



**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/88415730501>

Or you can call in using your telephone only:

- Call (toll free) 1-888-788-0099
- Enter the Access Code: 884 1573 0501
- 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.

July 16, 2025 - 5:15 PM

1. ROLL CALL

2. PLEDGE OF ALLEGIANCE

3. AB 2449 NOTIFICATIONS AND CONSIDERATIONS

4. PROCLAMATIONS/INTRODUCTIONS/PRESENTATIONS

- 4.a. Proclamation of the Ukiah City Council Recognizing July 26, 2025, as Disability Independence Day in the City of Ukiah.

Recommended Action: Issue a Proclamation of the Ukiah City Council recognizing July 26, 2025, as Disability Independence Day in the City of Ukiah.

Attachments:

1. Disability Independence Day Proclamation

5. PETITIONS AND COMMUNICATIONS

6. APPROVAL OF MINUTES

- 6.a. Approval of the Minutes for the July 2, 2025, Regular Meeting.

Recommended Action: Approve the Minutes for the July 2, 2025, Regular Meeting.

Attachments:

1. 2025-07-02 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 Master Service Agreements in Substantial Form for Utility Operations and Billing Services with the Hopland Public Utility District and River Estates Mutual Water Company, and for Billing and Administrative Services for the Ukiah Valley Sanitation District.

Recommended Action:

Authorize the City Manager to complete negotiations, finalize, and execute three Master Service Agreements in substantial form with the following entities for the fiscal year beginning July 1, 2025, and ending June 30, 2026:

- 1. Ukiah Valley Sanitation District, for billing and administrative services in the amount of \$183,055.68 (Attachment 1).***
- 2. Hopland Public Utility District, for operations, billing, and administrative services in the amount of \$161,000.86 (Attachment 2).***
- 3. River Estates Mutual Water Company, for operations, billing, and administrative services in the amount of \$39,707.07 (Attachment 3).***

Attachments:

1. UVSD_ Agreement with City of Ukiah for Billing and Collections
2. Hopland_ Agreement with City of Ukiah for Operations, Billing, and Administrative Services
3. River Estates_ Agreement with City of Ukiah for Operations, Billing, and Administrative Services

- 8.b. Adoption of a Resolution Approving the Application for the Land And Water Conservation Fund Riverside Park Regeneration Project.

Recommended Action: Adopt a resolution approving the application for the Land And Water Conservation Fund Riverside Park Regeneration Project.

Attachments:

1. 2024-04-16 Ukiah Riverside Park CDs
2. LWCF Authorizing Resolution Riverside Park

- 8.c. Approval of Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01 and Approve Final Payment of the 5% Retention to Kirby Construction Co.

Recommended Action: Approve the Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01; approve final payment of the 5% retention to Kirby Construction Co.; and direct the City Clerk to file the Notice of Completion with the County Recorder.

Attachments:

1. Spec 24-01 - Hastings Tenant Improvements & Fire Damage Repair
2. Kirby Construction Co. Inc. - Hastings Tenant Impvmnts and Fire Damage Repair - 23
3. Change Order No. 7
4. Notice of Completion-Kirby Construction

- 8.d. Consideration of Approval of an Amendment to Contract #2425-199 with Rincon Consultants, Inc., for the Purpose of Providing California Environmental Quality Act (CEQA) Professional

Consulting and GIS Services to Assist with the Potential Development of a Draft Reorganization Application.

Recommended Action: Approve an amendment in the amount of \$23,522 to Contract #2425-199 with Rincon Consultants, Inc., for the purpose of providing California Environmental Quality Act (CEQA) professional consulting and GIS services to assist with the potential development of a draft reorganization application.

Attachments:

1. Rincon Consultants COU 2425-199
2. Rincon Add Services 1

- 8.e. Approve Plans and Specifications for Remodel of Municipal Services Building Located at 501 South State Street, Specification 25-04, and Direct Staff to Advertise for Bids.

Recommended Action: Approve plans and specifications for remodel of the municipal services building at 501 South State Street, Specification 25-04, and direct Staff to advertise for bids.

Attachments:

1. Ukiah BofA ADA Barrier Removal_Issue for Bid_DWGS
2. Spec 25-04 Remodel of 501 South State Street - Draft
3. Ukiah BofA Cost Estimate

- 8.f. Adoption of a Resolution Authorizing an Application to the California Climate Investments and Proposition 4 Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention Program.

Recommended Action: Adopt a resolution authorizing an application to the California Climate Investments and Proposition 4 Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention Program.

Attachments:

1. FY 2526 Wildfire Prevention Grants GUIDELINES CCI-Prop4
2. Resolution Cal Fire Wildfire Prevention Program

- 8.g. Adoption of Resolution Reappointing Gregory Andronaco to the Airport Commission.

Recommended Action: Adopt resolution reappointing Gregory Andronaco to the 'County Resident' position on the Airport Commission, term to expire July 16, 2028.

Attachments:

1. Resolution 2014-48
2. Andronaco - Application and Nomination
3. Proposed Resolution

- 8.h. Authorize the City Manager to Negotiate and Execute a One-Year Extension to the Cooperative Agreement for Dispatch Services with the California Department of Forestry and Fire Protection.

Recommended Action: Authorize the City Manager to negotiate and execute a one-year extension to the agreement for dispatch services with the California Department of Forestry and Fire Protection.

Attachments:

1. Current Dispatch Agreement
2. Ukiah last agreement Calculator (003)

- 8.i. Authorize City Manager to Award Contract for the Fairgrounds Storm Drain Replacement Project, Specification 25-02, to Ghilotti Construction Company Inc, as the Apparent Low Bidder in the Amount of \$591,204, Upon the City Manager Completing Negotiation of a Satisfactory Agreement with the Redwood Empire Fairgrounds ("Fairgrounds") Sharing Costs of Construction and Other Matters Concerning the Ongoing Use and Maintenance of the Storm Drain and Related Facilities, and Approve All Necessary Budget Amendments.

Recommended Action: Authorize the City Manager to award a contract for the Fairgrounds Storm Drain Replacement Project, Specification 25-02, to Ghilotti Construction Company Inc., as the

apparent low bidder in the amount of \$591,204, upon completion of a satisfactory agreement with the Fairgrounds regarding cost-sharing and ongoing maintenance of the storm drain and related facilities; and authorize the City Manager to execute all necessary budget amendments based on the negotiated cost-sharing arrangement, including a 10% contingency, without the need for further Council approval.

Attachments:

1. Bid Tabulation Spec 25-02 Fairgrounds Storm Drain Replacement
2. Ghilotti Bid

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)

13. UNFINISHED BUSINESS

- 13.a. 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.
Recommended Action: Adopt a resolution affirming that the declaration of a local emergency remains in effect.

Attachments:

1. Resolution 2025-07 - Ratify Proclamation
2. CC Reso 2025-26 - Ratification of Proclamation of Local Emergency
3. Continuing Atmospheric River State of Emergency July 16 2025

- 13.b. Status Report on Emergency Contract with Diamond D Construction, LLC for the Emergency Repair of the Western Hills Mudslide at the City Water Tank (Pressure Zone 1-North, or PZ1-N) and Request for Authorization to Continue Work Under This Emergency Contract.

Recommended Action: Receive report and approve the continued work on the emergency contract with Diamond D Construction for the emergency repair of the Western Hills mudslide at the City water tank PZ1-N.

Attachments:

1. Resolution 2025-08 - Emergency Procurement for Mudslide at PZ1
2. Diamond D Estimate for PZ1
3. Purchase Order for Diamond D Slide
4. Slide Pictures

14. NEW BUSINESS

- 14.a. Adopt Resolution Initiating Proposition 218 Process to Adjust Sewer Service Rates and Receive Presentation of 2025 Sewer Utility Financial Plan (Anticipated to be Heard at the Start of the Meeting) .

Recommended Action: Adopt a resolution initiating the Proposition 218 process for proposed adjustments to sewer service rates, including authorizing the mailing of notice to affected property owners and customers, and setting a public hearing date for September 17, 2025.

Attachments:

1. City of Ukiah 2025 Sewer Rate Study Presentation, 7-16-25
2. City of Ukiah 2025 Sewer Financial Plan draft 7.10.25 (002)
3. Resolution - 218 Initiation
4. City Prop 218 Notice 7-16-25 - final

- 14.b. Review of Applications Received, and Possible Adoption of Resolution Making Appointments to Fill Vacancies on the City of Ukiah Planning Commission.

Recommended Action: 1) Review, possibly interview applicants, and discuss applications received; 2) make nominations; 3) adopt resolution making appointments to fill vacant seats on the Planning Commission.

Attachments:

1. Resolution 2021-52
2. Applications
3. Proposed Resolution

- 14.c. Adoption of a Resolution Amending Resolution 2024-09 to Revise the Diversity and Equity Committee Membership Composition.

Recommended Action: Adopt a resolution amending Resolution 2024-09 to revise the Diversity and Equity Committee membership composition and reduce the number of seats from eleven (11) to seven (7).

Attachments:

1. Resolution 2024-09 - Modifying Diversity and Equity Standing Committee
2. 2025-07-01 Diversity and Equity Committee
3. Resolution 2025 - Amending Resolution 2024-09 to Revise the Diversity and Equity Committee Membership Structure

- 14.d. 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 Hoc(s)

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. SCUUK-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. **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: 7/11/25



AGENDA SUMMARY REPORT

SUBJECT: Proclamation of the Ukiah City Council Recognizing July 26, 2025, as Disability Independence Day in the City of Ukiah.

DEPARTMENT: City Manager / Admin

PREPARED BY: Maria Ceja, Administrative Analyst

PRESENTER: Mayor Crane or Councilmember

ATTACHMENTS:

1. Disability Independence Day Proclamation

Summary: The Ukiah City Council to issue a proclamation recognizing July 26, 2025, as Disability Independence Day in the City of Ukiah.

