR’s bid a non-responsive bid that warrants disqualifying the bid. (See *MCM Constr., Inc. v. City & Cty. of S.F.* (1998) 66 Cal. App. 4th 359, 365, footnote 2: “It appears MCM’s failure to list work to be performed by one of the subcontractors ultimately was not a basis for determining the bid nonresponsive, as MCM agreed it would do that work itself, as permitted by the Public Contract Code. (Pub. Contract Code, § 4106.)

Here, Mr. Da Silva, in his response to the bid protest, agrees to self-perform the painting work as required by Public Contract Code Sections 4106 and 4107(c).

If DMR attempts to use an unlisted painting subcontractor, under Public Contract Code Section 4110, the City can either terminate the construction contract or impose a penalty equal to 10% of the subcontract. In addition, violation of Section 4106 constitutes grounds for disciplinary action by the Contractors State Licensing Board. (Public Contract Code §4110.)

2. Failure to list a roofing subcontractor.

Mr. Da Silva's written response to the bid protest states that Cortlandt, a roofing subcontractor, bid under the .5% threshold and, for that reason, DMR was not required to list Cortlandt as a roofing subcontractor. At the suggestion of the Purchasing Manager, Mr. da Silva subsequently submitted the bid from Cortlandt to substantiate the amount Cortlandt proposed to perform the roofing work on the "Penthouse".

The bid from Cortlandt proposes to perform roofing work for \$15,578, which is under the threshold amount, but it also bids \$9,762 for installation of Box Rib metal panels on 'Penthouse walls, over 2" rigid appurtenant flashings and cleats and \$2975 for demolition of the existing roof to facilitate the penthouse structure with a note that the demolition work is an alternate price which DMR can remove if it chooses to have the framers do the demo.

Understandably, DMR's response to the bid protest doesn't address the metal siding work on the "Penthouse" or how the additional two items on Cortlandt's proposal will be performed. Mr. Da Silva's response states that DMR proposes to subcontract with Cortlandt to install the roof on the new Penthouse for \$15,578. The bid from Cortlandt to perform that work is below the threshold amount for listing it on the Subcontractors List.

Under Public Contract Code Section 4104(b) the Subcontractors' List must include the portion of the work that will be done by each subcontractor, and the prime contractor shall list only one subcontractor for each portion of the Work as is defined by the prime contractor in his or her bid. If he uses a listed subcontractor to perform either or both items in Cortlandt's proposal that work would have to be included in the description of work for that listed subcontractor as listed in DMR's bid.

The bid at p.33 includes Division 7 Insulation and Waterproofing work for a total cost of \$54,879. According to the Specifications that Division includes roof and deck insulation (07-22), Thermoplastic Polyolefin (TPO) Roofing (07-62), Sheet Metal Flashing and Trim (07-62) and Roofing Specialties (07-71). All the work described in Cortlandt's \$15,578 proposal is Division 7 work. The installation of the metal siding and rigid insulation on the "Penthouse" walls also appears to be part of Division 7. None of the listed subcontractors are shown as performing work included in Division 7 of the specifications.

Two conclusions can be reached based on the above facts: (1) Cortlandt will perform both the roofing and metal siding work which exceeds the .5% threshold or (2) Cortlandt will perform as stated in Mr. Da Silva's written response to the bid protest and DMR will be required to self-perform the metal siding installation.

Given the wording of the proposal from Cortlandt and DMR's failure to appear and provide clarifying testimony at the hearing, the City Council finds that Cortlandt proposed to perform work exceeding the .5% threshold. Based on this finding DMR's bid is non-responsive by failing to list Cortlandt in DMR's Proposed Subcontractor's List and awards the bid to Cupples the next lowest bidder.

**CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA
PROPOSAL
FOR
REMODEL OF 501 SOUTH STATE STREET
Specification No. 25-04**

The undersigned, as bidder,
declares that he or she has examined thoroughly all of the contract documents herein contained, that this proposal is made without collusion with any other person, firm or corporation and that all laws and ordinances relating to the interest of public officers in this contract have been complied with in every respect.

AND he or she proposes and agrees, if this proposal is accepted,

- 1) that he or she will contract with the City of Ukiah, Mendocino County, California, in the form of the copy of the agreement herein contained
 - a) to provide all necessary machinery, tools, apparatus and other means of construction;
 - b) to furnish all materials;
 - c) to provide all superintendence, overhead expenses and all labor and expenses of whatever nature necessary to complete the job in conformity with the specifications and drawings and other contract provisions herein or reasonably implied hereby or as necessary to complete the work in the manner and within the time named herein and according to the requirements and to the reasonable satisfaction of the City Engineer;
 - d) to pay all charges of freight transportation and hauling;
- 2) that he or she indemnifies the City against any loss or damage arising from any act of the undersigned as Contractor; and
- 3) that he or she will accept as full payment therefor the following sums:

BIDDING SCHEDULE

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;
2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the items in the "Total" column. In case of discrepancy between the sum of the items in the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column items shall prevail. The bid comparison will be based on the sum of the items in the "total" column for each bidder.

The Unit prices for the various Construction Items below include all costs associated with the General Conditions, Special Provisions, Requirements of the Construction Contract, and represent the total, complete, in-place cost for each specific Construction Item in accordance with the Construction Documents, including all elements, work components, accessories, and connections, shown in applicable details or required to yield a complete, sound and functional component or system appropriate for its intended function, whether or not such is specifically described or listed in any description of measurement or payment. The total amount of the Construction items below shall represent the total and complete cost of the fully functional Project. All work not specifically listed below be required to complete the work of the various construction items and the cost of such shall be considered as included throughout the various unit prices indicated.

Lowest bid will be based on the lowest Base Bid, not including the add alternate bid item.

NAME OF BIDDER:
SPEC #:
PROJECT NAME:

DMR BUILDERS
25-04
REMODEL OF 501 SOUTH STATE STREET

ITEM#	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
1	Temporary Controls, Fencing & Signage	LS	1	\$65,000	\$65,000-
2	Mobilization	LS	1	\$15,000	\$15,000-
3	Div 02 - Demolition	LS	1	\$55,000	\$55,000-
4	Div 03 - Concrete	LS	1	\$147,205	\$147,205-
5	Div 05 - Metal Fabrications	LS	1	\$44,759	\$44,759-
6	Div 06 - Wood	LS	1	\$363,842	\$363,842-
7	Div 07 - Insulation & Waterproofing	LS	1	\$54,879	\$54,879-
8	Div 08 - Doors & Windows	LS	1	\$316,613	\$316,613-
9	Div 09 - Finishes	LS	1	\$464,393	\$464,393-
10	Div 10 - Signage & Accessories	LS	1	\$28,512	\$28,512-
11	Div 13 - Non-Structural Seismic Restraints	LS	1	\$30,000	\$30,000-
12	Div 14 - Elevator	LS	1	\$220,000	\$220,000-
13	Div 21 - Wet Pipe Sprinkler Systems	LS	1	\$113,464	\$113,464-
14	Div 22 - Plumbing	LS	1	\$217,754	\$217,754-
15	Div 23 - Mechanical	LS	1	\$200,000	\$200,000-
16	Div 26 - Electrical	LS	1	\$990,000	\$990,000-
17	Div 28 - Access Control	LS	4	\$	\$

18	Div 31 - Earthwork	LS	1	\$51,194	\$51,194-
19	Div 32 - Site Improvements	LS	1	\$34,125	\$34,125-
20	Div 33 - Sanitary Sewer	LS	1	\$76,120	\$76,120-
TOTAL BASE BID ==>>					\$348,490.00

BID ALTERNATES

Item #	Description	Unit of Measure	Quantity	Unit Price	Total
A1	New Transformer - including Demo of Existing Transformer & Site Work	LS	1	\$250,000	\$250,000-
TOTAL ALTERNATE BID→					\$250,000-

TOTAL BID: Items 1 through A1 inclusive: \$3,737,490.00

We, the undersigned, acknowledge that the City Council has reserved the right to reject any or all bids and to determine which proposal is, in its opinion, the lowest responsive bid from a responsible bidder and that which it deems in the best interest of the City to accept. We, the undersigned, further agree, if this proposal shall be accepted, to sign the agreement and to furnish the required bonds with satisfactory surety, or sureties, within fifteen (15) calendar days after written notice that the contract is ready for signature; and, if the undersigned shall fail to contract, as aforesaid, it shall be understood that he or she has abandoned the contract and that, therefore, this proposal shall be null and void and the proposal guaranty accompanying this proposal, or the amount of said guaranty, shall be forfeited to and become the property of the City. Otherwise, the proposal guaranty accompanying this proposal shall be returned to the undersigned.

Witness our hands this day of August 19, 2025.

Licensed in accordance with an act providing for the registration of California Contractors License No. 1033280, expiration date 5/31/2026.

THE CONTRACTOR'S LICENSE NUMBER AND EXPIRATION DATE STATED HEREIN ARE MADE UNDER PENALTY OF PERJURY.

Department of Industrial Relations Public Works Contractor Registration Number: 1000058288

Signature of bidder or bidders, with business name, address, phone number and fax number:

Godemar Da Silva Jr. 100% Owner

DMR Builders 2725 Guerneville Rd. Santa Rosa, Ca 95401

Office 707-596-7575 Fax N/a

Notice: In the case of a corporation, give below the addresses of the principal office thereof and names and addresses of the President, Secretary, Treasurer.

Godemar Da Silva Jr. - 100% President



WORKER'S COMPENSATION CERTIFICATE

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Worker's Compensation or undertake self-insurance in accordance with the provisions of that code and I will comply with such provisions before commencing the performance of the work of this contract.

Witness my hand this 18th day of August, 2025

Signature of Bidder, with Business Address:



DMR Builders

2725 Guerneville Rd.

Santa Rosa, Ca 95401

CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT

The bidder represents that he or she has/has not, participated in a previous contract or subcontract subject to either the equal opportunity clause herein or the clause contained in Section 301 of Executive Order 10925; that he or she has/has not, filed all required compliance reports; and that representations indicating submission of required compliance prior to subcontract awards.

Signature and address of Bidder:



Date 8/19/2025

DMR Builders

2725 Guerneville Rd.

Santa Rosa, Ca 95401

(This certification shall be executed by the bidder in accordance with Section 60-1.6 of the Regulations of the President's Committee on Equal Employment Opportunity for implementing Executive Orders 10925 and 11114.)

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4108 of the California Public Contract Code and any amendments thereof, each bidder shall set forth (a) the name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction site or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of 1 percent of the total bid and (b) the California Contractor License Number for each subcontractor, and (c) the portion of the work to be done by each subcontractor. (See General Conditions Section 1-09.) Include with the name of each sub-contractor their Department of Industrial Relations Public Works Contractor Registration Number.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK
North Counties Drywall	630523	1000005163	PO BOX 260 Sonoma, CA 95476	Drywall
North Coast Fabricators	883082	1000029831	4801 West End Rd., Arcata, CA 95521	Guard + Hand Rails
Ceiling Experts	917629	1000006305	8150 Sierra College Blvd. Ste 95061 150 Roseville, CA	Acoustical Ceiling
B.N.T. Tile	1022374	1000046452	502 Main St. Wheatland, CA 95692	Tile
Ellis Flooring	1007271	1000035466	515 Frazier Ave Santa Rosa, CA 95404	Flooring
Otis	7031	1000003571 (mb)	470 Lakeview Dr. Sunnyvale, CA 94085	Elevator
AGD	1131769	2000007862	7094 Gravenstein Hwy, Cotati, CA 94931	Concrete + Sitework
WIPF	629598	1000064006	P.O. Box 234 Ukiah, CA 95482	Fire Sprinkler
R&P Plumbing	802006	1000003935	461 Todd Rd. Santa Rosa, CA 95407	Plumbing
JMS	815102	1000006626	538 Mayfin Ave Rohnert Park, CA 94928	HVAC (mb)

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4108 of the California Public Contract Code and any amendments thereof, each bidder shall set forth (a) the name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction site or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of 1 percent of the total bid and (b) the California Contractor License Number for each subcontractor, and (c) the portion of the work to be done by each subcontractor. (See General Conditions Section 1-09.) Include with the name of each sub-contractor their Department of Industrial Relations Public Works Contractor Registration Number.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK
Core Electric	1041970	100437263	3250 Dutton Ave. Santa Rosa, CA 95407	Electrical
JR Stephens	446547	1000009737	5208 Boyd Rd. Arcata, CA 95521	Casework
TOP Notch	972009	1000017371	1337 N. Market #200 Blvd. Sacramento, CA 95834	HVAC
Redhawk Glass	889310	1000007033	PO Box 2608 Rohnert Park, CA 94927	Glamazing

STATEMENT OF EXPERIENCE OF BIDDER

The bidder is required to state below what work of similar magnitude or character he or she has done and to give references that will enable the City Council to judge of his or her experience, skill and business standing and his or her ability to conduct work as completely and rapidly as required under the terms of the contract.

Please see attached Completed Projects

SIGNATURE(S) OF BIDDER

Accompanying this proposal is Bidder's Bond
(insert the words "cash (\$)", "cashier's check" or "bidder's bond", as the case may be) in an amount equal to at least 10 percent of the bid.

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If bidder or other interested person is a corporation, provide the legal name of corporation and also the names of the president, secretary, treasurer and manager thereof. If a co-partnership, provide the true name of firm and also the names of all individual co-partners composing the firm. If bidder or other interested person is an individual, provide the first and last names in full.

Godemar Da Silva Jr. 100% Owner & President

Licensed in accordance with an act providing for the registration of Contractors:

License No. 1033280, License Expiration Date 5/31/2026.

Signature(s) of Bidder: 

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the co-partnership; and if bidder is an individual, his or her signature shall be placed above. If a member of a partnership, a Power of Attorney must be on file with the Department prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

Business address: 2725 Guerneville Rd. Santa Rosa, Ca 95401

Place of residence: 2717 Guerneville Rd. Santa Rosa, CA 95401

Dated: 8/19/2025

CITY OF UKIAH
Mendocino County, California

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, DMR Builders
_____, as PRINCIPAL and
United Surety Insurance Company
_____, as SURETY,

are held and firmly bound unto the City of Ukiah in the penal sum of 10 PERCENT OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the City of Ukiah, as the case may be, for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, to the City Clerk to which said bid was submitted, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents. In no case shall the liability of the surety hereunder exceed the sum of \$ Ten Percent of Attached Bid (10%)

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above mentioned bid to the City of Ukiah, as aforesaid, for certain construction specifically described as follows, for which bids are to be opened at the Office of the City Clerk, Ukiah Civic Center, Ukiah, California, on AUGUST 19, 2025 for REMODEL OF 501 SOUTH STATE STREET. #25-04

NOW, THEREFORE, If the aforesaid Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him or her for signatures, enters into a written contract, in the prescribed form, in accordance with the bid and files two bonds with the City of Ukiah, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this 19th day of August,
A.D. 2025.

DMR Builders (Seal)

[Signature] (Seal)

GOODEMIRE DA SILVA JR (Seal)
Principal

United Surety Insurance Company (Seal)

[Signature] (Seal)

[Signature] (Seal)
Surety Mark D. Leskanic, Attorney-In-Fact

Address: 303 Congress Street, Suite 502
Boston, MA 02210

Individual Acknowledgment

State of _____ }
County of _____ } ss:

On this _____ day of _____, 20____, before me personally came _____ to me known and known to me to be the individual described in and who executed the foregoing instrument, and acknowledged to me that he/she executed the same

My commission expires _____
Notary Public

Principal Acknowledgment

State of _____ }
County of _____ } ss:

On this _____ day of _____, 20____, before me personally came _____ to me known and who being by me duly sworn, did depose and say that he is the _____ of _____ the corporation described in and which executed the above instrument; that he knows the seal of said corporation, that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his/her name thereto by like order.

My commission expires _____
Notary Public

Surety Acknowledgment

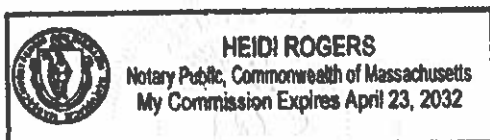
State of Massachusetts }
County of Middlesex } ss:

On this 19th day of August, 2025, before me personally came Mark D. Leskanic to me known, who, being by me duly sworn, did depose and say that he/she is an attorney-in-fact of United Surety Insurance Company the corporation described in and which executed the within instrument; that he knows the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

My commission expires 04/23/2032

Heidi Rogers

Notary Public Heidi Rogers



United Casualty and Surety Insurance Company
 DBA United Surety Insurance Company
 DBA US Casualty and Surety Insurance Company
 Statement of Assets, Liabilities, and Surplus
 Year Ended December 31

	Year Ended	
	2024	2023
<u>Admitted Assets</u>		
Cash and Short Term Investments	\$41,394,126	\$36,321,994
Stocks	19,798,138	2,176,755
Bonds	4,936,241	6,738,979
Uncollected Premiums & Agents' Balance	3,880,950	2,272,570
Other Assets	780,356	2,402,610
<i>Total Net Admitted Assets</i>	<u>\$70,789,811</u>	<u>\$49,912,908</u>
<u>Liabilities</u>		
Funds Held as Collateral	\$9,973,991	\$14,101,531
Unearned Premium	10,494,364	8,098,812
Losses	2,879,260	1,919,898
Other Expenses	549,747	528,056
Taxes, Licenses, and Fees	208,961	147,927
Loss Adjustment Expenses	1,190,067	530,475
Payable to Parent or Affiliates	1,766,168	1,001,040
Ceded Reinsurance Payable	1,822,923	1,277,138
Other Liabilities	1,179,840	442,295
<i>Total Liabilities</i>	<u>\$30,065,321</u>	<u>\$28,047,172</u>
<u>Capital and Surplus</u>		
Paid In Surplus	\$34,850,639	\$17,364,311
Unassigned Surplus	3,378,106	2,005,680
Common Stock	2,600,000	2,600,000
Less: Treasury Stock	104,255	104,255
<i>Total Capital and Surplus</i>	<u>\$40,724,490</u>	<u>\$21,865,736</u>
<i>Total Liabilities and Capital and Surplus</i>	<u>\$70,789,811</u>	<u>\$49,912,908</u>

I, Raymond Kyle Fowler, Treasurer and Secretary of United Casualty and Surety Insurance Company, hereby certify that the above is an exact copy of the financial statements of the Company dated December 31, 2024 and is a true and correct statement of the condition of United Casualty and Surety Insurance Company as of that date.

IN TESTIMONY WHEREOF, I have set my hand and affixed the seal of the Company this 7th day of March 2025.

By Raymond Kyle Fowler
 R. Kyle Fowler, Treasurer and Secretary

CALIFORNIA CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of SONOMA)

On AUGUST 18, 2025 before me, ALEXIS LEVESQUE, NOTARY PUBLIC
(here insert name and title of the officer)

personally appeared GODEMAR DA SILVA

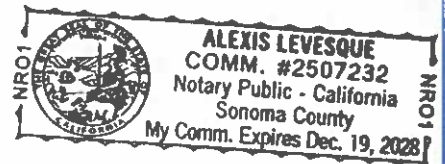
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

(Seal)



Optional Information

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of _____

BID BOND
containing _____ pages, and dated _____

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
☐ Attorney-in-Fact
☒ Corporate Officer(s)

PRESIDENT
DMR BUILDERS
Title(s)

- ☐ Guardian/Conservator
☐ Partner - Limited/General
☐ Trustee(s)
☐ Other: _____

representing: _____
Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:

- ☐ form(s) of identification ☐ credible witness(es)

Notarial event is detailed in notary journal on:

Page # _____ Entry # _____

Notary contact: _____

Other

- ☐ Additional Signer(s) ☐ Signer(s) Thumbprint(s)

☐

NON-COLLUSION AFFIDAVIT

Note: Bidder shall execute the affidavit on this page prior to submitting his or her bid.

To City Council, City of Ukiah:

The undersigned in submitting a bid for performing REMODEL OF 501 SOUTH STATE STREET by contract, being duly sworn, deposes and says:

that he or she has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract.

DMR Builders

Godemar Da Silva Jr.



Signature(s) of Bidder

Business Address: 2725 Guerneville Rd.

Santa Rosa, Ca 95401

Place of Residence: 2717 Guerneville Rd.

Santa Rosa, Ca 95401

NOTARIZATION

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public in and for the County of _____, State of California.

My Commission Expires _____, 20 ____.

** SEE ATTACHED NOTARY*

CALIFORNIA CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of SONOMA)

On AUGUST 18, 2025 before me, ALEXIS LEVESQUE, NOTARY PUBLIC
(here insert name and title of the officer)

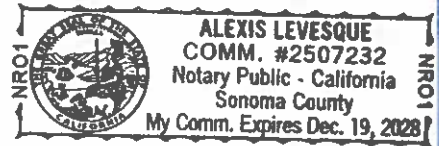
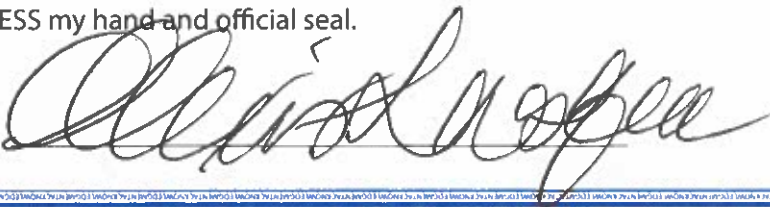
personally appeared GODEMAR DA SILVA

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)

Optional Information

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of

NON-COLLUSION

containing _____ pages, and dated _____

The signer(s) capacity or authority is/are as:

☐ Individual(s)

☐ Attorney-in-Fact

☒ Corporate Officer(s)

DMR BUILDERS

Title(s)

☐ Guardian/Conservator

☐ Partner - Limited/General

☐ Trustee(s)

☐ Other: _____

representing: _____
Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:

☐ form(s) of identification ☐ credible witness(es)

Notarial event is detailed in notary journal on:

Page # _____ Entry # _____

Notary contact: _____

Other

☐ Additional Signer(s)

☐ Signer(s) Thumbprint(s)

☐ _____

Project Name: Showcase Theater Seating Replacement

Project Address: Ave. of the Flags, San Rafael, Ca

Project Owner: County of Marin

Project Architect:

Scope: New construction and renovation of the surrounding area finished surfaces, including Floors, Walls, Speaker system and Speaker Support Structures, structural and electrical engineering. Hazardous Materials Abatement.

Original Completion Date: 9/26/2024

Date Completed: 10/28/2024

Initial Contract Value: \$667,754.00

Final Contract Value: \$701,363.76

DSA Approval Required: No

Stop Notices: 0

Lawsuits: 0

Liquidated Damages: 0

Project Name: Building 300 Modernization

Project Address: 4000 Suisun Valley Rd. Fairfield, Ca

Project Owner: Solano Community College District

Project Architect: Aedis Architects

Scope: HVAC upgrades to the controls and valves as well as motors and components without the removal of the existing equipment. Removal and replacement of the existing roofing, removal and replacement of the existing ceiling tiles, restroom upgrades, ADA upgrades on the path of travel.

Original Completion Date:

Date Completed: 6/18/2025

Initial Contract Value: \$2,018,132.00

Final Contract Value: \$2,272,809.00

DSA Approval Required: No

Stop Notices: 0

Lawsuits: 0

Liquidated Damages: 0

Project Name: 125 University Ave. T.I - Police Station

Project Address: 125 University Ave. Berkeley, Ca

Project Owner: City of Berkeley

Project Architect: Noll & Tam

Scope: Mod to exterior doors and glazing, new interior walls, doors, ceilings and finishes. Modification to building systems (HVAC, electrical, lighting and plumbing) Ballistic Paneling.

Original Completion Date: 1/15/2021

Date Completed: 1/12/2021

Initial Contract Value: \$255,000.00

Final Contract Value: \$438,649.98

DSA Approval Required: No

Stop Notices: 0

Lawsuits: 0

Liquidated Damages: 0

Project Name: Short Elementary School ECE
Project Address: 35 Marin St. San Rafael, Ca
Project Owner: San Rafael City Schools
Project Architect: CA+SA Studio
Scope: Four Restroom renovations; Plumbing; Electrical; AC Paving; Concrete
Curbs; Artificial Turf; Chain Link Fencing; Grading, in preparation for
owner installed play structures and equipment; Exterior Painting.
Original Completion Date: 7/12/2024
Date Completed: 2/3/25
Initial Contract Value: \$881,375.00
Final Contract Value: \$874,829.20
DSA Approval Required: Yes
Stop Notices: 0
Lawsuits: 0
Liquidated Damages: 0

Project Name: San Anselmo Town Hall Roof & HVAC
Project Address: 525 San Anselmo Ave. San Anselmo, Ca
Project Owner: Town of San Anselmo
Project Architect: n/a
Scope: Demolition and replacement of existing roofing and indicated HVAC system and components
Original Completion Date: 10/2/2024
Date Completed: 11/29/2024
Initial Contract Value: \$1,242,517.50
Final Contract Value: \$1,284,370.95
DSA Approval Required: No
Stop Notices: 0
Lawsuits: 0
Liquidated Damages: 0

Project Name: GVRD Recreation Office Remodel
Project Address: Vallejo, Ca
Project Owner: Greater Vallejo Recreation District
Project Architect: n/a
Scope: Demolish remaining items in offices, Remodel offices, site work. Provide and install all new
electrical, plumbing, AV, Finishes, building envelope, mechanical systems.
Original Completion Date: 3/8/2024
Date Completed: 4/10/2024
Initial Contract Value: \$774,345.00
Final Contract Value: \$806,263.98
DSA Approval Required: No
Stop Notices: 0
Lawsuits: 0
Liquidated Damages: 0

Project Name: L&M Motel
Project Address: Healdsburg Ave. Healdsburg
Project Owner: City of Healdsburg
Project Architect: Tierney/Figueiredo
Scope: Twenty Two (22) Unit existing Motel. Work includes interior and exterior rehabilitation of buildings, accessibility improvements, site improvements, public sidewalk improvements and sewer replacements, engineering.Hazardous Materials Abatement.
Original Completion Date: 3/20/2023
Date Completed: 4/7/2023
Initial Contract Value: \$1,348,776.00
Final Contract Value: \$1,599,649.67
DSA Approval Required: No
Stop Notices: 0
Lawsuits: 0
Liquidated Damages: 0

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 1

Request for Bid (RFB)
for
Spec 25-04 – Remodel of 501 South State Street
August 1, 2025

The following is Addendum No. 1.



This Addendum is hereby made part of the Contract Documents to the same extent as though it were originally included therein.

1. The following are questions asked and associated responses:

Q1: Are we changing the doorlites at Door 100 & 116D to GL-1? Per Sheet A602, its an existing doors. Please advise.

A1: No, the doorlite glazing remains existing, only the doors and hardware are getting replaced.

Q2: Sheet A602 - Window Type F2, F3, F4 calls out for Glass Type GL-2 which is 1/4" Clear Temp. Glass but the details shows for 1" OA IGU. Please clarify.

A2: All interior door frames with glazing are to be the 1/4" clear tempered glazing.

Q3: Sheet A602 - Window Type F2, F3, F4 calls out for 2" X 4 1/2" Offset Glaze / Thermally Broken. Please clarify if this is the correct material.

A3: These are interior aluminum window frames, no need for thermally broken. Only thermally broken at the insulated glazing locations as noted in the specifications.

Section 08 41 13: E:

Framing

1. Provide nominal 2" x 4 1/2" thermally broken aluminum framing system with positive mechanical bonding of interior and exterior aluminum sections at exterior frames, as manufactured by door manufacturers. Interior frames non-thermally broken.

Q4: Sheet A605 - Window Type W1 calls out for Glass Type GL-3 & GL-4. Is the GL-3 Black Spandrel Glass? Please clarify.

A4: GL-3 is the black spandrel glazing as listed in the specifications.

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 2

**Request for Bid (RFB)
for
Spec 25-04 – Remodel of 501 South State Street
August 7, 2025**

The following is Addendum No. 2.



This Addendum is hereby made part of the Contract Documents to the same extent as though it were originally included therein.

1. The following are questions asked and associated responses:

Q1: The following items are Specified & Not shown. Please confirm these items are not needed on this project.

Accessory Schedule 2.03

- A. B.9 ASI 0487 Combo Unit
- B. B.10 Folding Shower Seat

A1: These accessories are not required in this project and can be removed from the specifications on page 10 28 00 – 3 of 4. Please discard the original versions and replace with the attached revision provided with the addendum.

Q2: The Following items are shown & not specified. Please provide a manufacturer & model #(s) for pricing.

- A. Baby Changing Station
- B. Hooks
- C. Mop & Broom Holder
- D. Hand Sanitizer

A2:

- A. Bobrick: Koala Kare KB310-SSWM: Horizontal Stainless-Steel Surface Mounted Baby Changing Station (BCS)
- B. Bobrick - B-549: Coat Hook (CH)
- C. Bobrick – B-239 x 34
- D. Tork Skincare Dispenser White S4 #571600

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 3

**Request for Bid (RFB)
for
Spec 25-04 – Remodel of 501 South State Street
August 11, 2025**

The following is Addendum No. 3.



This Addendum is hereby made part of the Contract Documents to the same extent as though it were originally included therein.

1. The following are questions asked and associated responses:

Q1: Does the mortar bed on the first floor need to be demolished?

A1: Remove loose portions of concrete /mortar at the existing floor. Prepare existing concrete floor for new flooring. Repair holes/removed with high strength grout.

Q2: Page P002 DHW-1 Water Heater schedule Model # specified is a 10 Gallon Water Heater while the specified capacity stated is 55 Gallon. Please provide preferred model # for 55 Gallon Water Heater.

A2: Water heater model number is shown as Bradford White - Electriflex LD Utility LE11003-1 on sheet P002 is incorrect. That model number was only a 10 gallon water heater. Water heater shall be a Bradford White Electriflex LD LE255T3-3 55 gallon, 4500W, 208V.

Q3: Page S502 is calling for a 5'-0" high stand in mezzanine for a 5'-0" tall 55 gallon Water Heater on top. This is not only a safety hazard for maintenance, but also a space issue as well. Please confirm it is acceptable to make the Water Heater Stand 1'-6" tall instead of 5'-0" tall.

A3: Water heater shall be in Utility room 212 above first floor, see sheets A102 and P103. Change height of stand from 5'-0"+/- AFF to 18" AFF. on detail 3/S502.

Q4: Page P102 Sheet Note 11 states to e in new 2" DCW line to (E) 2" DCW line. 2" DCW line does not exist. Please provide solution for new 2" DCW e-in.

A4: Existing incoming water line is 1 1/2". Water line shall be upsized to 2".

Q5: Are Earthquake and Flood required on the Builders Risk Insurance?

A5: No, Earthquake and Flood are not required.

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 4

Request for Bid (RFB) for
Spec 25-04 – Remodel of 501 South State Street
August 15, 2025

The following is Addendum No. 4.



This Addendum is hereby made part of the Contract Documents to the same extent as though it were originally included therein.

1. The following are questions asked and associated responses:

Q1: Sheet C102, Note 9, indicates "new 2" PVC conduits extending from Electrical room to pull box at back of walk by sewer line." This work is not shown on the electrical drawings. Please provide updated electrical drawings showing the routing, terminations, and details for this conduit work.

A1: Location of this work in the plans will stay on page C102. Trenching details per utility requirements.

Q2: Sheet C102, Note 10, indicates "(2) AH empty PVC conduits extending from electrical room to the corner of the building." These conduits appear to be installed underslab. Please provide updated electrical drawings showing the extent of sawcutting, slab removal, and installation of new PVC conduits under slab, including trenching, backfill, and slab repair requirements.

A2: This conduit will be routed through the attic area, supported by min code requirements to rafter system. These empty conduits will down the wall and penetrate wall below slab to the new handhole. The only floor removal/repair would be at the location of where the conduits come down from the wall to the new handhole outside.

Q3: Note 3.5.D on specification section 01 50 00 requires the contractor to engage a pest control service. There are no technical specifications available for the same. Please confirm if Pest control services will be required on this project. If yes, please provide a specification section of the same.

A3: No pest control required. Contractor is responsible for building and site controls, phasing, security, garbage, debris removal and all other requirements to keep building and site clean and neat.

BID SUBMITTAL CHECKLIST

The following is a checklist to assist you in your submission of your bid documents. Please make sure you include the following when submitting your bid documents to reduce the risk of having your bid rejected:

Did you include?...

- **Proposal (Page 31)**
 - Unit prices filled out clearly.
 - Extended prices filled out clearly and calculated correctly
 - Total bid amount filled out clearly and calculated correctly
 - Sign the proposal, and provide complete information
 - CLSB No. and expiration date
 - Department of Industrial Relations Public Works Contractor Registration Number
- **Fair Employment Practices Certification (Page 36)**
 - Filled out completely per instruction
- **Worker's Compensation Certificate (Page 37)**
 - Filled out completely per instruction
- **Certification of Non-Discrimination in Employment (Page 38)**
 - Filled out completely per instruction
- **List of Proposed Subcontractors (Page 39)**
 - Filled out completely per instruction
- **Statement of Experience (Page 40)**
- **Signature of Bidder (Page 41)**
 - Filled out completely per instruction
 - Authorized signature provided
- **Bidder's Bond (Page 42)**
 - Filled out completely per instruction
- **Non-Collusion Affidavit (Page 43)**
 - Filled out completely per instruction
 - Notarized
- **Addenda Issued**
 - Check the City website for any addenda issued: www.cityofukiah.com/purchasing Please note that actual acknowledgment of addenda is not required to submit with your bid. Refer to Section 1-11 and 3-07 of the General Conditions.

**CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA**

PROPOSAL

**FOR
REMODEL OF 501 SOUTH STATE STREET**

Specification No. 25-04

The undersigned, as bidder,
declares that he or she has examined thoroughly all of the contract documents herein contained, that this proposal is made without collusion with any other person, firm or corporation and that all laws and ordinances relating to the interest of public officers in this contract have been complied with in every respect.

AND he or she proposes and agrees, if this proposal is accepted,

- 1) that he or she will contract with the City of Ukiah, Mendocino County, California, in the form of the copy of the agreement herein contained
 - a) to provide all necessary machinery, tools, apparatus and other means of construction;
 - b) to furnish all materials;
 - c) to provide all superintendence, overhead expenses and all labor and expenses of whatever nature necessary to complete the job in conformity with the specifications and drawings and other contract provisions herein or reasonably implied hereby or as necessary to complete the work in the manner and within the time named herein and according to the requirements and to the reasonable satisfaction of the City Engineer;
 - d) to pay all charges of freight transportation and hauling;
- 2) that he or she indemnifies the City against any loss or damage arising from any act of the undersigned as Contractor; and
- 3) that he or she will accept as full payment therefor the following sums:

BIDDING SCHEDULE

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;
2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the items in the "Total" column. In case of discrepancy between the sum of the items in the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column items shall prevail. The bid comparison will be based on the sum of the items in the "total" column for each bidder.

The Unit prices for the various Construction Items below include all costs associated with the General Conditions, Special Provisions, Requirements of the Construction Contract, and represent the total, complete, in-place cost for each specific Construction Item in accordance with the Construction Documents, including all elements, work components, accessories, and connections, shown in applicable details or required to yield a complete, sound and functional component or system appropriate for its intended function, whether or not such is specifically described or listed in any description of measurement or payment. The total amount of the Construction items below shall represent the total and complete cost of the fully functional Project. All work not specifically listed below be required to complete the work of the various construction items and the cost of such shall be considered as included throughout the various unit prices indicated.