Background: The Americans with Disabilities Act (ADA), signed into law on July 26, 1990, affirms the civil rights of people with disabilities and calls on communities to create inclusive environments that support people of all abilities; the City of Ukiah encourages all community members to recognize and support Disability Independence Day.

Discussion: At the Regular City Council Meeting on July 16, 2025, the City Council will issue a Proclamation (Attachment 1) recognizing July 26, 2025, as Disability Independence Day. The proclamation will be received by Julie Eby-Mckenzie from State Council on Developmental Disabilities and Denise Gorny, a member of the City of Ukiah's Diversity and Equity Committee.

Recommended Action: Issue a Proclamation of the Ukiah City Council recognizing July 26, 2025, as Disability Independence Day in the City of Ukiah.

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 Diversity and Equity Committee

STRATEGIC PLAN (SP): **SP 5C** - Create, sustain, and advance a diverse and inclusive workplace and workforce that reflects, values, and celebrates the diverse community we serve.

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved: 
Sage Sangiacomo, City Manager

PROCLAMATION

City of Ukiah



Recognizing

July 26, 2025, as Disability Independence Day in the City of Ukiah

Whereas, the Americans with Disabilities Act (ADA) was signed into law on July 26, 1990, establishing a clear and comprehensive national mandate for the elimination of discrimination to ensure the civil rights of people with disabilities; and

Whereas, disability is a social construct. The 'problem' is not the medical condition that resides within the individual, but the 'problem' is that society does not create a welcoming, supporting environment/policies/systems for all; and

Whereas, equitable experiences and full inclusion is a matter of social justice. Consequently, creating equitable, inclusive environments is a shared responsibility of everyone; and

Whereas, policies must be developed, attitudes shaped, and equitable experiences offered to all individuals; including those with developmental disabilities; and

Whereas, the ADA has expanded opportunities for Americans with disabilities; and

Whereas, citizens should do all in their power to:

- ❖ Recognize the value and intersectionality of the disability experience in our lives and its valued role in our rich diversity.
- ❖ Recognize the barriers presented to those with disabilities.
- ❖ Create ways to include everyone, especially those with developmental disabilities, to be fully included in all aspects of life.
- ❖ Understand the losses (financial, spiritual, human rights, contributions to the community, and otherwise) when our communities segregate and create barriers for those with disabilities.
- ❖ Demand policymakers no longer invest in segregation and create inclusive, equitable policies and systems for all; and

Whereas, we encourage the community to learn more about ADA, eliminate discrimination, and celebrate July 26, 2025, as Disability Independence Day.

Therefore be it resolved, that the City Council of the City of Ukiah, hereby proclaims July 26, 2025, as

Disability Independence Day in the City of Ukiah

*Signed and sealed, this 16th day of July
in the year Two Thousand and Twenty-Five.*

Douglas F. Crane, Mayor

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/87407229306>

July 2, 2025
5:15 p.m.

1. ROLL CALL

Ukiah City Council met at a Regular Meeting on July 2, 2025, having been legally noticed on June 27, 2025. The meeting was held in person and virtually at the following link: <https://us06web.zoom.us/j/87407229306>. Mayor Crane called the meeting to order at 5:18 p.m. Roll was taken with the following **Councilmembers Present:** Mari Rodin, Heather Criss, Juan V. Orozco, Susan Sher, and Douglas, F. Crane. **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 Councilmember Criss.

3. AB 2449 NOTIFICATIONS AND CONSIDERATIONS

4. PROCLAMATIONS/INTRODUCTIONS/PRESENTATIONS

a. Presentation from Northern Circle Indian Housing Authority (NCIHA) regarding their Proposed 'Ukiah Elders Village' Housing Project at 420 Cooper Lane.

Presenters: Moriah McGill, Northern Circle Indian Housing Authority and Jesse Davis, Chief Planning Manager.

Public Comment: Vevila Blossoming Bear, California Interagency Council on Homelessness Tribal Liaison

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 June 18, 2025, Regular Meeting.

Motion/Second: Orozco/Sher to approve Minutes of June 18, 2025, a regular meeting, with modifications. Motion **carried** by the following roll call votes: AYES: Rodin, Criss, Orozco, Sher, and Crane. NOES: None. ABSENT: None. ABSTAIN: None.

7. RIGHT TO APPEAL DECISION

Mayor Crane read the right to appeal.

8. CONSENT CALENDAR

- a. Approval of Contract (2526-075) with Stone Creek Environmental Consulting for Engineering Services and Consulting Services Related to Storm Water Permitting for Fiscal Years 2025/2026 – *Public Works*.
- b. Authorize the City Manager to Negotiate and Execute an Inter-Facility Dispatch Contract (2526-076) with All Access Transfer Center – *Fire*.
- c. Report of Disposition of Surplus Materials, Used Equipment, and Supplies – *Finance*.
- d. Consideration of Rejecting All Bids Received for the Abandonment of Environmental Monitoring and Remediation Wells Project, Specification 24-08 – *Public Works*.
- e. Consideration of Adoption of Resolution (2025-31) Approving Records Destruction for the Police Department – *City Clerk*.
- f. Receive Annual Report of Boards and Commission Term Expirations and Vacancies – *City Clerk*.

Sage Sangiacomo, City Manager, answered questions regarding agenda items 8b and f.

Motion/Second: Criss/Orozco to approve Consent Calendar Items 8a-8f, with the recommended action of item 8f modified to receive the report. Motion **carried** by the following roll call votes: AYES: Rodin, Criss, Orozco, Sher, and Crane. NOES: None. ABSENT: None. ABSTAIN: None.

9. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

No public comments were received.

10. COUNCIL REPORTS

Presenter: Councilmember Rodin.

11. CITY MANAGER/CITY CLERK REPORTS

Presenters:

- **Construction Update** – Tim Eriksen, Public Works Director / City Engineer.
- **Corp Yard Update** – Sage Sangiacomo, City Manager (*report given after agenda item 14b*).

12. PUBLIC HEARINGS (5:30 PM)

13. UNFINISHED BUSINESS

- a. **Status Report on Emergency Contract with Diamond D Construction, LLC for the Emergency Repair of the Western Hills Mudslide at the City Water Tank (Pressure Zone 1-North, or PZ1-N) and Request for Authorization to Continue Work Under This Emergency Contract.**

Presenter: Sage Sangiacomo, City Manager.

No public comment was received.

Motion/Second: Crane/Criss to receive the report and approve the continued work on the emergency contract (PO 48757) with Diamond D Construction for the emergency repair of the Western Hills mudslide at the City water tank PZ1-N. Motion **carried** by the following roll call votes: AYES: Rodin, Criss, Orozco, Sher, and Crane. NOES: None. ABSENT: None. ABSTAIN: None.

14. NEW BUSINESS

a. Adoption of Resolution Authorizing SAFER Grant Application Related to the Ukiah Valley Multi-Agency Consolidation.

Presenter: Sean White, Water Resources Director.

No public comment was received.

Motion/Second: Crane/Orozco to adopt resolution (2025-32) authorizing SAFER grant application related to the Ukiah Valley Multi-Agency Consolidation. Motion **carried** by the following roll call votes: AYES: Rodin, Criss, Orozco, Sher, and Crane. NOES: None. ABSENT: None. 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.

Additional City Manager report given.

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 Involving a Joint Powers Agency (Inland Water and Power Commission)

City representative on IWPC Board (Mari Rodin)
Discussion will concern: (Conference with Real Property Negotiators (Gov't Code §54956.8)
Property: PG&E Potter Valley Project;
Agency Negotiators: Scott Shapiro, Janet Pauli.
Negotiating Parties: IWPC and PG&E
Under Negotiation: Price and Terms)

e. 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

f. Conference with Labor Negotiator (54957.6)

Agency Designated Representative: Sage Sangiacomo, City Manager
Employee Organizations: All bargaining units
Unrepresented Employee: Police Chief

No closed session was held.

16. ADJOURNMENT

There being no further business, the meeting adjourned at 6:20 p.m.

Araceli Sandoval, Deputy City Clerk

DRAFT



AGENDA SUMMARY REPORT

SUBJECT: Approval of Master Service Agreements in Substantial Form for Utility Operations and Billing Services with the Hopland Public Utility District and River Estates Mutual Water Company, and for Billing and Administrative Services for the Ukiah Valley Sanitation District.

DEPARTMENT: Finance

PREPARED BY: Dan Buffalo, Finance Director

PRESENTER: Dan Buffalo, Finance Director, and Jared Walker, Deputy Water Resources Director

ATTACHMENTS:

1. UVSD_ Agreement with City of Ukiah for Billing and Collections
2. Hopland Agmt with City for Operations, Billing & Admin Srvcs
3. River Estates Agmt with City Operations, Billing & Admin Srvcs

Summary: Staff is requesting the approval of three Master Service Agreements (MSAs) in substantial form for the provision of utility-related services by the City of Ukiah to the Hopland Public Utility District, River Estates Mutual Water Company, and Ukiah Valley Sanitation District for fiscal year 2025–26. These agreements continue the City’s role in supporting partner agencies through direct operational support, billing, and administrative services on a full-cost recovery basis.

While these agencies are not members of the Ukiah Valley Water Authority (UVWA), they are and will continue to be served by it through the City of Ukiah’s operational and administrative infrastructure. All three agencies were previously receiving these services through Willow prior to the UVWA JPA. These agreements represent a coordinated effort to leverage UVWA’s regional service model in a cost-effective and collaborative manner.

Background: In 2024, the City of Ukiah assumed responsibility for operations and billing functions previously managed by Willow County Water District on behalf of multiple local water and sanitation agencies. The City entered into transitional agreements to maintain service continuity and initiate a long-term service model based on the City’s established financial, staffing, and operational infrastructure.

The Master Service Agreement framework developed in FY 2024–25 supports the broader regional water and sanitation strategy led by the Ukiah Valley Water Authority (UVWA), which was formed to coordinate and integrate service delivery across multiple agencies. Although Hopland, River Estates, and UVSD are not formal members of the UVWA, they benefit from its structure and services through the City’s participation.