Lowest bid will be based on the lowest Base Bid, not including the add alternate bid item.

NAME OF BIDDER:
SPEC #:
PROJECT NAME:

Cupples and Sons Construction Inc.
25-04
REMODEL OF 501 SOUTH STATE STREET

ITEM#	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
1	Temporary Controls, Fencing & Signage	LS	1	\$541,780. ⁰⁰	\$541,780. ⁰⁰
2	Mobilization	LS	1	\$2,500. ⁰⁰	\$2,500. ⁰⁰
3	Div 02 - Demolition	LS	1	\$82,005. ⁰⁰	\$82,005. ⁰⁰
4	Div 03 - Concrete	LS	1	\$65,330. ⁰⁰	\$65,330. ⁰⁰
5	Div 05 - Metal Fabrications	LS	1	\$19,350. ⁰⁰	\$19,350. ⁰⁰
6	Div 06 - Wood	LS	1	\$317,500. ⁰⁰	\$317,500. ⁰⁰
7	Div 07 - Insulation & Waterproofing	LS	1	\$55,682. ⁰⁰	\$55,682. ⁰⁰
8	Div 08 - Doors & Windows	LS	1	\$313,442. ⁰⁰	\$313,442. ⁰⁰
9	Div 09 - Finishes	LS	1	\$442,132. ⁰⁰	\$442,132. ⁰⁰
10	Div 10 - Signage & Accessories	LS	1	\$65,278. ⁰⁰	\$65,278. ⁰⁰
11	Div 13 - Non-Structural Seismic Restraints	LS	1	\$0	\$0
12	Div 14 - Elevator	LS	1	\$386,975. ⁰⁰	\$386,975. ⁰⁰
13	Div 21 - Wet Pipe Sprinkler Systems	LS	1	\$103,140. ⁰⁰	\$103,140. ⁰⁰
14	Div 22 - Plumbing	LS	1	\$155,640. ⁰⁰	\$155,640. ⁰⁰
15	Div 23 - Mechanical	LS	1	\$199,990. ⁰⁰	\$199,990. ⁰⁰
16	Div 26 - Electrical	LS	1	\$735,000. ⁰⁰	\$735,000. ⁰⁰
17	Div 28 - Access Control	LS	1	\$0	\$0

18	Div 31 - Earthwork	LS	1	\$ <u>57,875.00</u>	\$ <u>57,875.00</u>
19	Div 32 - Site Improvements	LS	1	\$ <u>109,468.00</u>	\$ <u>109,468.00</u>
20	Div 33 - Sanitary Sewer	LS	1	\$ <u>77,845.00</u>	\$ <u>77,845.00</u>
TOTAL BASE BID ==>>					\$ <u>3,731,632.00</u>

BID ALTERNATES

Item #	Description	Unit of Measure	Quantity	Unit Price	Total
A1	New Transformer - including Demo of Existing Transformer & Site Work	LS	1	\$ <u>50,000.00</u>	\$ <u>50,000.00</u>
TOTAL ALTERNATE BID→					\$ <u>50,000.00</u>

TOTAL BID:

Items 1 through A1 inclusive: \$ 3,781,632.00

We, the undersigned, acknowledge that the City Council has reserved the right to reject any or all bids and to determine which proposal is, in its opinion, the lowest responsive bid from a responsible bidder and that which it deems in the best interest of the City to accept. We, the undersigned, further agree, if this proposal shall be accepted, to sign the agreement and to furnish the required bonds with satisfactory surety, or sureties, within fifteen (15) calendar days after written notice that the contract is ready for signature; and, if the undersigned shall fail to contract, as aforesaid, it shall be understood that he or she has abandoned the contract and that, therefore, this proposal shall be null and void and the proposal guaranty accompanying this proposal, or the amount of said guaranty, shall be forfeited to and become the property of the City. Otherwise, the proposal guaranty accompanying this proposal shall be returned to the undersigned.

Witness our hands this day of August 19, 2025.

Licensed in accordance with an act providing for the registration of California Contractors License No. #806992, expiration date 04/30/2026.

THE CONTRACTOR'S LICENSE NUMBER AND EXPIRATION DATE STATED HEREIN ARE MADE UNDER PENALTY OF PERJURY.

Department of Industrial Relations Public Works Contractor Registration Number: 2000000130

Signature of bidder or bidders, with business name, address, phone number and fax number:

Casey Cyphus Cyphus & Sons Const. Inc
221 Olive Lane, Suite G Ukiah, CA 95482 707-467-0674, 707-972-7331

Notice: In the case of a corporation, give below the addresses of the principal office thereof and names and addresses of the President, Secretary, Treasurer.

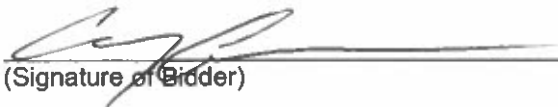
Casey Cupples, President
Rickey Cupples, Vice President
Jane D. Cupples, Treasurer/Secretary

FAIR EMPLOYMENT PRACTICES CERTIFICATION

TO: City of Ukiah

The undersigned, in submitting a bid for performing the following work by Contract, hereby certifies that he or she has or will meet the standards of affirmative compliance with the Fair Employment Practices requirements of the Special Provisions contained herein.

REMODEL OF 501 SOUTH STATE STREET


(Signature of Bidder)

Business Mailing Address:

221 Olive Lane, Suite G Ukiah, CA 95482

Business Location:

Ukiah, CA

(The bidder shall execute the certification of this page prior to submitting his or her proposal.)

WORKER'S COMPENSATION CERTIFICATE

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Worker's Compensation or undertake self-insurance in accordance with the provisions of that code and I will comply with such provisions before commencing the performance of the work of this contract.

Witness my hand this 19th day of August, 20025

Signature of Bidder, with Business Address:



221 Olive Lane, Suite G Ukiah, CA 95482

CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT

The bidder represents that he or she has/has not, participated in a previous contract or subcontract subject to either the equal opportunity clause herein or the clause contained in Section 301 of Executive Order 10925; that he or she has/has not, filed all required compliance reports; and that representations indicating submission of required compliance prior to subcontract awards.

Signature and address of Bidder:



221 Olive Lane, Suite G Ukiah, CA 95482

Date 8/19/28

(This certification shall be executed by the bidder in accordance with Section 60-1.6 of the Regulations of the President's Committee on Equal Employment Opportunity for implementing Executive Orders 10925 and 11114.)

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4108 of the California Public Contract Code and any amendments thereof, each bidder shall set forth (a) the name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction site or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of 1 percent of the total bid and (b) the California Contractor License Number for each subcontractor, and (c) the portion of the work to be done by each subcontractor. (See General Conditions Section 1-09.) Include with the name of each sub-contractor their Department of Industrial Relations Public Works Contractor Registration Number.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK
ALCAL Speciality Contracting Inc.	#815286	#1000000315	4201 Sierra Point Dr Suite 101 Sacramento, CA 95834	Folding Glass Partitions
American Sheet Metal Partition Co. Inc.	#277769	#1000008490	5027 Roberts Ave. McClellan, CA 95652	Partitions/Accessories
B&L Glass	#1058949	#2000005900	3175 Cleveland Ave Santa Rosa, CA 95403	Storefront and Glazing
DT Fabrication	#1044956	#100554880	1500 Scenic Way Redwood Valley, CA 95470	Railings
Dunn Right Painting Inc.	#691040	#1000008654	75 D Kunzler Ranch Road Ukiah, CA 95482	Painting
JMS Mechanical Inc.	#811562	#1000000626	538 Martin Ave Suite D Rohnert Park, CA 94928	Mechanical
Mendocino Striping	#1070403	#1000699239	1875 Daniel Way Redwood Valley, CA 95470	Striping
North Counties Drywall	#630523	#1000005163	PO Box 260 Sonoma, CA 95476	Drywall
Pacific Coast Cutters, Inc.	#628194	#1000003098	450 Lakeville Street Suite B Petaluma, CA 94952	Concrete Cutting
Solano County Roofing	#495355	#1000000777	4349 Cordelia Road Fairfield, CA 94534	Roofing

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4108 of the California Public Contract Code and any amendments thereof, each bidder shall set forth (a) the name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction site or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of 1 percent of the total bid and (b) the California Contractor License Number for each subcontractor, and (c) the portion of the work to be done by each subcontractor. (See General Conditions Section 1-09.) Include with the name of each sub-contractor their Department of Industrial Relations Public Works Contractor Registration Number.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK
Ultra Ceilings	#1082174	#1000850176	6900 Somerville Way Fair Oaks, CA 95628	Acoustical Panels
Valley Paving	#674411	#1000008895	PO Box 559 Redwood Valley, CA 95470	Paving
Wipf Construction	#629598	#1000064006	PO Box 234 Ukiah, CA 95481	Underground/ Fire Sprinklers
WM Linn Electrical Contracting	#10719213	#1000000868	190 Grace Court Cloverdale, CA 95425	Electrical
BNT Tile Inc.	#1022374	#1000046452	502 Main Street Wheatland, CA 95692	Tile
Universal Flooring	#813425	#1000003729	1060 National, Suite 1 Sacramento, CA 95834	Flooring
Nationwide Lifts	#1017161	#10000533074	4467 Golden Rwy #108 El Dorado Hills CA 95762	Elevator

The bidder is required to state below what work of similar magnitude or character he or she has done and to give references that will enable the City Council to judge of his or her experience, skill and business standing and his or her ability to conduct work as completely and rapidly as required under the terms of the contract.

projects of similar magnitude and character to the remodel at 501 South State Street.

highest standards of quality, safety, and compliance. We have attached a résumé of

projects we have delivered. These examples demonstrate our ability to handle projects

~~of comparable size and complexity.~~



Cupples & Sons
CONSTRUCTION, INC.

Recent Construction Projects

PROJECT: Sheriff's 911 Data Center Building

Location: 589 Low Gap Road, Ukiah, CA 95482

Owner: County of Mendocino, 851 Low Gap Road, Ukiah, CA 95482

Owner Contact: Doug Anderson, (707) 234-6050

Architect: Brokaw Designs, PO Box 3103, Rohnert Park, CA 94927, (415) 860-5043

Description of Work:

Construction of a new pre-engineered concrete building serving Sheriff's 911 and radio operations. Scope included new electrical service and installation of an emergency generator.

Contract Price: \$2,148,000

Scheduled Completion: August 2025

Actual Completion: TBD

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Mechanical Upgrade/Remodel for Fort Bragg Justice Center

Location: 700 South Franklin Street, Fort Bragg, CA 95482

Owner: County of Mendocino, 851 Low Gap Road, Ukiah, CA 95482

Owner Contact: Doug Anderson, (707) 234-6050

Architect: Newberger & Associates, 435 North Main Street, Fort Bragg, CA 95437 | (707) 961-0911

Description of Work:

Demolition of existing hydronic HVAC system in its entirety and installation of a new VRF HVAC system.

Contract Price: \$1,534,642.00

Scheduled Completion: February 2024

Actual Completion: February 2024

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Homekey Transitional Housing Phase II

Location: 555 South Orchard Ave, Ukiah, CA 95482

Owner: County of Mendocino, 951 Low Gap Road, Ukiah, CA 95482

Owner Contact: Allie Campbell, Project Manager, (707) 463-1975 ext.121, acampbell@rchdc.org

Architect: Brokaw Designs, PO Box 3103, Rohnert Park, CA 94927, (415) 860-5043, charles.beavers@brokawdesign.com

Description of Work:

Rehabilitation and conversion of 23 existing hotel rooms into transitional and permanent housing for individuals who are homeless. Scope included framing, roofing, tiling, painting, paving, concrete work, drywall, flooring, plumbing, electrical, and appliance installation.

Contract Awarded: July 2022

Contract Price: \$900,000

Scheduled Completion: October 2022

Actual Completion: October 2022

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.



Recent Construction Projects Completed (cont.)

PROJECT: Adventist Health – Urology OSHPD 3 Primary Care Clinic

Location: 240 Hospital Drive, Ukiah, CA 95482

Owner: Anderson Valley Health Center

Owner Contact: Kyle Brooks, Project Manager, (707) 391-1346, brooksk01@ah.org

Architect: Thomas Hise Architects, 580 Vichy Hills Drive, Ukiah, CA 95482, (707) 744-1921

Description of Work:

Remodel of clinic to OSHPD 3 standards. Scope included interior demolition, buildout of new floor plan, 400 SF addition, new siding, and site work.

Contract Awarded: September 2021

Contract Price: \$1,621,500.00

Scheduled Completion: July 1, 2022

Actual Completion: February 2023 (due to HVAC unit delay)

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Anderson Valley Health Center Addition

Location: 13500 Airport Rd, Boonville, CA 95415

Owner: Anderson Valley Health Center

Owner Contact: Chloë Guazzone-Rugebregt, Executive Director, (707) 895-3477, (707) 772-6606

Architect: Steve Wood Architect, PO Box 166, Boonville, CA 95415, (707) 895-2500

Description of Work:

Construction of a two-story 4,300 sq/ft addition including elevator and ADA parking. Scope included framing, roofing, tiling, painting, paving, concrete, HVAC, drywall, plumbing, electrical, and appliance installation.

Contract Awarded: June 2021

Contract Price: \$2,460,000.00

Scheduled Completion: September 2022

Actual Completion: September 2022

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Crisis Residential Treatment Facility

Location: 631 South Orchard Ave, Ukiah, CA 95482

Owner: Mendocino County Behavioral Health and Recovery Services Administration

Owner Contact: Doug Anderson | (707) 234-6050

Architect: Construction Manager: AECOM, Kirk Julian | (916) 298-6843 | kirk.julian@aecom.com

Description of Work:

Complete construction and site work of a 3,500 sq/ft treatment center with space for up to 10 beds, offices, kitchen, laundry, and associated site improvements.

Contract Awarded: November 2020

Contract Price: \$3,134,765.00

Scheduled Completion: October 2021

Actual Completion: October 2021

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.



Cupples & Sons
CONSTRUCTION, INC.

School District Specific-Recent Construction Projects

PROJECT: Anderson Valley Jr./Sr. High School 2023 Modernization Project

Location: 18200 Mountain View Road, Boonville, CA 95415

Owner: Anderson Valley Unified School District, PO Box 457, Boonville, CA 95415

Owner Contact: Kristen Larson, Superintendent, klarson@avpathers.org

Architect: Alameda Architecture, 555 Main Street, Suite 2, Sebastopol, CA 95472, (707) 824-1219, donald@alameida.com

Description of Work:

Modernization of science classrooms, library, general classrooms, and teacher's lounge including door and window replacement. Renovation of gymnasium entry restrooms, site concrete flatwork, and future EV parking stalls.

Modifications on staff and high school restrooms.

Contract Awarded: December 2023

Contract Price: \$2,398,068.00

Scheduled Completion: July 2025

Actual Completion: TBD

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Kelseyville High School Campus Renovations Project

Location: 5480 Main St, Kelseyville, CA 95451

Owner: Kelseyville Unified School District, 4410 Konocti Rd, Kelseyville, CA 95451

Owner Contact: Kristen Larson, Superintendent, klarson@avpathers.org

Architect: Persinger Architects, PO Box 1743, Sebastopol, CA 95473, (707) 772-7171

Description of Work:

Modernization of science classrooms, library, general classrooms, and teacher's lounge including door and window replacement. Renovation of gymnasium entry restrooms, site concrete flatwork, and future EV parking stalls.

Modifications on staff and high school restrooms.

Contract Awarded: July 2023

Contract Price: \$1,696,500.00

Scheduled Completion: August 2024

Actual Completion: February 2025 (Due to PG&E Switchgear lead time delay)

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Round Valley Elementary School Modular Classrooms Project

Location: Covelo, CA

Owner: Round Valley Unified School District

Owner Contact: Mike Gorman, Superintendent, (707) 983-6171 ext. 103

Architect: Studio W Architects, 1930 H Street, Sacramento, CA 95811

Description of Work:

Construction of three portable classrooms and associated site work.

Contract Awarded: June 2023



Recent Construction Projects Completed (cont.)

Contract Price: \$686,200.00

Scheduled Completion: May 2025

Actual Completion: May 2025

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Geyserville New Tech Academy CTE Shade Canopies Project

Location: Geyserville, CA

Owner: Geyserville Unified School District (GUSD)

Owner Contact: Debra Bertolucci, Superintendent, (707) 857-3592

Architect: Persinger Architects, (707) 829-0700, Alexis Persinger (707) 481-0693

Description of Work:

Construction of outdoor learning center with (2) 30'x50' shade structures and (2) 20'x30' greenhouses. Scope included underground utilities, excavation, foundations, flatwork, electrical, plumbing, and HVAC.

Contract Awarded: June 2022

Contract Price: \$1,822,000

Scheduled Completion: May 2023

Actual Completion: May 2023

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Mountain Vista Middle School Gymnasium Flooring

Location: 5081 Konocti Road, Kelseyville, CA 95451

Owner: Kelseyville Unified School District, 4410 Konocti Rd, Kelseyville, CA 95451

Owner Contact: Kristen Larson, Superintendent, klarson@avpathers.org

Architect: Quattrocchi Kwok Architects, 636 Fifth Street, Santa Rosa, CA 95404, (707) 576-0829

Description of Work:

Removal and replacement of flooring in NPR building as well as added site drainage work.

Contract Awarded: June 2022

Contract Price: \$1,696,500.00

Scheduled Completion: August 2022

Actual Completion: August 2022

Notes: No stop notices filed, no lawsuits filed, no liquidated damages assessed.

PROJECT: Round Valley High School New Gymnasium

Location: Covelo, CA

Owner: Round Valley Unified School District (RVUSD)

Owner Contact: Mike Gorman, Superintendent, (707) 983-6171 ext. 103

Architect: BC|A Architects, (916) 254-5600, Jason Masty (916) 215-8963

Description of Work:

Construction of an 11,869 sq. ft. gymnasium facility including gym space, bleachers, locker rooms, restrooms, offices, concessions, storage rooms, and associated site work including utilities, paving, and landscaping.



Cupples & Sons
CONSTRUCTION, INC.

Recent Construction Projects Completed (cont.)

Contract Price: \$6,745,000

Scheduled Completion: July 2020

Actual Completion: July 1, 2020

Notes: No stop notices filed, no liquidated damages assessed.

SIGNATURE(S) OF BIDDER

Accompanying this proposal is Bidder's Bond
(insert the words "cash (\$)", "cashier's check" or "bidder's bond", as the case may be) in an amount equal to at least 10 percent of the bid.

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If bidder or other interested person is a corporation, provide the legal name of corporation and also the names of the president, secretary, treasurer and manager thereof. If a co-partnership, provide the true name of firm and also the names of all individual co-partners composing the firm. If bidder or other interested person is an individual, provide the first and last names in full.

Cupples and Sons Construction Inc.

Casey Cupples, Vice President, CA

Rick Cupples, President, CA Jane Cupples, Secretary/Treasurer, CA

Licensed in accordance with an act providing for the registration of Contractors:

License No. #806992, License Expiration Date 04/30/2026

Signature(s) of Bidder: _____



NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the co-partnership; and if bidder is an individual, his or her signature shall be placed above. If a member of a partnership, a Power of Attorney must be on file with the Department prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

Business address: 221 Olive Lane, Suite G Ukiah, CA 95482

Place of residence: Ukiah, CA

Dated: 8/19/25

NON-COLLUSION AFFIDAVIT

Note: Bidder shall execute the affidavit on this page prior to submitting his or her bid.

To City Council, City of Ukiah:

The undersigned in submitting a bid for performing REMODEL OF 501 SOUTH STATE STREET by contract, being duly sworn, deposes and says:

that he or she has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract.


Signature(s) of Bidder

Business Address: 221 Olive Lane, Suite G Ukiah, CA 95482

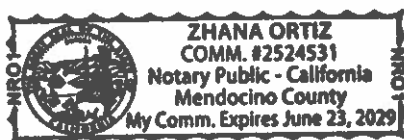
Place of Residence: Ukiah, CA

NOTARIZATION

Subscribed and sworn to before me this 15th day of August, 20 25.

Notary Public in and for the County of Mendocino, State of California.

My Commission Expires June 23rd, 20 29.



A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

CITY OF UKIAH
Mendocino County, California

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, Cupples & Sons Construction, Inc.

_____, as PRINCIPAL and

Merchants Bonding Company (Mutual), as SURETY,

are held and firmly bound unto the City of Ukiah in the penal sum of 10 PERCENT OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the City of Ukiah, as the case may be, for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, to the City Clerk to which said bid was submitted, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents. In no case shall the liability of the surety hereunder exceed the sum of \$Not to exceed 10% of the bid amount

(Not to exceed ten percent of the bid amount)

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above mentioned bid to the City of Ukiah, as aforesaid, for certain construction specifically described as follows, for which bids are to be opened at the Office of the City Clerk, Ukiah Civic Center, Ukiah, California, on AUGUST 19, 2025 for REMODEL OF 501 SOUTH STATE STREET.

NOW, THEREFORE, If the aforesaid Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him or her for signatures, enters into a written contract, in the prescribed form, in accordance with the bid and files two bonds with the City of Ukiah, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

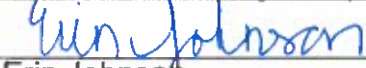
IN WITNESS WHEREOF, we have hereunto set our hands and seals on this 6th day of August, A.D. 2025.

Cupples & Sons Construction, Inc. (Seal)

 (Seal)

Casey Cupples, President (Seal)
Principal

Merchants Bonding Company (Mutual) (Seal)

 (Seal)

Erin Johnson (Seal)
Attorney-in-Fact (Seal)
Surety

Address: Merchants Bonding Company (Mutual)
6700 Westown Parkway
West Des Moines, IA 50266

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

County of Sacramento

On 8/6/2025 before me, Sandra R. Black, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Erin Johnson

Name(s) of Signer(s)



Place Notary Seal Above

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing: _____

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing: _____

MERCHANTS

BONDING COMPANY™

POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa, and MERCHANTS NATIONAL INDEMNITY COMPANY, an assumed name of Merchants National Bonding, Inc., (herein collectively called the "Companies") do hereby make, constitute and appoint, individually, **Erin Johnson**

Surety Bond #: Bid Bond
Principal: CUPPLES & SONS CONSTRUCTION, INC.
Obligee: City of Ukiah

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the By-Laws adopted by the Board of Directors of the Companies.

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner - Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 6th day of August, 2025.



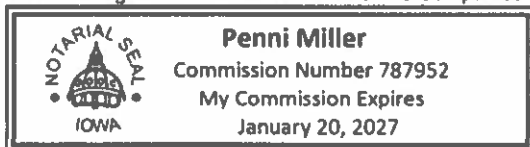
MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.
MERCHANTS NATIONAL INDEMNITY COMPANY

By

President

STATE OF IOWA
COUNTY OF DALLAS ss.

On this 6th day of August, 2025, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL), MERCHANTS NATIONAL BONDING, INC., and MERCHANTS NATIONAL INDEMNITY COMPANY; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.



(Expiration of notary's commission
does not invalidate this instrument)

Notary Public

I, Elisabeth Sandersfeld, Secretary of MERCHANTS BONDING COMPANY (MUTUAL), MERCHANTS NATIONAL BONDING, INC., and MERCHANTS NATIONAL INDEMNITY COMPANY do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 6th day of August, 2025.



Secretary

POA 0018 (5/25)

SECTION 05 12 00**STRUCTURAL STEEL FRAMING****PART 1 GENERAL****1.01 DESCRIPTION:**

- A. This section specifies structural steel shown and classified by Section 2, Code of Standard Practice for Steel Buildings and Bridges.

1.02 RELATED WORK:

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 QUALITY ASSURANCE:

- A. Fabricator and erector shall maintain a program of quality assurance in conformance with Section 8, Code of Standard Practice for Steel Buildings and Bridges. Work shall be fabricated in an AISC certified Category Std fabrication plant.
- B. Before authorizing the commencement of steel erection, the controlling contractor shall ensure that the steel erector is provided with the written notification required by 29 CFR 1926.752. Provide copy of this notification to the Resident Engineer.

1.04 TOLERANCES:

- A. Fabrication tolerances for structural steel shall be held within limits established by ASTM A6, by AISC 303, Sections 6 and 7, Code of Standard Practice for Buildings and Bridges, except as follows:
- B. Elevation tolerance for closure plates at the building perimeter and at slab openings prior to concrete placement is 6 mm (1/4 inch).

1.05 REGULATORY REQUIREMENTS:

- A. AISC 360: Specification for Structural Steel Buildings
- B. AISC 303: Code of Standard Practice for Steel Buildings and Bridges.

1.06 SUBMITTALS:

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples,
- B. Shop and Erection Drawings: Complete
- C. Certificates:
 - 1. Structural steel.

- 2. Steel for all connections.
 - 3. Welding materials.
 - D. Test Reports:
 - 1. Welders' qualifying tests.
 - E. Design Calculations and Drawings:
 - 1. Connection calculations, if required.
 - F. Record Surveys.
- 1.02 APPLICABLE PUBLICATIONS:
- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
 - B. American Institute of Steel Construction (AISC):
 - 1. AISC 360-10 Specification for Structural Steel Buildings
 - 2. AISC 303-10 Code of Standard Practice for Steel Buildings and Bridges
 - C. American National Standards Institute (ANSI):
 - B18.22.1-65(R2008)..... Plain Washers
 - B18.22M-81(R2000)..... Metric Plain Washers
 - D. American Society for Testing and Materials (ASTM):
 - A6/A6M-11 Standard Specification for General Requirements for
Rolled Structural Steel Bars, Plates, Shapes, and Sheet
Piling
 - A36/A36M-08 Standard Specification for Carbon Structural Steel
 - A53/A53M-10 Standard Specification for Pipe, Steel, Black and Hot-
Dipped, Zinc-Coated Welded and Seamless
 - A123/A123M-09 Standard Specification for Zinc (Hot-Dip Galvanized)
Coatings on Iron and Steel Products
 - A242/A242M-04(R2009) Standard Specification for High-Strength Low- Alloy
Structural Steel

- A283/A283M-03(R2007) Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- A307-10..... Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
- A325-10..... Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- A490-12..... Standard Specification for Heat-Treated Steel Structural Bolts 150 ksi Minimum Tensile Strength
- A500/A500M-10a Standard Specification for Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A501-07 Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- A572/A572M-07 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel A992/A992M-11..... Standard Specification for Structural Steel Shapes
- E. American Welding Society (AWS):
- D1.1/D1.1M-10 Structural Welding Code-Steel
- F. Research Council on Structural Connections (RCSC) of The Engineering Foundation:
- Specification for Structural Joints Using ASTM A325 or A490 Bolts
- G. Military Specifications (Mil. Spec.):
- MIL-P-21035 Paint, High Zinc Dust Content, Galvanizing, Repair
- H. Occupational Safety and Health Administration (OSHA):
- 29 CFR Part 1926-2001 Safety Standards for Steel Erection

PART 2 PRODUCTS

2.01 MATERIALS:

- A. Structural Steel: ASTM A572 W Shapes, A36 misc. steel

- B. Structural Tubing: ASTM A500, Grade B.
- C. Steel Pipe: ASTM A53, Grade B.
- D. Bolts, Nuts and Washers:
 - 1. High-strength bolts, including nuts and washers: ASTM A325 or A490 as noted.
 - 2. Bolts and nuts, other than high-strength or as shown on plans: ASTM A307, Grade A.
 - 3. Plain washers, other than those in contact with high-strength bolt heads and nuts: ANSI Standard B18.22.1.
- E. Zinc Coating: ASTM A123.
- F. Galvanizing Repair Paint: Mil. Spec. MIL-P-21035.

PART 3 EXECUTION

3.01 CONNECTIONS (SHOP AND FIELD):

- A. Welding: Welding in accordance with AWS D1.1. Welds shall be made only by welders and welding operators who have been previously qualified by tests as prescribed in AWS D1.1 to perform type of work required.
- B. High-Strength Bolts: High-strength bolts tightened to a bolt tension not less than 70% of their minimum tensile strength. Tightening done with properly calibrated wrenches, by turn-of-nut method or by use of direct tension indicators (bolts or washers). Tighten bolts in connections identified as slip-critical using Direct Tension Indicators. Twist-off torque bolts are not an acceptable alternate fastener for slip critical connections.

3.02 FABRICATION:

- A. Fabrication in accordance with Chapter M, AISC 360.

3.03 SHOP PAINTING:

- A. General: Shop paint steel with primer in accordance with AISC 303, Section 6.
- B. Do not apply paint to following:
 - 1. Surfaces within 50 mm (2 inches) of joints to be welded in field.
 - 2. Surfaces which will be encased in concrete.
 - 3. Surfaces which will receive sprayed on fireproofing.
 - 4. Top flange of members which will have shear connector studs applied.
- C. Structural steel in the interstitial space that does not receive sprayed on fireproofing shall be painted with primer in accordance with general requirement of shop painting.

3.04 ERECTION:

- A. General: Erection in accordance with AISC 303, Section 7B.
- B. Temporary Supports: Temporary support of structural steel frames during erection in accordance with AISC 303, Section 7

3.05 FIELD PAINTING:

- A. After erection, touch-up steel surfaces specified to be shop painted. After welding is completed, clean and prime areas not painted due to field welding.
- B. Finish painting of steel surfaces is specified in Section 09 91 00, PAINTING.

3.06 SURVEY:

- A. Upon completion of finish bolting or welding on any part of the work, and prior to start of work by other trades that may be supported, attached, or applied to the structural steel work, submit a certified report of survey to Resident Engineer for approval. Reports shall be prepared by Registered Land Surveyor or Registered Civil Engineer as specified in Section 01 00 00, GENERAL REQUIREMENTS. Report shall specify that location of structural steel is acceptable for plumbness, level and alignment within specified tolerances specified in the AISC Manual.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. This section specifies items and assemblies fabricated from structural steel shapes and other materials as shown and specified.
- B. Items specified.
 - 1. Support for Wall and Ceiling Mounted Items
 - 2. Metal Railings
 - 3. Bollards

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Shop Drawings:
 - 1. Each item specified, showing complete detail, location in the project, material and size of components, method of joining various components and assemblies, finish, and location, size and type of anchors.
 - 2. Mark items requiring field assembly for erection identification and furnish erection drawings and instructions.
 - 3. Provide templates and rough-in measurements as required.
- C. Furnish setting drawings and instructions for installation of anchors to be preset into concrete and masonry work, and for the positioning of items having anchors to be built into concrete or masonry construction.

1.04 QUALITY ASSURANCE

- A. Each product type shall be the same and be made by the same manufacturer.
- B. Assemble product to the greatest extent possible before delivery to the site.

- C. Include additional features, which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product.

1.05 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society of Mechanical Engineers (ASME):
 - B18.2.2-87(R2005)..... Square and Hex Nuts
- C. American Society for Testing and Materials (ASTM):
 - A36/A36M-08 Structural Steel
 - A47-99(R2009)..... Malleable Iron Castings
 - A53-10..... Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
 - A123-09..... Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - A307-10..... Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
 - A653/A653M-10 Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
 - A786/A786M-09 Rolled Steel Floor Plate
 - C1107-08 Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
 - F436-10..... Hardened Steel Washers
 - F1667-11..... Driven Fasteners: Nails, Spikes and Staples
- D. American Welding Society (AWS):
 - D1.1-10 Structural Welding Code Steel
 - D1.3-08 Structural Welding Code Sheet Steel
- E. National Association of Architectural Metal Manufacturers (NAAMM)
 - AMP 521-01 Pipe Railing Manual
 - AMP 500-06 Metal Finishes Manual
- Structural Steel Painting Council (SSPC)/Society of Protective Coatings:
 - SP 1-04 No. 1, Solvent Cleaning
 - SP 2-04 No. 2, Hand Tool Cleaning
 - SP 3-04 No. 3, Power Tool Cleaning

1.06 DESIGN CRITERIA

- A. In addition to the dead loads, design fabrications to support the following live loads unless otherwise specified.
- B. Ladders and Rungs: 120 kg (250 pounds) at any point.
- C. Railings and Handrails: 900 N (200 pounds) in any direction at any point.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Structural Steel: ASTM A36.
- B. Floor Plate:
 - 1. Steel ASTM A786.
 - 2. Aluminum: ASTM B632.
- C. Steel Pipe: ASTM A53.
 - 1. Galvanized for exterior locations.
 - 2. Coated for interior locations, see SECTION 09 06 00 for coating.
- D. Cast-Iron: ASTM A48, Class 30, commercial pattern.
- E. Grout: ASTM C1107, pourable type.
- F. Steel Pipe (Bollard): ASTM A53.
 - 1. Galvanized for exterior locations.
 - 2. Type S, Grade A unless specified otherwise.
 - 3. NPS (inside diameter) as shown.

2.02 HARDWARE

- A. Rough Hardware:
 - 1. Furnish rough hardware with a standard plating, applied after punching, forming and assembly of parts; galvanized, cadmium plated, or zinc-coated by electro-galvanizing process. Galvanized G-90 where specified.
 - 2. Use G90 galvanized coating on ferrous metal for exterior work unless non-ferrous metal or stainless is used.
- B. Fasteners:
 - 1. Bolts with Nuts:

- a. ASTM A307 for 415 MPa (60,000 psi) tensile strength bolts.
- b. ASTM F593 for stainless steel.
- c. Screws: ASME B18.6.1.
- d. Washers: ASTM F436, type to suit material and anchorage.
- e. Nails: ASTM F1667, Type I, style 6 or 14 for finish work.

2.03 FABRICATION GENERAL

A. Material

- 1. Use material as specified. Use material of commercial quality and suitable for intended purpose for material that is not named or its standard of quality not specified.
- 2. Use material free of defects which could affect the appearance or service ability of the finished product.

B. Size:

- 1. Size and thickness of members as shown.
- 2. When size and thickness is not specified or shown for an individual part, use size and thickness not less than that used for the same component on similar standard commercial items or in accordance with established shop methods.

C. Connections

- 1. Except as otherwise specified, connections may be made by welding, riveting or bolting.
- 2. Field riveting will not be approved.
- 3. Design size, number and placement of fasteners, to develop a joint strength of not less than the design value.
- 4. Holes, for rivets and bolts: Accurately punched or drilled and burrs removed.
- 5. Size and shape welds to develop the full design strength of the parts connected by welds and to transmit imposed stresses without permanent deformation or failure when subject to service loadings.
- 6. Use Rivets and bolts of material selected to prevent corrosion (electrolysis) at bimetallic contacts. Plated or coated material will not be approved.
- 7. Use stainless steel connectors for removable members machine screws or bolts.

D. Fasteners and Anchors

- 1. Use methods for fastening or anchoring metal fabrications to building construction as shown or specified.

2. Where fasteners and anchors are not shown, design the type, size, location and spacing to resist the loads imposed without deformation of the members or causing failure of the anchor or fastener, and suit the sequence of installation.
3. Use material and finish of the fasteners compatible with the kinds of materials which are fastened together and their location in the finished work.
4. Fasteners for securing metal fabrications to new construction only, may be by use of threaded or wedge type inserts or by anchors for welding to the metal fabrication for installation before the concrete is placed or as masonry is laid.
5. Fasteners for securing metal fabrication to existing construction or new construction may be expansion bolts, toggle bolts, power actuated drive pins, welding, self-drilling and tapping screws or bolts.

E. Workmanship

1. General:

- a. Fabricate items to design shown.
- b. Furnish members in longest lengths commercially available within the limits shown and specified.
- c. Fabricate straight, true, free from warp and twist, and where applicable square and in same plane.
- d. Provide holes, sinkages and reinforcement shown and required for fasteners and anchorage items.
- e. Provide openings, cut-outs, and tapped holes for attachment and clearances required for work of other trades.
- f. Prepare members for the installation and fitting of hardware.
- g. Cut openings in gratings and floor plates for the passage of ducts, sumps, pipes, conduits and similar items. Provide reinforcement to support cut edges.
- h. Fabricate surfaces and edges free from sharp edges, burrs and projections which may cause injury.

2. Welding:

- a. Weld in accordance with AWS.
- b. Welds shall show good fusion, be free from cracks and porosity and accomplish secure and rigid joints in proper alignment.
- c. Where exposed in the finished work, continuous weld for the full length of the members joined and have depressed areas filled and protruding welds finished smooth and flush with adjacent surfaces.
- d. Finish welded joints to match finish of adjacent surface.

3. Joining:
 - a. Miter or butt members at corners.
 - b. Where frames members are butted at corners, cut leg of frame member perpendicular to surface, as required for clearance.
4. Cutting and Fitting:
 - a. Accurately cut, machine and fit joints, corners, copes, and miters.
 - b. Fit removable members to be easily removed.
 - c. Design and construct field connections in the most practical place for appearance and ease of installation.
 - d. Fit pieces together as required.
 - e. Fabricate connections for ease of assembly and disassembly without use of special tools.
 - f. Joints firm when assembled.
 - g. Conceal joining, fitting and welding on exposed work as far as practical.
 - h. Do not show rivets and screws prominently on the exposed face.
 - i. The fit of components and the alignment of holes shall eliminate the need to modify component or to use exceptional force in the assembly of item and eliminate the need to use other than common tools.

F. Finish:

1. Finish exposed surfaces in accordance with NAAMM Metal Finishes Manual.
2. Aluminum: NAAMM AMP 501.
 - a. Mill finish, AA-M10, as fabricated, use unless specified otherwise.
 - b. Clear anodic coating, AA-C22A41, chemically etched medium matte, with Architectural Class 1, 0.7 mils or thicker.
 - c. Colored anodic coating, AA-C22A42, chemically etched medium matte with Architectural Class 1, 0.7 mils or thicker.
 - d. Painted: AA-C22R10.
3. Steel and Iron: NAAMM AMP 504.
 - a. Zinc coated (Galvanized): ASTM A123, G90 unless noted otherwise.
 - b. Surfaces exposed in the finished work:
 - 1) Finish smooth rough surfaces and remove projections.

- 2) Fill holes, dents and similar voids and depressions with epoxy type patching compound.
- c. Shop Prime Painting:
 - 1) Surfaces of Ferrous metal:
 - a) Items not specified to have other coatings.
 - b) Galvanized surfaces specified to have prime paint.
 - c) Remove all loose mill scale, rust, and paint, by hand or power tool cleaning as defined in SSPC-SP2 and SP3.
 - d) Clean of oil, grease, soil and other detrimental matter by use of solvents or cleaning compounds as defined in SSPC-SP1.
 - e) After cleaning and finishing apply one coat of primer as specified in Section 09 90 00, PAINTING.
4. Stainless Steel: NAAMM AMP-504 Finish No. 4.

G. Protection:

1. Spot prime all abraded and damaged areas of zinc coating which expose the bare metal, using zinc rich paint on hot-dip zinc coat items and zinc dust primer on all other zinc coated items.

2.04 SUPPORTS

A. General:

1. Fabricate ASTM A36 structural steel shapes where shown.
2. Use clip angles or make provisions for welding hangers and braces to overhead construction.
3. Field connections may be welded or bolted.

B. For Wall Mounted Items:

1. For items supported by metal stud partitions.
2. Steel strip minimum of 150 mm (6 inches) wide, length extending one stud space beyond end of item supported.

C. For Trapeze Bars:

1. Construct assembly above ceilings as shown and design to support not less than a 340 kg (750 pound) working load at any point.
2. Fabricate trapeze supports as shown, with all exposed members, including screws, nuts, bolts and washers, fabricated of stainless steel.

3. Continuously weld connections where welds shown.
4. Use modular channel where shown with manufacturers bolts and fittings.

2.05 GATE HINGES LATCH AND STOP

- A. Manufacturer: Tymetal, Hoover Fence Co., or approved equal
- B. Galvanized ASTM A123, G-90 after fabrication.
- C. Doors:
 1. Provide pre-fabricated steel hinged door and frame as shown.
 2. Color: to match fence color
 3. Hardware:
 - a. Install lock or latch specified in Section 08 71 00, DOOR HARDWARE.

2.06 METAL RAILING

- A. In addition to the dead load design railing assembly to support live load specified.
- B. Fabrication General:
 1. Provide continuous welded joints, dressed smooth and flush.
 2. Standard flush fittings, designed to be welded, may be used.
 3. Exposed threads will not be approved.
 4. Form handrail brackets to size and design shown.
 5. Interior Post Anchors:
 - a. Provide flanged fittings for securing fixed posts to floor with expansion bolts, unless shown otherwise.
 - b. Weld or thread flanged fitting to posts at base.
 - c. For securing removable posts to floor, provide close fitting sleeve insert or inverted flange base plate with stud bolts or rivets concrete anchor welded to the base plate.
 - d. Provide sliding flange base plate on posts secured with set screws.
 - e. Weld flange base plate to removable posts set in sleeves.
- C. Handrails:
 1. Close free ends of rail with flush metal caps welded in place except where flanges for securing to walls with bolts are shown.

2. Make provisions for attaching handrail brackets to wall, posts, and handrail as shown.
- D. Aluminum Railings:
1. Fabricate from extruded aluminum.
 2. Use tubular posts not less than 3 mm (0.125 inch) wall thickness for exterior railings.
 3. Punch intermediate rails and bottom of top rails for passage of posts and machine to a close fit.
 4. Where shown use extruded channel sections for top rail with 13 mm (1/2 inch) thick top cover plates and closed ends.
 5. Fabricate brackets of extruded or wrought aluminum as shown.
 6. Fabricate stainless pipe sleeves with closed bottom at least six inches deep having internal dimensions at least 13 mm (1/2 inch) greater than external dimensions of posts where set in concrete.

2.06 METAL LADDER

- A. Aluminum Ladders:
1. Fixed-rail type, constructed of structural aluminum, with mill finish.
 2. Fabricate side rails and rungs of size and design shown, with the rungs shouldered and headed into and welded to the rails.
 3. Where shown fabrication side rails curved, twisted and formed into gooseneck.
 4. Fabricate angle brackets at top and bottom and intermediate brackets where shown. Drill for bolting.
- B. Ladder Rungs:
1. Fabricate from 25 mm (one inch) diameter steel bars.
 2. Fabricate so that rungs will extend at least 100 mm (4 inches) into wall with ends turned 50 mm (2 inches), project out from wall 175 mm (7 inches), be 400 mm (16 inches) wide and be designed so that foot cannot slide off end.
 3. Galvanized after fabrication, ASTM A123, G-90 rungs for exterior use and for access to pits.

2.07 STEEL PIPE BOLLARD

- A. Provide bollard in accordance with ASTM A53 with dimensions as shown in standard detail SD320523-04. Anchor posts in concrete and fill solidly with concrete with a minimum compressive strength of 17 MPa 2500psi.

PART 3 EXECUTION**3.01 INSTALLATION, GENERAL**

- A. Set work accurately, in alignment and where shown, plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Set frames of access doors and similar items flush with finish floor and, where applicable, flush with side of opening.
- C. Field weld in accordance with AWS.
 - 1. Design and finish as specified for shop welding.
 - 2. Use continuous weld unless specified otherwise.
- D. Install anchoring devices and fasteners as shown and as necessary for securing metal fabrications to building construction as specified.
- E. Spot prime all abraded and damaged areas of zinc coating as specified and all abraded and damaged areas of shop prime coat with same kind of paint used for shop priming.

3.02 INSTALLATION OF SUPPORTS

- A. Anchorage to structure:
 - 1. Secure angles or channels and clips to overhead structural steel by continuous welding unless bolting is shown.
 - 2. Secure supports to concrete inserts by bolting as shown.
 - 3. Secure steel plate to studs as detailed.
- B. Supports for Wall Mounted items:
 - 1. Locate center of support at anchorage point of supported item.
 - 2. Locate support at top and bottom of wall hung cabinets.
 - 3. Locate support at top of floor cabinets and shelving installed against walls.
 - 4. Locate supports where required for items shown.
- C. Supports for Trapeze Bars:
 - 1. Secure plates to overhead construction with fasteners where shown.
 - 2. Secure angle brace assembly to overhead construction with fasteners where shown and bolt plate to braces.
 - 3. Fit modular channel unit to equipment and secure with modular channel unit manufacturer's standard fittings as shown.

3.03 CLEAN AND ADJUSTING

- A. Adjust movable parts including hardware to operate as designed without binding or deformation of the members centered in the opening or frame and, where applicable, contact surfaces fit tight and even without forcing or warping the components.
- B. Clean after installation exposed prefinished and plated items and items fabricated from stainless steel, aluminum and copper alloys, as recommended by the metal manufacture and protected from damage until completion of the project.

3.04 INSTALLATION OF STEEL PIPE BOLLARD

- A. Set bollards vertically in concrete piers. Compressive strength of concrete piers shall be 21MPa 3000psi. For dimensions of concrete piers

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section Includes rubber waterproofing for below grade structures.

1.2 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Show locations and extent of waterproofing.
 - 2. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
- C. Sample warranty.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.5 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace waterproofing that fails in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 RUBBER WATERPROOFING**

- A. Two-Component, Reinforced, Rubber Waterproofing system: ASTM C836/C836M; coal-tar free.
 - 1. Basis-of-Design or Approved Equal:
 - a. Manufacturer: GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA; gcpat.com; 1-866-333-3726
 - b. Product: Procor Below Grade – Fluid applied waterproofing & all associated system components which include:
 - 1) Procor 75 Spray Grade – For horizontal and vertical applications
 - 2) Hydroduct Drainage Composites – Geocomposite Drainage Sheets
 - a) HYDRODUCT® 660 Drainage Composite for use on horizontal applications.
 - b) HYDRODUCT® 220 Drainage Composite for use on vertical applications.
 - 3) Bituthene Liquid Membrane – Detailing at pipe entries, etc.
 - 4) Preprufe Tape – For tie-ins of Procor, Bituthene, or Preprufe waterproofing sheet membranes.
 - 5) Preprufe 300R Plus – Pre-applied waterproofing membrane that bonds integrally to poured concrete
 - 2. Hydrostatic-Head Resistance: 65 feet minimum; ASTM D5385/D5385M.

2.2 AUXILIARY MATERIALS

- A. Primer: Manufacturer's standard primer, sealer, or surface conditioner; factory-formulated.
- B. Sheet Flashing: 50-mil- (1.3-mm-) minimum, nonstaining, uncured sheet neoprene.
 - 1. Adhesive: Manufacturer's recommended contact adhesive.
- C. Membrane-Reinforcing Fabric: Manufacturer's recommended fiberglass mesh or polyester fabric.
- D. Joint Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.
- E. Joint Sealant: Multicomponent polyurethane sealant, compatible with waterproofing; and as recommended by manufacturer for substrate and joint conditions.
 - 1. Backer Rod: Closed-cell polyethylene foam.

2.3 PRE-APPLIED WATERPROOFING MEMBRANE – BELOW SLAB

- A. Pre-Applied waterproofing membrane: Composite membrane comprised of a heavy duty grade HDPE film, pressure sensitive adhesive, and weather resistant protective coating to form an integral bond to poured concrete. Designed for horizontal and vertical use below slabs.
 - 1. Thickness: 0.046 inch (1.2 mm), nominal
 - 2. Lateral water migration resistance:

3. Hydrostatic-Head Resistance: 231 feet minimum; ASTM D5385.
4. Tensile strength: 4,000 psi (27.6 Mpa)
5. Required overlap: 3" minimum

2.4 PROTECTION COURSE

- A. Protection Course: ASTM D6506, semirigid sheets of fiberglass- or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners and as follows:
 1. Thickness: 1/4 inch (6 mm), nominal, for vertical applications; 1/4 inch (6 mm), nominal, elsewhere.
 2. Adhesive: Rubber-based solvent type recommended in writing by waterproofing manufacturer.

2.5 MOLDED-SHEET DRAINAGE PANELS

- A. Nonwoven-Geotextile-Faced, Molded-Sheet Drainage Panel with Polymeric Film: Composite subsurface drainage panel consisting of a studded, nonbiodegradable, molded-plastic-sheet drainage core; with a nonwoven, needle-punched geotextile facing with an apparent opening size not exceeding No. 70 (0.21-mm) sieve laminated to one side of the core and a polymeric film bonded to the other side; and with a vertical flow rate through the core of [9 to 21 gpm per ft. (112 to 261 L/min. per m)].

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- D. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete.
- E. Remove fins, ridges, and other projections, and fill honeycomb, aggregate pockets, holes, and other voids.
- F. Prepare surfaces at terminations and penetrations through waterproofing and at expansion joints, drains, sleeves, and corners according to waterproofing manufacturer's written instructions and to recommendations in ASTM C898/C898M.
- G. Apply waterproofing in two separate applications, and embed a joint reinforcing strip in the first preparation coat when recommended by waterproofing manufacturer.

- H. Prepare, treat, rout, and fill joints and cracks in substrate according to waterproofing manufacturer's written instructions and to recommendations in ASTM C898/C898M. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D4258.
- I. Install sheet flashing and bond to deck and wall substrates where required according to waterproofing manufacturer's written instructions.

3.2 WATERPROOFING APPLICATION

- A. Apply waterproofing according to manufacturer's written instructions and to recommendations in ASTM C898/C898M.
- B. Unreinforced Waterproofing Applications.
 - 1. Apply one or more coats of waterproofing to obtain a seamless membrane free of entrapped gases and pinholes, with a dry film thickness of 60 mils (1.5 mm).
- C. Install protection course with butted joints over waterproofing before starting subsequent construction operations.
 - 1. For horizontal applications, install protection course loose laid over fully cured membrane.
 - 2. For vertical applications, set protection course in nominally cured membrane, which will act as an adhesive. If membrane cures before application of protection course, use adhesive.
 - 3. Molded-sheet drainage panels may be used in place of a separate protection course for vertical applications when approved in writing by waterproofing manufacturer.

3.3 MOLDED-SHEET DRAINAGE PANEL INSTALLATION

- A. Place and secure molded-sheet drainage panels, with geotextile facing away from wall or deck substrate, according to manufacturer's written instructions. Use adhesive or another method that does not penetrate waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed molded-sheet drainage panels during subsequent construction.
 - 1. For vertical applications, install protection course before installing drainage panels.

3.4 PROTECTION

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide labor, material, equipment and services to furnish and install building insulation as shown on the drawings, as specified herein and as required for a complete and proper installation, including, but not limited to, the following:
 - 1. Thermal Insulation
 - 2. Acoustic Insulation

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's literature for each type of insulation.
 - 1. Submit Underwriter's Laboratory approval numbers for required fire ratings; approvals of other laboratories contingent upon acceptance of applicable authorities.
- C. Certificates: Stating the type, thickness and "R" value (thermal resistance) of the insulation to be installed.

1.04 STORAGE AND HANDLING

- A. Store insulation materials in weathertight enclosure.
- B. Protect insulation from damage from handling, weather and construction operations before, during, and after installation.

1.05 APPLICABLE STANDARDS: The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. Federal Specifications (Fed. Spec.)
 - FF N 105B (3) Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
- B. California Building Codes (CBC) 2019 Energy Codes

- C. American Society for Testing and Materials (ASTM):
- C552 Cellular Glass Block and Pipe Thermal Insulation
 - C553 Mineral Fiber Blanket and Felt Insulation (Industrial Type)
 - C578 Preformed Cellular Polystyrene Thermal Insulation
 - C591 Unfaced Preformed Rigid Cellular Polyurethane Thermal Insulation
 - C612 Mineral Fiber Block and Board Thermal Insulation
 - C665 Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
 - C728 Perlite Thermal Insulation Board
 - C954 Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Base to Steel Studs From 0.033 inch to 0.112 inch in thickness
 - C1002 Steel Drill Screws for the Application of Gypsum Board

PART 2 PRODUCTS

2.01 MATERIALS

- A. Thermal Batt Insulation: Thermafiber SAFB, preformed slag mineral or glass fiber with thermosetting resin binders, conforming to ASTM C665, Type 1, HH-I-521F, unfaced; formaldehyde-free and with no toxic materials. Flame Spread/Smoke Density Rating: Maximum 0/0, ASTM E84. Combustibility: Pass ASTM E136.
- B. Acoustical Insulation
- 1. Mineral Fiber Batt or Blankets: ASTM C665, Type 1. Thickness as shown; of widths and lengths to fit tight against framing.
- C. Rigid Insulation
- 1. On the inside face of exterior walls.
 - 2. Cellular Glass Block, ASTM C552, Type 1.
- D. Accessories: Furnish as recommended by insulation manufacturer for insulation types, substrates, and conditions involved.
- E. Aerogel.
- 1. Flexible gel filled blanket material: ASTM C1728, Type III, Grade 1A, 10 mm (0.4 in) thick, shown; of widths and lengths to fit tight against framing. Products similar to Pryogel HPS.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify substrate and adjacent materials are dry and ready to receive insulation; beginning installation signifies acceptance of conditions.
- B. Ensure mechanical and electrical items affecting work are properly placed, complete, and have been inspected by Architect prior to commencement of installation.

3.02 INSTALLATION

- A. Install batt or blanket insulation with tight joints and filling framing void completely. Seal cuts, tears, and un-lapped joints with tape.
- B. Fit insulation tight against adjoining construction and penetrations, unless specified otherwise. Install insulation in accordance with manufacturer's instructions.
- C. Cut and trim insulation neatly, to fit spaces.
- D. Fit insulation tight within spaces and tight to and behind mechanical and electrical services within insulation plane; leave no gaps or voids; maintain integrity of thermal barrier.
- E. Friction fit batt insulation in place; use tape or penetration supports as necessary to assure permanent installation.
- F. Fasten blanket insulation between metal studs and wall furring with continuous pressure sensitive tape along edges or adhesive.
- G. Pack insulation around door frames and windows and in cracks, expansion joints, control joints, door soffits and other voids. Pack behind outlets, around pipes, ducts, and services encased in wall or partition. Hold insulation in place with pressure sensitive tape or adhesive.
- H. Do not compress insulation below required thickness except where embedded items prevent required thickness.

END OF SECTION

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PART 1 - GENERAL**1.01 DESCRIPTION**

- A. Roof and deck insulation on new construction ready to receive roofing or waterproofing membrane over wood deck.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only. Editions of applicable publications current on date of issue of bidding documents apply unless otherwise indicated.
- B. American Society of Heating, Refrigeration and Air Conditioning (ASHRAE):
 - 90.1-07Energy Standard for Buildings Except Low-Rise Residential Buildings
- C. ASTM International (ASTM):
 - C208-08Cellulosic Fiber Insulating Board
 - C552-07Cellular Glass Thermal Insulation
 - C726-05Mineral Fiber Roof Insulation Board
 - C728-05Perlite Thermal Insulation Board
 - C1177/C1177M-08.....Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - C1278/C1278M-07.....Standard Specification for Fiber-Reinforced Gypsum Panel
 - C1289-10Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
 - C1396/C1396M-09.....Standard Specification for Gypsum Board
 - D41-05Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
 - D312-06Asphalt Used in Roofing

- D1970-09 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- D2178-04 Asphalt Glass Felt Used in Roofing and Waterproofing
- D2822-05 Asphalt Roof Cement
- D4586-07 Standard Specification for Asphalt Roof Cement, Asbestos-Free
- E84-09..... Standard Test Method for Surface Burning Characteristics of Building Material
- F1667-05 Driven Fasteners: Nails, Spikes, and Staples

- D. FM Approvals: RoofNav Approved Roofing Assemblies and Products.
 - 4450-89 Approved Standard for Class 1 Insulated Steel Deck Roofs
 - 4470-10 Approved Standard for Class 1 Roof Coverings
 - 1-28-09 Loss Prevention Data Sheet: Design Wind Loads.
 - 1-29-09 Loss Prevention Data Sheet: Above-Deck Roof Components
 - 1-49-09 Loss Prevention Data Sheet: Perimeter Flashing

- E. National Roofing Contractors Association: Roofing and Waterproofing Manual

- F. U.S. Department of Agriculture (USDA): USDA BioPreferred Catalog, www.biopreferred.gov

- G. Underwriters Laboratories, Inc. (UL): Fire Resistance Directory (2009)

- H. U.S. Department of Commerce National Institute of Standards and Technology (NIST):
 - DOC PS 1-09 U.S. Product Standard for Construction and Industrial Plywood
 - DOC PS 2-04 Performance Standard for Wood-Based Structural-Use Panels.

1.04 PERFORMANCE REQUIREMENTS

- A. Thermal Performance: Provide roof insulation meeting minimum overall average R-value of 33 (6 inches).
- B. FM Approvals: Provide roof insulation complying with requirements in FM Approvals 4450 and 4470 as part of specified roofing system, listed in FM Approvals "RoofNav" as part of roofing system meeting Fire/Windstorm Classification in Division 07 roofing section.

1.05 QUALITY CONTROL

- A. Requirements of Division 07 roofing section for qualifications of roofing system insulation Installer; Work of this Section shall be performed by same Installer.
- B. Requirements of Division 07 roofing section for inspection of Work of this Section and qualifications of Inspector.

- C. Unless specified otherwise, comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to insulation for storage, handling, and application.
- D. Requirements of roofing system uplift pressure design for specified roofing system.
- E. Requirements of applicable FM Approval for specified roofing system insulation attachment.
- G. Bio-Based Materials: Where applicable, provide products designated by USDA and meeting or exceeding USDA recommendations for bio-based content, and products meeting Rapidly Renewable Materials and certified sustainable wood content definitions; refer to www.biopreferred.gov.

1.06 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product Data:
 - 1. Asphalt and adhesive materials, each type.
 - 2. Roofing cement, each type.
 - 3. Roof insulation, each type.
- 4. Fastening requirements.
- C. Federal Sustainable Design Submittals:
 - 1. Product Data for Federally-Mandated Bio-Based Materials: For roof materials, indicating USDA designation and compliance with definitions for bio-based products, Rapidly Renewable Materials, and certified sustainable wood content.
- D. Shop Drawings: Include plans, sections, details, and attachments.
 - 1. Nailers, cants, and terminations.
 - 2. Layout of insulation showing slopes, tapers, penetration, and edge conditions.
- E. Samples:
 - 1. Roof insulation, each type.
 - 2. Nails and fasteners, each type.
- F. Certificates:
 - 1. Indicating type, thermal conductance, and minimum and average thickness of insulation.
 - 2. Indicating materials and method of application of insulation system meet the requirements of FM Approvals for specified roofing system.
- G. Laboratory Test Reports: Thermal values of insulation products.

- H. Layout of tapered roof system showing units required.
- I. Documentation of supervisors' and inspectors' qualifications.

1.07 DELIVERY, STORAGE AND MARKING

- A. Comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to built-up roofing for storage, handling and installation requirements.

1.08 QUALITY ASSURANCE:

- A. Roof insulation on combustible or steel decks shall have a flame spread rating not greater than 75 and a smoke developed rating not greater than 150, exclusive of covering, when tested in accordance with ASTM E84, or shall have successfully passed FM Approvals 4450.
 - 1. Insulation bearing the UL label and listed in the UL Building Materials Directory as meeting the flame spread and smoke developed ratings will be accepted in-lieu-of copies of test reports.
 - 2. Compliance with flame spread and smoke developed ratings will not be required when insulation has been tested as part of a roof construction assembly of the particular type used for this project and the construction is listed as fire-classified in the UL Building Materials Directory or listed as Class I roof deck construction in the FM Approvals "RoofNav."
 - 3. Insulation tested as part of a roof construction assembly shall bear UL or FM labels attesting to the ratings specified herein.

PART 2 - PRODUCTS

2.01 ADHESIVE MATERIALS

- A. Adhesive Materials, General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
 - 1. Liquid-type adhesive materials shall comply with VOC limits of authorities having jurisdiction.
 - 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Multipurpose Construction Adhesives: 70 g/L.
 - c. Fiberglass Adhesives: 80 g/L.
 - d. Contact Adhesives: 80 g/L.

- e. Other Adhesives: 250 g/L.
 - f. Non-membrane Roof Sealants: 300 g/L.
 - g. Sealant Primers for Non-porous Substrates: 250 g/L.
 - h. Sealant Primers for Porous Substrates: 775 g/L.
- B. Primer: ASTM D41.
 - C. Asphalt: ASTM D312, Type III or IV for vapor retarders and insulation.
 - D. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphaltic, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.
 - E. Bead-Applied Urethane Insulation Adhesive: Insulation manufacturer's recommended bead-applied, low-rise, one- or multicomponent urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
 - F. Full-Spread Applied Urethane Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
 - G. Roof Cement: Asbestos free, ASTM D2822, Type I or Type II, ; or, D4586, Type I or Type II.

2.02 ROOF AND DECK INSULATION

- A. Roof and Deck Insulation, General: Preformed roof insulation boards approved by roofing manufacturer and listed as component of FM Approvals-approved roofing system.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
- C. Cellular Glass Board Insulation: ASTM C552, Type IV, kraft-paper sheet faced.
- D. Perlite Board Insulation: ASTM C728, expanded perlite, cellulosic fibers, binders, and waterproofing agents with top surface seal coated.
- E. Cellulosic Fiber Board Insulation: ASTM C208, Type II, Grade 1 for built-up asphalt or modified bitumen roofing.
- F. Tapered Roof Insulation System:
 - 1. Fabricate of mineral fiberboard, polyisocyanurate, perlite board, or cellular glass. Use only one insulation material for tapered sections. Use only factory-tapered insulation.
 - 2. Cut to provide high and low points with crickets and slopes as shown.
 - 3. Minimum thickness of tapered sections; 38 mm (1-1/2 inch).

4. Minimum slope 1:48 (1/4 inch per 12 inches).

2.03 INSULATION ACCESSORIES

- A. Glass (Felt): ASTM D2178, Type VI, heavy duty ply sheet.
- B. Cants and Tapered Edge Strips:
 1. Wood Cant Strips: Refer to Division 06 Section "Rough Carpentry."
 2. Insulation Cant Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.
 3. Tapered Edge Strips: 1:12 (one inch per foot), from 0 mm (0 inches), 300 mm to 450 mm (12 inches to 18 inches) wide.
 - a. Cellulosic Fiberboard: ASTM C208.
 - b. Mineral Fiberboard: ASTM C726.
 - c. Perlite Board: ASTM C728.
- C. Vapor Retarder:
 1. Glass-Fiber Felts: ASTM D2178, Type IV, asphalt impregnated.
 2. Self-Adhering Sheet Vapor Retarder: ASTM D1970, minimum of 1.0-mm- (40-mil-) thick, polyethylene film laminated to layer of rubberized asphalt adhesive, or 0.76- to 1.0-mm- (30- to 40-mil-) thick, polyethylene film laminated to layer of butyl rubber adhesive; maximum permeance rating of 6 ng/Pa x s x sq. m (0.1 perm).

2.04 FASTENERS

- A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with FM Approvals 4470, designed for fastening substrate board to roof deck.
- B. Staples and Nails: ASTM F1667. Type as designated for item anchored and for substrate.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Comply with requirements of Division 07 roofing section.

3.02 PREPARATION

- A. Comply with requirements of Division 07 roofing section.

3.03 RIGID INSULATION INSTALLATION

A. Insulation Installation, General:

1. Install roof insulation in accordance with roofing system manufacturer's written instructions.
2. Install roof insulation in accordance with requirements of FM Approval's Listing for specified roofing system.
3. Base Sheet: Where required by roofing system, install one lapped base sheet specified in Division 07 roofing section by mechanically fastening to roofing substrate prior to installation of insulation.
4. Cant Strips: Install preformed insulation cant strips at junctures of roofing system with vertical construction.

B. Insulation Thickness:

1. Thickness of roof insulation shown on drawings is nominal. Actual thickness shall provide the average thermal resistance "R" value of not less than that specified in Performance Requirements Article.
2. When thickness of insulation to be used is more or less than that shown on the drawings, make adjustments in the alignment and location of roof drains, flashing, gravel stops, fascias and similar items at no additional cost to the Government.
3. Where tapered insulation is used, the insulation thickness at high points and roof edges shall be as shown on the drawings; the thickness at the low point (drains) shall be not less than 38 mm (1-1/2 inches).
5. Use not less than two layers of insulation when insulation is 68 mm (2.7 inch) or more in thickness unless specified otherwise. Stagger joints minimum 150 mm (6 inches).

C. Lay insulating units with close joints, in regular courses and with cross joints broken. When laid in more than one layer, break joints of succeeding layers of roof insulation with those in preceding layer.

D. Lay units with long dimension perpendicular to the rolled (longitudinal) direction of the roofing felt.

E. Seal all cut edges at penetrations and at edges against blocking with bitumen or roof cement.

F. Cut to fit tight against blocking or penetrations.

G. Cover all insulation installed on the same day; comply with temporary protection requirements of Division 07 roofing section.

H. Installation Method:

1. Adhered Insulation:

- a. Prime substrate as required.
 - b. Set each layer of insulation firmly in solid mopping of hot asphalt.
 - c. Set each layer of insulation firmly in ribbons of bead-applied insulation adhesive.
 - d. Set each layer of insulation firmly in uniform application of full-spread insulation adhesive.
2. Mechanically Fastened Insulation:
- a. Fasten insulation in accordance with FM Approval's "RoofNav" requirement in Division 07 roofing section.
 - b. Fasten insulation to resist uplift pressures specified in Division 07 roofing section.
3. Mechanically Fastened and Adhered Insulation:
- a. Fasten first layer of insulation according to "Mechanically Fastened Insulation" requirements.
 - b. Fasten each subsequent layer of insulation according to "Adhered Insulation" requirements.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Manufacturer's requirements for the proper design, use, and installation of an Exterior Insulation and Finish System.
 - 1. The scope of this work includes creating EIFS infill panels at exterior precast panel openings with a heavy aggregate finish.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM B117 Test Method for Salt Spray (Fog) Testing
- B. ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- C. ASTM D968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- D. ASTM D1037 Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
- E. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity
- F. ASTM D2294 Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal).
- G. ASTM D2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- H. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of
- I. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials
- J. ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings
- K. ASTM E119 Standard Test Method for Fire Tests of Building Construction and Materials.
- L. ASTM E330 Test method for Structural Performance by Uniform Static Air Pressure Difference
- M. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference

- N. ASTM E695 Method for Measuring Relative Resistance to Impact Loading
- O. ASTM E2134 Standard Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)
- P. ASTM E2430 Standard Specification For Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems ("EIFS")
- Q. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
- R. ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
- S. ASTM G155/
G153 Accelerated Weathering for Exposure of Nonmetallic Materials
- T. Fed. Spec.
TT-C-555B Coating, Textured (For Interior and Exterior Masonry Surfaces)
- U. MIL STD 810B Military Standard, Environmental Test Methods
- V. NFPA 259 Test Method for Potential Heat of Building Materials
- W. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source
- X. NFPA 285 Standard Method of Test for the Evaluation of Flammability characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components Using the Intermediate-scale, Multistory Test Apparatus

1.04 SUBMITTALS

- A. Submit Samples, Evaluation Reports, warranties and Certificates.

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. All EIFS assembly materials must be manufactured or sold by a single-source manufacturer.
 - 2. Applicator:
 - a. Must process a current manufacturer's certificate of education
 - b. Must be experienced and competent in installation of plaster-like materials

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in original packaging with manufacturer's identification
- B. Storage: Store materials in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40°F (4°C) and below 110°F (43°C) in accordance with manufacturer's instructions.

1.07 SITE CONDITIONS

- A. Installation Ambient Air Temperature: Minimum of 40°F (4°C) and rising, and remain so for 24 hours thereafter.
- B. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- C. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.
- D. Sunlight Exposure: Avoid, when possible, installation of the materials in direct sunlight. Application of Acrylic Finishes in direct sunlight in hot weather may adversely affect aesthetics.
- E. Materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 40°F (4°C) within 24 hours of application. Protect materials from uneven and excessive evaporation during hot, dry weather.
- F. Prior to installation, the substrate shall be inspected for surface contamination, or other defects that may adversely affect the performance of the materials and shall be free of residual moisture.

1.08 WARRANTY

- A. Warranty: Manufacturer's 5 Year Warranty.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Manufacturer, Basis of Design: Parex USA, Inc.

2.02 MATERIALS

- A. Adhesives:
 - 1. Parex 302 ABC-N1 Base Coat & Adhesive: 100% acrylic polymer base, ready to use, applied without the addition of cement.
- B. Insulation Board: In compliance with manufacturer's requirements for Standard System EIFS.
 - 1. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
 - 2. Shall conform to ASTM C578 and ASTM E2430, Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
 - 3. Maximum size shall be 2 ft x 4 ft (610 mm x 1219 mm).
 - 4. Thickness: 3/4 in, minimum (19 mm) after rasping.
- C. Base Coats:
 - 1. 302 ABC-N1 Base Coat & Adhesive: 100% acrylic polymer base, ready to use, applied without the addition of cement.

D. Reinforcing Mesh:

1. 358.10 Intermediate Impact 10 Mesh: Wight 12 oz per sq. yd. (407 g/sq m) Reinforcing mesh used with a Standard Sustem, to achieve ASTM E2486 intermediate impact strength.
2. 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.

E. Primer:

1. Parex USA Primer: 100% acrylic based coating to prepare surfaces for acrylic or elastomeric finishes.
2. Variance VariPrime Sanded: 100% acrylic based coating to prepare surface for exposed aggregate specialty finishes

F. Finish:

1. Parex USA Variance. Acrylic-based specialty finish. Finish type, texture, and color per Section 09 06 00 Schedules for Finishes.
2. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealter for use as a protective coating over acrylic finishes. Use 600 Clear or Matte Clear.
 - a. Variance Antiquing Gel: a water-based, tinted, semi-transparent, acrylic emulsion for staining, sealing, and protecting concrete, masonry and other cementitious substrates. Use as required to achieve desired finish.
3. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealer for use as a protective coating over acrylic finishes. Use 600 Clear or 610 Matte Clear.

G. Portland Cement: ASTM C150, Type I or Type I-II.

H. Water: Clean, cool, potable water.

2.03 RELATED MATERIALS AND ACCESSORIES

A. Substrate Material: Concrete

B. Sealant System:

1. Sealant for expansion joints between panelized EIFS sections shall be ultra-low modulus designed for minimum 100% elongation and minimum 50% compression and as selected by Project Designer.
2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50% elongation and minimum 25% compression, and as selected by Project Designer.
3. Sealants shall conform to ASTM C 920, Grade NS.
4. Expansion joints between sections of EIFS shall have a minimum width of 3/4 in (19 mm).
5. Perimeter seal joints shall be a minimum width of 1/2 in (12.7 mm).