The MSA framework ensures a clear scope of services, compliance with cost recovery standards, and responsiveness to each agency’s operational needs. As of FY 2025–26, the City has prepared updated MSAs for continued service, supported by detailed cost estimates and pricing schedules developed in consultation with each agency.

Discussion: The proposed MSAs reflect the City’s full-cost recovery model, inclusive of direct labor, equipment use, materials, administrative support, and applicable overhead. While the MSA boilerplate is identical for all three agencies—modeled after the agreement with Ukiah Valley Sanitation District (UVSD)—the scope and pricing differ based on service levels, timing, and prior negotiations.

Hopland Public Utility District and River Estates Mutual Water Company require both operations (including water treatment/production and distribution) and administrative services. For both agencies, the City is maintaining pricing for the first six months of FY 2025–26 at the same levels each agency paid under their prior MSA agreements with Willow County Water District and the City for FY 2024–25. This pricing structure honors verbal commitments made during the formation of the Ukiah Valley Water Authority (UVWA), even though neither agency is a formal JPA member. Beginning January 1, 2026, full cost-based pricing will take effect, based on the City's FY 2025–26 indirect cost rate of 13.21% and detailed operational cost estimates.

City staff have briefed both agencies. In Hopland's case, the Finance Director previously intended to share a pricing memo with the Board, but they requested the updated proposal and draft agreement be presented together before taking action. The Board has been informed that Willow would likely have raised rates if they had remained the service provider, and the increases presented by the City are consistent with expectations outlined in Hopland's recent rate study and adopted rate schedule. For River Estates, while formal board approval is still pending, staff anticipates acceptance with no substantive changes to the proposed MSA.

Ukiah Valley Sanitation District (UVSD) already receives operations support through a separate Operating Agreement with the City. Therefore, the MSA with UVSD is limited to billing and administrative services. The pricing was determined based on the full cost of providing those services and was developed earlier in the year using the City's FY 2024–25 indirect cost rate of 10.97%. While the new pricing is higher than what UVSD previously paid to Willow, the increase reflects the higher compensation and benefit structure for City staff. The UVSD Board reviewed and approved the agreement at its meeting on July 9, 2025.

Though pricing varies by agency, the methodology used for each agreement is consistent—using budgeted labor rates, estimated hours, direct material costs, and the applicable overhead rate based on the City's cost allocation plan. The differences are the result of timing and scope—not approach.

Each agreement is structured to cover a three-year term, with automatic one-year renewals thereafter unless terminated. The proposed pricing schedules and service scopes are detailed in the exhibits of each MSA.

The costs and associated revenue to provide these services are already included in the City's FY 2025–26 adopted budget.

Staff recommends Council authorize the City Manager to complete negotiations, finalize, and execute three Master Service Agreements in substantial form for Utility Operations and Billing Services with the Hopland Public Utility District and River Estates Mutual Water Company, and for Billing and Administrative Services with the Ukiah Valley Sanitation District for the fiscal year beginning July 1, 2025, and ending June 30, 2026.

Recommended Action:

Authorize the City Manager to complete negotiations, finalize, and execute three Master Service Agreements in substantial form with the following entities for the fiscal year beginning July 1, 2025, and ending June 30, 2026:

1. Ukiah Valley Sanitation District, for billing and administrative services in the amount of \$183,055.68 (Attachment 1).
2. Hopland Public Utility District, for operations, billing, and administrative services in the amount of \$161,000.86 (Attachment 2).
3. River Estates Mutual Water Company, for operations, billing, and administrative services in the amount of \$39,707.07 (Attachment 3).

BUDGET AMENDMENT REQUIRED: No

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.:

COORDINATED WITH: Water Resources Department

STRATEGIC PLAN (SP): **SP 3B** - Analyze and consider opportunities for regional partnerships that support or improve the delivery of municipal services.

CLIMATE INITIATIVES (CI):

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

Approved:


Sage Sangiacomo, City Manager

**AGREEMENT BETWEEN
THE CITY OF UKIAH AND
UKIAH VALLEY SANITATION DISTRICT
FOR ADMINISTRATIVE, BILLING AND COLLECTION SERVICES**

This Agreement for Administrative, Billing and Collection Services ("Agreement") is entered into on _____, 2025 ("the Effective Date") between the City of Ukiah, a general law municipal corporation ("City") and the Ukiah Valley Sanitation District ("District"), a sanitation district organized under the County Sanitation District Act to provide administrative, billing and collection services as further described herein. City and the District are sometimes individually referred to as "Party" and collectively as "Parties" in this Agreement.

RECITALS

1. Willow County Water District ("Willow") and the District entered into a Master Services Agreement ("MSA") on May 19, 2019, an addendum to the MSA on May 13, 2020, a Second Amendment to the MSA on May 17, 2021, a Third Amendment to the MSA on April 1, 2022, a Fourth Amendment to the MSA on March 8, 2023, and a Fifth Amendment to the MSA on March 1, 2024.

2. Under the MSA, Willow was providing the District with administrative, billing, and collection services.

3. A Joint Exercise of Powers Agreement ("JPA") between Millview County Water District, Redwood Valley County Water District, Willow and the City created the Ukiah Valley Water Authority ("UVWA").

4. Under the JPA, Willow no longer performs administrative, billing and collection services for itself or other special districts, and its employees have become City employees.

5. The District consented to the City and Willow entering into the Assignment and Assumption Agreement effective March 1, 2025, in which Willow assigned to the City, and the City assumed from Willow, the obligations set forth in the MSA, as amended.

6. The MSA expires on June 30, 2025, but District is in need of continued administrative, billing and collection services, and the City is willing to provide those services to the District as further provided herein;

AGREEMENT

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING, and for other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, City and District hereby agree as follows:

1. **Recitals**, The recitals set forth above are an integral part of this agreement and are fully incorporated herein.

2. **Services.** City shall provide District with administrative, billing and collection services as described in the Scope of Services ("Services") attached hereto as Exhibit A and incorporated herein by this reference. City will provide all qualified, trained and, if required, licensed and certified personnel, and direct supervision.
3. **Term.** The term of this Agreement shall commence on July 1, 2025, continue through June 30, 2028, and shall be renewed automatically for one-year terms, unless the Agreement is terminated pursuant to Section 7. If the Agreement is terminated, the City will work with District in transitioning District to another source for Services, but City will be under no obligation to provide Services to District or be liable for costs or damages due to such transition.
4. **City Obligations.** City shall train and assign staff to perform the Services described in Exhibit A.
5. **Compensation.** District shall pay City the compensation for Services provided during the fiscal years beginning July 1, 2025, July 1, 2026, and July 1, 2027, as detailed in the attached Exhibit B, which is incorporated herein. City and District reserve the right to negotiate the compensation. The Parties shall meet and confer by March 31, 2028, to determine the cost of the increase effective July 1, 2028.

In the first year of this Agreement, City will have incurred implementation costs associated with preparing its software for District billing. District agrees to compensate City for these costs, not to exceed the amount as detailed in Exhibit B. Any difference in costs for software shall be subject to true up between the Parties within thirty (30) days after the City's payment to the software vendor.

City shall invoice District on a monthly basis and District shall remit these amounts in full within 30 days of service of an invoice from City by email and regular U.S. mail.
6. **Relationship of the Parties.** It is expressly understood and agreed by the Parties that this is a fee for service agreement and does not establish a joint venture, partnership or other relationship or separate entity and City does not assume a fiduciary relationship with the District under the terms of this Agreement or as a result of the City's performance under this Agreement. Each Party retains control over its own employees, who will be subject to that agency's rules and regulations.
7. **Termination.** This Agreement may be terminated in accordance with the following:

- a. **Termination Without Cause.**

- Either Party, and without cause, shall have the right, at the Party's sole discretion, to terminate this Agreement by providing one hundred and eighty

(180) days' advance written notice to the other Party. Upon termination, District shall be entitled only to a prorated refund of any monthly sum already paid in advance.

b. Termination for Cause.

Notwithstanding any other provision of this Agreement, if a Party fails to satisfactorily cure any breach within thirty (30) days' written notice ("Cure Period"), the other Party may immediately terminate this Agreement after the Cure Period concludes.

c. Data Transfer

In the event of termination, the Parties shall mutually cooperate to transition the District's data managed by the City to the District. The City shall transfer the District's data, in a format acceptable to the District, to the District within 180 days of notice of termination. The City shall ensure that its agreement with the billing software vendor includes language that addresses the City's transition of District's data to the District consistent with this paragraph.

8. **Force Majeure.** If by reason of *force majeure* any Party is unable in whole or in part to perform the obligations under this Agreement, such Party shall not be in default during the continuance of such inability. The term "*force majeure*" as used herein shall mean an event or condition beyond the Party's reasonable control in the exercise of due diligence, such as the following: acts of God; labor strikes or management lockouts lasting more than seven (7) days, any decisions or actions by the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, droughts, floods, explosions, breakage of or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of such Party.
9. **Software.** The District shall license and provide the City with access to the billing software (i.e., El Dorado) used by the District as of the Effective Date. The District makes no representations, warranties, or guarantees regarding the current software, and the City shall not be liable for any billing delays, errors or similar problems caused by any billing software that is used. Beginning January 1, 2026, or as soon as it is available thereafter, the City shall utilize new (i.e., COU) software to provide billing services for the District. The City shall license the new software (i.e., COU) and provide the District with access to that billing software.
10. **Operational Concerns.** The Parties shall attempt to resolve operational concerns or complaints in the most expeditious manner. If necessary, these concerns or complaints shall be documented and forwarded through the City Manager or the District Manager.

If the matter cannot be resolved informally, the complaining Party may be asked to put those complaints in writing, addressed to the other Party pursuant to Section 16. The Party receiving the complaint, within three (3) weeks of receipt, shall respond in writing regarding the status of the complaint, and shall continue to update the complaining Party every forty-five (45) days until disposition. It is the intent of the Parties that all complaints be resolved within ninety (90) days of receipt.