6. Sealant backer rod shall be closed-cell polyethylene foam.
7. Apply sealant to tracks or base coat of EIFS.
8. Refer to EIFS manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS materials.
9. Joint design, surface preparation, and sealant primer shall be based on sealant manufacturer's recommendations and project conditions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify project site conditions.
- B. Compliance: Comply with manufacturer's instructions for installation.
- C. Substrate Examination: Examine prior to installation of EIFS assembly materials as follows:
 1. Substrate shall be examined for soundness, and other harmful conditions.
 2. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
- D. Sealants and Backer Rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturers recommended primers.
- E. Advise Contractor of discrepancies preventing proper installation of the EIFS materials. Do not proceed with the work until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Protection: Protect surrounding material surfaces and areas during installation of system.
- B. Clean surfaces thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 MIXING

- A. Mix materials in accordance with manufacturer's instructions.

3.04 APPLICATION

- A. General: Installation shall conform to this specification and manufacturer's written instructions.
- B. Insulation Board:
 1. Install back-wrap mesh or edge-wrap mesh at system terminations.
 2. Apply EIFS adhesive to backs of insulation boards with a notched trowel, with ribbons of adhesive oriented in a vertical direction (parallel to the 2 ft (61 mm) dimension of the EPS board).

3. Install insulation board without gaps in a running bond pattern and interlocked at corners.
 4. Rasp irregularities off insulation board after adhesive has dried a minimum of 24 hours.
- C. Apply base coat and fully embed mesh in base coat; include diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections. Apply multiple layers of base coat and mesh where required for specified impact resistance classification.
 - D. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's product data sheets for the specified finish coat or otherwise specified for the project.
 - E. Finish Coat: Apply finish coat to match specified finish type, texture, and color. Do not apply finish coat to surfaces to receive sealant. Keep finish out of sealant joint gaps.

3.05 CLEAN-UP

- A. Removal: Remove and legally dispose of EIFS materials from job site.
- B. Clean surfaces and work area of foreign materials resulting from material installation.

3.06 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed materials from dust, dirt, precipitation, and freezing during installation, and continuous high humidity until fully cured and dry.
- C. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.

END OF SECTION 07 24 00

PART 1 GENERAL**1.01 SUMMARY**

- A. Vapor retarder under concrete slabs on grade.

1.02 RELATED SECTIONS

- A. All Sections listed in the Table of Contents are a Condition of this Section.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Submit for vapor retarder sheet and installation accessories. Include data from tests performed within 18 months of submittal showing compliance with specified standard.
- C. Shop Drawings: Show extent of vapor retarder work. Include details for edges at walls, grade beams, and the like. Include details for penetrating elements including conduit, piping, and structural membranes.

PART 2 PRODUCTS**2.01 VAPOR RETARDER**

- A. Plastic Sheet Vapor Retarder: Meeting ASTM E 1745, Class A. Minimum 15 mil thick polyolefin sheet.

Acceptable types include:

- 1. Stego Wrap by Stego Industries
- 2. Moistop Ultra A by Fortifiber Corp
- 3. VaporBlock 15 by Raven Industries
- 4. Perminator by W.R. Meadows

- B. Accessory Products

- 1. Provide manufacturer's recommended self-adhesive plastic seam tape for seams and penetrations.
- 2. Penetration boots: Provide manufacturer's recommended accessory system for sealing pipe and conduit penetrations.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that surface to receive vapor retarder is compacted and trimmed smooth.
- B. Verify that all work that will penetrate vapor retarder is complete and rigidly installed.
- C. Confirm locations and details of vapor retarder termination.

3.02 VAPOR RETARDER INSTALLATION

- A. General: Comply with requirements of ASTM E 1643 and manufacturer's published instructions.
- B. Place plastic sheet vapor retarder directly on compacted granular fill. Place sheeting with longest dimension parallel with direction of pour.
- C. Lap joints 6 inches and seal with per manufacturer's recommendations with pressure sensitive tape.
- D. Tape seal vapor retarder at all perimeters.
- E. Tape seal vapor retarder around columns, pipe, and conduit penetrations.
- F. Avoid cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: Provide materials and accessories as required for complete installation.
 - 1. Surface preparation.
 - 2. Application of liquid applied vapor permeable air barrier. May be referred to weather resistive barrier on Drawings.
 - 3. Application of materials to provide bridge and seal air leakage pathways in
 - a. Wall and roof connections and penetrations.
 - b. Walls, windows, louvers or doors
 - c. All other penetrations through the wall assembly.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 REFERENCES

- A. ASTM D412-98a(2002)e1 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- B. ASTM E96-00e1 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.
- C. ASTM E283-91 (1999) - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- D. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage through Installed Exterior Windows and Doors.
- E. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.
- F. ASTM E2178-01 - Standard Test Method for Air Permeance of Building Materials.

- G. ASTM E2357 - 05 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

1.04 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's literature for each type of insulation.
 - 1. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.
 - 2. Shop Drawings: Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strip, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction. Include details of interfaces with other materials that form part of air barrier.
 - 3. Use an experienced installer and adequate number of skilled personnel who are thoroughly trained and experienced in the application of the air barrier.
 - 4. Obtain air/vapor barrier materials from a single manufacturer regularly engaged in manufacturing the product.
 - 5. Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

1.05 MOCK-UP

- A. Before beginning installation of air barrier, build mockups of exterior wall assembly, full height by ten (10) feet wide, including parapet, backup wall construction, external cladding, window, door frame and sill, insulation, and flashing to demonstrate surface preparation, crack and joint treatment, and sealing of gaps, terminations, and penetrations of air barrier membrane.
 - 1. Coordinate construction of mockup to permit inspection of air barrier before external insulation and cladding is installed.
 - 2. Reconstruct mockups do not comply with requirements.
 - 3. Approved mockups may become part of the completed.
 - 4. Include installers of other construction connecting to air barrier, including roofing, waterproofing, composite metal wall panels, metal wall panels, sealants, windows, glazed curtain walls, and door frames.
 - 5. Review air barrier requirements including surface preparation, substrate condition and pretreatment, minimum substrate curing period, forecasted weather conditions, special details and sheet flashings, mockups, installation

procedures, sequence of installation, testing and inspecting procedures, and protection and repairs.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air barrier manufacturer.
- B. Store at temperatures at or above 40°F (4°C), free from contact with cold or frozen surfaces.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- D. Protect stored materials from direct sunlight.
- E. Protect materials during handling and application to prevent damage or contamination.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Product not intended for uses subject to abuse or permanent exposure to the elements.
- B. Do not proceed with product application if rainfall is forecast or imminent within 12 hours.
- C. Do not apply membrane when air or surface temperatures are below 40°F (4°C).
- D. Do not apply when air, material and surface temperatures are expected to fall below 32° F (0° C) within 24 hours of completed application.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Carlisle
- B. Grace
- C. Henry
- D. Rubber Polymer Corporation
- E. Tremco
- F. W.R. Meadows

2.02 FLUID-APPLIED MEMBRANE AIR BARRIER

- A. Fluid-Applied, Vapor Impermeable Membrane Air Barrier: Two-component, self-curing synthetic-rubber-based membrane, free of solvents, isocyanates and bitumen, suitable for spray application to wet film and dry film thickness of 60 mils.

- B. Basis-of-Design Product: Products specified to establish required level of performance, quality, and appearance are by Grace Construction Products, Perm-A-Barrier.

2.03 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits.
- B. Transition Membrane Primer: Grace Construction Products; "Perm-A-Barrier WB Primer." Liquid primer recommended for substrate by manufacturer of air barrier material when applying flashing and transition membranes directly to substrate.
- C. Flashing and Transition Membrane: Grace Construction Products; "Perm-A-Barrier Wall Flashing." Modified bituminous, 40-mil thick, self-adhering sheet consisting of 32 mils of rubberized asphalt laminated to an 8-mil thick, cross-laminated polyethylene film with release liner backing.
- D. Modified Bituminous Transition Membrane: Grace Construction Products; "Perm-A-Barrier Detail Membrane." Vapor-retarding, 40-mil- thick, smooth-surfaced, self-adhering; consisting of 36 mils of rubberized asphalt laminated to a 4-mil-thick polyethylene film with release liner backing.
- E. Joint Reinforcing Strip: Sheathing manufacturer's glass-fiber-mesh tape.
- F. Substrate Patching Membrane: Manufacturer's standard trowel-grade single component substrate filler.
- G. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
- H. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, 0.0250-inch-thick, and Series 300 stainless-steel fasteners.
- I. Sprayed Polyurethane Foam Sealant: 1- or 2-component, foamed-in-place, polyurethane foam sealant, 1.5 to 2.0 lb/cu. ft. density; flame spread index of 25 or less according to ASTM E 162; with primer and noncorrosive substrate cleaner recommended by foam sealant manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive membrane. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
- C. Verify that sheathing is attached with proper fasteners and spacing.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Protect adjacent surfaces not designated to receive air barrier.
- B. Clean and prepare surfaces to receive air barrier membrane in accordance with manufacturer's instructions.
- C. Do not apply membrane to surfaces unacceptable to manufacturer.
- D. Patch all holes and voids and smooth out any surface misalignments.
- E. Insure joints between dissimilar building materials are sealed with a strip of self-adhesive membrane 10" wide minimum, centered over the joint.
- F. Exterior Sheathing Panels:
 - 1. Panels are to be fastened according to sheathing panel manufacturer.
 - 2. Fill all panel joint with detailing compound prior to full application.
 - 3. Gypsum Sheathing: Fill joints greater than 1/4 inch with sealant according to ASTM C 1193 and with air barrier manufacturer's written instructions. Apply first layer of fluid air barrier membrane at joints. Tape joints with joint reinforcing strip after first layer is dry. Apply a second layer of fluid air barrier membrane over joint reinforcing strip.
- G. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

3.03 TRANSITION MEMBRANE INSTALLATION

- A. Install strips, transition membrane, and auxiliary materials according to air barrier manufacturer's written instructions to form a seal with adjacent construction and maintain a continuous air barrier.
- B. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
- C. Install modified bituminous transition membrane on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over both substrates.
- D. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Re-prime areas exposed for more than 24 hours.
- E. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- F. Connect and seal exterior wall air barrier membrane continuously to roofing membrane air barrier, floor-to floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings.

- G. At end of each working day, seal top edge of strips and transition membranes to substrate with termination mastic.
- H. Apply joint sealants forming part of air barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- I. Wall Openings: Prime concealed perimeter frame surfaces of windows, curtain walls, storefronts, doors and louvers. Apply modified bituminous transition membrane so that a minimum of 6 inches of coverage is achieved over both substrates. Maintain 6 inches of full contact over firm bearing to perimeter frames with not less than 2 inches of full contact.
- J. Modified Bituminous Transition Membrane: Roll firmly to enhance adhesion.
- K. Preformed Silicone-Sealant Extrusion: Set in full bed of silicone sealant applied to walls, frame, and membrane.
- L. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, and doors, and miscellaneous penetrations of air barrier membrane with foam sealant.
- M. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counter-flashings or ending in reglets with termination mastic.
- N. Repair punctures, voids, and deficient lapped seams in strips and transition membranes. Slit and flatten fish-mouths and blisters. Patch with transition membranes extending 10 inches beyond repaired areas in membrane direction.

3.04 AIR BARRIER MEMBRANE INSTALLATION

- A. Apply air barrier membrane to form a seal with strips and transition membranes and to achieve a continuous air barrier according to air barrier manufacturer's written instructions.
- B. Apply air barrier at walls, soffits and fascia to roof barrier.
- C. Apply within manufacturer's recommended application temperature ranges.
- D. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Re-prime areas exposed for more than 24 hours.
- E. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- F. Apply a continuous unbroken air barrier to substrates according to the following minimum thickness. Apply membrane in full contact around protrusions.
- G. Vapor-Impermeable Membrane Air Barrier: 60-mil wet film thickness, 60-mil dry film thickness.

- H. Apply strip and transition membrane overlapping or onto according to air barrier manufacturer's written instructions.
- I. Do not cover air barrier until it has been tested and inspected by testing agency.
- J. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.

3.05 CLEANING AND PROTECTION

- A. Protect air barrier system from damage during application.
- B. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. Remove and replace vapor-impermeable air barrier exposed for more than 60 days.
- C. Keep barrier from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by air barrier manufacturer.
- D. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
- E. Remove masking materials after installation.

END OF SECTION

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PART 1 GENERAL**1.01 DESCRIPTION**

- A. Thermoplastic Polyolefin (TPO) sheet roofing mechanically fastened to roof deck.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 2. All Specification Sections listed in the Table of Contents.

1.03 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only. Editions of applicable publications current on date of issue of bidding documents apply unless otherwise indicated.
- B. American National Standards Institute/Single-Ply Roofing Institute (ANSI/SPRI):
- ANSI/SPRI ES-1-03 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- C. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI):
- ASCE/SEI-7-10 Minimum Design Loads for Buildings and Other Structures
- D. ASTM International (ASTM):
- C1371-04 Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers
- C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer
- D6878-08 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
- E108-10 Standard Test Methods for Fire Tests of Roof Coverings
- E408-71(R2008) Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques
- E1980-01 Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field

- E 2430 -05. Rigid Polystyrene Insulation
- C 168. Test method for Thermal Insulation
- C 177. Test for Steady State Heat flux Measurements, and Thermal insulation
- E. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
ASHRAE 90.1-2007Energy Standard for Buildings Except Low-Rise Residential Buildings, Appendix f.
- F. Cool Roof Rating Council:
CRRC-1Product Rating Program, www.coolroofs.org
- G. FM Approvals: Roof Nav Approved Roofing Assemblies and Products.
1-28-09Loss Prevention Data Sheet: Design Wind Loads.
1-29-09Loss Prevention Data Sheet: Above-Deck Roof Components
- H. National Roofing Contractors Association: Roofing and Waterproofing Manual
- I. U.S. Department of Energy (DoE): Roof Products Qualified Product List,
www.energystar.gov

1.04 PERFORMANCE REQUIREMENTS

- A. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- B. Roofing System Energy Performance Requirements: Provide a roofing system identical to components that that have been successfully tested by a qualified independent testing and inspecting agency to meet the following requirements:
- C. Energy Performance, Energy Star: Provide roofing system that is listed on DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
www.energystar.gov.
 - 1. Solar Reflectance Index: Not less than 82 when calculated according to ASTM E1980 based on testing identical products by a qualified testing agency.
www.coolroofs.com.

1.05 QUALITY CONTROL

- A. Installer Qualifications:
 - 1. Licensed or approved in writing by manufacturer to perform work under warranty requirements of this Section.
 - 2. Employ full-time supervisors knowledgeable and experienced in roofing of similar types and scopes, and able to communicate with owner and workers.

- B. Inspector Qualifications: Inspection of work by third-party technical inspector or technical representative of manufacturer experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be an independent party certified as a Registered Roof Observer by the Roof Consultants Institute (RCI), retained by the Contractor and approved by the Manufacturer
- C. Product/Material Requirements:
 - 1. Obtain products from single manufacturer or from sources recommended by manufacturer for use with roofing system and incorporated in manufacturer's warranty.
- D. Roofing system design standard requirements:
 - 1. Recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to Thermoplastic Polyolefin (TPO) roofing for storage, handling and application.
 - 2. Recommendations of FM Approvals 1-49 Loss Prevention Data Sheet for Perimeter Flashings.
 - 3. Recommendations of ANSI/SPRI ES-1 for roof edge design.
 - 4. Roofing System Design: Provide roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
 - a. Corner Uplift Pressure: (75 lbf/sq. ft.).
 - b. Perimeter Uplift Pressure: (75 lbf/sq. ft.).
 - c. Field-of-Roof Uplift Pressure: (75 lbf/sq. ft.).
 - 5. FM Approvals Listing: Provide roofing membrane, base flashing, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a roofing system and that are listed in FM Approvals "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.
 - a. Fire/Windstorm Classification: Class 1A-75.
 - b. Hail Resistance: MH.
- E. Pre-Roofing Meeting:
 - 1. Prior to roofing, discuss specific expectations and responsibilities, construction procedures, specification requirements, application, environmental conditions, job and surface readiness, material storage, and protection with COR to:
 - a. Verify that work of other trades which penetrates roof deck is completed.

- b. Determine adequacy of deck anchorage, presence of foreign material, moisture and unlevel surfaces, or other conditions that would prevent application of roofing system from commencing or cause a roof failure.
- c. Examine samples and installation instructions of manufacturer.

1.06 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, SAMPLES.
- B. Product Data:
 - 1. Adhesive materials.
 - 2. Membrane sheet roofing and flashing membrane.
 - 3. Roof Insulation
 - 3. Fastening requirements.
 - 4. Application instructions.
- C. Samples:
 - 1. Nails and fasteners, each type.
- D. Shop Drawings: Include plans, sections, details, and attachments.
 - 1. Base flashings and terminations.
 - 2. Layout of insulation, crickets, edge conditions and roof drains, scuppers etc.
- E. Certificates:
 - 1. Indicating materials and method of application of roofing system meets requirements of FM Approvals "RoofNav" for specified fire/windstorm classification.
 - 2. Indicating compliance with energy performance requirement.
 - 3. Laboratory test reports: Thermal values of insulation products.
 - 4. Indicating Thermal conductance, and minimum average thickness of insulation.
- F. Warranty: As specified.
- G. Documentation of supervisors' and inspectors' qualifications.
- H. Field reports of roofing inspector.
- I. Contract Close-out Submittals:
 - 1. Maintenance Manuals.

2. Warranty signed by installer and manufacturer.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Comply with the recommendations of the NRCA "Roofing and Waterproofing Manual" applicable to single ply membrane roofing for storage, handling and installation.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.09 WARRANTY

- A. Roofing work subject to 10 years.

1.10 QUALITY ASSURANCE:

- A. Roof insulation on steel deck shall have a flame spread rating no greater than 75 and a smoke developed rating not greater than 150, exclusive of covering, when tested in accordance with ASTM E 84, or shall have successfully passed FM Approvals 4450.

PART 2 PRODUCTS

2.01 TPO MEMBRANE ROOFING

- A. TPO Sheet: ASTM D6878, internally fabric or scrim reinforced, 1.5 mm (60 mils) thick, with no backing.
- B. Color: White.

2.02 ACCESSORIES

- A. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as TPO sheet membrane.
- B. Bonding Adhesive: Manufacturer's standard, water based.
- C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 25 by 3 mm (1 by 1/8 inch) thick; with anchors.
- D. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 25 mm wide by 1.3 mm (1 inch wide by 0.05 inch) thick, prepunched.
- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with FM Approvals 4470, designed for fastening membrane to substrate.
- G. Miscellaneous Accessories: Provide sealers, preformed flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories acceptable to manufacturer.

- H. Roof and Deck Insulation.

2.03 ADHESIVE AND SEALANT MATERIALS

- A. General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
- B. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions with roofing Installer and roofing inspector to verify compliance with project requirements and suitability to accept subsequent roofing work. Correct unsatisfactory conditions before proceeding with roofing work.
- B. Do not apply roofing if roof surface will be used for subsequent work platform, storage of materials, or staging or scaffolding will be erected thereon unless system is protected.

3.02 PREPARATION

- A. Complete roof deck construction prior to commencing roofing work:
 - 1. Install curbs, blocking, edge strips, nailers, cants, and other components where insulation, roofing, and base flashing is attached to, in place ready to receive insulation and roofing.
 - 2. Complete deck and insulation to provide designed drainage to working roof drains.
 - 3. Document installation of related materials to be concealed prior to installing roofing work.
- B. Dry out surfaces, including the flutes of metal deck that become wet from any cause during progress of the work before roofing work is resumed. Apply materials to dry substrates.
- C. Sweep decks to broom clean condition. Remove all dust, dirt or debris.
- D. Remove projections that might damage materials.

3.04 INSTALLATION, GENERAL

- A. FM Approvals Installation Standard: Install roofing membrane, base flashings, wood cants, blocking, curbs, and nailers, and component materials in compliance with requirements in FMG 4450 and FMG 4470 as part of a membrane roofing system as listed in FM Approval's "RoofNav" for fire/windstorm classification indicated. Comply with recommendations in FM Approvals' Loss Prevention Data Sheet 1-49, including requirements for nailers and cants.

- B. NRCA Installation Standard: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations.
- C. Manufacturer Recommendations: Comply with roofing system manufacturer's written installation recommendations.
- D. Coordination with related work: Coordinate roof operations with roof insulation and sheet metal work so that insulation and flashings are installed concurrently to permit continuous roofing operations.
- E. Installation Conditions:
 - 1. Apply dry roofing materials. Apply roofing work over dry substrates and materials.
 - 2. Apply materials within temperature range and surface and ambient conditions recommended by manufacturer.
 - 3. Except for temporary protection, do not apply materials during damp or rainy weather, during excessive wind conditions, nor while moisture (dew, snow, ice, fog or frost) is present in any amount in or on the materials to be covered or installed:
 - a. Do not apply materials when the temperature is below 4 deg. C (40 deg. F).
 - b. Do not apply materials to substrate having temperature of 4 deg. C (40 deg. F) or less.

3.05 RIGID INSULATION INSTALLATION

- A. Insulation Installation, General:
 - 1. Install roof insulation in accordance with roofing system manufacturer's written instructions.
 - 2. Install roof insulation in accordance with requirements of FM Approval's Listing for specified roofing system.
 - 3. Base Sheet: Where required by roofing system, install one lapped base sheet specified in Division 07 roofing section by mechanically fastening to roofing substrate prior to installation of insulation.
 - 4. Cant Strips: Install preformed insulation cant strips strips at junctures of roofing system with vertical construction.
 - 5. Use same insulation as existing for roof repair and alterations unless specified otherwise.
- B. Insulation Thickness:
 - 1. Thickness of roof insulation shown on drawings is nominal. Actual thickness shall provide the average thermal resistance "R" value of not less than that specified in Performance Requirements Article.

2. Insulation on Metal Decks: Provide minimum thickness of insulation for metal decks recommended by the insulation manufacturer to span rib opening (flute size) of metal deck used. Support edges of insulation on metal deck ribs.
 3. When thickness of insulation to be used is more or less than that shown on the drawings, make adjustments in the alignment and location of roof drains, flashing, gravel stops, fascias and similar items at no additional cost to the Owner.
 4. Where tapered insulation is used, the thickness of the insulation at high points and roof edges shall be as shown on the drawings; the thickness at the low point (drains) shall be not less than 38 mm (1-1/2 inches).
 5. Use not less than two layers of insulation when insulation is 68 mm (2.7 inch) or more in thickness unless specified otherwise. Stagger joints minimum 150 mm (6 inches).
- C. Lay insulating units with close joints, in regular courses and with cross joints broken. When laid in more than one layer, break joints of succeeding layers of roof insulation with those in preceding layer.
- D. Lay units with long dimension perpendicular to the rolled (longitudinal) direction of the roofing felt.
- E. Seal all cut edges at penetrations and at edges against blocking with bitumen or roof cement.
- F. Cut to fit tight against blocking or penetrations.
- G. Cover all insulation installed on the same day; comply with temporary protection requirements of Division 07 roofing section.

3.06 INSTALLATION OF TPO ROOFING

- A. Do not allow the membrane to come in contact with surfaces contaminated with asphalt, coal tar, oil, grease, or other substances which are not compatible with TPO.
- B. Install the membrane so the sheets run perpendicular to the long dimension of the insulation boards.
- C. Commence installation at the low point of the roof and work towards the high point. Lap the sheets so the flow of water is not against the edges of the sheet.
- D. Position the membrane so it is free of buckles and wrinkles.
- E. Roll sheet out on deck; inspect for defects as being rolled out and remove defective areas. Allow for relaxing before proceeding.
1. Lap edges and ends of sheets 50 mm (two inches) or more as recommended by the manufacturer.
 2. Heat weld laps. Apply pressure as required. Seam strength of laps as required by ASTM D4434.
 3. Check seams to ensure continuous adhesion and correct defects.

4. Finish edges of laps with a continuous beveled bead of sealant to sheet edges to provide smooth transition.
 5. Finish seams as the membrane is being installed (same day).
 6. Anchor perimeter to deck or wall as specified.
- F. Repair areas of welded seams where samples have been taken or marginal welds, bond voids, or skips occurs.
- G. Repair fishmouths and wrinkles by cutting to lay flat and installing patch over cut area extending 100 mm (four-inches) beyond cut.
- H. Membrane Perimeter Anchorage:
1. Install metal fastening strip at the perimeter of each roof level, curb flashing, expansion joints and similar penetrations as indicated and in accordance with membrane manufacturer's instructions on top of roof membrane to deck or wall.
 2. Mechanically Fastened Metal Fastening Strip:
 - a. Set top of mechanical fastener set flush with top surface of the metal fastening strip. Space mechanical fasteners a maximum 300 mm (12 inches) on center starting 25 mm (one inch) from the end of the nailing strip.
 - b. When strips are cut round corners and eliminate sharp corners.
 - c. After mechanically fastening strip cover and seal strip with a six-inch wide roof membrane strip; heat weld to roof membrane and seal edges.
 - d. At roof edge metal, turn the membrane down over the front edge of the blocking or the nailer to below blocking. Secure the membrane to the vertical portion of the nailer; or, if required by the membrane manufacturer with fasteners spaced not over 300 mm (12 inches) on centers.
 - e. At parapet walls, intersecting building walls and curbs, secure the membrane to the structural deck with fasteners 300 mm (12 inches) on centers or as shown on NRCA manual.
- I. Mechanically-Attached System:
1. Secure the membrane to the structural deck with fasteners through stress plate or batten strips spaced and patterned in accordance with the membrane manufacturer's instructions to achieve specified wind uplift performance.
 2. When fasteners are installed within the laps of adjoining sheets, position the fastener so that the stress plates are a minimum 13 mm (1/2)inch) from the edge of the sheets.
 3. Where fasteners are installed over the membrane after the seams have been welded, cover the fasteners with a minimum 175 mm (seven inch) wide round TPO membrane cap centered over the fasteners. If batten strips are used cover the strip with a minimum 175 mm (seven inch) wide TPO strip centered over the

batten. Heat weld to the roof membrane and finish edges with sealant as specified. Finish edges with sealant as specified.

4. Before installing fasteners into cast in place concrete, pre-drill the correct size hole into the deck. Drill the hole 9 mm (3/8 inch) deeper than the fastener penetration.

3.07 INSTALLATION OF FLASHING

- A. Install flashings as the membrane is being installed. If the flashing cannot be completely installed in one day, complete the installation until the flashing is in a watertight condition and provide temporary covers or seals.
- B. Flashing Roof Drains:
 1. Install roof drain flashing as recommended by the membrane manufacturer, generally as follows:
 - a. Coordinate to set the metal drain flashing in asphalt roof cement, holding cement back from the edge of the metal flange.
 - b. Do not allow the roof cement to come in contact with the TPO roof membrane.
 - c. Adhere the TPO roof membrane to the metal flashing with the membrane manufacturer's recommended adhesive.
 2. Turn down the metal drain flashing and TPO roof membrane into the drain body and install clamping ring and strainer.
- C. Installing TPO Base Flashing and Pipe Flashing:
 1. Install TPO flashing membranes to pipes, wall or curbs to a height not less than eight-inches above roof surfaces and 100 mm (four inches) on roof membrane.
 - a. Adhere flashing to pipe, wall or curb with adhesive.
 - b. Form inside and outside corners of TPO flashing membrane in accordance with NRCA manual. Form pipe flashing in accordance with NRCA manual use pipe boot.
 - c. Lap ends not less than 100 mm (four inches).
 - d. Heat weld flashing membranes together and flashing membranes to roof membranes. Finish exposed edges with sealant as specified.
 - e. Install flashing membranes in accordance with NRCA manual.
 2. Anchor top of flashing to walls or curbs with fasteners spaced not over 200 mm (eight inches) on centers. Use fastening strip on ducts. Use pipe clamps on pipes or other round penetrations.
 3. Apply sealant to top edge of flashing.
- D. Installing Building Expansion Joints:

1. Install base flashing as shown.
 2. Coordinate installation with metal expansion joint cover or roof expansion joint system.
- E. Repairs to membrane and flashings:
1. Remove sections of TPO sheet roofing or flashing that is creased wrinkled or fish-mouthed.
 2. Cover removed areas, cuts and damaged areas with a patch extending 100 mm (four inches) beyond damaged, cut, or removed area. Heat weld to roof membrane or flashing. Finish edge of lap with sealant as specified.

3.08 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
1. Examine and probe seams in the membrane and flashing in the presence of Architect, Owner and Membrane Manufacturer's Inspector.
 2. Probe edge of welded seams with a blunt tipped instrument. Use sufficient hand pressure to detect marginal welds, voids, skips, and fish-mouths.
- C. Final Roof Inspection:
1. Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
 2. Notify Architect and Owner 7 days in advance of date and time of inspection.
- D. Repair or remove and replace components of roofing work where test results or inspections indicate that they do not comply with specified requirements. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.09 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of acceptance by Owner.
- C. Clean overspray and spillage from adjacent construction. Clean membrane and restore surface to like-new condition meeting solar reflectance requirements.

END OF SECTION

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PART 1 GENERAL**1.01 SUMMARY**

- A. Provide metal flashings and sheet metal including accessories as required for complete weather tight installation.
- B. Patch existing flashing and sheet metal as required by new construction.
- C. Provide concealed sealants used in conjunction with installation of metal flashing and sheet metal.
- D. Provide miscellaneous sheet metal flashing and reglets not provided by other trades or suppliers.
 - 1. Where reglets are to be installed in conjunction with other work, provide in adequate time for installation.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish literature for manufactured products.
- C. Shop Drawings: Clearly indicate dimensioning, layout, general construction details including closures, flashings, locations and types of sealants, anchorages, and method of anchorage.
- D. Samples: Furnish samples of typical metal flashing fabrication indicating standard soldered joints and edge conditions.

1.04 QUALITY ASSURANCE

- A. Referenced Standards
 - 1. California Building Code (CBC), Latest Edition
 - 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA): Architectural Sheet Metal Manual, Latest Edition

- B. Design Requirements: Allow for movement of components without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to 100-year seasonal temperature ranges.
- C. Sheet metal fabricator and installer shall have a minimum five (5) years of experience with shop fabrication and installation of shop-fabricated roofing metal and flashings.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Provide strippable film protective covering on shop finished flashing materials to protect materials through shipping, fabrication and installation.

1.06 WARRANTY

- A. Special Warranty: Provide for correcting failure of metal flashing system to resist penetration of water and damage from wind.
 - 1. Special Warranty Period: Two years.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Flashing and Sheet Metal:
 - 1. Minimum gauge of aluminum per SMACNA. Minimum gauge of gutters, downspouts and roof edge, .040 aluminum, 20ga.
- B. Flexible Flashings: Reinforced self- adhered flexible flashing.
- C. Solder and Fasteners: As recommended by SMACNA and complying with applicable codes and regulations; hot dipped galvanized minimum coating comparable to G90.
- D. Concealed Sealant: Butyl type for use in conjunction with sheet metal; non-staining; non-corrosive; non-shrinking and non-sagging; ultra-violet and ozone resistant for exterior concealed applications.
- E. Bituminous Paint: Acid and alkali resistant type; black color; asbestos free.
- F. Plastic Cement: Cutback asphaltic type; asbestos free.
- G. Sealing Compound: Type recommended by roofing manufacturer; asbestos free.
- H. Gaskets: Type suitable for use in conjunction with sheet metal; non-staining, non-corrosive, non-shrinking, non-sagging, ultra-violet resistant, and ozone resistant; for exterior concealed applications.
 - 1. Manufacturers:
 - a. Sandell Manufacturing Co./Polytite Joint Sealant.
 - b. Emseal USA, Inc./Emseal Secondary Seal.

2.02 FABRICATION

- A. Fabricate sheet metal in accordance with SMACNA Architectural Sheet Metal Manual.
- B. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- C. Fabricate corners and intersections in shop with solder joints; watertight fabrication.
- D. Form sections in maximum 10'-0" lengths; make allowance for expansion at joints.
- E. Hem exposed edges on underside 1/2".
- F. Backpaint flashings with heavy bodied bituminous paint where in contact with cementitious materials or dissimilar metals.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install metal flashing and sheet metal in accordance with SMACNA Architectural Sheet Metal Manual.
 - 1. Install tight in place, with corners square, surfaces true and straight in planes, and lines accurate to profiles as indicated on Drawings.
 - 2. Lap joints in direction of water flow.
 - 3. Install self-adhering flexible flashings and overlap metal flashing joints and adjacent materials in direction of water flow.
- B. Exercise care when cutting materials on site, to ensure cuttings do not remain on finished surfaces.
- C. Provide expansion joints concealed within system.
- D. Use concealed fasteners, continuous cleat type, except where specifically approved by Architect.
 - 1. Exposed fasteners may be used, where clearly indicated on shop drawings and approved by the Owner, at areas not exposed at exterior walls nor in sight of interior spaces.
- E. Apply sealing compound at junction of metal flashing and felt flashing.
- F. Lock seams and end joints; fit flashing tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- G. Install flashings with minimum joints and as long of section as possible.
- H. Install sealants where required to prevent direct weather penetration.
 - 1. Install continuous gasket behind surface-applied reglets.

- I. Completed installation shall be free of rattles, noise due to thermal and air movement, and wind whistles.
- J. Install metal flashing at all intersections to protect waterproofing, insulation and gypsum sheathing from UV exposure.
- K. Install dam flashing at window, louvers, openings and at intersecting horizontal and vertical surfaces.

3.02 CLEANING

- A. Remove protective coating from shop finished sheet metal when no longer required to protect roofing and flashing from construction.
- B. Touch-up scratched and damaged finish to match new; remove and replace sheet metal units that cannot be repaired to look identical to adjacent sheet metal when viewed from 5'-0" away.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. This section specifies the following materials and accessories as required for complete weathertight installation:
 - 1. Copings.

1.2 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of roof specialty and for each color and texture specified.
- C. Product Test Reports: For tests performed by a qualified testing agency.
- D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class.

1.6 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 07 54 23 - Thermoplastic Polyolefin (TPO) Roofing.

- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. FM Approvals' Listing: Manufacture and install copings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90 Identify materials with FM Approvals' markings.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C) material surfaces.

2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
 - 1. Metallic-Coated Steel Sheet Coping Caps: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Three-coat metallic fluoropolymer.
 - c. Color: Dark Bronze
 - 2. Corners: Factory mitered and mechanically clinched and sealed watertight.
 - 3. Coping-Cap Attachment Method: Face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
 - a. Face-Leg Cleats: Concealed, continuous stainless steel.

2.3 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.

- B. Stainless-Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements, complying with FM Approvals 4470.
- B. General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use, identical to materials utilized in approved listed roofing system, and compatible with roofing membrane.
- C. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.5 FINISHES

- A. Coil-Coated Galvanized-Steel Sheet Finishes:
 - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A755/A755M and coating and resin manufacturers' written instructions.
 - a. Three-Coat Metallic Fluoropolymer: AAMA 621. Fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 - 4. Torch cutting of roof specialties is not permitted.
 - 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of stainless-steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 - 1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

3.2 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
 - 1. Interlock face-leg drip edge into continuous cleat anchored to substrate at 16-inch (406-mm) centers. Anchor back leg of coping with screw fasteners and elastomeric washers at 16-inch (406-mm) centers.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed.

END OF SECTION

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide labor, material, equipment and services to furnish and install firestopping systems required for the work as shown on the drawings, as specified herein and as required for a complete and proper installation, including, but not limited to, the following:
 - 1. Closures of openings in walls, floors, and roof decks against penetration of flame, heat, and smoke or gases in fire resistant rated construction.
 - 2. Closures of openings in walls against penetration of gases or smoke in smoke partitions.
 - 3. Sealants around penetrations in non-rated smoke barriers where indicated on Drawings.
 - 4. Closures of floor openings in vertical mechanical shafts against penetration of flame, heat, smoke and gases.
- B. Drawings and General Provisions of the Contract, including General and Supplementary Conditions, and Division 1 Specification Sections, apply to this Section.

1.02 RELATED SECTIONS

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Section 01 33 00 – Submittals.
- B. Manufacturers literature, data, and installation instructions for types of firestopping and smoke stopping used.
- C. List of FM, UL, or WH classification number of systems installed.
- D. Certified laboratory test reports for ASTM E814 tests for systems not listed by FM, UL, or WH proposed for use.

1.04 DELIVERY AND STORAGE

- A. Deliver materials in their original unopened containers with manufacturer's name and product identification.
- B. Store in a location providing protection from damage and exposure to the elements.

1.05 QUALITY ASSURANCE

- A. FM, UL, or WH or other approved laboratory tested products will be acceptable.

1.06 APPLICABLE STANDARDS: The latest edition of publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Society for Testing and Materials (ASTM):
 - 1. E84 Surface Burning Characteristics of Building Materials
 - 2. E136 Behavior of Material in a Vertical Tube Furnace
 - 3. E814 Fire Tests of Through-Penetration Fire Stops
- B. Factory Mutual Engineering and Research Corporation (FM):
 - 1. Annual Issue Approval Guide Building Materials
- C. Underwriters Laboratories, Inc. (UL):
 - 1. Annual Issue Building Materials Directory
 - 2. Annual Issue Fire Resistance Directory
- D. Warnock Hersey (WH):
 - 1. Annual Issue Certification Listings

PART 2 PRODUCTS

2.01 FIRESTOP SYSTEMS

- A. Metallic Pipe or Conduits: Firestop systems shall comply with the following:
 - 1. Classified for use with the particular type of penetrating material used.
 - 2. Use either factory built (Firestop Devices) or field erected (through-Penetration Firestop Systems) to form a specific building system maintaining required integrity of the fire barrier and stop the passage of gases or smoke.
 - 3. Tested through-penetration firestop systems and firestop devices in accordance with ASTM E814 using the "T" rating to maintain the same rating and integrity as the fire barrier being sealed.
 - 4. Products requiring heat activation to seal an opening by its intumescence shall exhibit a demonstrated ability to function as designed to maintain the fire barrier.
 - 5. Firestop sealants used for firestopping or smoke sealing shall have following properties:
 - a. Contain no flammable or toxic solvents.
 - b. Have no dangerous or flammable outgassing during the drying or curing of products.
 - c. Water-resistant after drying or curing and unaffected by high humidity, condensation or transient water exposure.

- d. When used in exposed areas, shall be capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.
6. Maximum flame spread of 25 and smoke development of 50 when tested in accordance with ASTM E84.
7. FM, UL, or WH rated or tested by an approved laboratory in accordance with ASTM E814.
8. Materials to be asbestos free.
- B. Glass pipe, plastic pipe or conduits, unenclosed cables, or other non-metallic materials: Comply to requirements for metallic pipe and as follows:
 1. Penetrations containing loose electrical cables, computer data cables, and communications cables protected using firestopping systems that allow unrestricted cable changes without damage to the seal.
 2. Intumescent products which expand to seal the opening and act as fire, smoke, toxic fumes, and, water sealant.
- C. One-Hour Fire Barrier Sealant: One-component neutral-cure silicone rubber sealant.
 1. Manufacturers:
 - a. 3M "Fire Barrier 2000 or 2003 Sealant, Caulk Type CP25 or No. 303 Putty";
 - b. International Protective Coatings "Flame-Safe FS500 or FSP1000 Putty";
 - c. Fipro "A/D Silicone Firebarrier Sealant-SL";
 - d. Or equal.
 2. Two Hour Fire Barrier Sealant: 3M CP25 Sealant.

2.02 SMOKE STOPPING IN SMOKE PARTITIONS

- A. Non-Fire-rated Smoke Stop Partitions: Sealants around penetrations in smoke stop partitions or barriers not identified on the plans as part of a rated assembly shall comply as follows:
 1. Use silicone sealant in smoke partitions as specified in Section 07 90 00, Joint Sealers.
 2. Use mineral fiber filler and bond breaker behind sealant.
 3. Sealants shall have a maximum flame spread of 25 and smoke developed of 50 when tested in accordance with E84.
 4. When used in exposed areas capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.
- B. Fire-rated Smoke Stop Partitions: Sealants around penetrations in smoke stop partitions or barriers that are identified on the plans as part of a rated assembly shall comply as follows:

1. Use listed firestop system specified above.

2.03 ACCESSORIES

- A. Stuffing Material: Mineral fiber matting, permanent.
- B. Retainers: Clips to support mineral fiber matting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Submit product data and installation instructions, as required by article, submittals, after an on site examination of areas to receive firestopping.
- B. Examine substrates and conditions for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping.

3.02 PREPARATION

- A. Remove dirt, grease, oil, loose materials, or other substances that prevent adherence and bonding or application of the firestopping or smoke stopping materials.
- B. Remove insulation on insulated pipe for a distance of six inches (150 mm) on either side of the fire rated assembly prior to applying the firestopping materials unless the firestopping materials are tested and approved for use on insulated pipes.
- C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLATION

- A. Do not begin work until the specified material data and installation instructions of the proposed firestopping systems have been submitted and approved.
- B. Install firestopping systems with smoke stopping in accordance with FM, UL, WH, or other approved system details and installation instructions.
- C. Install smoke stopping seals in smoke partitions.

3.04 FIELD QUALITY CONTROL

- A. Owner's Fire Marshal will examine completed firestopping to determine, in general, if it is being installed in compliance with requirements.
- B. Do not proceed to enclose firestopping with other construction until reports of Owner Fire Marshal's examinations are issued.
- C. Where deficiencies are found, repair or replace firestopping so that it complies with requirements.

3.05 CLEANING

- A. Remove materials, litter, and debris.
- B. Clean up spills of liquid type materials.

END OF SECTION 07 84 00

PART 1 GENERAL**1.01 SUMMARY**

- A. Provide joint sealants, for interior and exterior joints not specified elsewhere, with backing rods and accessories as required for complete installation. Joint sealers include sealants and caulking as indicated.

1.02 RELATED WORK

- A. All Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Those Documents and Sections include, but is not limited to, the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, apply to this Section.
 - 2. All Specification Sections listed in the Table of Contents.

1.03 SUBMITTALS

- A. Submit in accordance with Division 01, Submittals, Shop Drawings Product Data and Samples.
- B. Product Data: Furnish manufacturer's descriptive literature.
- C. Samples: Furnish samples of each type of exposed joint sealer in required colors.
- D. Certifications:
 - 1. Furnish manufacturer's certification joint sealers comply with Contract Documents and are suitable for Project applications.
 - 2. Furnish certification indicating installers are trained in proper use of specified products, qualified, and familiar with proper installation techniques.

1.04 QUALITY ASSURANCE

- A. Performance Requirements:
 - 1. Select materials for compatibility with joint surfaces and indicated exposures.
 - 2. Where not indicated, select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated.
 - 3. Comply with applicable limitations on volatile organic compound (VOC) emissions.
- B. Installer Qualifications: Firm with minimum five years successful experience on projects of similar type and size, using specified products.
 - 1. Installers shall be familiar with proper application procedures to ensure maximum joint sealer expansion and contraction capabilities.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, cure time, and mixing instructions.

1.06 SITE CONDITIONS

- A. Do not proceed with installation of joint sealers under unfavorable weather conditions.
- B. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer.

1.07 WARRANTY

- A. Special Warranty: Repair or replace joint sealers which fail to perform as intended, because of leaking, crumbling, hardening, shrinkage, bleeding, sagging, staining and loss of adhesion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Elastomeric Sealants:
 - 1. Single-Component Low Modulus Silicone Sealant: ASTM C920 Type S, Class 25, Grade NS; minimum 50% expansion and compaction capability.
 - a. Provide at exterior locations not exposed to traffic.
 - b. Manufacturers:
 - 1) General Electric Co./Silpruf, Silglaz or GESIL.
 - 2) Dow Corning Corp./790 or 795.
 - 3) Pecora Corp./864 Architectural Silicone.
 - 4) Tremco/Spectrum 3.
 - 2. Multi-Component Polyurethane Sealant: ASTM C920, Type M, Grade P, Class 25, self-leveling; minimum 25% expansion and compaction capability.
 - a. Provide following at traffic bearing locations.
 - b. Manufacturers:
 - 1) Pecora Corp./NR-200 Urexpan.
 - 2) Tremco/Vulkem 245.
 - 3) Sonneborn Division of ChemRex /SL 2

3. Mildew-Resistant Silicone Rubber Sealant: ASTM C920, Type S, Grade NS, Class 25, compounded with fungicide, specifically for mildew resistance and recommended for interior joints in wet areas.
 - a. Provide at interior joints in wet areas.
 - b. Manufacturers:
 - 1) General Electric Co./SCS 1702 Sanitary Sealant.
 - 2) Dow Corning Corp./786 Bathtub Caulk.
 - 3) Pecora Corp./863 #345 White.
 - 4) Tremco/Tremsil 200.
- B. Non-Elastomeric Sealants:
 1. Acrylic-Emulsion Sealant: ASTM C834 acrylic or latex-rubber-modified acrylic sealant, permanently flexible, non-staining and non-bleeding; recommended for general interior exposure; compatible with paints specified in Section 09 90 00.
 - a. Provide at general interior applications.
 - b. Manufacturers:
 - 1) Pecora Corp./AC-20.
 - 2) Sonneborn Division of ChemRex/Sonolac.
 - 3) Tremco/Ultrem 1500
- C. Miscellaneous Materials:
 1. Primers/Sealers: Non-staining types recommended by joint sealer manufacturer for joint surfaces to be primed or sealed.
 2. Joint Cleaners: Non-corrosive types recommended by joint sealer manufacturer; compatible with joint forming materials.
 3. Bond Breaker Tape: Polyethylene tape as recommended by joint sealer manufacturer where bond to substrate or joint filler must be avoided for proper performance of joint sealer.
 4. Sealant Backer Rod: Compressible polyethylene foam rod or other flexible, permanent, durable non-absorptive material as recommended by joint sealer manufacturer for compatibility with joint sealer.
 - a. Oversize backer rod minimum 30% to 50% of joint opening.
- D. Colors: Provide colors indicated or as selected by Architect from manufacturer's full range of colors.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prepare joint surfaces in accordance with ASTM C1193 and as recommended by joint sealer manufacturer.
- B. Clean joint surfaces immediately before installation of joint sealer; remove dirt, insecure materials, moisture and other substances which could interfere with bond of joint sealer.
- C. Prime or seal joint surfaces where recommended by joint sealer manufacturer; do not allow primer/sealer to spill or migrate onto adjoining surfaces.
- D. Ensure protective coatings on surfaces in contact with joint sealers have been completely stripped.

3.02 INSTALLATION

- A. Comply with manufacturer's printed instructions and ASTM C1193, except where more stringent requirements are shown or specified.
- B. Set sealant backer rods at proper depth or position in joint to coordinate with other work, including installation of bond breakers and sealant; do not leave voids or gaps between ends of backer rods.
 - 1. Do not stretch, twist, puncture or tear backer rods.
- C. Install bond breaker tape where required by manufacturer's recommendations to ensure joint sealers will perform properly.
- D. Size materials to achieve required width/depth ratios.
- E. Employ installation techniques that will ensure joint sealers are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of bond surfaces equally on opposite sides.
- F. Joint Configuration: Fill sealant joint to a slightly concave surface, slightly below adjoining surfaces, unless otherwise indicated.
- G. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture or dirt.
- H. Install joint sealers to depths recommended by joint sealer manufacturer but within the following general limitations, measured at center (thin) section of bead.
 - 1. Horizontal Joints: 75% width with minimum depth of 3/8".
 - 2. Elastomeric Joints: 50% width with minimum depth of 1/4".
 - 3. Non-Elastomeric Joints: 75% to 125% of joint width.
- I. Spillage: Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into voids of adjoining surfaces.
 - 1. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

- J. Cure joint sealers in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength and surface durability.
- K. Maintain finished joints free of embedded matter, ridges and sags.

END OF SECTION



AGENDA SUMMARY REPORT

SUBJECT: Possible Introduction of Camping Ordinance Amendment by Title Only.

DEPARTMENT: City Attorney

PREPARED BY: Darcy Vaughn, Assistant City Attorney

PRESENTER: Darcy Vaughn, Assistant City Attorney

ATTACHMENTS:

1. Camping Ordinance Amendment Redline
2. Camping Ordinance Amendment Clean
3. Mendocino County Homeless Encampment Coordination Protocol
4. 14a Correspondence Received - Mazie Malone
5. 14a Correspondence Received - Rayna Matthews
6. 14a Correspondence Received - Laura Diamondstone
7. 14a Correspondence Received - Megan Wolf
8. 14a Correspondence Received - Josie Slovut
9. 14a Correspondence Received - Amelia Taylor
10. 14a Correspondence Received - Maureen Taylor
11. 14a Correspondence Received - Cecelia Sullivan
12. 14a Correspondence Received - Clarice Sargenti

Summary: The City Council will consider introducing by title only a Camping Ordinance Amendment that responds to *City of Grants Pass v. Johnson* and incorporates elements of the State's Model Encampment Ordinance.

Background: The U.S. Supreme Court ruling in *City of Grants Pass v. Johnson* issued on June 28, 2024, centered around a local jurisdiction's ability to enforce a ban on public camping when sufficient shelter for unhoused individuals is not available. The ruling reversed a Ninth Circuit decision that prohibited local restrictions on public camping as unconstitutional cruel and unusual punishment under the Eighth Amendment, unless the person was provided access to adequate temporary shelter. This ruling allows local jurisdictions greater latitude to enforce anti-camping rules even when alternative shelter is not offered to the unhoused individual. The City of Ukiah's current City Code provisions prohibiting public camping were adopted in February 2019 and reflect the previous Ninth Circuit limitations on the authority state and local government entities to enforce public camping prohibitions. These limiting regulations are no longer required in light of the Supreme Court ruling.

On July 25, 2024, in response to the Supreme Court's holding that states and their subdivisions can take reasonable actions to clear encampments, the Governor of the State of California signed Executive Order N-1-24, which directed state agencies to develop policies to prioritize addressing encampments on state property while providing reasonable advance notice and partnering with shelter and services providers. Executive Order N-1-24 also encouraged local governments to adopt similar policies, and to use all available resources and infrastructure, including the historic resources provided by the State, to take urgent action to humanely remove encampments from public spaces.

On May 12, 2025, the Governor released a model ordinance ("Model Ordinance") for cities and counties to address unhealthy and dangerous encampments and which follows and builds on the Executive Order N-1-24

by providing model methods to local jurisdictions to quickly address encampments and use state and local funding to connect people experiencing homelessness with the care and support they need.

Discussion: In response to the Supreme Court's decision in *City of Grants Pass v. Johnson* and the Governor's Executive Order N-1-24 and Model Ordinance for addressing the public health and safety issues posed by public camping and encampments, City staff propose a number of amendments to the current City Code provisions prohibiting public camping. The proposed Camping Ordinance Amendment is attached to this staff report in redline as Attachment 1 and as a clear version in Attachment 2. The Ordinance includes the following changes to the current anti-camping provisions in the City Code:

1. The Ordinance removes the requirement that the public camping provisions can be enforced only if shelter space is available and the individual who is camping in the public right of way in violation of the Ordinance refuses to use the shelter space. In addition, the Ordinance removes a number of provisions that were intended to limit public camping to certain hours, locations, and encampment size in the event that the lack of available shelter space made enforcement of the Ordinance impossible. Finally, the Ordinance requires that Ukiah Police Department officers or other City officials who are delegated the authority to enforce the Ordinance make reasonable efforts to assist an individual who is violating the Ordinance to find alternate shelter and supportive services.
2. The Ordinance authorizes the Chief of the Ukiah Police Department to delegate enforcement authority to other City officials.
3. The Ordinance adds an explicit prohibition on camping in the public right of way, in a manner that impedes passage within the meaning of the Americans with Disabilities Act.

While the Model Ordinance sets forth required procedures for enforcement of public camping prohibitions that are intended to prevent unconstitutional enforcement of such provisions, the Camping Ordinance Amendment retains the City's current approach, which requires the Ukiah Police Department to "adopt a policy establishing procedures to be followed . . . in the enforcement of [the Ordinance] that prevent [the Ordinance] from being enforced in an arbitrary or discriminatory manner and that prevent the violation of the constitutional right to due process and to be free from unreasonable search or seizure." Furthermore, while the Model Ordinance outlines procedures for collecting and retaining personal property collected at encampment sites, the Camping Ordinance Amendment retains the City Council's authority and responsibility to set such procedures by resolution. The Ukiah Police Department and Mendocino County Department of Social Services recently adopted an updated Homeless Encampment Coordination Protocol (Attachment 3) that is intended, in part, to ensure constitutional enforcement of the City's public camping prohibition and to set forth procedures for collecting and storing personal property collected from camp sites and encampments while preventing health and safety threats to City and County officials changed with collecting and storing such personal property.

Staff recommends Council introduce by title only the Camping Ordinance Amendment.

Recommended Action: Introduce by title only the Camping Ordinance Amendment.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: Yes / No **GRANT:** Yes / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Tom Corning, Ukiah Police Department; Craig Schlatter, Community Services

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): N/A

Approved: 
Sage Sangiacomo, City Manager

ORDINANCE NO.

ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING DIVISION 7, CHAPTER 1, ARTICLE 8 OF THE UKIAH CITY CODE, ENTITLED "CAMPING" TO REFLECT GUIDANCE PROVIDED BY STATE OF CALIFORNIA IN ITS "MODEL ORDINANCE: ADDRESSING ENCAMPMENTS WITH URGENCY AND DIGNITY."

The City Council of the City of Ukiah hereby ordains as follows:

SECTION ONE. FINDINGS AND DECLARATION OF INTENT

1. Unauthorized overnight camping in the City poses significant risks to public health and safety, including environmental damage.
2. Such camping can expose the campers to crimes from which they would be protected, if they were camping in designated campgrounds or facilities.
3. Unauthorized overnight camping occurs where proper sanitation and cooking facilities are not available resulting in unhealthful and unsanitary conditions.
4. Unauthorized overnight camping in the floodway results in trash, human waste and food waste being deposited in close proximity to creeks, streams and rivers. These waterways are used for recreation and drinking water and support fish and wildlife.
5. Unauthorized overnight camping and the storage of camping paraphernalia on public property interferes with the general public's access and use of such property for the purposes for which it is intended.
6. Unauthorized overnight camping and the adverse impacts from such activity pose a significant public health and environmental problem in the City.
7. After the United States Supreme Court's decision in *Grants Pass v. Johnson* clarified that states and their subdivisions can take reasonable actions to clear encampments, the Governor of the State of California signed Executive Order N-1-24, which directed state agencies to develop policies to prioritize addressing encampments on state property while providing reasonable advance notice and partnering with shelter and services providers.
8. Executive Order N-1-24 also encouraged local governments to adopt similar policies, and to use all available resources and infrastructure, including the historic resources provided by the State, to take urgent action to humanely remove encampments from public spaces.
9. On May 12, 2025, the Governor released a model ordinance ("Model Ordinance") for cities and counties to address unhealthy and dangerous encampments and which follows and builds on the Executive Order N-1-24 by providing model methods to local jurisdictions to quickly address encampments and use state and local funding to connect people experiencing homelessness with the care and support they need.
10. By adopting these amendments to the City's Camping regulations, the City Council intends to update the application of camping restrictions in the City to reflect the legal effects of *Grants Pass v. Johnson* and to incorporate elements of the Model Ordinance that will enhance the City's ability to humanely remove encampments from public spaces, to provide care and support to people experiencing homelessness, and to protect public health and safety and to keep public property accessible and useful to the general public for the purposes for which it was acquired and is maintained.

SECTION TWO.

Article 8, entitled "Camping" in Division 7, Chapter 1 of the Ukiah City Code is hereby amended to read as follows (unchanged text is omitted and is shown by " *"):**

ARTICLE 8. CAMPING

SECTION:

§6080: Definitions

§6081: Unlawful Camping

§6082: Special Event Permit

§6083: Storage of Personal Property on Public or Private Property

§6084: Penalty for Violation

§6085: Enforcement

§6080 DEFINITIONS

The following words shall have the following meanings, when used in this article, unless the context clearly indicates otherwise:

CAMP FACILITIES: Tents, tent-like shelter, tarpaulins, huts, or temporary or permanent structures, when placed on public or private property for the purpose of camping or when used on public or private property to camp. Camp facilities also include recreational or motor vehicles used as camp facilities.

CAMP PARAPHERNALIA: Bedrolls, blankets, tarpaulins, cots, beds, sleeping bags, tents, hammocks, mattresses, sleeping pads, portable stoves, barbecues, grills, cooking pots, or similar equipment when placed on public or private property for the purpose of camping or when used to camp. Camp paraphernalia also includes other personal property, when used or stored with camp paraphernalia as described herein.

CAMP SITE: The physical area on public or private property occupied by camp facilities and/or camp paraphernalia for purposes of camping.

ESTABLISH: Setting up or moving camp facilities, camp paraphernalia or other equipment, supplies or materials onto public or private property to camp or make ready to camp.

FLOODWAY: The area designated as "floodway" on the Flood Boundary Floodway Map issued by the Federal Emergency Management Authority ("FEMA") for the City of Ukiah, regardless of ownership, and any other area within fifty feet (50') of the top of the bank of any creek, stream, river or drainage facility the purpose of which is to channel water to a creek, stream or river.

MAINTAIN: Keeping or permitting camp facilities, camp paraphernalia or other equipment, supplies or materials to remain on public or private property to camp or make ready to camp.

MOTOR VEHICLE: A self-propelled car, truck or van or other motorized vehicle that can carry two (2) or more persons within an enclosed or enclosable portion thereof.

OCCUPY: To be physically present and/or reside at a camp site.

OPERATE: Participating or assisting in establishing or maintaining a camp or camp facility.

PERMANENT: When used in reference to a camp site, camp facilities, camp paraphernalia or other equipment, supplies or materials: any camp facility, camp paraphernalia or other equipment, supplies or materials that cannot be broken down, packed up, and removed from a camp site as readily as a tent or tentlike structure, as commonly used for temporary recreational camping.

PRIVATE PROPERTY: Real property that is not public property, including, but not limited to, streets, sidewalks, and improved or unimproved land.

PUBLIC PROPERTY: Real property that is open to the public and owned by a government body or agency such as, but not limited to, the Federal government, the State of California, the County of Mendocino, the City of Ukiah, and special districts, regardless of the form of ownership, including, but not limited to, streets, sidewalks, and improved or unimproved land and parks.

RECREATIONAL OR MOTOR VEHICLES USED AS CAMP FACILITIES: Recreational or motor vehicles when placed on public or private property to camp.

RECREATIONAL VEHICLE: As defined in California Health and Safety Code section 18010.

RECREATIONAL VEHICLE PARK OR MOBILE HOME PARK: Any area of land within the City licensed pursuant to the California Health and Safety Code as a mobile home park, as defined in California Health and Safety Code section 18214, or a special occupancy park as defined in California Health and Safety Code section 18862.43, which has a currently effective city business license, and in which space is rented or held out for camping.

SIDEWALK: Any area of public property adjacent to a street, or within a parking lot, whether improved or unimproved, and commonly intended or designed for pedestrian use.

STORE: To put aside or accumulate for use when needed, to put for safekeeping, to place or leave in a location.

STREET: A street, alley, way or place of whatever nature, publicly or privately maintained for purposes of vehicular travel. "Street" includes highway, as that term is defined in the California Vehicle Code.

TO CAMP or CAMPING: The occupation of a camp site, either in the open air or using camp facilities and camp paraphernalia, including to place, pitch, or use, as applicable, camp facilities or camp paraphernalia for such purposes.

§6081 UNLAWFUL CAMPING

Except as provided in this article, it is unlawful and a public nuisance for any person to camp, or to establish, maintain, operate or occupy a camp site, camp facilities, or use camp paraphernalia in or upon the areas listed in subsections A through ~~F~~G of this section:

A. Any public park except as provided for in section 1967 of this code;

B. Any sidewalk;

C. Any public right of way, in a manner that impedes passage within the meaning of the Americans with Disabilities Act.

~~C~~D. Any street except for recreational or motor vehicles used as camp facilities that are legally parked and do not remain parked longer than the posted time limit, if any, or twelve (12) hours, whichever is less;

~~DE.~~ Any other public property except as otherwise permitted in this article;

~~EE.~~ Any floodway whether on public or private property;

~~FG.~~ Any private property, except when permitted under subsection ~~G-H~~ of this section.

~~GH.~~ The prohibitions on camping do not apply to:

1. Camping on private residential property by friends or family of the property owner or person in lawful possession of the property, so long as the owner or lawful occupant consents, and the camping does not create a public or private nuisance;
2. Mobile home parks and special occupancy parks or other locations where camping is specifically allowed under the Ukiah City Code;
3. Camping on public or private property in connection with a special event, when authorized pursuant to section 6082 of this code.

~~H.—No person shall be in violation of the general prohibition on camping on public property contained in subsection D of this section unless:~~

- ~~1. The person is informed of the location of homeless shelters currently in operation in the City or outside of but within one mile of the City limits;~~
- ~~2. Such shelter is actually available to the person; and~~
- ~~3. The person voluntarily refuses to utilize or sleep in such shelter.~~

~~I.—Even if the prohibition on camping does not apply, because the requirements set forth in subsection H of this section are not met, establishment, maintenance, operation or occupation of camp facilities is prohibited between the hours of seven o'clock (7:00) A.M. and ten o'clock (10:00) P.M. and constitutes a violation of this section, except as otherwise permitted herein.~~

~~J.—Even if the prohibition on camping does not apply, because the requirements set forth in subsection H of this section are not met, establishment, maintenance, operation or occupation of a camp site, camp facilities, or use of camp paraphernalia within an area larger than sixty-four (64) square feet per person is prohibited and constitutes a violation of this section, except as otherwise permitted herein.~~

~~KJ.~~ Recreational or motor vehicles used as camp facilities shall be allowed to occupy a space equal to the dimensions of the vehicle, if parking in the space is otherwise permitted under this code, but the establishment, maintenance, operation, or occupation of a camp, camp facilities, or use of camp paraphernalia outside the vehicle is prohibited and constitutes a violation of this section except as otherwise permitted herein.

~~LJ.~~ Establishment, maintenance, operation or occupation of permanent camp facilities or camp paraphernalia for camping; attaching permanent structures to trees or other on-site fixtures and the associated installation of fencing or similar materials is prohibited and constitutes a violation of this section.

* * *

§6083 STORAGE OF PERSONAL PROPERTY ON PUBLIC OR PRIVATE PROPERTY

It is unlawful and a public nuisance for any person to store camp paraphernalia in the following areas:

- A. Any public property;
- B. Any floodway; or
- C. Outside a structure on any private property without the prior written consent of the owner.

§6084 ENFORCEMENT

A. The Ukiah Police Department shall adopt a policy establishing procedures to be followed by its officers, and any other City officials delegated with the authority to enforce this Article by the Chief of the Department, in the enforcement of this article that prevent this article from being enforced in an arbitrary or discriminatory manner and that prevent the violation of the constitutional right to due process and to be free from unreasonable search or seizure. The City Council shall adopt by resolution procedures for removing personal property from an area used for camping in violation of this article and provide an opportunity and procedure for any person to claim property removed by the City from a site used for camping in violation of this article.

B. Members of the Ukiah Police Department or any other City officials delegated with the authority to enforce this Article by the Chief of the Department shall make every reasonable effort to identify and offer shelter at an emergency shelter, navigation center, or other appropriate housing, and to offer supportive services, to persons who are camping in violation of this Article.

* * *

SECTION THREE.

1. Publication: Within fifteen (15) days after its adoption, this Ordinance shall be published once in a newspaper of general circulation in the City of Ukiah. In lieu of publishing the full text of the Ordinance, the City may publish a summary of the Ordinance once 5 days prior to its adoption and again within fifteen (15) days after its adoption.
2. Effective Date: The ordinance shall become effective thirty (30) days after its adoption.
3. Severability: If any section, subsection, subdivision, paragraph, sentence, clause or phrase of this Ordinance, or its application to any person or circumstance, is for any reason held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases of this Ordinance, or its application to any other person or circumstance. The City Council of the City of Ukiah hereby declares that it would have adopted each section, subsection, subdivision, paragraph, sentence, clause or phrase hereof, irrespective of the fact that any one or more other sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases hereof be declared invalid or unenforceable.

Introduced by title only on , 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Adopted on , 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, CMC/City Clerk

ORDINANCE NO.

ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING DIVISION 7, CHAPTER 1, ARTICLE 8 OF THE UKIAH CITY CODE, ENTITLED “CAMPING” TO REFLECT GUIDANCE PROVIDED BY STATE OF CALIFORNIA IN ITS “MODEL ORDINANCE: ADDRESSING ENCAMPMENTS WITH URGENCY AND DIGNITY.”

The City Council of the City of Ukiah hereby ordains as follows:

SECTION ONE. FINDINGS AND DECLARATION OF INTENT

1. Unauthorized overnight camping in the City poses significant risks to public health and safety, including environmental damage.
2. Such camping can expose the campers to crimes from which they would be protected, if they were camping in designated campgrounds or facilities.
3. Unauthorized overnight camping occurs where proper sanitation and cooking facilities are not available resulting in unhealthful and unsanitary conditions.
4. Unauthorized overnight camping in the floodway results in trash, human waste and food waste being deposited in close proximity to creeks, streams and rivers. These waterways are used for recreation and drinking water and support fish and wildlife.
5. Unauthorized overnight camping and the storage of camping paraphernalia on public property interferes with the general public’s access and use of such property for the purposes for which it is intended.
6. Unauthorized overnight camping and the adverse impacts from such activity pose a significant public health and environmental problem in the City.
7. After the United States Supreme Court’s decision in *Grants Pass v. Johnson* clarified that states and their subdivisions can take reasonable actions to clear encampments, the Governor of the State of California signed Executive Order N-1-24, which directed state agencies to develop policies to prioritize addressing encampments on state property while providing reasonable advance notice and partnering with shelter and services providers.
8. Executive Order N-1-24 also encouraged local governments to adopt similar policies, and to use all available resources and infrastructure, including the historic resources provided by the State, to take urgent action to humanely remove encampments from public spaces.
9. On May 12, 2025, the Governor released a model ordinance (“Model Ordinance”) for cities and counties to address unhealthy and dangerous encampments and which follows and builds on the Executive Order N-1-24 by providing model methods to local jurisdictions to quickly address encampments and use state and local funding to connect people experiencing homelessness with the care and support they need.
10. By adopting these amendments to the City’s Camping regulations, the City Council intends to update the application of camping restrictions in the City to reflect the legal effects of *Grants Pass v. Johnson* and to incorporate elements of the Model Ordinance that will enhance the City’s ability to humanely remove encampments from public spaces, to provide care and support to people experiencing homelessness, and to protect public health and safety and to keep public property accessible and useful to the general public for the purposes for which it was acquired and is maintained.

SECTION TWO.

Article 8, entitled "Camping" in Division 7, Chapter 1 of the Ukiah City Code is hereby amended to read as follows (unchanged text is omitted and is shown by " *"):**

ARTICLE 8. CAMPING

SECTION:

§6080: Definitions

§6081: Unlawful Camping

§6082: Special Event Permit

§6083: Storage of Personal Property on Public or Private Property

§6084: Penalty for Violation

§6085: Enforcement

§6080 DEFINITIONS

The following words shall have the following meanings, when used in this article, unless the context clearly indicates otherwise:

CAMP FACILITIES: Tents, tent-like shelter, tarpaulins, huts, or temporary or permanent structures, when placed on public or private property for the purpose of camping or when used on public or private property to camp. Camp facilities also include recreational or motor vehicles used as camp facilities.

CAMP PARAPHERNALIA: Bedrolls, blankets, tarpaulins, cots, beds, sleeping bags, tents, hammocks, mattresses, sleeping pads, portable stoves, barbecues, grills, cooking pots, or similar equipment when placed on public or private property for the purpose of camping or when used to camp. Camp paraphernalia also includes other personal property, when used or stored with camp paraphernalia as described herein.

CAMP SITE: The physical area on public or private property occupied by camp facilities and/or camp paraphernalia for purposes of camping.

ESTABLISH: Setting up or moving camp facilities, camp paraphernalia or other equipment, supplies or materials onto public or private property to camp or make ready to camp.

FLOODWAY: The area designated as "floodway" on the Flood Boundary Floodway Map issued by the Federal Emergency Management Authority ("FEMA") for the City of Ukiah, regardless of ownership, and any other area within fifty feet (50') of the top of the bank of any creek, stream, river or drainage facility the purpose of which is to channel water to a creek, stream or river.

MAINTAIN: Keeping or permitting camp facilities, camp paraphernalia or other equipment, supplies or materials to remain on public or private property to camp or make ready to camp.

MOTOR VEHICLE: A self-propelled car, truck or van or other motorized vehicle that can carry two (2) or more persons within an enclosed or enclosable portion thereof.

OCCUPY: To be physically present and/or reside at a camp site.

OPERATE: Participating or assisting in establishing or maintaining a camp or camp facility.

PERMANENT: When used in reference to a camp site, camp facilities, camp paraphernalia or other equipment, supplies or materials: any camp facility, camp paraphernalia or other equipment, supplies or materials that cannot be broken down, packed up, and removed from a camp site as readily as a tent or tentlike structure, as commonly used for temporary recreational camping.

PRIVATE PROPERTY: Real property that is not public property, including, but not limited to, streets, sidewalks, and improved or unimproved land.

PUBLIC PROPERTY: Real property that is open to the public and owned by a government body or agency such as, but not limited to, the Federal government, the State of California, the County of Mendocino, the City of Ukiah, and special districts, regardless of the form of ownership, including, but not limited to, streets, sidewalks, and improved or unimproved land and parks.

RECREATIONAL OR MOTOR VEHICLES USED AS CAMP FACILITIES: Recreational or motor vehicles when placed on public or private property to camp.

RECREATIONAL VEHICLE: As defined in California Health and Safety Code section 18010.

RECREATIONAL VEHICLE PARK OR MOBILE HOME PARK: Any area of land within the City licensed pursuant to the California Health and Safety Code as a mobile home park, as defined in California Health and Safety Code section 18214, or a special occupancy park as defined in California Health and Safety Code section 18862.43, which has a currently effective city business license, and in which space is rented or held out for camping.

SIDEWALK: Any area of public property adjacent to a street, or within a parking lot, whether improved or unimproved, and commonly intended or designed for pedestrian use.

STORE: To put aside or accumulate for use when needed, to put for safekeeping, to place or leave in a location.

STREET: A street, alley, way or place of whatever nature, publicly or privately maintained for purposes of vehicular travel. "Street" includes highway, as that term is defined in the California Vehicle Code.

TO CAMP or CAMPING: The occupation of a camp site, either in the open air or using camp facilities and camp paraphernalia, including to place, pitch, or use, as applicable, camp facilities or camp paraphernalia for such purposes.