11. Nondiscrimination. The Parties shall comply with all applicable federal, state, and local laws regarding nondiscriminatory employment practices, whether or not said laws are expressly stated in this Agreement. The Parties shall not discriminate in violation of said laws against any employee or applicant because of race, color, religious creed, national origin, physical disability, mental disability, medical condition, marital status, sexual orientation, or gender.

12. Compliance with Laws. The parties shall comply with all applicable legal requirements including all federal, state, and local laws (including local ordinances and resolutions), whether or not said laws are expressly stated in this Agreement.

13. Indemnification and Insurance.

A. Mutual Indemnification. To the maximum extent allowed by law each Party hereby agrees to indemnify, defend, assume all liability for and hold the other Party harmless from all actions, claims, suits, penalties, obligations, liabilities, damages to persons or property, costs and expenses (including without limitation any fines, penalties, judgments, and actual litigation expenses, including, but not limited to, the fees of attorneys', experts, and investigators), and/or personal injuries or death to any persons (collectively, "Claims"), to the extent caused or alleged to have been caused in whole or in part by the negligence or willful misconduct of that Party. All references to "Party" in this Section 13.A. includes the Party's officers, agents or employees.

B. Insurance. During the term of this Agreement, each Party shall maintain at its own cost and expense the following insurance or self-insurance coverage (including through a pooled risk Joint Powers Agency against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work under this Agreement. If requested, each Party shall furnish the other party certificates of insurance and policy endorsements evidencing the required coverage. Thirty (30) days' written notice must be given of any pending change in the limits of liability or of any cancellation or modification of the policy.

- 1) *Commercial General Liability (CGL)*. Coverage equivalent to on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$1,000,000** per occurrence. If a general aggregate limit applies, 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 Insurance*. Equivalent to ISO Form Number CA 00 01 covering any auto (Code 1) with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
- 3) *Workers’ Compensation Insurance*. As required by the State of California, with statutory limits, and Employer’s Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease.
- 4) *Other Insurance Provisions*. The insurance policies are to contain, or be endorsed to contain, the following provisions:
 - i. *Additional Insured Status*. Each Party and its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of this Agreement.
 - ii. *Notice of Cancellation*. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the other Party.
 - iii. *Waiver of Subrogation*. Each Party hereby grants a waiver of any right to subrogation which any insurer of said Party may acquire by virtue of the payment of any loss under such insurance.

14. Records. City shall maintain any and all records, documents, and data relating to District’s billing and collection, and administrative services. These records include those maintained by the City on behalf of the District in accordance with Exhibit A. The City shall retain these records for a minimum of 3 years, or for any longer period required by law, after the Agreement terminates. All such records shall be maintained in accordance with generally accepted accounting principles and shall be made available for inspection, audit, and/or copying during regular business hours, upon advance written request of the District.

All books, documents, papers, accounting records, and other evidence pertaining to costs incurred shall be maintained by City and made available at all reasonable

times during the Term and in accordance with the City's retention policy for inspection by District.

15. Modifications and Amendments. This Agreement may only be modified or amended by the mutual written agreement of City and District executed by officials legally authorized to bind the Parties.

16. Entire Agreement. This Agreement contains all the terms and conditions agreed upon by the Parties regarding the terms and conditions of this Agreement or the Parties' performance hereunder. Except as expressly provided herein, no other agreement or understanding, whether written, oral, arising from conduct or otherwise, shall be deemed to exist or to bind any of the Parties hereto with respect to or otherwise add to or alter the terms and conditions of this Agreement. In any alleged conflict between the terms of this Agreement and any other agreement or understanding of the Parties the provisions of this Agreement shall prevail.

17. Notices. Any notices, requests, demands or other communications required or permitted to be given under this Agreement shall be in writing and delivered to the following addresses or such other addresses as the Parties may designate by written notice:

CITY: City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482
Attn: City Manager
Email: ssangiacomo@cityofukiah.com

DISTRICT: Ukiah Valley Sanitation District
151 Laws Avenue
Ukiah, CA 95482
Attn: District Manager
Email: wingseef@urbanfuturesinc.com

Depending upon the method of transmittal, notice shall be deemed received as follows: by messenger, overnight courier such as UPS or Federal Express or by email with acknowledgment of receipt as of the date delivered; and by U.S. Mail first class postage prepaid, as of 72 hours after deposit in the U.S. Mail.

18. Headings. The heading titles for each section of this Agreement are included only as a guide to the contents and are not to be considered as controlling, enlarging, or restricting the interpretation of the Agreement. The Parties acknowledge that this Agreement is the product of negotiation and compromise on the part of both Parties, and the Parties agree, that since both Parties have participated in the negotiation and drafting of this Agreement, this Agreement shall not be construed

as if prepared by one of the Parties, but rather according to its fair meaning as a whole, as if both Parties had prepared it.

19. Severability. If any term of this Agreement (including any phrase, provision, covenant, or condition) is held by a court of competent jurisdiction to be invalid or unenforceable, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in full force and effect; provided, however, this section shall not be applied to the extent that it would result in a frustration of the Parties' intent under this Agreement.

20. Governing Law; Jurisdiction; Venue. The interpretation, validity, and enforcement of this Agreement shall be governed by and interpreted in accordance with the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of Mendocino. The parties waive any right to a jury trial that either party may have.

21. Assignment and Delegation. This Agreement, and any portion thereof, shall not be assigned or transferred, nor shall any of the Parties' duties be delegated without the written consent of the other Party. Any attempt to assign or delegate this Agreement without the written consent of the other Party shall be void and of no force or effect. Consent by a Party to one assignment shall not be deemed to be consent to any subsequent assignment.

22. Successors. This Agreement shall bind and inure to the benefit of all successors and assigns of the Parties and any associates in interest, and their respective directors, officers, agents, servants, and employees, and the successors and assigns of each of them, separately and collectively.

23. Waiver. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

23. Signatures. The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of the respective agencies.

IN WITNESS WHEREOF, the Agreement is in full force and effect on the Effective Date.

CITY OF UKIAH

By: _____
Sage Sangiacomo, City Manager

ATTEST:

By: _____
Kristine Lawler, City Clerk

APPROVED AS TO FORM:

By: _____
David Rapport, City Attorney

UKIAH VALLEY SANITATION DISTRICT

By: _____
Ernie Wipf, Chair

ATTEST:

By: _____
Clerk to the Board

APPROVED AS TO FORM:

By: _____
Joanna Gin, General Counsel

Exhibit A
Scope of Services

The City shall provide the following services to the District, in accordance with District policies:

Billing & Collections:

- Prepare and process sanitation service bills, ensuring accuracy and compliance with district policies.
- Manage account receivables and monitor past-due accounts.
- Process customer payments, including cash, check, credit card, and online transactions.
- Work with customers to set up payment arrangements and resolve billing discrepancies.
- Prepare Year End Delinquency Schedule to submit to the County of Mendocino in accordance with the District's Policies and Procedures.

Customer Service:

- Answer customer inquiries via phone, email, or in person regarding billing, account status, service rates, and policies, at the District office located at 151 Laws Avenue, Ukiah, CA 95482, or at City offices at 300 Seminary Avenue, Ukiah, CA, 95482 during regular business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m., except when closed for holidays observed by the City. The City shall notify the District of any change to this location and contact information.
- Assist customers with new service applications/connection fees, service terminations, and account updates including invoices for connection fees.
- Provide clear explanations of billing statements and resolve disputes.
- Maintain customer records and update account information as necessary including updating "Ins" and "Outs".

Administrative & Financial Support:

- Maintain accurate records of payments, adjustments, and account activities.
- Maintain custodial funds for the District with an appropriate chart of accounts, and deposit payments addressed to District into District accounts.
- Annual File maintenance for updating customer's files for new monthly billing amounts.
- Generate and analyze billing reports to track revenue, outstanding balances, and collection trends.
- Assist with financial audits and compliance reporting related to billing and collections.
- Timely run reports of delinquent payments for placement on the property tax bill annually and update the list.
- Route correspondences as necessary.
- Support District meetings including Clerking Services. This includes, but is not limited to, the following tasks:

Exhibit A
Scope of Services

- Publish notices in the newspaper, post notices in public places, and/or email or email letters or notifications to customers as required for hearings or official business to be taken by the Board or following action taken by the Board) (e.g., ordinances).
- Attend regular and special District Board meetings and provide clerking service, including setting up and managing teleconferencing (such as Zoom) features, taking roll call, notes and preparing accurate minutes of the Board meetings.
- Plan and coordinate necessary preparations and support requirements for all Board meetings, including meeting room reservations.
- Prepare and post the agenda materials online, and email the agenda materials to the distribution list, in compliance with the Brown Act.
- Print agenda packets for Board Directors and the public at Board meetings.
- Maintain official District records, attest and process official District documents (e.g., contracts, resolutions, ordinances, minutes) and maintain financial records.
- Inform Board Directors of their obligations to complete their annual State of Economic Interests and biennial ethics and sexual harassment training.
- Arrange stipend payments, appointments, meetings, and travel of all Board Directors.
- Respond to California Public Records Act Requests in compliance with state or federal law in conjunction with District General Counsel.
- Banking:
 - Wire money from the Savings Bank semiannually to ensure timely payment of the District's Bond Obligation.
 - Other Savings Bank duties as required.