§6081 UNLAWFUL CAMPING

Except as provided in this article, it is unlawful and a public nuisance for any person to camp, or to establish, maintain, operate or occupy a camp site, camp facilities, or use camp paraphernalia in or upon the areas listed in subsections A through G of this section:

- A. Any public park except as provided for in section 1967 of this code;
- B. Any sidewalk;
- C. Any public right of way, in a manner that impedes passage within the meaning of the Americans with Disabilities Act.
- D. Any street except for recreational or motor vehicles used as camp facilities that are legally parked and do not remain parked longer than the posted time limit, if any, or twelve (12) hours, whichever is less;

- E. Any other public property except as otherwise permitted in this article;
- F. Any floodway whether on public or private property;
- G. Any private property, except when permitted under subsection H of this section.
- H. The prohibitions on camping do not apply to:
 - 1. Camping on private residential property by friends or family of the property owner or person in lawful possession of the property, so long as the owner or lawful occupant consents, and the camping does not create a public or private nuisance;
 - 2. Mobile home parks and special occupancy parks or other locations where camping is specifically allowed under the Ukiah City Code;
 - 3. Camping on public or private property in connection with a special event, when authorized pursuant to section 6082 of this code.
- I. Recreational or motor vehicles used as camp facilities shall be allowed to occupy a space equal to the dimensions of the vehicle, if parking in the space is otherwise permitted under this code, but the establishment, maintenance, operation, or occupation of a camp, camp facilities, or use of camp paraphernalia outside the vehicle is prohibited and constitutes a violation of this section except as otherwise permitted herein.
- J. Establishment, maintenance, operation or occupation of permanent camp facilities or camp paraphernalia for camping; attaching permanent structures to trees or other on-site fixtures and the associated installation of fencing or similar materials is prohibited and constitutes a violation of this section.

* * *

§6083 STORAGE OF PERSONAL PROPERTY ON PUBLIC OR PRIVATE PROPERTY

It is unlawful and a public nuisance for any person to store camp paraphernalia in the following areas:

- A. Any public property;
- B. Any floodway; or
- C. Outside a structure on any private property without the prior written consent of the owner.

§6084 ENFORCEMENT

A. The Ukiah Police Department shall adopt a policy establishing procedures to be followed by its officers, and any other City officials delegated with the authority to enforce this Article by the Chief of the Department, in the enforcement of this article that prevent this article from being enforced in an arbitrary or discriminatory manner and that prevent the violation of the constitutional right to due process and to be free from unreasonable search or seizure. The City Council shall adopt by resolution procedures for removing personal property from an area used for camping in violation of this article and provide an opportunity and procedure for any person to claim property removed by the City from a site used for camping in violation of this article.

B. Members of the Ukiah Police Department or any other City officials delegated with the authority to enforce this Article by the Chief of the Department shall make every reasonable effort to identify and offer shelter at an emergency shelter, navigation center, or other appropriate housing, and to offer supportive services, to persons who are camping in violation of this Article.

* * *

SECTION THREE.

1. Publication: Within fifteen (15) days after its adoption, this Ordinance shall be published once in a newspaper of general circulation in the City of Ukiah. In lieu of publishing the full text of the Ordinance, the City may publish a summary of the Ordinance once 5 days prior to its adoption and again within fifteen (15) days after its adoption.

2. Effective Date: The ordinance shall become effective thirty (30) days after its adoption.

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Introduced by title only on _____, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Adopted on _____, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, CMC/City Clerk



Homeless Encampment Coordination Protocol

Purpose:

The purpose of the Homeless Encampment Coordination Protocol is to develop a standard process and protocol for Ukiah Police Department (UPD) and Mendocino County Department of Social Services (MCDSS) to coordinate effectively in the course of responding to homeless encampments within the City of Ukiah. The procedures set forth in this document are intended to identify and establish best practices for communication when Ukiah Police Department makes a decision to disband a homeless encampment. The goal is to proactively offer additional support to individuals who are facing homelessness, and to reduce the negative impacts of encampments on the community and the individuals living within them.

Best Practices Procedures:

Step 1: Ukiah Police Department (UPD) assesses an area to determine if it meets the definition of an "encampment." For the purposes of this Coordination Protocol only, a homeless encampment is defined as five or more individuals apparently regularly sleeping in the same limited geographical area.

Step 2: If the site **does not meet the definition of an encampment**, consistent with Ukiah City Code section 6081 and Mendocino County Code section Sec. 14.32.040 campers will be required to immediately pack and vacate the site. LEO and staff should proceed to Step 9 of this Protocol.

If the site **does meet this protocol's definition of an encampment**, UPD and staff should proceed to Step 3 of this Protocol.

Step 3: UPD identifies a single Point-of-Contact (hereafter referred to as UPD POC) for the encampment disbandment mission. The UPD POC emails the MCDSS Point-of-Contact (hereafter referred to as the MCDSS POC) in order to initiate mission planning. To the extent permitted by law, UPD and MCDSS will share information to better understand the scope of the encampment, the location, and the possible needs of the encampment residents.

The MCDSS Point-of-Contact, at time of signing, is as follows:

Megan Van Sant, Senior Program Manager
 Special Projects Team
 County of Mendocino
 vansantm@mendocinocounty.gov
 707-463-7733

The UPD POC for Ukiah Police Department, at time of signing, is as follows:

Jason Chapman, Patrol Commander
Ukiah Police Department
City of Ukiah
ichapman@cityofukiah.com
707-463-6249

Step 4: MCDSS POC will formally respond to a request from UPD with one of three options:

- a) MCDSS will take responsibility for providing on-site outreach assistance through MCDSS staff or together with community-based partner organization staff, under the direction of MCDSS.
- b) MCDSS will defer support and responsibility for outreach services to a community-based organization, with the advance approval of UPD, and facilitate a warm hand-off to the community-based partner organization.
- c) MCDSS will decline to participate in the encampment mission, with a written explanation for the declination.

Step 5: UPD will establish a timeline for Encampment Disbandment, and will notify MCDSS as soon as reasonably practicable of that timeline. The timeline will typically identify the Noticing Date (typically 48 hours before Disbandment Date.) This notice should include the date of the disbandment, who is conducting the cleanup, where personal property or belongings of apparent value of \$50 or more after that date may be reclaimed, and the maximum time period that personal property will be retained.

Step 6: If more than one law enforcement organization or jurisdiction has an interest in the encampment disbandment process, MCDSS will schedule a short organizational meeting between interested parties in order to clarify roles, responsibilities, and timeline.

Step 7: After UPD establishes Encampment Disbandment timeline, MCDSS will develop a schedule and format for on-site outreach appropriate to that timeline. Typically, the schedule will include at least one outreach mission before the Noticing Date, and another outreach mission after the Noticing Date but before the Disbandment Date. The outreach work will be completed by MCDSS or community partner staff without the presence of UPD, unless at UPD's option and at MCDSS' request, provision is made for the presence of an on-site officer. If MCDSS requests the presence of an accompanying officer, and UPD is unable to provide such support, MCDSS may choose to decline to provide outreach support in the field.

Step 8: UPD and MCDSS will collaboratively decide whether or not the participation of outreach staff is warranted or desired on the Disbandment Date. Either party retains the right to decline the participation of outreach staff on Disbandment Date, dependent on the unique needs of each encampment situation.

Step 9: At the time of disbandment items that are not of apparent personal value¹ or that assessed to be of less than \$50 value will be disposed of. Staff will retain any abandoned item of apparent personal value or that is assessed at \$50 value or greater and transport it to a storage facility where it will be retained for a minimum of 60 days. At the end of this period, unclaimed items will be disposed of. Any item, regardless of whether it is personal property or its estimated value, that is moldy, mildewed, poses a safety risk², potentially infectious, possibly infested with rodents or insects, or in any way co-mingled with human waste or body fluids will be disposed of immediately in accord with best practice safety guidelines. Encampment members who are leaving at the time of disbandment must take all personal items with them. Any item left on site without the owner present will be deemed abandoned and disposed of in accordance with this Protocol.

At any time, either party can request an in-person or Zoom pre-mission coordination meeting, in order to finalize details, work out possible issues, or prepare for specific complex situations.

¹ The State of California's "Model Ordinance: Addressing Encampments with Urgency and Dignity" provides a non-exhaustive list of items of apparent personal value, which includes but is not limited to "eyeglasses, operational wheelchairs, walkers, crutches, other medical equipment, habitable tents, personal papers (such as photographs, albums, ID's, bank statements, and legal papers), backpacks, containers, and operational bicycles, scooters, and strollers."

² Items that may pose a safety risk, as set forth in State of California's "Model Ordinance: Addressing Encampments with Urgency and Dignity", include but are not limited to toxic sharps, such as needles, scissors, and knives; chemicals such as bleach, paint, and oils; and Items that pose a risk of fire or explosion, such as combustibles and propane tanks.

Areas of Responsibility:

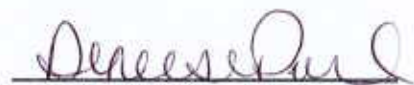
Ukiah Police Department is responsible for:

- a) Proper noticing of the encampment, if required by law or a policy of the LEO jurisdiction.
- b) Coordinating the logistics and implementation of trash and / or vehicle removal.
- c) Storage and provision for retrieval of personal items and/or identifying who will maintain the property, per County or State laws and regulations, if applicable.
- d) Notifying MCDSS POC of interaction with media outlets related to the specific encampment mission, in order to reduce the likelihood of conflicting public messaging.

Mendocino County Department of Social Services is responsible for:

- a) Identifying and deploying staff who are skilled, responsible, and knowledgeable in outreach and engagement of homeless individuals and households.
- b) Arranging for additional support from community-based organizations, if needed and desired.
- c) Communicating clearly and effectively with UPD about issues that may require follow-up and/or potential intervention by law enforcement.
- d) Securing the appropriate funding to pay for outreach staff time.
- e) Notifying the relevant local homeless shelter of the disbandment timeline.
- f) Notifying UPD POC of interaction with media outlets related to the specific encampment mission, in order to reduce the likelihood of conflicting public messaging.

This Protocol may be amended or dissolved at any time, by either party, through written communication. This Protocol will remain in effect until June 1, 2028, at which point the parties will have the option to re-adopt this Protocol with any necessary amendments.



DeNeese Parker, Director
Department of Social Services
County of Mendocino

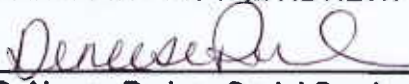
8/25/25
Date



Thomas Corning, Chief
Ukiah Police Department
City of Ukiah

8.14.25
Date

IN WITNESS WHEREOF**DEPARTMENT FISCAL REVIEW:**

By: 
DeNeese Parker, Social Services Director

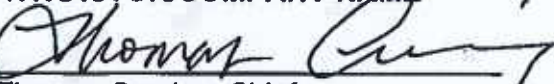
Date: 8/25/25

Budgeted: N/A

Grant: No

Grant No.: N/A

CONTRACTOR/COMPANY NAME

By: 
Thomas Corning, Chief,
Ukiah Police Department, City of Ukiah

Date: 8.14.25

NAME AND ADDRESS OF CONTRACTOR:**UKIAH POLICE DEPARTMENT**

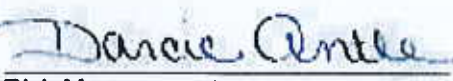
300 Seminary Avenue

Ukiah, CA 95482

707-463-6249

ichapman@cityofukiah.com

INSURANCE REVIEW:

By: 
Risk Management

Date: 08/13/2025

EXECUTIVE OFFICE/FISCAL REVIEW:

By: 
Deputy CEO or Designee

Date: 08/13/2025

COUNTY COUNSEL REVIEW:**APPROVED AS TO FORM:**

By: 
COUNTY COUNSEL

Date: 08/13/2025

Signatory Authority: \$0-25,000 Department; \$25,001- 50,000 Purchasing Agent; \$50,001+ Board of Supervisors

Exception to Bid Process Required/Completed ☐ N/A

Mendocino County Business License: Valid ☐

Exempt Pursuant to MCC Section: Government Entity

Kristine Lawler

Subject:

FW: Public Comment-Opposition to encampment ordinance



Kristine Lawler, CMC/City Clerk
Email: klawler@cityofukiah.com
300 Seminary Ave., Ukiah, CA 95482
P:(707) 463-6217 F:(707) 463-6204

Continually working to promote diversity, equity, transparency, and justice through the adoption and implementation of City practices, policies, and procedures.

From: Mazie Malone <[REDACTED]>
Sent: Wednesday, September 17, 2025 7:32 AM
To: CityClerk <cityclerk@cityofukiah.com>
Cc: Doug Crane <dcrane@cityofukiah.com>; Susan Sher <Ssher@cityofukiah.com>; Heather Criss <hcriss@cityofukiah.com>; Mari Rodin <mrodin@cityofukiah.com>; Juan Orozco <jorozco@cityofukiah.com>
Subject: Public Comment-Opposition to encampment ordinance

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Mayor and Councilmembers,

I am writing in strong opposition to the proposed changes to Ukiah's encampment ordinance.

This ordinance does not solve homelessness. By removing the safeguard that requires shelter to be available before enforcement, it simply turns displacement into policy. There are no beds available and taking away that protection does not create housing, it only creates punishment, discrimination & stigma.

By these new definitions, simply having a sleeping bag in public could result in enforcement or arrest. That means the ordinance doesn't target "encampments" it targets people. These definitions are so expansive that anyone with minimal gear in a public area

could be categorized as “occupying” or “operating” a camp. That turns necessary survival into a punishable offense.

Pushing people from sidewalks into jail, or into another sidewalk, is not care and not safety. Real solutions come from housing, treatment, and support, not criminalization.

I urge you to reject these changes and focus on policies that address the real causes of homelessness, rather than punishing those who are already vulnerable.

Sincerely,

Mazie Malone

Kind Hearts Initiative

Care Without Conditions

Kristine Lawler

From: rayna matthews [REDACTED]
Sent: Tuesday, September 16, 2025 5:18 PM
To: Meeting
Subject: No on item 14A

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

My name is Rayna Matthews.

I am a Ukiah resident and I am writing to ask you NOT to support item 14 A Possible Introduction of Camping Ordinance Amendment by Title Only. We should not be harming our homeless community members when they have nowhere to go! We do not need to blindly follow the anti-homeless policies of the governor. Do not remove the requirement that homeless encampments can only be cleared if shelter space is available.

Thank you for doing the right thing,
Rayna

Fwd: Ukiah City Council Homeless Ordinance

From Laura Diamondstone <[REDACTED]>

Date Wed 9/17/2025 9:57 AM

To Meeting <meeting@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Ukiah City Council Homeless Ordinance

Ukiah is the city center for ALL Mendocino County residents. What happens in Ukiah affects us all. At this point, with even the bandaid, most minimal safety networks are dissolving before our eyes. We do not need more cruel actions against the most marginalized among us.

Homelessness is a problem that takes political will to fix. Instead of an expedient non-fix of allocating resources for sweeps to a \$10 million budgeted department, those funds need to be allocated and earmarked for outreach, in-reach and engagement with community health workers, social workers, and peer advocates for [available affordable housing](#).

[Sweeps do not fix anything](#) and [actually makes conditions worse](#) for not only the affected individuals but the inevitable costs to taxpayers and a floundering county budget.

Although the current political and economic climate economizes supports while penalizing and stigmatizing the most disempowered, Ukiah City Council can promote more humane, rational, and ultimately more productive ordinances.

Everyone is one health crisis, non living wage paycheck, or discrimination policy away from losing their housing. This is a crisis and needs to be addressed with more affordable housing (and realistic living wages).

Please do not endorse sweeps. It is a bad option with bad consequences.

Laura Diamondstone
Boonville, CA 95415

No on item 14A

From Megan Wolf <[REDACTED]>
Date Wed 9/17/2025 4:15 PM
To CityClerk <cityclerk@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Ukiah City Council Members,

I am a Ukiah resident and I am writing to ask you NOT to support item 14 A Possible Introduction of Camping Ordinance Amendment by Title Only.
We should not be harming our homeless community members when they have nowhere to go! We do not need to blindly follow the anti-homeless policies of the governor.
Do not remove the requirement that homeless encampments can only be cleared if shelter space is available.

Thank you,

Megan Wolf
Ukiah Resident

Public Comment: No on 14a!

From Josie Slovut <[REDACTED]>
Date Wed 9/17/2025 4:30 PM
To CityClerk <cityclerk@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

My name is Josephine Slovut and I am a Mendocino County resident who works and spends much of my life in Ukiah. It has come to my attention that the City of Ukiah is considering removing a policy that limits "sweeps" of our homeless neighbors when shelter beds are available and offered to these members of our community, essentially taking away the brief reprieves that homeless people have from criminalization. This is unspeakably cruel. The vast majority of people in this County are only a few very bad months away from homelessness, at most, especially in the current economy. We should be supporting our neighbors in their time of need, not treating them to be trash to be swept away. I urge you to remove this item from consideration.

Thank you,

Josie Slovut

Item 14A at Tonight's City Council Meeting

From Amelia Taylor <[REDACTED]>
Date Wed 9/17/2025 4:39 PM
To CityClerk <cityclerk@cityofukiah.com>
Cc meetings@cityofukiah.com <meetings@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ukiah City Council,

I am writing right before the meeting to ask you not to support item 14 A—Possible Introduction of Camping Ordinance Amendment by Title Only.

We should not be harming our homeless community members when they have nowhere to go! Do not remove the requirement that homeless encampments can only be cleared if shelter space is available.

I have lived in this area for most of my life and worked intensively with our local homeless population in Ukiah. Being unhoused is dangerous and difficult, and no one would choose it, or make different choices given even less safety and security. I can easily picture myself in the position of someone without a home, and it is painful to me that this is even on the agenda for tonight. We do not need to blindly follow the anti-homeless policies of the governor.

Sincerely,
Amelia Taylor

Homeless Encampment topic AT TONIGHT's MEETING

From Maureen Taylor [REDACTED]
Date Wed 9/17/2025 4:42 PM
To CityClerk <cityclerk@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

I work full time in Ukiah in the medical field. I have patients that are unhoused and hear from them how difficult this is for them.

I am writing to ask you NOT to support item 14 A Possible Introduction of Camping Ordinance Amendment by Title Only.

It is harmful to our homeless community members when they have nowhere to go. It is imperative to keep the requirement that homeless encampments can only be cleared if shelter space is available. These community members need options, not limitations.

Thank you for your attention to this matter,
Maureen Taylor

Agenda Item 14.a. — Oppose

From Cecelia Sullivan <[REDACTED]>

Date Wed 9/17/2025 4:55 PM

To CityClerk <cityclerk@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I'm a resident of Ukiah and am opposed to the removal of the change to the camping ordinance of allowing clearing of encampments if space is not available.

I understand the desire to maintain public safety, but kicking people out of their shelters is not safe for those people! I would propose investments instead to provide more access to restroom and trash disposal services. Meet people where they are, not criminalize their existence.

I'd also like to foster a little empathy here. I've heard stories from people who have stayed in shelters and it sounds a little terrifying. I would prefer to live in my car (it solves part of the problem of not wanting to see very poor people). I'd always have a bed, and it takes a little more effort to throw away.

Shelters in general can also be difficult to obtain and retain. Between rules about when one can be present, if your companion animal is allowed to be with you, to the issues of some places not accepting trans people—we do not need to perpetuate the same kinds of harm that the federal government is doing, by ripping people away from what little homes they may have.

Thanks,
Cecelia Sullivan

Item 14A

From C S <[REDACTED]>
Date Wed 9/17/2025 4:56 PM
To CityClerk <cityclerk@cityofukiah.com>

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Ukiah City Council Members,

I am a resident of the City of Ukiah. Like many California cities, our community is facing overlapping crises: housing, mental health, and substance use. One visible result is that many of our neighbors live outside without stable shelter.

As you prepare to vote on item 14A, *Possible Introduction of Camping Ordinance Amendment by Title Only*, I urge you to consider the devastating impact a “yes” vote would have.

When we see people living outside, they are often far from their best. Sometimes their behavior shocks, annoys, or even frightens us. It can be easy to let those reactions dehumanize them, making it harder to imagine: *What if that were me? What if that were my mother, father, son, daughter, or grandparent?*

I ask you to imagine:

- What if I, Douglas Crane, were mentally ill, homeless, and living on the street?
- What if I, Susan Sher, suddenly became disabled, lost my job, and had nowhere to go?
- What if I, Juan Orozco, was evicted because my landlord’s apartments were condemned, and I could not find other housing?
- What if I, Heather Criss, had to raise school-aged children while living in my car?
- What if I, Mary Rodin, could no longer afford a 30% rent increase when my landlord sold my home?

The people we see sleeping outside are in these situations not by choice, but because a series of circumstances didn’t work out. Every day they fight simply to stay alive—suffering in the summer heat, the winter cold and rain, without regular access to health care, bathrooms, or showers.

Homelessness is hellish. It is no wonder that some people living in these conditions appear alarming or behave in ways that unsettle us.

But sweeping encampments when people have nowhere else to go will only destabilize those who are already barely hanging on. Even if viewed strictly in terms of finances, this approach will cost our city

more. Destabilized people end up in crisis, requiring emergency medical care, police intervention, incarceration, and court processing. All of that is far more expensive than leaving encampments in place—or, better yet, creating sanctioned spaces where people can camp safely and access services.

I urge you to vote “no” on item 14A. Doing so is not only the more compassionate choice—it is also the more fiscally responsible one.

Sincerely,

Clarice Sargenti

[REDACTED]

Ukiah, CA

[REDACTED]



AGENDA SUMMARY REPORT

SUBJECT: Introduction of an Ordinance by Title Only and Adoption of the Corresponding Resolution of the City of Ukiah Adopting the 2025 Edition of the California Fire Code, Part 9, With Amendments, as Well as the 2025 Edition of the California Wildland-Urban Interface Code, Part 7, Regulating and Governing the Safeguarding of Life and Property From Fire and Explosion, and Providing for the Issuance of Permits, and Repealing All Other Ordinances and Parts of Ordinances of the City of Ukiah Fire Prevention Code in Conflict Herewith.

DEPARTMENT: Fire

PREPARED BY: Matt Keizer, Chief Building Official / Fire Code Official UVFD

PRESENTER: Matt Keizer, Chief Building Official, City of Ukiah / Fire Code Official, Ukiah Valley Fire Authority

ATTACHMENTS:

1. 2025 Fire Code Adoption Ordinance Red Line - updated 9/17/25
2. 2025 Fire Code Adoption Ordinance Clean
3. Resolution 2025-X Ukiah CC

Summary: The City of Ukiah will consider introducing an ordinance by title only to adopt the 2025 California Fire Code and the 2025 Wildland-Urban Interface (WUI) Code, and adopting a resolution establishing findings of fact and the need for modifications to the California Fire Code, if necessary.

Background: The California Fire Code is part of the California Building Standards Code, and a new edition is published every three years by order of the California State Legislature. These new building and fire standards take effect January 1, 2026, unless otherwise stipulated.

A city or district may establish more restrictive standards when reasonably necessary due to local climatic, geological, or topographical conditions. These findings of local conditions and adopted local standards must be filed with the California Building Standards Commission to become effective. Previous additions and amendments do not apply without appropriate adoption.

Discussion: The City of Ukiah has begun the process of adopting the updated 2025 California Fire Code and amending the City's current Fire Prevention Code Section to include the changes of the 2025 California Fire Code and other considerations to increase safety.

In an ongoing effort to provide more consistency in the application of the Fire Codes with the greater Ukiah Valley, the City of Ukiah shall work closely with the Ukiah Valley Fire Authority in the evaluation of the changes to the 2025 Fire Code and creating additions and amendments to address local issues. There are no significant additional amendments or requested changes to the 2025 Fire Code for this code cycle.

Staff requests Council introduce an Ordinance by title only (Attachment 1 - Redline and Attachment 2 - Clean) adopting the 2025 California Fire Code and the 2025 Wildland-Urban Interface Code, and adopting a Resolution (Attachment 3) establishing the findings of fact, including additions or amendments, to address local conditions.

Recommended Action: Introduce an Ordinance by title only adopting the 2025 California Fire Code and the 2025 Wildland-Urban Interface Code, and adopt a Resolution establishing the findings of fact, including additions or amendments, to address local conditions.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: No **GRANT:** No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: N/A

STRATEGIC PLAN (SP): SP 1B - Provide services that support a high quality of life for all residents, including fostering diverse, inclusive, sustainable, and accessible neighborhoods.

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): GP-A6 - Safety Element, Policy 5-7- Fire Code Compliance.

Approved:


Sage Sangiacomo, City Manager

ORDINANCE NO. 202~~54~~-X

ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING DIVISION 6, CHAPTER 3, ARTICLES 1 AND 3, OF THE UKIAH CITY CODE, ENTITLED: FIRE PREVENTION CODE.

The City Council of the City of Ukiah hereby ordains as follows:

SECTION ONE.

Article 1 of Chapter 3 in Division 6 of the Ukiah City Code is hereby amended to read as follows (unchanged text is omitted and is shown by “* * *”):

§5200 ADOPTION OF CALIFORNIA FIRE CODE AND THE WUI CODE.

A certain document, three (3) copies of which are on file in the office of the City Clerk of the City of Ukiah, being marked and designated as the California Fire Code, 202~~52~~ Edition, including Appendix Chapter 4 and Appendices B, BB, C, CC, D, E, F, G, H, I, K, N and O as published by the International Code Council, as well as the 2025 edition of the California Wildland-Urban Interface Code (WUI), including Appendix A, B, and F as published by the International Code Council and National Fire Protection Association (NFPA) 1 Chapter 38, ~~be and~~ is hereby adopted as the Fire Code of the City of Ukiah, in the State of California regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Fire Code on file in the office of the City Clerk are hereby referred to, adopted, and made part hereof, as if fully set out in this section, with the additions, insertions, deletions, and changes, if any, prescribed in Division 6, Chapter 3, Articles 2 and 3 of this code.

§5200.5 INSERTIONS INTO CERTAIN SECTIONS OF THE CALIFORNIA FIRE CODE 202~~52~~ EDITION AND THE CALIFORNIA WILDLAND-URBAN INTERFACE CODE 2025

The following sections of the California Fire Code, 202~~52~~ Edition, are hereby amended by inserting information specific to the City of Ukiah so that these sections read as follows:

101.1 Title. These regulations shall be known as the Fire Code of the City of Ukiah, hereinafter referred to as "this code."

Section 105.1, General, of Chapter 1 is amended to read as follows:

105.1 General. Permits shall be in accordance with Sections 105.1.1 through 105.6.2~~54~~ or other provisions of this code as required by the City of Ukiah.

Section 11~~24.1~~, Board of Appeals Established, of Chapter 1 is amended to read as follows:

11~~24.1~~ Board of Appeals Established. In order to hear and decide appeals of orders, decisions, or determinations made by the fire code official relative to the application and – interpretation of this code, there shall be and is hereby created a Board of Appeals. The Board of Appeals shall be the Board of Directors of the Ukiah Valley Fire District or a ~~sub-~~~~committee-subcommittee~~ as appointed by the Board of Directors of the Ukiah Valley Fire District. The fire –code official shall be an ex-officio member of said board but shall have no vote on any –matter before the board. The board shall adopt rules of procedure for conducting its –business and shall render all decisions and findings in writing to the Appellant with a –duplicate copy to the fire code official.

Section 11~~24.3~~, Qualifications, of Chapter 1 is deleted.

Section 11~~24.5~~, Appeals Process, of Chapter 1 is added to read as follows:

11~~24.5~~ Appeals Process. The appeals process for appeals of orders, decisions, or determinations made by the fire code official relative to the application and interpretation of – this code shall be defined by sections 11~~24.5.1~~ through 11~~24.5.5~~.

Section 11~~24.5.1~~, Initiating Appeal, of Chapter 1 is added to read as follows:

Section 11~~24.5.1~~ Initiating Appeal. Any beneficially interested party has the right to appeal the order served by the fire code official by filing a written “NOTICE OF APPEAL” with the –office of the fire code official within ten days after service of such order and upon payment –of the sum of \$150. In the event the order of the fire code official is overturned following –the appeal, the fee shall be returned. The notice shall state the order appealed from, the –identity and mailing address of the Appellant, and the specific grounds upon which the –appeal is made.

Section 11~~24.5.2~~, Stay of Order, of Chapter 1 is added to read as follows:

Section 11~~24.5.2~~ Stay of Order. The timely filing of a properly completed notice of appeal – shall have the effect of staying the implementation of the order appealed from until the final – decision of the appeal. Failure to file a timely notice of appeal waives any right to further challenge the order of the fire code official. “File” means delivered to the office of the fire – code official at 300 Seminary Ln, Ukiah, California 95482.

Exception: Orders affecting acts or conditions which in the opinion of the fire code official, pose an immediate threat to life, property, or the environment as a result of panic, fire, explosion, or release are enforceable when made and are not stayed by the filing of a – notice of appeal.

Section 11~~24.5.3~~, Hearing of Appeal, of Chapter 1 is added to read as follows:

Section 1124.5.3 Hearing of Appeal. Following is the process for establishing and hearing appeals:

The Board of Appeals, or the secretary thereof, shall set the matter to be heard at a date within thirty (30) days of receipt of such notice of appeal. Written notice of the time and place set for hearing shall be served on the Appellant by first class mail to the mailing address given in the notice of appeal. A hearing may not be conducted less than 20 days after notice is given to the applicant. The Board of Appeals may adopt rules governing the conduct of its hearings. Those rules shall include, at least, the following:

1. The fire code official shall submit evidence at the hearing substantiating his/her decision. Such evidence may include testimony, fire district, police or other reports of the incident, witness statements, and other documents. Not less than 10 days prior to the scheduled hearing, the fire code official must notify the Appellant of the name, address, and phone number of any witness to the violation and furnish the Appellant with a copy of any document the fire code official intends to submit at the hearing. Not less than seven (7) days prior to the hearing, the Appellant may request the fire code official to produce at the hearing any witness he/she intends to rely upon to substantiate the violation. The written request must name the witness or witnesses who are requested to attend the hearing. The fire code official may not rely on the testimony of any witness (including such testimony contained in reports or written witness statements) whose appearance at the hearing is required by this subsection if that witness fails to appear.
2. Not less than 10 days prior to the hearing, the Appellant must notify the fire code official in writing of the name, address, and phone number of any witness the Appellant intends to call as a witness at the hearing, provide a brief description of the proposed testimony, and furnish the fire code official with a copy of any document the Appellant intends to offer as evidence at the hearing. The Appellant may not call any witness to testify at the hearing who was not identified as required by this subsection or offer any document as evidence at the hearing that was not provided to the fire code official as required by this subsection.
3. At the hearing, the Appellant may be represented by an attorney, at the Appellant's expense. Both the fire code official and the Appellant shall have the right to examine and cross-examine any witness produced at the hearing. The rules of evidence that normally apply in court shall not apply in a hearing before the Board of Appeals, but it shall only consider evidence that would be relied upon by reasonable people making an important decision and shall disregard evidence that by its nature is unreliable or not credible.
4. The entire hearing shall be electronically or stenographically recorded. The Board of Appeals shall base its decision exclusively on the evidence presented at the hearing and shall issue a written decision, which includes a statement of the relevant facts that it finds to be true and explains how the facts support its decision. The record of the hearing shall be preserved for not less than six (6) months after the decision is served on the Appellant.

Section 1124.5.4, Hearing Decision, of Chapter 1 is added to read as follows:

Section 1124.5.4 Hearing Decision. The chairperson of the Board of Appeals shall issue the written decision required by subsection 4 of Section 1124.4-3 Hearing of appeal. The

The Board of Appeals may issue a decision affirming, modifying, or vacating the order of the fire code official. The decision shall be in writing and shall be served upon the Appellant by first class mail to the mailing address given in the notice of appeal. The hearing decision shall include notice of the Appellant's right to seek review of the decision pursuant to California Code of Civil Procedure Sections 1094.5 and 1094.6.

Section 11~~24~~.5.5, Finality of the Decision of the Board of Appeals, of Chapter 1 is added to read as follows:

Section 11~~24~~.5.5 Finality of the Decision of the Board of Appeals. The decision of the Board of Appeals shall be the final decision for the District. The Board of Appeals shall have the power to continue any hearing and may, at its discretion, take the appeal under submission. The Board of Appeals shall render a decision not later than the seventh (7th) day following the date the matter was taken under submission, and forthwith notify the interested parties as previously set forth.

Section 11~~24~~.5.6, Appeal to Superior Court, of Chapter 1 is added to read as follows:

Section 11~~24~~.5.6 Appeal to Superior Court. Judicial review of the decision of the Board of Appeals shall be governed by the Code of Civil Procedure Sections 1094.5 and 1094.6.

Section 11~~24~~.5.7, Enforcement of Decision, of Chapter 1 is added to read as follows:

Section 11~~24~~.5.7 Enforcement of Decision. Unless stayed by a court, any final decision of the Board of Appeals is effective immediately and may be implemented and enforced by the District. The remedies provided by this code are cumulative and in addition to any other remedies available at law or in equity.

1.Causing, permitting, aiding, abetting, or concealing a violation of any provision of this ordinance shall constitute a violation.

2.Violations of this code are hereby declared to be public nuisances.

3.A violation of this code constitutes a misdemeanor/infraction punishable by a fine of \$1,000 or by imprisonment in the County jail for six months, or both.

4.In addition to other remedies provided by this ordinance or by other law, any violation of this ordinance may be remedied by a civil action brought by the District, including, for example, administrative or judicial nuisance abatement proceedings, other legally authorized enforcement proceedings, and suits for injunctive relief.

Section 11~~30~~.4, Violation Penalties, of Chapter 1 is amended to read as follows:

Section 11~~30~~.4 Violation Penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a misdemeanor/infraction. The first citation within a 12-month period, for violations of the Fire

Code and any amendments adopted herein shall be treated as a Civil Penalty payable directly to the Ukiah Valley Fire District and is set at \$250.00 plus the actual costs of all inspections required to gain compliance at the current rate set from time to time by the Ukiah Valley Fire District, per hour with a 1-hour minimum. Said civil penalties shall be a debt owed to the District by the person responsible for the violation within thirty (30) days after the date of mailing the citation unless an appeal is filed as provided in this section. Upon failure to pay the civil penalty when due, the

responsible person shall be liable for civil action brought by the Ukiah Valley Fire District for such penalty and costs of the litigation, including reasonable attorney's fees.

Any subsequent citations within a twenty-four (24) month period for any violations of the Fire Code and any amendments adopted herein shall be misdemeanors/infractions and shall be subject to the penalties set forth herein, or a civil penalty shall be assessed in the sum of \$500.00 plus the actual costs of all inspections required to gain compliance at the current rate set from time to time by the Ukiah Valley Fire District. The imposition of a penalty for any violation shall not excuse the violation or permit it to continue and all such persons shall be required to correct or remedy such violations or defects within a reasonable time. When not otherwise specified, each day that a violation occurs or continues, after a final notice has been delivered shall constitute a separate offense. The application of both penalties shall be held to prevent the enforced correction of the prohibited condition. Nothing contained in this Section shall be construed or interpreted to prevent the Ukiah Valley Fire District from recovering all costs associated with a Fire District response as described in the Ukiah Valley Fire District's current cost recovery ordinance, Ordinance 2004-1, or subsequent cost recovery ordinances.

Any violation of any provision of this Chapter shall constitute a public nuisance and shall entitle the Ukiah Valley Fire District to collect the costs of abatement and related administrative costs by a nuisance abatement lien as more particularly set forth in Government Code Section 38773.1, and by special assessment to be collected by the County Tax Collector as more particularly set forth in Government Code Section 38773.5. At least thirty (30) days prior to recordation of the lien, or submission of the report to the Tax Collector for collection of this special assessment, the record owner shall receive notice from the Chief of the Ukiah Valley Fire District of the intent to charge the property owner for all administrative costs associated with enforcement of this Ordinance and abatement of the nuisance. The notice shall include a summary of costs associated with enforcement of this Ordinance and abatement of the nuisance. The property owner may appeal the Chief's decision to the Board of Directors of the Ukiah Valley Fire District within fifteen (15) days of the date of the notice and request a public hearing prior to recordation of the lien or submission of the report to the County Tax Collector for collection of the special assessment. In addition to the foregoing, the Ukiah Valley Fire District is authorized to prosecute a civil action to collect such abatement costs from the property owner or other person in possession or control of the affected property and shall be entitled to recover such abatement costs, together with the cost of litigation, including reasonable attorney's fees.

Any person receiving a citation for a civil penalty pursuant to Section 11~~3.42.3~~, Violation Penalties, of Chapter 1, may file an appeal per Section 11~~24.5~~ through 11~~24.7~~ of this code against the imposition of the civil penalty or response costs and expense.

Section 11~~42.4~~, Failure to Comply, of Chapter 1 is amended to read as follows:

Section 11~~42.4~~ Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe conditions, shall be liable to a fine payable directly to the Ukiah Valley Fire District in the amount set at not less than \$250.00 or more than \$1000.00 plus the actual costs of all inspections required to gain compliance at the rate set from time to time by the Ukiah Valley Fire District, civil penalty shall be a debt owed to the District by the person responsible for the violation within thirty (30) days after the date of mailing of the citation unless an appeal is filed as provided for in Section 11~~2.508.4~~.

~~Section 315.8 Lithium battery storage and handling, of Chapter 3, is hereby added to read as follows:—~~

~~315.8Lithium battery storage and handling.~~ The storage and handling of lithium-ion and lithium-metal batteries or cells in quantities exceeding 1,000 pounds (4086 kg) shall comply with Sections 315.8.1 through 315.8.10, and Chapter 32 where applicable.—

~~315.8.1Permits.~~ Permits shall be required as set forth in Section 105.6.27.—

~~315.8.2Maximum quantity in a fire area.~~ The aggregate amount of lithium batteries stored and handled in a single fire area shall not exceed 9,000 pounds (4086 kg).—

~~315.8.3Construction requirements.~~ Fire areas shall be separated from each other by fire barriers having not less than a 2-hour fire-resistance rating constructed in accordance with Section 707 of the Building Code and horizontal assemblies constructed in accordance with Section 711 of the Building Code.—

~~315.8.4Number of fire areas.~~ The maximum number of fire areas within a building shall be four.—

~~315.8.5Group H, Division 2 occupancy.~~ Storage and handling of more than 9,000 pounds of lithium batteries per fire area shall be in an approved Group H, Division 2 occupancy constructed in accordance with the Building Code and provided throughout with approved automatic smoke detection and radiant energy detection systems.———

~~315.8.6Automatic sprinkler system.~~ Buildings containing fire areas used for lithium-battery storage or handling shall be equipped throughout with an approved automatic-sprinkler system in accordance with Section 903.3.1.1. The design of the sprinkler system within each fire area shall not be less than that required for Extra Hazard Group 2 with a minimum design area of 2,500 square feet. Where the storage arrangement is required by other provisions of this code to be provided with a higher level of sprinkler system protection, the higher level of sprinkler system protection shall be provided.——

~~**315.8.7 Automatic smoke detection system.** An approved automatic smoke detection system that activates an approved occupant notification system shall be provided throughout each fire area in accordance with Section 907.~~

~~**315.8.8 Radiant energy detection.** An approved radiant energy detection system that activates an approved occupant notification system shall be installed throughout each fire area in accordance with Section 907.~~

~~**315.8.9 Collection containers.** Containers used to collect or store lithium batteries shall be noncombustible and shall not have an individual capacity exceeding 30 gallons (113.6 L); or be approved for transportation in accordance with the Department of Transportation (DOT).~~

~~**315.8.10 Storage configuration.** Lithium batteries shall be considered a high-hazard commodity in accordance with Chapter 32 and where applicable, lithium battery storage shall comply with Chapter 32 in addition to Section 315.8.~~

Section 503 Fire Apparatus Access Roads in its entirety.

Section 503.3 **MARKING .1, Fire Lane Designation**, of Chapter 5 is hereby added to read as follows:

Section 503.3 MARKING .1 Fire Lane Designation. Where the fire code official determines that it is necessary to ensure adequate fire access, the fire code official may designate existing roadways as fire access roadways as provided by Vehicle Code section 22500.1 (public) or 22658(a) (private).

Section 503.4.2, Roadway Design Features, of Chapter 5 is hereby added to read as follows:

Section 503.4.2 Roadway Design Features. Roadway design features (speed bumps, speed humps, speed control dips, etc.) which may interfere with emergency apparatus responses shall not be installed on fire access roadways, unless they meet design criteria approved by the fire code official.

Section 505.1, Address Identification, of Chapter 5 is hereby amended to read as follows:

Section 505.1 Address Identification. Approved numbers and/or addresses shall be placed and maintained on all new and existing buildings and at appropriate additional locations as to be plainly visible and legible from the street or roadway fronting the property from either direction of approach. Said number shall contrast with their background and shall meet the minimum standards as to size: 4" high with a 0.5" stroke for residential buildings, 6" high and a 0.5" stroke for commercial and multi-residential buildings, 12" high with a 1" stroke for industrial buildings. Additional numbers shall be required where deemed necessary by the fire code official, such as rear access doors, building corners, and entrances to commercial centers. The fire code official may establish different minimum sizes for numbers for various categories of projects.

Section 505.3, Easement Address Signs, of Chapter 5 is hereby added to read as follows:

Section 505.3 Easement Address Signs. All easements, which are not named differently from the roadway from which they originate, shall have an address sign installed and

maintained, listing all street numbers occurring on that easement, located where the easement intersects the named roadway. Minimum size of numbers on that sign shall be 4" in height with a minimum stroke of 0.5" and shall contrast with the background.

Section 505.4, Map Directories, of Chapter 5 is hereby added to read as follows:

Section 505.4 Map Directories. A lighted directory map, meeting current Fire District standards, shall be installed at each driveway entrance to multiple-unit residential projects and mobile home parks, where the numbers of units in such projects exceed 15.

Section 505.5, Response Map Updates, of Chapter 5 is hereby added to read as follows:

Section 505.5 Response Map Updates. Any new development, which necessitates updating of emergency response maps by virtue of new structures, hydrants, roadways or similar features, shall be required to provide map updates in a format (PDF and/or CAD format as approved by the fire code official) or compatible with current District mapping services, and shall be charged a reasonable fee for updating all response maps associated with this development.

Section 506.1 Key box where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life saving or firefighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL1037, and shall contain keys to gain necessary access as required by the fire code official.

Section 506.1.1 Locks. An approved lock shall be installed on gates or similar barriers where required by the fire code official.

Section 506.2 Key Box Maintenance. The operator of the building shall immediately notify the fire code official and provide a new key where a lock is changed or rekeyed. The key to such lock shall be secured in the key box.

Section 506.3, Emergency Electrical Disconnects, of Chapter 5 is hereby added as follows:

Section 506.3 Emergency Electrical Disconnects. Where access to main electrical control panels requires entry to, and passage through, portions of a structure which may be involved with fire, smoke, gasses, hazardous materials, or which otherwise present unsafe conditions to emergency personnel, the fire code official may require that a means of remotely disconnecting electrical service to the structure be provided. This means of remotely disconnecting electrical service shall be by a secured key switch mechanism approved by the Fire District.

Section 1201.4 ~~3.1.1~~, Alternate Power Sources, of Chapter 12 is hereby added to read as follows:

Section 1201.4 ~~3.1.1~~ Alternate Power Sources. All permanent installations of electrical generators, wind generators, or other power sources shall be approved by the building code official. All applicable provisions of the California Electrical Code, the California Plumbing Code, the California Building Code, the California Residential Code, and this Code shall

be followed for any such installation. Permanent engraved and affixed signage, red in color, reading "WARNING – This premises is provided with an Alternate Power source, Disconnection of commercial power may not disable the electric power source." Lettering shall be a minimum of 0.5" tall and shall be permanently affixed on each electrical panel subject to back-feed from alternate power sources. Any and all power disabling switches shall be clearly labeled.

Section 903.2, Where required, of Chapter 9 is hereby amended to read as herein provided. This section shall not amend the portion commencing and following Section 903.2.1.

Section 903.2 Where required. Approved automatic sprinkler systems in new, additions to existing, remodeled, added to or altered buildings and structures shall be provided in the locations described in this section.

A. Approved automatic sprinkler systems shall be provided in the new buildings and structures requiring a fire flow of 2000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

B. Approved automatic sprinkler systems shall be provided in addition to existing structures where the new total building area would require a fire flow of 2,000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

C. Approved automatic sprinkler systems shall be provided in existing structures where improvements occur during any three (3) year period which meet the definition of a "substantial remodel" and require a fire flow of 2,000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

Exception: Projects that are solely complying with statutory regulations (examples may be Health and Safety Codes, earthquake/seismic, American Disabilities Act (ADA), or façade improvements) will not trigger this requirement.

D. Approved automatic sprinkler systems shall be provided in new structures exceeding 30 feet in height above the lowest grade level.

E. Approved automatic sprinkler systems shall be provided in those new, additions to existing, remodeled, added to, or altered buildings and structures which require a fire flow, as determined by Appendix B of this code, in excess of the capability of the available water supply.

F. Approved automatic sprinkler systems shall be installed per 903.3.1.3 in new mobile homes, and manufactured homes.

For purposes of this Section, "substantial remodel" shall mean the alteration of any structure which combined with any additions to the structure, performed within any three (3) year period, affects an area of work that exceeds fifty percent (50%) of the existing floor area of the structure. When any changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists and coverings, roof rafters, roof diaphragms, foundations, piles or retaining walls, or similar components, the area of work for all rooms affected by such changes shall be included in computing floor areas for purposes of applying this definition. This definition does not apply to the replacement and upgrading of residential roof coverings or exterior wall finishes.

Definition: Area of work: (For the purpose of determining the square footage affected by a construction permit.) An area, where work activity takes place for which a permit is required plus 5 feet in all directions and does not include adjacent spaces where no work requiring a permit is being done.

Example: A 10 foot walls are moved that will take two spaces and turn them into one. The only area of work would be the wall plus five feet on either side. Total square footage 100 square foot assuming there is no other work being done that would require a permit in the

same space.

Section 3307.5 13.4, Where required, of Chapter 33 is hereby amended to read as follows:

Section 3307.5 13.4 Where required. In buildings required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed during construction for each story above or below the first floor grade. Such standpipes shall be provided with Fire District hose connections at locations adjacent to stairways complying with Section 3307.1.241.4. Such standpipes shall be extended to the floor of the highest point of construction having secured decking or flooring.

Table B105.2, Buildings other than one- and two-family dwellings, of Appendix B, is hereby amended as follows:

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the <i>California Fire Code</i>	50% of the value in Table B105.1(2) ^a	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the <i>California Fire Code</i>	50% of the value in Table B105.1(2) ^b	Duration in Table B105.1(2) at the reduced flow rate

Section BB105.1, Fire-Flow requirements for buildings, of Appendix BB is hereby amended as follows:

Section BB105.1 The minimum fire flow and flow duration for school buildings shall be specified in Table BB105.1.

Exception: A reduction in required fire flow of up to 50 percent is allowed when the building is provided with an approved sprinkler system.

§5201 DEFINITIONS

In the California Fire Code, herein adopted, the terms used therein shall comply with the common construction given to and usage of them in the City and as hereinafter defined.

§5202 ENFORCEMENT

A. The California Fire Code (CFC) herein adopted shall be enforced by the Chief of the Ukiah Valley Fire District who is hereby appointed to supervise the Bureau of Fire Prevention and such regularly employed members of said District in accordance with the applicable provisions of the California Fire Code.

B. Section 104.3 of the California Fire Code is amended by adding subsection 104.3.2 thereto as follows:

For the purpose of providing and maintaining functions necessary for the prevention of fire and for the protection of life and property from fire and panic, there is hereby established a "self-inspection program" assuring that certain California building code (CBC) group B, F, H, L, M, and S occupancies within the city are inspected on an annual basis for fire safety.

The Ukiah Fire District shall deliver, by hand or by mail, "self-inspection worksheet" and "business and emergency record" forms as established from time to time by said District to certain CBC group B, F, H, L, M, & S occupancies within the city on an annual basis, or as may be initiated through the business license application process.

The owner or manager of said occupancy or person in highest authority in said occupancy shall be allowed thirty (30) days from issue date, as noted on the self-inspection worksheet, in which to conduct an inspection for fire safety, correct any deficiencies, complete said forms, and return completed forms to the Ukiah Valley Fire District as directed by the fire chief or his designee.

Any person who fails to comply with the requirements to return said forms duly completed and to correct the deficiencies noted in said occupancies within thirty (30) days of the issuance of said forms shall be guilty of an infraction, punishable by a fine of \$100 for a first offense, \$500 for a second offense and \$1,000 for a third or subsequent offense.

~~SECTION TWO.~~

~~Article 3 of Chapter 3 in Division 6 of the Ukiah City Code is hereby amended to read as follows:~~

~~§5216 SECTION 903.2~~

~~Section 903.2 (not including sections 903.2.1 and all subsections thereof) of the California fire code, 2010 edition, is amended to read as follows:~~

~~Section 903.2 — Where Required.~~ ~~Approved automatic sprinkler systems in new, additions to existing, remodeled, added to or altered buildings and structures shall be provided in the locations described in this section.~~

~~A. Approved automatic sprinkler systems shall be provided in new buildings and structures requiring a fire flow of 2,000 gallons per minute (gpm) or greater as determined by Appendix B of this code.~~

~~B. Approved automatic sprinkler systems shall be provided in additions to existing structures where the new total building area would require a fire flow of 2,000 gallons per minute (gpm) or greater as determined by Appendix B of this code.~~

~~G. Approved automatic sprinkler systems shall be provided in existing structures where improvements occur during any three (3) year period which meet the definition of a "substantial remodel" and require a fire flow of 2,000 gallons per minute (gpm) or greater as determined by Appendix B of this code.~~

~~**Exception:** Projects which are solely complying with statutory regulations (examples may be health and safety codes, earthquake/seismic, American disabilities act (ADA), or facade improvements) will not trigger this requirement.~~

~~D. Approved automatic sprinkler systems shall be provided in new structures exceeding 30 feet in height above the lowest grade level.~~

~~E. Approved automatic sprinkler systems shall be provided in those new, additions to existing, remodeled, added to or altered buildings and structures which require a fire flow, as determined by appendix B of this code, in excess of the capability of the available water supply.~~

~~F. Approved automatic sprinkler systems shall be installed per 903.3.1.3 in new mobile homes, and manufactured homes.~~

~~G. For purposes of this Section, "substantial remodel" shall mean the alteration of any structure which combined with any additions to the structure, performed within any three (3) year period, affects an area of work that exceeds fifty percent (50%) of the existing floor area of the structure. When any changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists and coverings, roof rafters, roof diaphragms, foundations, piles or retaining walls or similar components, the area of work of all rooms affected by such changes shall be included in computing floor areas for purposes of applying this definition. This definition does not apply to the replacement and upgrading of residential roof coverings or exterior wall finishes.~~

§5218 SECTION 506.3

~~Section 506.3 of the California fire code, 2010 edition, is added as follows:~~

~~**Section 506.3—Emergency Electrical Disconnects.**~~

~~Where access to main electrical control panels requires entry to, and passage through, portions of a structure which may be involved with fire, smoke, gasses, hazardous materials, or which otherwise present unsafe conditions to emergency personnel, the chief may require that a means of remotely disconnecting electrical service to the structure be provided. This means of remotely disconnecting electrical service shall be by a secured key switch mechanism approved by the Fire District.~~

§5223 GEOGRAPHIC LIMITS

The geographic limits referred to in certain section of the 202522 edition of the California Fire Code are hereby established as follows:

Section 5704.2.9.6.1 The geographic limits referred to in Section 5704.2.9.6.1 of the 20252 edition of the California Fire Code in which storage of Class I, Class II, and liquids in outside above-ground tanks is prohibited are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the City of U County of Mendocino, and agricultural land of less than two (2) acres.

Section 5706.2.4.4 The geographic limits referred to in Section 5706.2.4.4 of the 20252 edition of the California Fire Code in which storage of Class I, Class II, and liquids in aboveground tanks is prohibited are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the County of Mendocino, and agricultural land of less than two (2) acres.

Section 5806.2 The geographic limits referred to in the 20252 edition of the California Fire Code in which the storage of flammable cryogenic fluids in stationary containers are prohibited, are hereby established as follows: In all residential areas and heavily populated or congested commercial areas, as established by the County of Mendocino.

Section 6104.2 The geographic limits referred to in Section 6104.2 of the 20252 edition of the California Fire Code in which storage of liquefied petroleum gas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7,570 liters), is restricted, are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the City of Ukiah.

SECTION TWO.

1. Publication: Within fifteen (15) days after its adoption, this Ordinance shall be published once in a newspaper of general circulation in the City of Ukiah. In lieu of publishing the full text of the Ordinance, the City may publish a summary of the Ordinance once 5 days prior to its adoption and again within fifteen (15) days after its adoption.

2. Effective Date: The ordinance shall become effective thirty (30) days after its adoption.

Introduced by title only on 11/2_____, 2022, by the following roll call vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Adopted on XX/XX/XXX 12/6 _____, 20253, by the following

roll call vote: AYES:
NOES:
ABSENT:
ABSTAIN:

Jim O. Brown, Mayor

ATTEST:

Kristine Lawler, City Clerk

ORDINANCE NO. 2025-X**ORDINANCE OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING DIVISION 6, CHAPTER 3, ARTICLES 1 AND 3 OF THE UKIAH CITY CODE, ENTITLED: FIRE PREVENTION CODE.**

The City Council of the City of Ukiah hereby ordains as follows:

SECTION ONE.

Article 1 of Chapter 3 in Division 6 of the Ukiah City Code is hereby amended to read as follows (unchanged text is omitted and is shown by “* * *”):

§5200 ADOPTION OF CALIFORNIA FIRE CODE AND THE WUI CODE.

A certain document, three (3) copies of which are on file in the office of the City Clerk of the City of Ukiah, being marked and designated as the California Fire Code, 2025 Edition, including Appendix Chapter 4 and Appendices B, BB, C, CC, D, E, F, G, H, I, K, N and O as published by the International Code Council, as well as the 2025 edition of the California Wildland-Urban Interface Code (WUI), including Appendix A, B, and F as published by the International Code Council is hereby adopted as the Fire Code of the City of Ukiah, in the State of California regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Fire Code on file in the office of the City Clerk are hereby referred to, adopted, and made part hereof, as if fully set out in this section, with the additions, insertions, deletions, and changes, if any, prescribed in Division 6, Chapter 3, Articles 2 and 3 of this code.

§5200.5 INSERTIONS INTO CERTAIN SECTIONS OF THE CALIFORNIA FIRE CODE 2025 EDITION AND THE CALIFORNIA WILDLAND-URBAN INTERFACE CODE 2025

That the following sections of the 2025 edition of the California Wildland-Urban Interface Code are hereby amended and changed in the following respects:

Section 101.1 Title of Chapter 1 is amended to read as follows:

101.1 Title. These regulations shall be known as the California Wildland-Urban Interface Code of the City of Ukiah, hereinafter referred to as “this code.”

Section 103.1 Creation of agency. The City of Ukiah is hereby created, and the official in charge there of shall be known as the Fire Code Official. The function of this agency shall be the implementation, administration, and enforcement of the provisions of this code.

The following sections of the California Fire Code, 2025 Edition, are hereby amended by inserting information specific to the City of Ukiah so that these sections read as follows:

101.1 Title. These regulations shall be known as the Fire Code of the City of Ukiah, hereinafter referred to as “this code.”

Section 105.1, General, of Chapter 1 is amended to read as follows:

105.1 General. Permits shall be in accordance with Sections 105.1.1 through 105.6.25 or other

provisions of this code as required by the City of Ukiah.

Section 112, Board of Appeals Established, of Chapter 1 is amended to read as follows:

112.1 Board of Appeals Established. In order to hear and decide appeals of orders, decisions, or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a Board of Appeals. The Board of Appeals shall be the Board of Directors of the Ukiah Valley Fire District or a subcommittee as appointed by the Board of Directors of the Ukiah Valley Fire District. The fire code official shall be an ex-officio member of said board but shall have no vote on any matter before the board. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the Appellant with a duplicate copy to the fire code official.

Section 112.3, Qualifications, of Chapter 1 is deleted.

Section 112.5, Appeals Process, of Chapter 1 is added to read as follows:

112.5 Appeals Process. The appeals process for appeals of orders, decisions, or determinations made by the fire code official relative to the application and interpretation of this code shall be defined by sections 112.5.1 through 112.5.5.

Section 112.5.1, Initiating Appeal, of Chapter 1 is added to read as follows:

Section 112.5.1 Initiating Appeal. Any beneficially interested party has the right to appeal the order served by the fire code official by filing a written "NOTICE OF APPEAL" with the office of the fire code official within ten days after service of such order and upon payment of the sum of \$150. In the event the order of the fire code official is overturned following the appeal, the fee shall be returned. The notice shall state the order appealed from, the identity and mailing address of the Appellant, and the specific grounds upon which the appeal is made.

Section 112.5.2, Stay of Order, of Chapter 1 is added to read as follows:

Section 112.5.2 Stay of Order. The timely filing of a properly completed notice of appeal shall have the effect of staying the implementation of the order appealed from until the final decision of the appeal. Failure to file a timely notice of appeal waives any right to further challenge the order of the fire code official. "File" means delivered to the office of the fire code official at 300 Seminary Ln, Ukiah, California 95482.

Exception: Orders affecting acts or conditions which in the opinion of the fire code official, pose an immediate threat to life, property, or the environment as a result of panic, fire, explosion, or release are enforceable when made and are not stayed by the filing of a notice of appeal.

Section 112.5.3, Hearing of Appeal, of Chapter 1 is added to read as follows:

Section 112.5.3 Hearing of Appeal. Following is the process for establishing and hearing appeals:

The Board of Appeals, or the secretary thereof, shall set the matter to be heard at a date within thirty (30) days of receipt of such notice of appeal. Written notice of the time and place set for hearing shall be served on the Appellant by first class mail to the mailing address given in the notice of appeal. A hearing may not be conducted less than 20 days after notice is given to the applicant. The Board of Appeals may adopt rules governing the conduct of its hearings. Those rules shall include, at least,

the following:

1. The fire code official shall submit evidence at the hearing substantiating his/her decision. Such evidence may include testimony, fire district, police or other reports of the incident, witness statements, and other documents. Not less than 10 days prior to the scheduled hearing, the fire code official must notify the Appellant of the name, address, and phone number of any witness to the violation and furnish the Appellant with a copy of any document the fire code official intends to submit at the hearing. Not less than seven (7) days prior to the hearing, the Appellant may request the fire code official to produce at the hearing any witness he/she intends to rely upon to substantiate the violation. The written request must name the witness or witnesses who are requested to attend the hearing. The fire code official may not rely on the testimony of any witness (including such testimony contained in reports or written witness statements) whose appearance at the hearing is required by this subsection if that witness fails to appear.
2. Not less than 10 days prior to the hearing, the Appellant must notify the fire code official in writing of the name, address, and phone number of any witness the Appellant intends to call as a witness at the hearing, provide a brief description of the proposed testimony, and furnish the fire code official with a copy of any document the Appellant intends to offer as evidence at the hearing. The Appellant may not call any witness to testify at the hearing who was not identified as required by this subsection or offer any document as evidence at the hearing that was not provided to the fire code official as required by this subsection.
3. At the hearing, the Appellant may be represented by an attorney, at the Appellant's expense. Both the fire code official and the Appellant shall have the right to examine and cross-examine any witness produced at the hearing. The rules of evidence that normally apply in court shall not apply in a hearing before the Board of Appeals, but it shall only consider evidence that would be relied upon by reasonable people making an important decision and shall disregard evidence that by its nature is unreliable or not credible.
4. The entire hearing shall be electronically or stenographically recorded. The Board of Appeals shall base its decision exclusively on the evidence presented at the hearing and shall issue a written decision, which includes a statement of the relevant facts that it finds to be true and explains how the facts support its decision. The record of the hearing shall be preserved for not less than six (6) months after the decision is served on the Appellant.

Section 112.5.4, Hearing Decision, of Chapter 1 is added to read as follows:

Section 112.5.4 Hearing Decision. The chairperson of the Board of Appeals shall issue the written decision required by subsection 4 of Section 112.4 Hearing of appeal.

The Board of Appeals may issue a decision affirming, modifying, or vacating the order of the fire code official. The decision shall be in writing and shall be served upon the Appellant by first class mail to the mailing address given in the notice of appeal. The hearing decision shall include notice of the Appellant's right to seek review of the decision pursuant to California Code of Civil Procedure Sections 1094.5 and 1094.6.

Section 112.5.5, Finality of the Decision of the Board of Appeals, of Chapter 1 is added to read as follows:

Section 112.5.5 Finality of the Decision of the Board of Appeals. The decision of the Board of Appeals shall be the final decision for the District. The Board of Appeals shall have the power to continue any hearing and may, at its discretion, take the appeal under submission. The Board of Appeals shall render a decision not later than the seventh (7th) day following the date the matter was

taken under submission, and forthwith notify the interested parties as previously set forth.

Section 112.5.6, Appeal to Superior Court, of Chapter 1 is added to read as follows:

Section 112.5.6 Appeal to Superior Court. Judicial review of the decision of the Board of Appeals shall be governed by the Code of Civil Procedure Sections 1094.5 and 1094.6.

Section 112.5.7, Enforcement of Decision, of Chapter 1 is added to read as follows:

Section 112.5.7 Enforcement of Decision. Unless stayed by a court, any final decision of the Board of Appeals is effective immediately and may be implemented and enforced by the District. The remedies provided by this code are cumulative and in addition to any other remedies available at law or in equity.

1. Causing, permitting, aiding, abetting, or concealing a violation of any provision of this ordinance shall constitute a violation.
2. Violations of this code are hereby declared to be public nuisances.
3. A violation of this code constitutes a misdemeanor/infraction punishable by a fine of \$1,000 or by imprisonment in the County jail for six months, or both.
4. In addition to other remedies provided by this ordinance or by other law, any violation of this ordinance may be remedied by a civil action brought by the District, including, for example, administrative or judicial nuisance abatement proceedings, other legally authorized enforcement proceedings, and suits for injunctive relief.

Section 113.4, Violation Penalties, of Chapter 1 is amended to read as follows:

Section 113.4 Violation Penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a misdemeanor/infraction. The first citation within a 12-month period, for violations of the Fire Code and any amendments adopted herein shall be treated as a Civil Penalty payable directly to the Ukiah Valley Fire District and is set at \$250.00 plus the actual costs of all inspections required to gain compliance at the current rate set from time to time by the Ukiah Valley Fire District, per hour with a 1-hour minimum. Said civil penalties shall be a debt owed to the District by the person responsible for the violation within thirty (30) days after the date of mailing the citation unless an appeal is filed as provided in this section.

Upon failure to pay the civil penalty when due, the responsible person shall be liable for civil action brought by the Ukiah Valley Fire District for such penalty and costs of the litigation, including reasonable attorney's fees.

Any subsequent citations within a twenty-four (24) month period for any violations of the Fire Code and any amendments adopted herein shall be misdemeanors/infractions and shall be subject to the penalties set forth herein, or a civil penalty shall be assessed in the sum of \$500.00 plus the actual costs of all inspections required to gain compliance at the current rate set from time to time by the Ukiah Valley Fire District. The imposition of a penalty for any violation shall not excuse the violation or permit it to continue and all such persons shall be required to correct or remedy such violations or defects within a reasonable time. When not otherwise specified, each day that a violation occurs or continues, after a final notice has been delivered shall constitute a separate offense. The application

of both penalties shall be held to prevent the enforced correction of the prohibited condition. Nothing contained in this Section shall be construed or interpreted to prevent the Ukiah Valley Fire District from recovering all costs associated with a Fire District response as described in the Ukiah Valley Fire District's current cost recovery ordinance, Ordinance 2004-1, or subsequent cost recovery ordinances.

Any violation of any provision of this Chapter shall constitute a public nuisance and shall entitle the Ukiah Valley Fire District to collect the costs of abatement and related administrative costs by a nuisance abatement lien as more particularly set forth in Government Code Section 38773.1, and by special assessment to be collected by the County Tax Collector as more particularly set forth in Government Code Section 38773.5. At least thirty (30) days prior to recordation of the lien, or submission of the report to the Tax Collector for collection of this special assessment, the record owner shall receive notice from the Chief of the Ukiah Valley Fire District of the intent to charge the property owner for all administrative costs associated with enforcement of this Ordinance and abatement of the nuisance. The notice shall include a summary of costs associated with enforcement of this Ordinance and abatement of the nuisance. The property owner may appeal the Chief's decision to the Board of Directors of the Ukiah Valley Fire District within fifteen (15) days of the date of the notice and request a public hearing prior to recordation of the lien or submission of the report to the County Tax Collector for collection of the special assessment. In addition to the foregoing, the Ukiah Valley Fire District is authorized to prosecute a civil action to collect such abatement costs from the property owner or other person in possession or control of the affected property and shall be entitled to recover such abatement costs, together with the cost of litigation, including reasonable attorney's fees.

Any person receiving a citation for a civil penalty pursuant to Section 113.4, Violation Penalties, of Chapter 1, may file an appeal per Section 112.5 through 112.7 of this code against the imposition of the civil penalty or response costs and expense.

Section 114.4, Failure to Comply, of Chapter 1 is amended to read as follows:

Section 114.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe conditions, shall be liable to a fine payable directly to the Ukiah Valley Fire District in the amount set at not less than \$250.00 or more than \$1000.00 plus the actual costs of all inspections required to gain compliance at the rate set from time to time by the Ukiah Valley Fire District, civil penalty shall be a debt owed to the District by the person responsible for the violation within thirty (30) days after the date of mailing of the citation unless an appeal is filed as provided for in Section 112.5.

Section 503 Fire Apparatus Access Roads in its entirety.

Section 503.3 MARKING, of Chapter 5 is hereby added to read as follows:

Section 503.3 MARKING. Where the fire code official determines that it is necessary to ensure adequate fire access, the fire code official may designate existing roadways as fire access roadways as provided by Vehicle Code section 22500.1 (public) or 22658(a) (private).

Section 503.4.2, Roadway Design Features, of Chapter 5 is hereby added to read as follows:

Section 503.4.2 Roadway Design Features. Roadway design features (speed bumps, speed humps, speed control dips, etc.) which may interfere with emergency apparatus responses shall not be installed on fire access roadways, unless they meet design criteria approved by the fire code official.

Section 505.1, Address Identification, of Chapter 5 is hereby amended to read as follows:

Section 505.1 Address Identification. Approved numbers and/or addresses shall be placed and maintained on all new and existing buildings and at appropriate additional locations as to be plainly visible and legible from the street or roadway fronting the property from either direction of approach. Said number shall contrast with their background and shall meet the minimum standards as to size: 4" high with a 0.5" stroke for residential buildings, 6" high and a 0.5" stroke for commercial and multi-residential buildings, 12" high with a 1" stroke for industrial buildings. Additional numbers shall be required where deemed necessary by the fire code official, such as rear access doors, building corners, and entrances to commercial centers. The fire code official may establish different minimum sizes for numbers for various categories of projects.

Section 505.3, Easement Address Signs, of Chapter 5 is hereby added to read as follows:

Section 505.3 Easement Address Signs. All easements, which are not named differently from the roadway from which they originate, shall have an address sign installed and maintained, listing all street numbers occurring on that easement, located where the easement intersects the named roadway. Minimum size of numbers on that sign shall be 4" in height with a minimum stroke of 0.5" and shall contrast with the background.

Section 505.4, Map Directories, of Chapter 5 is hereby added to read as follows:

Section 505.4 Map Directories. A lighted directory map, meeting current Fire District standards, shall be installed at each driveway entrance to multiple-unit residential projects and mobile home parks, where the numbers of units in such projects exceed 15.

Section 505.5, Response Map Updates, of Chapter 5 is hereby added to read as follows:

Section 505.5 Response Map Updates. Any new development, which necessitates updating of emergency response maps by virtue of new structures, hydrants, roadways or similar features, shall be required to provide map updates in a format (PDF and/or CAD format as approved by the fire code official) or compatible with current District mapping services, and shall be charged a reasonable fee for updating all response maps associated with this development.

Section 506.1 Key box where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life saving or firefighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL1037, and shall contain keys to gain necessary access as required by the fire code official.

Section 506.1.1 Locks. An approved lock shall be installed on gates or similar barriers where required by the fire code official.

Section 506.2 Key Box Maintenance. The operator of the building shall immediately notify the fire code official and provide a new key where a lock is changed or rekeyed. The key to such lock shall be secured in the key box.

Section 506.3, Emergency Electrical Disconnects, of Chapter 5 is hereby added as follows:

Section 506.3 Emergency Electrical Disconnects. Where access to main electrical control panels requires entry to, and passage through, portions of a structure which may be involved with fire, smoke, gasses, hazardous materials, or which otherwise present unsafe conditions to emergency personnel, the fire code official may require that a means of remotely disconnecting electrical service to the

structure be provided. This means of remotely disconnecting electrical service shall be by a secured key switch mechanism approved by the Fire District.

Section 1201.4 Alternate Power Sources, of Chapter 12 is hereby added to read as follows:

Section 1201.4 Alternate Power Sources. All permanent installations of electrical generators, wind generators, or other power sources shall be approved by the building code official. All applicable provisions of the California Electrical Code, the California Plumbing Code, the California Building Code, the California Residential Code, and this Code shall be followed for any such installation. Permanent engraved and affixed signage, red in color, reading "WARNING – This premises is provided with an Alternate Power source, Disconnection of commercial power may not disable the electric power source." Lettering shall be a minimum of 0.5" tall and shall be permanently affixed on each electrical panel subject to back-feed from alternate power sources. Any and all power disabling switches shall be clearly labeled.

Section 903.2, Where required, of Chapter 9 is hereby amended to read as herein provided. This section shall not amend the portion commencing and following Section 903.2.1.

Section 903.2 Where required. Approved automatic sprinkler systems in new, additions to existing, remodeled, added to or altered buildings and structures shall be provided in the locations described in this section.

A. Approved automatic sprinkler systems shall be provided in the new buildings and structures requiring a fire flow of 2000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

B. Approved automatic sprinkler systems shall be provided in addition to existing structures where the new total building area would require a fire flow of 2,000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

C. Approved automatic sprinkler systems shall be provided in existing structures where improvements occur during any three (3) year period which meet the definition of a "substantial remodel" and require a fire flow of 2,000 gallons per minute (GPM) or greater as determined by Appendix B of this code.