Exhibit B

District shall pay City the compensation for Services provided as follows:

Fiscal Year	Compensation
2025-2026	\$ 183,055.68
2026-2027	\$ 192,208.46
2027-2028	\$ 201,818.89

Exhibit B



Bill To
 Lori Martin
 Ukiah, City of
 300 Seminary Avenue
 Ukiah, CA, 95482-5400
 USA

Quote Number: **54026**
 Date Created: 02/04/2025
 Valid Until: 04/08/2025
 Account Manager: Bart Brockway

Accounting & Utility Billing - Services

Qty	Quoted Line Item	Price
1	Database Conversion from iXp - UVSD Sewer/Water Different Sub CIS Data Pull Conversion Services. -Convert minimum data to ensure system functionality. -Convert only accounts, meters, and locations that are active or have either a credit or debit balance. -Convert only one year of monthly summary history, which includes usage, bill amount, and monthly payment total but does not include detailed charges or payment information. -All data will be provided in Excel format, and utility resources will identify data items. Data mapping will be a joint effort between Milsoft and Ukiah. -Milsoft will provide reports and assist with data balancing. Ukiah will confirm that the data is accurate and balanced. -Four data pulls will be received, converted, and balanced. Each data pull may be reconverted multiple times. However, new data will only be received for the initial test conversion, 2 intermediate pulls in support of reconversions to ensure the process is correct, and a final go live conversion. -The final data pull will be performed after the system cutoff date of 12/31/2025, and the newly converted data in the system will be available and live on an agreed upon date the first week of January, 2026. Changes to this timeline will be agreed upon by both parties. -Additional pulls are \$7,000 each. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support not applicable. Contingent upon the execution of quote 53850.	\$27,000.00
1	Acct / Billing Services Blanket Set up and configuration of one (1) additional sanitation company being added to the current Ukiah CIS iXp system. -Online payments for all utility districts must have the same rate charge/convenience fee. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support Not Applicable.	\$4,500.00
1	iXp New Custom Development - Water Sewer Different Subs Quoted line item is a not-to-exceed amount. All project change orders require an SOW with a description and cost to be agreed upon by both parties. Special Terms: 60% invoiced upon each SOW acceptance, remaining 40% invoiced at "Go Live" Milsoft Support applicable.	\$20,000.00
Accounting & Utility Billing - Services Total:		\$51,500.00
Grand Total:		\$51,500.00

Exhibit B

Quote Acceptance:

This Quote comprises all material representations and constitutes the entire understanding between the parties to date with respect to the subject matter hereof and supersedes any and all prior representations, offers or agreements either oral or written between the parties with respect to such subject matter. This Quote shall serve as Schedule A to the Customer's contract for procurement of the Product, Training, Service and Support Program as described when applicable, or as an addendum to Customer's current contract(s) with Milsoft.

Terms & Conditions - Services, General

Payment Terms

- Payment due in USD upon receipt of invoice
- 100% invoiced upon quote acceptance, unless otherwise specified in description

Price Exclusions

- Underlying Software solution/product, sold or subscribed separately.
- Any Customer-requested changes to the scope of work
- Support Program, if applicable as noted in description (e.g. for custom development)
 - Annual support at the rate of 20% of the retail price
 - Support invoiced separately upon installation; may be prorated to coordinate w/account renewals

Terms & Conditions - Integration, Texting Configuration, DB Conversion, Migration Tool, Special Script

Payment Terms

- Payment due in USD upon receipt of invoice
- 100% invoiced upon quote acceptance, unless otherwise specified in description

Price Exclusions

- Underlying standard-edition Software product, sold or subscribed separately
- Any Customer-requested changes to the scope of work
- Support Program, if applicable as noted in description (for custom development or tool)
 - Annual support at the rate of 20% of the retail price
 - Support invoiced separately upon installation, may be prorated to coordinate account

IMPORTANT! Hardware and Operating System (OS) Requirements

Customer, before signing below, please check online at <http://milsoft.com/hardware-software-requirements> to ensure that you have current compatibility and the latest recommendations for optimum functionality of this and all Milsoft® software with your organization's computers and devices.

Account Name: _____ Date: _____
Accepted By: _____ PO# (if applicable): _____
Printed Name: _____

**AGREEMENT BETWEEN
THE CITY OF UKIAH AND
HOPLAND PUBLIC UTILITY DISTRICT
FOR ADMINISTRATIVE, BILLING AND COLLECTION SERVICES**

This Agreement for Administrative, Billing and Collection Services ("Agreement") is entered into on _____, 2025 ("the Effective Date") between the City of Ukiah, a general law municipal corporation ("City") and the Hopland Public Utility District ("District"), an independent special district to provide operational, administrative, financial, billing and collection services as further described herein. City and the District are sometimes individually referred to as "Party" and collectively as "Parties" in this Agreement.

RECITALS

1. Willow County Water District ("Willow") and the District have operated under a master service agreement ("MSA") concept.

2. Under the MSA, Willow was providing the District with operational, administrative, billing, and collection services.

3. A Joint Exercise of Powers Agreement ("JPA") between Millview County Water District, Redwood Valley County Water District, Calpella County Water District, Willow and the City created the Ukiah Valley Water Authority ("UVWA").

4. Under the JPA, Willow no longer performs operational, administrative, billing and collection services for itself or other special districts, and its employees have become City employees.

5. The District is in need of continued operational, administrative, financial, billing and collection services, and the City is willing to provide those services to the District as further provided herein;

AGREEMENT

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING, and for other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, City and District hereby agree as follows:

1. **Recitals.** The recitals set forth above are an integral part of this agreement and are fully incorporated herein.
2. **Services.** City shall provide District with administrative, financial, billing and collection services as described in the Scope of Services ("Services") attached hereto as Exhibit A and incorporated herein by this reference. City will provide all qualified, trained and, if required, licensed and certified personnel, and direct supervision.

3. **Term.** The term of this Agreement shall commence on July 1, 2025, continue through June 30, 2028, and shall be renewed automatically for one-year terms, unless the Agreement is terminated pursuant to Section 7. If the Agreement is terminated, the City will work with District in transitioning District to another source for Services, but City will be under no obligation to provide Services to District or be liable for costs or damages due to such transition.
4. **City Obligations.** City shall train and assign staff to perform the Services described in Exhibit A.
5. **Compensation.** District shall pay City the compensation for Services provided during the fiscal years beginning July 1, 2025, July 1, 2026, and July 1, 2027, as detailed in the attached Exhibit B, which is incorporated herein. City and District reserve the right to negotiate the compensation. The Parties shall meet and confer by March 31, 2028, to determine the cost of the increase effective July 1, 2028.

In the first year of this Agreement, City will have incurred implementation costs associated with preparing its software for District billing. District agrees to compensate City for these costs, not to exceed the amount as detailed in Exhibit C. Any difference in costs for software shall be subject to true up between the Parties within thirty (30) days after the City's payment to the software vendor.

City shall invoice District on a monthly basis and District shall remit these amounts in full within 30 days of service of an invoice from City by email and regular U.S. mail.
6. **Relationship of the Parties.** It is expressly understood and agreed by the Parties that this is a fee for service agreement and does not establish a joint venture, partnership or other relationship or separate entity and City does not assume a fiduciary relationship with the District under the terms of this Agreement or as a result of the City's performance under this Agreement. Each Party retains control over its own employees, who will be subject to that agency's rules and regulations.
7. **Termination.** This Agreement may be terminated in accordance with the following:

- a. **Termination Without Cause.**

Either Party, and without cause, shall have the right, at the Party's sole discretion, to terminate this Agreement by providing one hundred and eighty (180) days' advance written notice to the other Party. Upon termination, District shall be entitled only to a prorated refund of any monthly sum already paid in advance.

- b. **Termination for Cause.**

Notwithstanding any other provision of this Agreement, if a Party fails to satisfactorily cure any breach within thirty (30) days' written notice ("Cure Period"), the other Party may immediately terminate this Agreement after the Cure Period concludes.

c. Data Transfer

In the event of termination, the Parties shall mutually cooperate to transition the District's data managed by the City to the District. The City shall transfer the District's data, in a format acceptable to the District, to the District within 180 days of notice of termination. The City shall ensure that its agreement with the billing software vendor includes language that addresses the City's transition of District's data to the District consistent with this paragraph.

8. **Force Majeure**. If by reason of *force majeure* any Party is unable in whole or in part to perform the obligations under this Agreement, such Party shall not be in default during the continuance of such inability. The term "*force majeure*" as used herein shall mean an event or condition beyond the Party's reasonable control in the exercise of due diligence, such as the following: acts of God; labor strikes or management lockouts lasting more than seven (7) days, any decisions or actions by the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, droughts, floods, explosions, breakage of or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of such Party.
9. **Software**. The District shall license and provide the City with access to the billing software (i.e., El Dorado) used by the District as of the Effective Date. The District makes no representations, warranties, or guarantees regarding the current software, and the City shall not be liable for any billing delays, errors or similar problems caused by any billing software that is used. Beginning January 1, 2026, or as soon as it is available thereafter, the City shall utilize new (i.e., COU) software to provide billing services for the District. The City shall license the new software (i.e., COU) and provide the District with access to that billing software.
10. **Operational Concerns**. The Parties shall attempt to resolve operational concerns or complaints in the most expeditious manner. If necessary, these concerns or complaints shall be documented and forwarded through the City Manager or the General manager.

If the matter cannot be resolved informally, the complaining Party may be asked to put those complaints in writing, addressed to the other Party pursuant to Section 16. The Party receiving the complaint, within three (3) weeks of receipt, shall respond in writing regarding the status of the complaint, and shall continue to

update the complaining Party every forty-five (45) days until disposition. It is the intent of the Parties that all complaints be resolved within ninety (90) days of receipt.

11. Nondiscrimination. The Parties shall comply with all applicable federal, state, and local laws regarding nondiscriminatory employment practices, whether or not said laws are expressly stated in this Agreement. The Parties shall not discriminate in violation of said laws against any employee or applicant because of race, color, religious creed, national origin, physical disability, mental disability, medical condition, marital status, sexual orientation, or gender.

12. Compliance with Laws. The parties shall comply with all applicable legal requirements including all federal, state, and local laws (including local ordinances and resolutions), whether or not said laws are expressly stated in this Agreement.

13. Indemnification and Insurance.

A. Mutual Indemnification. To the maximum extent allowed by law each Party hereby agrees to indemnify, defend, assume all liability for and hold the other Party harmless from all actions, claims, suits, penalties, obligations, liabilities, damages to persons or property, costs and expenses (including without limitation any fines, penalties, judgments, and actual litigation expenses, including, but not limited to, the fees of attorneys', experts, and investigators), and/or personal injuries or death to any persons (collectively, "Claims"), to the extent caused or alleged to have been caused in whole or in part by the negligence or willful misconduct of that Party. All references to "Party" in this Section 13.A. includes the Party's officers, agents or employees.