Exception: Projects that are solely complying with statutory regulations (examples may be Health and Safety Codes, earthquake/seismic, American Disabilities Act (ADA), or façade improvements) will not trigger this requirement.

D. Approved automatic sprinkler systems shall be provided in new structures exceeding 30 feet in height above the lowest grade level.

E. Approved automatic sprinkler systems shall be provided in those new, additions to existing, remodeled, added to, or altered buildings and structures which require a fire flow, as determined by Appendix B of this code, in excess of the capability of the available water supply.

F. Approved automatic sprinkler systems shall be installed per 903.3.1.3 in new mobile homes, and manufactured homes.

For purposes of this Section, "substantial remodel" shall mean the alteration of any structure which combined with any additions to the structure, performed within any three (3) year period, affects an area of work that exceeds fifty percent (50%) of the existing floor area of the structure. When any changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists

and coverings, roof rafters, roof diaphragms, foundations, piles or retaining walls, or similar components, the area of work for all rooms affected by such changes shall be included in computing floor areas for purposes of applying this definition. This definition does not apply to the replacement and upgrading of residential roof coverings or exterior wall finishes.

Definition: Area of work: (For the purpose of determining the square footage affected by a construction permit.) An area, where work activity takes place for which a permit is required plus 5 feet in all directions and does not include adjacent spaces where no work requiring a permit is being done.

Example: A 10 foot walls are moved that will take two spaces and turn them into one. The only area of work would be the wall plus five feet on either side. Total square footage 100 square foot assuming there is no other work being done that would require a permit in the same space.

Section 3307.5, Where required, of Chapter 33 is hereby amended to read as follows:

Section 3307.5 Where required. In buildings required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed during construction for each story above or below the first floor grade. Such standpipes shall be provided with Fire District hose connections at locations adjacent to stairways complying with Section 3307.1.2. Such standpipes shall be extended to the floor of the highest point of construction having secured decking or flooring.

Table B105.2, Buildings other than one- and two-family dwellings, of Appendix B, is hereby amended as follows:

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the <i>California Fire Code</i>	50% of the value in Table B105.1(2)a	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the <i>California Fire Code</i>	50% of the value in Table B105.1(2)b	Duration in Table B105.1(2) at the reduced flow rate

Section BB105.1, Fire-Flow requirements for buildings, of Appendix BB is hereby amended as follows:

Section BB105.1 The minimum fire flow and flow duration for school buildings shall be specified in Table BB105.1.

Exception: A reduction in required fire flow of up to 50 percent is allowed when the building is provided with an approved sprinkler system.

§5201 DEFINITIONS

In the California Fire Code, herein adopted, the terms used therein shall comply with the common construction given to and usage of them in the City and as hereinafter defined.

§5202 ENFORCEMENT

- A. The California Fire Code (CFC) herein adopted shall be enforced by the Chief of the Ukiah Valley Fire District who is hereby appointed to supervise the Bureau of Fire Prevention and such regularly employed members of said District in accordance with the applicable provisions of the California Fire Code.
- B. Section 104.3 of the California Fire Code is amended by adding subsection 104.3.2 thereto as follows:

For the purpose of providing and maintaining functions necessary for the prevention of fire and for the protection of life and property from fire and panic, there is hereby established a "self-inspection program" assuring that certain California building code (CBC) group B, F, H, L, M, and S occupancies within the city are inspected on an annual basis for fire safety.

The Ukiah Fire District shall deliver, by hand or by mail, "self-inspection worksheet" and "business and emergency record" forms as established from time to time by said District to certain CBC group B, F, H, L, M, & S occupancies within the city on an annual basis, or as may be initiated through the business license application process.

The owner or manager of said occupancy or person in highest authority in said occupancy shall be allowed thirty (30) days from issue date, as noted on the self-inspection worksheet, in which to conduct an inspection for fire safety, correct any deficiencies, complete said forms, and return completed forms to the Ukiah Valley Fire District as directed by the fire chief or his designee.

Any person who fails to comply with the requirements to return said forms duly completed and to correct the deficiencies noted in said occupancies within thirty (30) days of the issuance of said forms shall be guilty of an infraction, punishable by a fine of \$100 for a first offense, \$500 for a second offense and \$1,000 for a third or subsequent offense.

§5223 GEOGRAPHIC LIMITS

The geographic limits referred to in certain section of the California Fire Code are hereby established as follows: 2025 edition of the California Fire Code are hereby established as follows:

Section 5704.2.9.6.1 The geographic limits referred to in Section 5704.2.9.6.1 of the 2025 edition of the California Fire Code in which storage of Class I, Class II, and liquids in outside above-ground tanks is prohibited are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the City of U County of Mendocino, and agricultural land of less than two (2) acres.

Section 5706.2.4.4 The geographic limits referred to in Section 5706.2.4.4 of the 2025 edition of the California Fire Code in which storage of Class I, Class II, and liquids in aboveground tanks is prohibited are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the County of Mendocino, and agricultural land of less than two (2) acres.

Section 5806.2 The geographic limits referred to in the 2025 edition of the California Fire Code in which the storage of flammable cryogenic fluids in stationary containers are prohibited, are hereby established as follows: In all residential areas and heavily populated or congested commercial areas, as established by the County of Mendocino.

Section 6104.2 The geographic limits referred to in Section 6104.2 of the 2025 edition of the California Fire Code in which storage of liquefied petroleum gas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7,570 liters), is restricted, are amended as follows: In all residential areas and in all heavily populated or congested commercial areas as established by the City of Ukiah.

SECTION TWO.

1. Publication: Within fifteen (15) days after its adoption, this Ordinance shall be published once in a newspaper of general circulation in the City of Ukiah. In lieu of publishing the full text of the Ordinance, the City may publish a summary of the Ordinance once 5 days prior to its adoption and again within fifteen (15) days after its adoption.
2. Effective Date: The ordinance shall become effective thirty (30) days after its adoption.

Introduced by title only on September 17, 2025, by the following roll call vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Adopted on _____, 2025, by the following roll call vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk

RESOLUTION 2025-X

RESOLUTION OF THE CITY OF UKIAH CITY COUNCIL ESTABLISHING FINDINGS OF FACT AND NEED FOR CHANGES OR MODIFICATIONS TO THE STATE BUILDING STANDARDS CODE BECAUSE OF LOCAL CONDITIONS

CHANGES OR MODIFICATIONS: Pursuant to Section 13869.7, 17958.5, 17958.7, 17922, and 18941.5 of the State of California Health and Safety Code, the City of Ukiah City Council in its ordinance adopting and amending the 2025 Edition of the California Fire Code with reference to the 2024 Edition of the International Fire Code, changes or modifies certain provisions of the 2025 California Building Standards Code (Title 24, Part 9) as it pertains to the regulation of buildings used for human habitation. A copy of the text of such changes or modifications is attached.

Findings: Pursuant to Sections 17958.5, 17958.7, 17922, and 18941.5 of the State of California Health and Safety Code, the City of Ukiah City Council has determined and finds that the attached changes or modifications to the 2025 California Building Standards Code are needed and are reasonably necessary because of local climatic, geographic, and topographic conditions.

Local Conditions: Local conditions have an adverse effect on the prevention of (1) major loss fires, (2) major earthquake damage, and (3) the potential for life and property loss, making necessary changes or modifications to the 2025 California Fire Code, 2024 International Fire Code and the 2025 California Building Standards Code in order to provide a reasonable degree of property security and fire and life safety in this Fire District.

Below are listed adverse local climatic (see No. 1), geographic, and topographic (see No. 2) conditions.

1. Climatic

- a. **Precipitation.** Precipitation ranges from 13 to 71 inches per year with an average of approximately 37 inches per year. Approximately eighty-nine percent (89%) falls during the months of November through April, and eleven (11%) from May through October.
- b. **Relative Humidity.** Humidity generally ranges from 35% during daytime to 85% at night. The humidity can drop to 12% or lower during the summer months.
- c. **Temperatures.** Temperatures have been recorded as high as 115 degrees F. Average summer highs are in the 86 to 91 degree range.
- d. **Winds.** Prevailing winds are from the northwest. However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 3 – 18 mph range, gusting to 33 mph, particularly during the summer months. Extreme winds, up to 50 mph, have been known to occur.
- e. **Summary.** These local climatic conditions affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, of low humidity and high temperatures create extremely hazardous conditions, particularly as they relate to the ignition of structure fires which have the potential to burn into the vegetation (wildland), and vice versa. The winds experienced in this area can have a tremendous impact upon structure fires in buildings of close proximity to one another, commonly found in the residential neighborhoods throughout the Ukiah Valley. During structure, or wildland fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building

fires, winds can literally force fire back into the building and create a blowtorch effect, in addition to preventing “natural” ventilation and cross-ventilation efforts.

2. Geographic and Topographic

- a. The fire environment of a community is primarily a combination of two factors: the area’s physical geographic characteristics and the historic pattern of urban-suburban development. These two factors, alone and combined, create a mixture of environments, which ultimately determines the area’s fire protection needs.

The basic geographical boundaries of the District include Nelson Ranch Road to the south, Cleland Mountain to the west, Gold Gulch to the north and Cow Mountain to the east.

Because of the size of the Ukiah Valley Fire District (98 square miles), the characteristics of the fire environment changes from one location to the next. Therefore, the District has not one, but a number of fire environments, each of which has its individual fire protection needs.

The service area of the Ukiah Valley Fire District has a varied topography and vegetative cover. A conglomeration of valley floor, mountainous slopes, and ridges make up the terrain. Development has occurred on the flat lands in the central portion of the District. However, over the last thirty years, development has spread onto the surrounding mountainous slopes.

- b. **Seismic Location.** The relatively young geological processes that have created the San Francisco Bay Area are still active today. The District sits on the Maacama fault between the San Andreas fault to the west and the Bartlett Springs fault to the east.
- c. **Size and Population.** The Ukiah Valley Fire District covers 98 square miles including a population estimated at 35,000. Ukiah Valley Fire has the largest number of dispatches of any fire district in Mendocino County. Within the Fire Protection District are four (4) fire stations and a total of 34 Fire District personnel. The Fire Protection District handles diverse responsibilities including wildland, urban, freeway, and medical.
- d. **Roads and Streets.** The 2005 Regional Transportation Plan states that the mountainous nature of Mendocino County tends to minimize ground transportation options throughout the region. As a result, lengthy cul-de-sacs, dead-end roads, and looped road systems generally service many of the existing and new developments. Some planned unit developments are served by private roads, which create access problems (i.e., narrow paved widths and on-street parking).

The roadway systems on the flat lands within the Ukiah Valley Fire District are for the most part a grid or loop system. Many of the roads servicing residential areas on the east and west foothills of the District are narrow and winding affording difficult ingress to emergency apparatus. Ingress and egress into the foothill areas will be made extremely difficult by large-scale emergencies such as earthquake and wildland fire.

- e. **Topography.** The District’s service area is a conglomeration of valley floor, mountainous slopes, and ridges. The flatter lands are found in the central portion of the District. Most of the existing urban and suburbanized areas are on relatively flat lands (0 – 5% slope).

Correspondingly, there is much diversity in slope percentages to the east and west of the valley floor. Slopes on the northeast side of the valley floor average 26% and range from 8-80%. Slopes on the southeast side of the valley floor average 35% and range from 9-80%. Slopes on the northwest side of the valley floor average 32% and range from 13-80%. Slopes on the southwest side of the valley floor average 48% and range from 6-80%. Slope is an important factor in fire spread. As a basic rule of thumb, the rate of spread will double as the slope percentage doubles, all other factors remaining the same.

Elevations are varied in the District with the most southwest turn on Ruddick Cunningham Road listed as 566 feet above sea level. The average elevation of the valley floor within the District is 585 feet above sea level. The highest elevation is located above Willow Creek on the east side of the District at 2600 feet above sea level.

- f. **Vegetation.** The Ukiah Valley's semi-arid Mediterranean-type climate produces vegetation similar to that of most of Mendocino County, with specific growth locale a result of topography and prevailing wind. The south facing exposures are primarily annual grass with occasional clumps of Oak trees. The east, north, west facing slopes are heavily wooded from lower elevations to ridge with Oak, Madrone, Douglas-fir, Redwood, and minor shrubs of the general Chaparral class.

Expansion of the residential community into areas of heavier vegetation has resulted in homes existing in close proximity to dense natural foliage. Often such dwellings are completely surrounded by highly combustible vegetation compounding the fire problem from a conflagration point of view.

- g. **Hydrology.** The Ukiah Valley Fire District contains Lake Mendocino, the Russian River, Mill Creek, Robinson Creek and multiple ephemeral streams. Annual precipitation at or above the annual average of 37 inches can result in flooding along the Russian River and its tributaries. These flooding events lead to increased emergency response times for apparatus responding through or around the flooded roadways.

- h. **Summary.** The above local geographic and topographic conditions increase the magnitude, exposure, accessibility problems, and fire hazards presented to the Ukiah Valley Fire District.

Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself.

The majority of the Ukiah Valley's industrial/commercial complexes are located in close proximity to the Maacama fault. This fault zone also contains the largest concentration of hazardous materials. Hazardous materials, particularly toxic gases, could pose the greatest threat to the largest number, should a significant seismic event occur. The District's resources would have to be prioritized to mitigate the greatest threat, and may likely be unavailable for smaller single-dwelling or structure fires.

Other variables may tend to intensify the situation:

- 1) The extent of damage to the water system;
- 2) The extent of isolation due to bridge and/or freeway overpass collapse;
- 3) The extent of roadway damage and/or amount of debris blocking the roadways;
- 4) Climatic conditions (hot, dry weather with high winds);

- 5) Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
- 6) The availability of timely mutual aid or military assistance;

Conclusion: Local climatic, geographic, and topographic conditions impact fire prevention efforts, and the frequency, spread, acceleration, intensity and size of fire involving buildings in this community. Further, they affect potential damage to all structures from earthquake, or flood, and subsequent fire. Therefore it is found to be reasonably necessary that the California Fire Code and the State Building Standards Code be changed or modified to mitigate the effects of the above conditions.

Furthermore, California Health and Safety Code Section 17958.7 requires that the modification or change be expressly marked and identified as to which each finding refers. Therefore, the City of Ukiah City Council finds that the following table provides code sections that have been modified pursuant to **Ordinance 2023-1** which are building standards as defined in Health and Safety Code Section 18909, and the associated referenced conditions for modification due to local climatic, geological and topographical reasons.

<u>Section Number</u>	<u>Local climatic, geological and topographical conditions</u>
503	1e, 2a, 2b, 2e, 2f, 2h
503.3	1e, 2a, 2b, 2e, 2f, 2h
503.3.3	1e, 2a, 2d, 2e, 2f
505.1	1e, 2h
505.3	1e, 2h
505.4	1e, 2c
505.5	1e, 2h
506.1	1e, 2h
506.1.1	1e, 2h
506.2	1e, 2h
1201.4	1e, 2h
903.2	1e, 2h
3307.5	1e, 2h
Table B105.2	1e, 2h
BB105.1	1e, 2h
5704.2.9.6.1	1e, 2h
5706.2.4.4	1e, 2h
5806.2	1e, 2h
6104.2	1e, 2h

NOW, THEREFORE, BE IT FURTHER RESOLVED AND ORDERED that the Fire Chief of the Ukiah Valley Fire District shall provide a copy of the change or modification together with a copy of this resolution to the County of Mendocino pursuant to California Health and Safety Code Section 13869.7(b)

PASSED AND ADOPTED, by the City of Ukiah City Council, County of Mendocino, State of California on September 17, 2025, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Receive Updates on City Council Committee and Ad Hoc Assignments, and, if Necessary, Consider Modifications to Assignments and/or the Creation/Elimination of Ad Hoc(s).

DEPARTMENT: City Clerk

PREPARED BY: Kristine Lawler, City Clerk

PRESENTER: Mayor Crane and Various Councilmembers

ATTACHMENTS:

1. 2025 City Council Special Assignments and Ad Hocs

Summary: City Council members will provide reports and updates on their committee and ad hoc assignments. If necessary, the Council may consider modifications.

Background: City Council members are assigned to a number of committees and ad hoc activities. These assignments are included as Attachment 1.

Discussion: Previously, the City Council discussed having more time allocated to reporting on committee and ad hoc activities. Often, the Council Reports section of the regular agenda is rushed due to impending business (i.e., public hearings), and not enough time is afforded for reports beyond community activities.

In an effort to foster regular updates on committee and ad hoc assignments, this item is being placed on the agenda to provide the City Council members an expanded opportunity to report on assignments and modify assignments as necessary.

Recommended Action: Receive report(s). The Council will consider modifications to committee and ad hoc assignments along with the creation/elimination ad hoc(s).

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: N/A

REVENUE: No **GRANT:** No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: N/A

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): N/A

Approved: 
Sage Sangiacomo, City Manager

LOCAL / UKIAH VALLEY	MTG DATE/TIME	MEETING LOCATION	MAILING ADDRESS/CONTACT	COMMITTEE FUNCTION	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
City Broadband Project	TBD	TBD	Civic Center 300 Seminary Ave. Ukiah, CA 95482	to evaluate the Request for Proposal (RFP) for the Internet Service Provider (ISP) for the California's Public Utilities Commission (CPUC) Last Mile Broadband	Orozco	Jim Robbins , Grants Manager, 463-6708; jrobbins@cityofukiah.com
Investment Oversight Committee	Varies	Civic Center 300 Seminary Ave. Ukiah, CA 95482	Civic Center 300 Seminary Ave. Ukiah, CA 95482	Reviews City investments, policies, and strategies	Crane Orozco - Alternate Alan Carter , Treasurer	Dan Buffalo , Director of Finance; 463-6220 dbuffalo@cityofukiah.com
Disaster Council	Shall meet a minimum of once a year at a time and place designated upon call of the chair	Place designated upon call of the chair or, if she/he is unavailable or unable to call such meeting, the first vice chair and then the City Manager or her/his designee.	Office of Emergency Management 300 Seminary Ave. Ukiah, CA 95482 467-5720 - Traci Boyl	Develop any necessary emergency and mutual aid plans, agreements, ordinances, resolutions, rules, and regulations.	Orozco Criss - Alternate	Traci Boyl , City Manager's Office Management Analyst; 467-5720; tboyl@cityofukiah.com
Greater Ukiah Business & Tourism Alliance (GUPTA)	4th Monday of month, 10 a.m.	200 S School St. Ukiah, CA 95482	200 S School St. Ukiah, CA 95482	Promotes tourism and works to strengthen and promote the historic downtown and businesses within the greater Ukiah area	Marianne Davison - Community Services Department Staff Orozco - Alternate	Shannon Riley , Deputy City Manager; 467-5793 sriley@cityofukiah.com
Mendocino County Inland Water and Power Commission (IWPC)	2nd Thursday of month, 6:00 p.m.	Civic Center 300 Seminary Avenue conference room 5	IWPC Staff P.O. Box 1247 Ukiah, CA 95482 391-7574 - Candace Horsley	Develops coordination for water resources and current water rights: Potter Valley project - Eel River Diversion	Rodin Orozco - Alternate	Sean White , Director of Water Resources; 463-5712 swhite@cityofukiah.com
North Coast Opportunities (NCO)	4th Wednesday of month, 2 p.m.	Alternating locations - Ukiah and Lakeport	Governing Board Chair North Coast Opportunities 413 North State Street Ukiah, CA 95482	Assist low income and disadvantaged people to become self reliant	Neil Davis	Neil Davis, Community Services Director; 467-5764 ndavis@cityofukiah.com
Sun House Guild ex officio	2nd Tuesday of month, 10:30 a.m.	Sun House 431 S. Main St. Ukiah, CA	431 S. Main Street Ukiah, CA 95482 467-2836	Support and expand Grace Hudson Museum	Orozco, Sher Neil Davis - Alternate	David Burton , Museum Director; 467-2836 dburton@cityofukiah.com
Ukiah Valley Basin Groundwater Sustainability Agency (GSA)	2nd Thursday of month, 1:30 p.m.	Board of Supervisors Chambers; 501 Low Gap Road Ukiah, CA	County Executive Office 501 Low Gap Rd., Rm. 1010 Ukiah, CA 95482 463-4441	GSA serves as the Groundwater Sustainability Agency in the Ukiah Valley basin	Crane N/A - Alternate	Sean White , Director of Water Resources; 463-5712 swhite@cityofukiah.com
MENDOCINO COUNTY	MTG DATE/TIME	MEETING LOCATION	MAILING ADDRESS/CONTACT	COMMITTEE FUNCTION	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
City Selection Committee	Called as required by the Clerk of the Board	BOS Conference Room 501 Low Gap Rd. Rm. 1090 Ukiah, CA	C/O: BOS 501 Low Gap Rd., Rm 1090 Ukiah, CA 95482 463-4441	Makes appointments to LAFCO and Airport Land Use Commission (Mayor - Primary; Vice Mayor - Alternate)	Mayor Crane Vice Mayor Sher	Kristine Lawler , City Clerk; 463-6217 klawler@cityofukiah.com
Economic Development & Financing Corporation (EDFC)	2nd Thursday of month, 2:00 p.m.	Primarily 631 S. Orchard Street (location varies)	Executive Director 631 South Orchard Avenue Ukiah, CA 95482 467-5953	Multi-agency co-op for economic development and business loan program	Riley (appointed 12/19/18)	Shannon Riley , Deputy City Manager; 467-5793 sriley@cityofukiah.com
Library Advisory Board	3rd Wednesdays of alternate months; 1:00 p.m.	Various Mendocino County Libraries	Ukiah County Library 463-4491	Review library policy and activities	Sher Rodin - Alternate	Kristine Lawler , City Clerk; 463-6217; klawler@cityofukiah.com
Mendocino County 1st District Liaison	Monthly; TBD	Civic Center Annex conference room #5 411 West Clay St. Ukiah, CA 95482	Civic Center 300 Seminary Ave. Ukiah, CA 95482	To coordinate activities and policy development with the City's 1st District Supervisor	Crane Rodin - Alternate	Sage Sangiacomo , City Manager; 463-6221; ssangiacomo@cityofukiah.com
Mendocino County 2nd District Liaison	1st Wednesdays of month, 8:00 a.m.	Civic Center Annex conference room #5 411 West Clay St. Ukiah, CA 95482	Civic Center 300 Seminary Ave. Ukiah, CA 95482	To coordinate activities and policy development with the County's 2nd District Supervisor	Criss Rodin - Alternate	Shannon Riley , Deputy City Manager; 467-5793 sriley@cityofukiah.com
Mendocino Council of Governments (MCOG)	1st Monday of month, 1:30 p.m.	Board of Supervisors Chambers 501 Low Gap Road Ukiah, CA	Executive Director 367 N. State Street, Ste. 206 Ukiah, CA 95482 463-1859	Plan and allocate State funding, transportation, infrastructure and project County wide	Criss Sher - Alternate	Tim Eriksen , Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com Craig Schlatter , Community Development Director; 463-6219; cschlatter@cityofukiah.com
Mendocino County Airport Land Use Commission	As needed	BOS Conference Room 501 Low Gap Rd., Rm. 1090, Ukiah, CA	Mendocino County Executive Office 501 Low Gap Rd. Rm. 1010 Ukiah, CA 95482	To formulate a land use compatibility plan, provide for the orderly growth of the airport and the surrounding area, and safeguard the general welfare of the inhabitants within the vicinity	Liaisons: Owen/Schlatter	Greg Owen , Airport Manager; 467-2855; gowen@cityofukiah.com Craig Schlatter , Director of Community Development; 463-6219; cschlatter@cityofukiah.com
Mendocino County Local Area Formation Commission (LAFCO)	1st Monday of month, 9:00 a.m.	Board of Supervisors Chambers	Executive Director 200 S. School Street, Ste. 2 Ukiah, CA 95482 463-4470	Required by legislation - planning spheres of influence, annexation, service areas, and special districts	Rodin Crane - Alternate for both city seat members on Commission	Craig Schlatter , Director of Community Development; 463-6219; cschlatter@cityofukiah.com

MENDOCINO COUNTY Continued	MTG DATE/TIME	MEETING	LOCATION	MAILING ADDRESS/CONTACT	COMMITTEE FUNCTION	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
Mendocino Solid Waste Management Authority (MSWMA)	3rd Thursday of every other month (varies), 10:00 a.m.	Willits Council Chambers		Solid Waste Director 3200 Taylor Drive Ukiah, CA 95482 468-9710	County-wide Solid Waste JPA	Crane Sher - Alternate	Tim Eriksen , Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com
Mendocino Transit Authority (MTA) Board of Directors	Last Wednesday of month, 1:30 p.m.	Alternating locations - Ukiah Conference Center or Fort Bragg, or Point Arena		Executive Director 241 Plant Road Ukiah, CA 95482 462-1422	County-wide bus transportation issues and funding	Sher Rodin - Alternate	Tim Eriksen, Public Works Director/City Engineer ; 463-6280 teriksen@cityofukiah.com
Mendocino Youth Project JPA Board of Directors	3rd Wednesday of month, 7:45 a.m.	776 S. State Street Conference Room		Mendocino Co. Youth Project 776 S. State Street, Ste. 107 Ukiah, CA 95482 707-463-4915	Targets all youth with a focus on drug and alcohol prevention, healthy alternatives and empowering youth to make healthy choices	Criss Max Brazill, Admin Lieutenant - Alternate	Tom Corning , Police Chief; 463-6254; tcorning@cityofukiah.com
Russian River Flood Control District (RRFCD) Liaison	1st Monday of month, 5:30 p.m.	151 Laws Ave., Suite D Ukiah, CA		151 Laws Ave., Ukiah, CA 95482; rrfc@pacific.net; 462-5278	Proactively manage the water resources of the upper Russian River for the benefit of the people and environment of Mendocino County	White/Orozco	Sean White , Director of Water Resources; 463-5712 swhite@cityofukiah.com
Ukiah Players Theater Board of Directors	3rd Tuesday of month, 6:00 p.m.	1041 Low Gap Rd Ukiah, CA 95482 462-1210		1041 Low Gap Rd Ukiah, CA 95482 462-1210	To oversee the activities, organization and purpose of the Ukiah Players Theater	Greg Owen , Airport Manager (appointed 12/19/18)	Kristine Lawler , City Clerk; 463-6217 klawler@cityofukiah.com
Ukiah Unified School District (UUSD) Committee	Quarterly	511 S. Orchard, Ste. D Ukiah, CA 95482		511 S. Orchard Ukiah, CA 95482	Information exchange with UUSD Board Chair, Mayor, Superintendent, and City Manager	Orozco, Criss Sage Sangiacomo, City Manager Cedric Crook, Police Chief	Sage Sangiacomo , City Manager; 463-6221 ssangiacomo@cityofukiah.com
REGIONAL	MTG DATE/TIME	LOCATION		MAILING ADDRESS/CONTACT	COMMITTEE FUNCTION	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
Great Redwood Trail Agency (GRTA)	Bi-monthly, 3rd Thursdays, 10:30 a.m.	Various Locations - announced		419 Talmage Road, Suite M Ukiah, CA 95482 463-3280	Provides a unified and revitalized rail infrastructure meeting the freight and passenger needs of the region	Rodin Sher- Alternate	Neil Davis , Community Services Director 467-5764 ndavis@cityofukiah.com
League of California Cities Redwood Empire Legislative Committee	Prior to Division Meetings, meets 3x in person and then via conference call	Various locations that are announced		Redwood Empire League President; Public Affairs Program Manager (916) 658-8243	Elected city officials and professional city staff attend division meetings throughout the year to share what they are doing and advocate for their interests in Sacramento	Orozco Criss - Alternate	Sage Sangiacomo , City Manager; 463-6221 ssangiacomo@cityofukiah.com
Russian River Watershed Association (RRWA)	4th Thursday of month, 9:00 a.m. (only 5 times a year)	Windsor Town Hall 9291 Old Redwood Hwy, #400 Windsor, CA 95492 707-838-1000		Russian River Watershed Association 2235 Mercury Way, Suite 105 Santa Rose, CA 95407 info@rrwatershed.org 707-508-3670 (message only)	Consider issues related to Russian river - plans projects and funding requests	Rodin Sher - Alternate	Tim Eriksen , Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com
Northern California Power Agency (NCPA) - Commission	4th Thursday of month, 9:00 a.m. (see NCPA calendar)	Roseville, CA and other locations		651 Commerce Drive Roseville, CA 95678 916-781-4202	Pool of State and local power utilities developing and operating power generation, providing scheduling and related energy services and providing regulatory and legislative support.	Crane - Commissioner Sher - City Council Alternate Sauers - Alternate and Commissioner in absence of Commissioner Crane	Cindi Sauers - Electric Utility Director; 463-6286 csauers@cityofukiah.com
Northern California Power Agency (NCPA) – Lodi Energy Center (LEC) Appointment	2nd Monday of month, 10:00 AM	Lodi, CA and other locations		651 Commerce Drive Roseville, CA 95678 916-781-4299	Committee oversees the operation, maintenance and expenditures of the LEC 300 MW generating project.	Sauers – Project Participate Appointee	Cindy Sauers , Electric Utility Director, 463-6286, csauers@cityofukiah.com
Transmission Agency of Northern California (TANC)	4th Wednesday of month, 10 a.m.	35 Iron Point Circle Suite 225 Folsom, CA		35 Iron Point Cir #225 Folsom, CA 95630 916-852-1673; info@tanc.us	Provide electric transmission to its Member utilities through transmission line ownership or contract arrangements.	Crane Sauers - Alternate	Cindi Sauers - Electric Utility Director; 463-6286 csauers@cityofukiah.com C
STANDING COMMITTEES	MTG DATE/TIME	LOCATION		MAILING ADDRESS/CONTACT	COMMITTEE FUNCTION	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
Diversity and Equity	TBD	Virtual Meeting Room (link to be created)		Civic Center 300 Seminary Ave. Ukiah, CA 95482	Improve diversity and equity in the City's workforce and municipal services	Orozco/Criss	Traci Boyl , City Manager's Office Management Analyst; 467-5720; tboyl@cityofukiah.com
Fire Executive Committee	2nd Tue, every other month beginning in January; 5:00 p.m.	Ukiah Valley Conference Center, 200 S. School Street Ukiah, CA		Civic Center 300 Seminary Ave. Ukiah, CA 95482 sabba@cityofukiah.com	Per the recently adopted agreement between the City of Ukiah and the Ukiah Valley Fire Protection District	Orozco/Sher Alternates: Criss	Doug Hutchison , Fire Chief; 463-6263; dhutchison@cityofukiah.com
Countywide Oversight Board to the RDA Successor Agencies	4th Thursday of January, 4:00 p.m.; meets annually	Ukiah Valley Conference Center, 200 S. School Street Ukiah, CA		City of Ukiah ATTN: City Clerk 300 Seminary Ave. Ukiah, CA 95482	Oversee and direct the Successor Agencies of the former redevelopment agencies	Crane	Dan Buffalo , Director of Finance; 463-6220 dbuffalo@cityofukiah.com Kristine Lawler , City Clerk; 463-6217, klawler@cityofukiah.com
Water Executive Committee (Ukiah Valley Water Authority)	1st Tue of each month at 6:00 p.m.	Ukiah Valley Conference Center, 200 S. School Street Ukiah, CA		City of Ukiah ATTN: Sean White 300 Seminary Ave. Ukiah, CA 95482	Oversight of UVWA; set annual budget for the combined water system; Manage rates and collect levies; modify existing water rights for the provision of water service; mediation and dispute resolution;	Crane/Orozco	Sean White , Director of Water Resources; 463-5712 swhite@cityofukiah.com

2025 AD HOC COMMITTEES		
COMMITTEE	ASSIGNED TO	PRINCIPAL STAFF SUPPORT
Electric Grid Operational Improvements	Crane/Orozco	Cindy Sauers, Electric Utility Director; 463-6286 csauers@cityofukiah.com
Trench Cut Policy Development	Crane	Tim Eriksen, Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com
Advance Planning & Policy for Annexation Applications	Crane/Rodin	Craig Schlatter, Community Development Director 463-6219 cschlatter@cityofukiah.com
UVSD/ City Relations <i>Ad hoc committee to address specific issues with the Ukiah Valley Sanitation District, including discussion of overall sewer system service delivery policies, operating policy revisions, potential revisions to the current Operating Agreement, and cost sharing</i>	Crane/Orozco	Dan Buffalo, Director of Finance; 463-6220 dbuffalo@cityofukiah.com Sean White, Water Resources Director 463-5712 swhite@cityofukiah.com
Orr Street Bridge Corridor	Rodin/Sher	Tim Eriksen, Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com
Complete Streets	Rodin/Crane	Tim Eriksen, Public Works Director/City Engineer; 463-6280 teriksen@cityofukiah.com Shannon Riley, Deputy City Manager 467-5793 sriley@cityofukiah.com Neil Davis, Community Services Director 467-5764 ndavis@cityofukiah.com
Special Districts (Water District Consolidation)	Orozco/Crane	Shannon Riley, Deputy City Manager 467-5793 sriley@cityofukiah.com
Corp Yard Planning	Crane/Orozco	Jason Benson, Senior Civil Engineer 463-6284 jbenson@cityofukiah.com
Mendocino County Courthouse Project and Reuse	Sher/Orozco	Shannon Riley, Deputy City Manager 467-5793 sriley@cityofukiah.com
City's 150-Year Anniversary Planning	Orozco/Rodin	Shannon Riley, Deputy City Manager 467-5793 sriley@cityofukiah.com
Zoning Reform <i>Function is to explore creation of a new ministerial zoning permit and identify additional zoning streamlining and reform efforts to provide better and more consistent development outcomes</i>	Crane/Orozco	Craig Schlatter, Community Development Director 463-6219 cschlatter@cityofukiah.com
Community Health Needs Assessment (CHNA) Steering Committee <i>assist in the creation of the 2025 CHNA Report for the communities served by the three Adventist Health hospitals in Mendocino County. providing insight, identifying, gathering and analyzing the health needs of our community. Additionally</i>	Rodin/Sher	Jeremy Malin, NP Director of Community Health Analytics Adventist Health Howard Memorial Adventist Health Ukiah Valley Adventist Health Mendocino Coast 978-289-3330; malinj@ah.org
Parks & Recreation Special District Exploration	Rodin/Orozco	Neil Davis, Community Services Director 467-5764 ndavis@cityofukiah.com
Downtown Zoning code	Crane/Rodin	Craig Schlatter, Community Development Director 463-6219 cschlatter@cityofukiah.com
Tourism Advisory Committee	Rodin/Sher	Shannon Riley, Deputy City Manager 467-5793 sriley@cityofukiah.com
Historic Preservation Code	Sher/Criss	Craig Schlatter, Community Development Director 463-6219 cschlatter@cityofukiah.com
Fire Severity	Rodin/Orozco	Craig Schlatter, Community Development Director 463-6219 cschlatter@cityofukiah.com
CalPERS	Crane/Orozco	Dan Buffalo, Director of Finance; 463-6220 dbuffalo@cityofukiah.com
City Council Handbook Review and Update	Sher	Kristine Lawler, City Clerk 463-6217; klawler@cityofukiah.com

*Note: Changing the composition of an existing ad-hoc among current councilmembers after work has begun presents potential Brown Act issues. Requests for fully filled ad-hocs are represented on the draft, but staff does not recommend changes except to fill vacated assignments. The current requests on the sheet for fully composed ad-hocs are primarily intended to convey interest in topics covered by these ad-hoc committees for possible future consideration of new assignments.