B. Insurance. During the term of this Agreement, each Party shall maintain at its own cost and expense the following insurance or self-insurance coverage (including through a pooled risk Joint Powers Agency against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work under this Agreement. If requested, each Party shall furnish the other party certificates of insurance and policy endorsements evidencing the required coverage. Thirty (30) days' written notice must be given of any pending change in the limits of liability or of any cancellation or modification of the policy.

1) *Commercial General Liability* (CGL). Coverage equivalent to on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$1,000,000** per occurrence. If a general aggregate limit applies, 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 Insurance*. Equivalent to ISO Form Number CA 00 01 covering any auto (Code 1) with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
 - 3) *Workers' Compensation Insurance*. As required by the State of California, with statutory limits, and Employer's Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease.
 - 4) *Other Insurance Provisions*. The insurance policies are to contain, or be endorsed to contain, the following provisions:
 - i. *Additional Insured Status*. Each Party and its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of this Agreement.
 - ii. *Notice of Cancellation*. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the other Party.
 - iii. *Waiver of Subrogation*. Each Party hereby grants a waiver of any right to subrogation which any insurer of said Party may acquire by virtue of the payment of any loss under such insurance.
- 14. Records.** City shall maintain any and all records, documents, and data relating to District's billing and collection, and administrative services. These records include those maintained by the City on behalf of the District in accordance with Exhibit A. The City shall retain these records for a minimum of 3 years, or for any longer period required by law, after the Agreement terminates. All such records shall be maintained in accordance with generally accepted accounting principles and shall be made available for inspection, audit, and/or copying during regular business hours, upon advance written request of the District.

All books, documents, papers, accounting records, and other evidence pertaining to costs incurred shall be maintained by City and made available at all reasonable times during the Term and in accordance with the City's retention policy for inspection by District.

15. Modifications and Amendments. This Agreement may only be modified or amended by the mutual written agreement of City and District executed by officials legally authorized to bind the Parties.

16. Entire Agreement. This Agreement contains all the terms and conditions agreed upon by the Parties regarding the terms and conditions of this Agreement or the Parties' performance hereunder. Except as expressly provided herein, no other agreement or understanding, whether written, oral, arising from conduct or otherwise, shall be deemed to exist or to bind any of the Parties hereto with respect to or otherwise add to or alter the terms and conditions of this Agreement. In any alleged conflict between the terms of this Agreement and any other agreement or understanding of the Parties the provisions of this Agreement shall prevail.

17. Notices. Any notices, requests, demands or other communications required or permitted to be given under this Agreement shall be in writing and delivered to the following addresses or such other addresses as the Parties may designate by written notice:

CITY: City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482
Attn: City Manager
Email: ssangiacomo@cityofukiah.com

DISTRICT: Hopland Public Utility District
151 Laws Avenue
Ukiah, CA 95482
Attn: General manager
Email: jawalker@cityofukiah.com

Depending upon the method of transmittal, notice shall be deemed received as follows: by messenger, overnight courier such as UPS or Federal Express or by email with acknowledgment of receipt as of the date delivered; and by U.S. Mail first class postage prepaid, as of 72 hours after deposit in the U.S. Mail.

18. Headings. The heading titles for each section of this Agreement are included only as a guide to the contents and are not to be considered as controlling, enlarging, or restricting the interpretation of the Agreement. The Parties acknowledge that this Agreement is the product of negotiation and compromise on the part of both Parties, and the Parties agree, that since both Parties have participated in the negotiation and drafting of this Agreement, this Agreement shall not be construed as if prepared by one of the Parties, but rather according to its fair meaning as a whole, as if both Parties had prepared it.

19. Severability. If any term of this Agreement (including any phrase, provision, covenant, or condition) is held by a court of competent jurisdiction to be invalid or unenforceable, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in full force and effect; provided, however, this section shall not be applied to the extent that it would result in a frustration of the Parties' intent under this Agreement.

20. Governing Law; Jurisdiction; Venue. The interpretation, validity, and enforcement of this Agreement shall be governed by and interpreted in accordance with the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of Mendocino. The parties waive any right to a jury trial that either party may have.

21. Assignment and Delegation. This Agreement, and any portion thereof, shall not be assigned or transferred, nor shall any of the Parties' duties be delegated without the written consent of the other Party. Any attempt to assign or delegate this Agreement without the written consent of the other Party shall be void and of no force or effect. Consent by a Party to one assignment shall not be deemed to be consent to any subsequent assignment.

22. Successors. This Agreement shall bind and inure to the benefit of all successors and assigns of the Parties and any associates in interest, and their respective directors, officers, agents, servants, and employees, and the successors and assigns of each of them, separately and collectively.

23. Waiver. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

23. Signatures. The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of the respective agencies.

IN WITNESS WHEREOF, the Agreement is in full force and effect on the Effective Date.

CITY OF UKIAH

By: _____
Sage Sangiacomo, City Manager

ATTEST:

By: _____
Kristine Lawler, City Clerk

APPROVED AS TO FORM:

By: _____
David Rapport, City Attorney

HOPLAND PUBLIC UTILITY DISTRICT

By: _____
[], Chair

ATTEST:

By: _____
Clerk to the Board

APPROVED AS TO FORM:

By: _____
[], General Counsel

Exhibit A
Scope of Services

Scope of Services

The City shall provide the following services to the District in accordance with District policies, procedures, and applicable regulatory standards.

Billing and collection services will be performed in the same manner as they are for Ukiah Valley Water Authority (UVWA) member agencies, following the same procedures, policies, and practices adopted by the UVWA Board and implemented by the City of Ukiah.

All billing and administrative fees, service charges, penalties, fines, and any other non-rate-related or non-expansion/capital-related revenues will be aligned with a standardized schedule used by UVWA for JPA member agencies.

Billing & Collections

- Integrate district customer accounts into City's billing system.
- Prepare and process utility service bills, ensuring accuracy and compliance with district policies.
- Manage account receivables and monitor past-due accounts.
- Process customer payments, including cash, check, credit card, and online transactions.
- Work with customers to set up payment arrangements and resolve billing discrepancies.
- Prepare Year End Delinquency Schedule to submit to collection services or the County of Mendocino in accordance with the District's Policies and Procedures.

Customer Service

- Answer customer inquiries via phone, email, or in person regarding billing, account status, service rates, and policies, at the District office located at 151 Laws Avenue, Ukiah, CA 95482, or at City offices at 300 Seminary Avenue, Ukiah, CA 95482 during regular business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m., except when closed for holidays observed by the City. The City shall notify the District of any change to this location and contact information.
- Assist customers with new service applications/connection fees, service terminations, and account updates including invoices for connection fees.
- Provide clear explanations of billing statements and resolve disputes.
- Maintain customer records and update account information as necessary including updating "Ins" and "Outs."

Exhibit A
Scope of Services

Administrative and Clerking Support

- Perform annual file maintenance for updating customer billing amounts.
- Route correspondences as necessary.
- Publish notices in the newspaper, post notices in public places, and/or mail or email letters or notifications to customers as required for hearings or official Board action.
- Attend regular and special District Board meetings and provide clerking services, including teleconferencing setup, roll call, minute-taking, and preparation of accurate Board meeting minutes.
- Plan and coordinate preparations for Board meetings, including meeting room reservations.
- Prepare, post, and distribute agenda materials in compliance with the Brown Act.
- Print agenda packets for Board Directors and public attendees.
- Maintain official District records, attest and process official District documents (e.g., contracts, resolutions, ordinances, minutes) and maintain financial records.
- Inform Board Directors of their obligations to complete annual Form 700s and biennial ethics and harassment prevention training.
- Arrange stipend payments, appointments, meetings, and travel for Board Directors.
- Respond to Public Records Act requests in conjunction with District General Counsel.

Financial Services

The City shall provide professional financial services customary for local governments, including but not limited to:

- **Accounting and Reporting:** Maintain financial records consistent with governmental accounting standards; prepare monthly, quarterly, and annual financial reports; support year-end closing procedures.
- **Budgeting:** Assist in the preparation of annual operating and capital budgets in coordination with staff and the Board; monitor expenditures and provide budget-to-actual comparisons.
- **Audit Management:** Coordinate annual independent financial audits; prepare audit schedules and provide supporting documentation; respond to auditor inquiries and implement audit recommendations.

Exhibit A
Scope of Services

- Banking: Wire funds from the District's preferred bank no less than semiannually to ensure timely payment of the District's bond obligations; perform additional banking services as necessary, including fund transfers, account reconciliations, and coordination with financial institutions.
- Financial Oversight: Monitor cash flow and investment activity; advise the District on financial planning and policy; ensure compliance with fiscal policies, debt covenants, and applicable laws.

General Management

The City shall serve as the District's General Manager and shall perform executive and management functions as necessary to implement District policy and ensure the effective and efficient operation of District services. Responsibilities include, but are not limited to:

- Supervising and coordinating all City-provided services outlined in this agreement.
- Advising the District Board on policy matters, operational issues, and strategic planning.
- Preparing reports and recommendations for Board consideration.
- Coordinating with regulatory agencies and ensuring compliance with applicable laws and permits.
- Representing the District in interagency meetings and public forums as directed by the Board.
- Implementing the Board's policies and directives.

Operations Services

The City shall provide comprehensive water and sewer operations services, including:

- Water Treatment/Production: Operate and maintain water treatment facilities, ensure regulatory compliance with drinking water standards, and perform routine sampling, testing, and reporting.
- Water Distribution: Maintain the integrity of the water distribution system, respond to leaks and service outages, perform routine flushing, valve and hydrant maintenance, and install or replace water meters as required.
- Sewer Collection: Operate and maintain sewer collection systems including gravity lines, force mains, and lift stations. Conduct preventive maintenance and emergency response for overflows, backups, or infrastructure failures.
- Sewer Treatment/Disposal: Operate and maintain wastewater treatment and disposal facilities in accordance with discharge permits and regulatory

Exhibit A
Scope of Services

requirements. Perform sampling, analysis, and reporting to ensure environmental compliance.

All operational services will be provided by qualified and certified City staff in accordance with applicable state and federal laws. The City will maintain records of all work performed and coordinate with the District on capital planning, emergency response, and ongoing maintenance priorities.

Exhibit B

District shall pay City the compensation for Services provided as follows:

Fiscal Year	Compensation
2025-2026	\$ 161,000.86
2026-2027	\$ 185,580.79
2027-2028	\$ 194,859.80

The District is receiving a discount on full cost pricing by the City in the first year (FY 2025-26) so that it pays the same for the first six months of this agreement as it did the year prior (FY 2024-25). In subsequent fiscal years, the pricing increases by 5% of the prior year full cost pricing without discount.

Detail on the first-year pricing is as follows:

Exhibit B

FY 2025–26 Pricing Proposal

City of Ukiah – Hopland Public Utility District

Effective July 1, 2025 – June 30, 2026

This pricing proposal outlines the annual charges for operations, billing, and administrative services to be provided by the City of Ukiah to the Hopland Public Utility District under the Master Service Agreement. The initial term is for one fiscal year, beginning July 1, 2025.

To assist with cost stability during the transition of services previously performed under contract with Willow County Water District, the City is providing a temporary discount for the first six months of the fiscal year (July 1 through December 31, 2025). During this period, charges will match the District's current MSA rates. Full cost-based rates will take effect January 1, 2026.

A detailed breakdown of pricing by service component will be provided in Attachment A to this proposal.

Annual Pricing Summary – FY 2025–26

Service Category	Current MSA Amount	Full Cost City MSA	Six-Month Discount	Total FY 2025–26
Operations Services	\$111,874.37	\$136,287.12	(\$12,206.37)	\$124,080.75
Billing & Administrative	\$33,383.76	\$40,456.46	(\$3,536.35)	\$36,920.11
Total	\$145,258.13	\$176,743.58	(\$15,742.72)	\$161,000.86

*Note: "Current MSA Amount" reflects the annualized cost of services under the existing agreement with Willow County Water District for FY 2024–25.

Methodology and Notes

1. Overhead Rate: Overhead is applied at a rate of 13.21%, based on the City's 2026 indirect cost allocation plan.
2. Cost Basis: Rates are derived from budgeted labor rates, materials, equipment usage, and administrative support, consistent with the City's full cost recovery model.
3. Discount Rationale: The discount ensures the District pays no more than its current MSA rates through the first half of the fiscal year, which will be a full year since the City assumed operations, billing, and administration. The full cost rates apply beginning January 1, 2026.
4. Future Increases: Any increase in pricing for future terms will be negotiated or escalated consistent with terms of the Agreement, including inflation or negotiated labor adjustments.

Exhibit B

Attachment A

**Operations - Water and Sewer
Pricing Proposal - Hopland, 2025**

City Methodology	Rate	Hours	Budgetary Cost
Operations			
Labor:			
Operators	\$ 63.23	1,194	\$ 75,469.34
Management	105.07	208	21,854.68
Materials, supplies, and services ²			7,785.92
Vehicle and equipment usage	10.90	1,402	15,274.40
Overhead (13.21%) ¹			15,902.77
Total			\$ 136,287.12
Discount, first six months ³			\$ (12,206.37)
Total pricing, FY 2025-26			\$ 124,080.75
Current MSA			\$ 111,874.37
Increase from current MSA			\$ 12,206.37
% Change from current MSA			10.91%

Notes:

1. Overhead rate comes from 2026 City indirect cost allocation plan.
2. Certain costs would be incurred by City and charged to District through the MSA, initially at a rate of 8% of personnel costs. Other costs would be charged directly to the District if incurred and applicable just as it was under the former MSA with Willow.
3. Discount results in the district paying the same amount for operations for the first full year after Willow staff was assumed by City, January 1, 2025 through December 31, 2025.

Exhibit B

Billing and Administrative Services
Pricing Proposal - Hopland, 2025

City Methodology	Rate	Hours	Budgetary Cost	
Billing Services				
Labor:				
Billing	53.00	416.00	\$	22,050.00
Management	62.37	70.00		4,365.86
Materials, supplies, and services				7,228.28
Overhead (13.21%) ¹				4,444.39
Total			\$	38,088.53
Administrative services				
Labor:				
Clerk	46.48	45.00	\$	2,091.63
Overhead (13.21%)				276.30
Total			\$	2,367.93
Total billing and administrative			\$	40,456.46
Discount, first six months ²			\$	(3,536.35)
Total pricing, FY 2025-26			\$	36,920.11
Current MSA			\$	33,383.76
Increase from current MSA			\$	3,536.35
% Change from current MSA				10.59%

Notes:

1. Overhead rate comes from 2026 City indirect cost allocation plan.
2. Discount results in the district paying the same amount for admin and billing for the first full year after Willow staff was assumed by City, January 1, 2025 through December 31, 2025.

Exhibit C



Bill To
Lori Martin
Ukiah, City of
300 Seminary Avenue
Ukiah, CA, 95482-5400
USA

Quote Number: 53962
Date Created: 02/04/2025
Valid Until: 04/08/2025
Account Manager: Bart Brockway

Accounting & Utility Billing - Services

Qty	Quoted Line Item	Price
1	Database Conversion from iXp (Optional: Hopland) CIS Data Pull Conversion Services. -Convert minimum data to ensure system functionality. -Convert only accounts, meters, and locations that are active or have either a credit or debit balance. -Convert only one year of monthly summary history, which includes usage, bill amount, and monthly payment total but does not include detailed charges or payment information. -All data will be provided in Excel format, and utility resources will identify data items. Data mapping will be a joint effort between Milsoft and Ukiah. -Milsoft will provide reports and assist with data balancing. Ukiah will confirm that the data is accurate and balanced. -Four data pulls for each water district will be received, converted, and balanced. Each data pull may be reconverted multiple times. However, new data will only be received for the initial test conversion, 2 intermediate pulls in support of reconversions to ensure the process is correct, and a final go live conversion. -The final data pull will be performed after the system cutoff date of 12/31/2025, and the newly converted data in the system will be available and live on an agreed upon date the first week of January, 2026. Changes to this timeline will be agreed upon by both parties. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support not applicable. Contingent upon the execution of quote 53850.	\$6,500.00
1	Acct / Billing Services Blanket Set up and configuration of one (1) additional water company being added to the current Ukiah CIS iXp system. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support Not Applicable.	\$4,500.00
Accounting & Utility Billing - Services Total:		\$11,000.00
Grand Total:		\$11,000.00

**AGREEMENT BETWEEN
THE CITY OF UKIAH AND
RIVER ESTATES MUTUAL WATER COMPANY
FOR ADMINISTRATIVE, BILLING AND COLLECTION SERVICES**

This Agreement for Administrative, Billing and Collection Services ("Agreement") is entered into on _____, 2025 ("the Effective Date") between the City of Ukiah, a general law municipal corporation ("City") and the River Estates Mutual Water Company ("Company"), to provide administrative, billing and collection services as further described herein. City and the Company are sometimes individually referred to as "Party" and collectively as "Parties" in this Agreement.

RECITALS

1. Willow County Water Company ("Willow") and the Company have operated under a master service agreement ("MSA") concept.

2. Under the MSA, Willow was providing the Company with operational, administrative, billing, and collection services.

3. A Joint Exercise of Powers Agreement ("JPA") between Millview County Water Company, Redwood Valley County Water Company, Willow, Calpella County Water District, and the City created the Ukiah Valley Water Authority ("UVWA").

4. Under the JPA, Willow no longer performs operational, administrative, billing and collection services for itself or other special Company's, and its employees have become City employees.

5. The Company is in need of continued operational, administrative, financial, billing and collection services, and the City is willing to provide those services to the Company as further provided herein;

AGREEMENT

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING, and for other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, City and Company hereby agree as follows:

1. **Recitals.** The recitals set forth above are an integral part of this agreement and are fully incorporated herein.
2. **Services.** City shall provide Company with administrative, financial, billing and collection services as described in the Scope of Services ("Services") attached hereto as Exhibit A and incorporated herein by this reference. City will provide all qualified, trained and, if required, licensed and certified personnel, and direct supervision.
3. **Term.** The term of this Agreement shall commence on July 1, 2025, continue through June 30, 2028, and shall be renewed automatically for one-year terms,

unless the Agreement is terminated pursuant to Section 7. If the Agreement is terminated, the City will work with Company in transitioning Company to another source for Services, but City will be under no obligation to provide Services to Company or be liable for costs or damages due to such transition.

4. **City Obligations.** City shall train and assign staff to perform the Services described in Exhibit A.
5. **Compensation.** Company shall pay City the compensation for Services provided during the fiscal years beginning July 1, 2025, July 1, 2026, and July 1, 2027, as detailed in the attached Exhibit B, which is incorporated herein. City and Company reserve the right to negotiate the compensation. The Parties shall meet and confer by March 31, 2028, to determine the cost of the increase effective July 1, 2028.

In the first year of this Agreement, City will have incurred implementation costs associated with preparing its software for Company billing. Company agrees to compensate City for these costs, not to exceed the amount as detailed in Exhibit C. Any difference in costs for software shall be subject to true up between the Parties within thirty (30) days after the City's payment to the software vendor.

City shall invoice Company on a monthly basis and Company shall remit these amounts in full within 30 days of service of an invoice from City by email and regular U.S. mail.

6. **Relationship of the Parties.** It is expressly understood and agreed by the Parties that this is a fee for service agreement and does not establish a joint venture, partnership or other relationship or separate entity and City does not assume a fiduciary relationship with the Company under the terms of this Agreement or as a result of the City's performance under this Agreement. Each Party retains control over its own employees, who will be subject to that agency's rules and regulations.
7. **Termination.** This Agreement may be terminated in accordance with the following:
 - a. **Termination Without Cause.**

Either Party, and without cause, shall have the right, at the Party's sole discretion, to terminate this Agreement by providing one hundred and eighty (180) days' advance written notice to the other Party. Upon termination, Company shall be entitled only to a prorated refund of any monthly sum already paid in advance.
 - b. **Termination for Cause.**

Notwithstanding any other provision of this Agreement, if a Party fails to satisfactorily cure any breach within thirty (30) days' written notice ("Cure

Period”), the other Party may immediately terminate this Agreement after the Cure Period concludes.

c. Data Transfer

In the event of termination, the Parties shall mutually cooperate to transition the Company’s data managed by the City to the Company. The City shall transfer the Company’s data, in a format acceptable to the Company, to the Company within 180 days of notice of termination. The City shall ensure that its agreement with the billing software vendor includes language that addresses the City’s transition of Company’s data to the Company consistent with this paragraph.

8. **Force Majeure**. If by reason of *force majeure* any Party is unable in whole or in part to perform the obligations under this Agreement, such Party shall not be in default during the continuance of such inability. The term “*force majeure*” as used herein shall mean an event or condition beyond the Party’s reasonable control in the exercise of due diligence, such as the following: acts of God; labor strikes or management lockouts lasting more than seven (7) days, any decisions or actions by the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, droughts, floods, explosions, breakage of or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of such Party.
9. **Software**. The Company shall license and provide the City with access to the billing software (i.e., El Dorado) used by the Company as of the Effective Date. The Company makes no representations, warranties, or guarantees regarding the current software, and the City shall not be liable for any billing delays, errors or similar problems caused by any billing software that is used. Beginning January 1, 2026, or as soon as it is available thereafter, the City shall utilize new (i.e., COU) software to provide billing services for the Company. The City shall license the new software (i.e., COU) and provide the Company with access to that billing software.
10. **Operational Concerns**. The Parties shall attempt to resolve operational concerns or complaints in the most expeditious manner. If necessary, these concerns or complaints shall be documented and forwarded through the City Manager or the Company Manager.

If the matter cannot be resolved informally, the complaining Party may be asked to put those complaints in writing, addressed to the other Party pursuant to Section 16. The Party receiving the complaint, within three (3) weeks of receipt, shall respond in writing regarding the status of the complaint, and shall continue to

update the complaining Party every forty-five (45) days until disposition. It is the intent of the Parties that all complaints be resolved within ninety (90) days of receipt.

11. Nondiscrimination. The Parties shall comply with all applicable federal, state, and local laws regarding nondiscriminatory employment practices, whether or not said laws are expressly stated in this Agreement. The Parties shall not discriminate in violation of said laws against any employee or applicant because of race, color, religious creed, national origin, physical disability, mental disability, medical condition, marital status, sexual orientation, or gender.

12. Compliance with Laws. The parties shall comply with all applicable legal requirements including all federal, state, and local laws (including local ordinances and resolutions), whether or not said laws are expressly stated in this Agreement.

13. Indemnification and Insurance.

A. Mutual Indemnification. To the maximum extent allowed by law each Party hereby agrees to indemnify, defend, assume all liability for and hold the other Party harmless from all actions, claims, suits, penalties, obligations, liabilities, damages to persons or property, costs and expenses (including without limitation any fines, penalties, judgments, and actual litigation expenses, including, but not limited to, the fees of attorneys', experts, and investigators), and/or personal injuries or death to any persons (collectively, "Claims"), to the extent caused or alleged to have been caused in whole or in part by the negligence or willful misconduct of that Party. All references to "Party" in this Section 13.A. includes the Party's officers, agents or employees.

B. Insurance. During the term of this Agreement, each Party shall maintain at its own cost and expense the following insurance or self-insurance coverage (including through a pooled risk Joint Powers Agency against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work under this Agreement. If requested, each Party shall furnish the other party certificates of insurance and policy endorsements evidencing the required coverage. Thirty (30) days' written notice must be given of any pending change in the limits of liability or of any cancellation or modification of the policy.

1) *Commercial General Liability (CGL)*. Coverage equivalent to on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$1,000,000** per occurrence. If a general aggregate limit applies, 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 Insurance.* Equivalent to ISO Form Number CA 00 01 covering any auto (Code 1) with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
 - 3) *Workers' Compensation Insurance.* As required by the State of California, with statutory limits, and Employer's Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease.
 - 4) *Other Insurance Provisions.* The insurance policies are to contain, or be endorsed to contain, the following provisions:
 - i. *Additional Insured Status.* Each Party and its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of this Agreement.
 - ii. *Notice of Cancellation.* Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the other Party.
 - iii. *Waiver of Subrogation.* Each Party hereby grants a waiver of any right to subrogation which any insurer of said Party may acquire by virtue of the payment of any loss under such insurance.
- 14. Records.** City shall maintain any and all records, documents, and data relating to Company's billing and collection, and administrative services. These records include those maintained by the City on behalf of the Company in accordance with Exhibit A. The City shall retain these records for a minimum of 3 years, or for any longer period required by law, after the Agreement terminates. All such records shall be maintained in accordance with generally accepted accounting principles and shall be made available for inspection, audit, and/or copying during regular business hours, upon advance written request of the Company.

All books, documents, papers, accounting records, and other evidence pertaining to costs incurred shall be maintained by City and made available at all reasonable times during the Term and in accordance with the City's retention policy for inspection by Company.

15. Modifications and Amendments. This Agreement may only be modified or amended by the mutual written agreement of City and Company executed by officials legally authorized to bind the Parties.

16. Entire Agreement. This Agreement contains all the terms and conditions agreed upon by the Parties regarding the terms and conditions of this Agreement or the Parties' performance hereunder. Except as expressly provided herein, no other agreement or understanding, whether written, oral, arising from conduct or otherwise, shall be deemed to exist or to bind any of the Parties hereto with respect to or otherwise add to or alter the terms and conditions of this Agreement. In any alleged conflict between the terms of this Agreement and any other agreement or understanding of the Parties the provisions of this Agreement shall prevail.

17. Notices. Any notices, requests, demands or other communications required or permitted to be given under this Agreement shall be in writing and delivered to the following addresses or such other addresses as the Parties may designate by written notice:

CITY: City of Ukiah
300 Seminary Avenue
Ukiah, CA 95482
Attn: City Manager
Email: ssangiacomo@cityofukiah.com

COMPANY: River Estates Mutual Water Company
151 Laws Avenue
Ukiah, CA 95482
Attn: Company Manager
Email: jawalker@cityofukiah.com

Depending upon the method of transmittal, notice shall be deemed received as follows: by messenger, overnight courier such as UPS or Federal Express or by email with acknowledgment of receipt as of the date delivered; and by U.S. Mail first class postage prepaid, as of 72 hours after deposit in the U.S. Mail.

18. Headings. The heading titles for each section of this Agreement are included only as a guide to the contents and are not to be considered as controlling, enlarging, or restricting the interpretation of the Agreement. The Parties acknowledge that this Agreement is the product of negotiation and compromise on the part of both Parties, and the Parties agree, that since both Parties have participated in the negotiation and drafting of this Agreement, this Agreement shall not be construed as if prepared by one of the Parties, but rather according to its fair meaning as a whole, as if both Parties had prepared it.

19. Severability. If any term of this Agreement (including any phrase, provision, covenant, or condition) is held by a court of competent jurisdiction to be invalid or unenforceable, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in full force and effect; provided, however, this section shall not be applied to the extent that it would result in a frustration of the Parties' intent under this Agreement.

20. Governing Law; Jurisdiction; Venue. The interpretation, validity, and enforcement of this Agreement shall be governed by and interpreted in accordance with the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of Mendocino. The parties waive any right to a jury trial that either party may have.

21. Assignment and Delegation. This Agreement, and any portion thereof, shall not be assigned or transferred, nor shall any of the Parties' duties be delegated without the written consent of the other Party. Any attempt to assign or delegate this Agreement without the written consent of the other Party shall be void and of no force or effect. Consent by a Party to one assignment shall not be deemed to be consent to any subsequent assignment.

22. Successors. This Agreement shall bind and inure to the benefit of all successors and assigns of the Parties and any associates in interest, and their respective directors, officers, agents, servants, and employees, and the successors and assigns of each of them, separately and collectively.

23. Waiver. Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

23. Signatures. The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity and authority to enter into and to execute this Agreement on behalf of the respective agencies.

IN WITNESS WHEREOF, the Agreement is in full force and effect on the Effective Date.

CITY OF UKIAH

By: _____
Sage Sangiacomo, City Manager

ATTEST:

By: _____
Kristine Lawler, City Clerk

APPROVED AS TO FORM:

By: _____
David Rapport, City Attorney

**RIVER ESTATES MUTUAL WATER
COMPANY**

By: _____
[], Chair

ATTEST:

By: _____
Clerk to the Board

APPROVED AS TO FORM:

By: _____
[], General Counsel

Exhibit A
Scope of Services

Scope of Services

The City shall provide the following services to the Company in accordance with Company policies, procedures, and applicable regulatory standards.

Billing and collection services will be performed in the same manner as they are for Ukiah Valley Water Authority (UVWA) member agencies, following the same procedures, policies, and practices adopted by the UVWA Board and implemented by the City of Ukiah.

All billing and administrative fees, service charges, penalties, fines, and any other non-rate-related or non-expansion/capital-related revenues will be aligned with a standardized schedule used by UVWA for JPA member agencies.

Billing & Collections

- Integrate Company customer accounts into City's billing system.
- Prepare and process utility service bills, ensuring accuracy and compliance with Company policies.
- Manage account receivables and monitor past-due accounts.
- Process customer payments, including cash, check, credit card, and online transactions.
- Work with customers to set up payment arrangements and resolve billing discrepancies.
- Prepare Year End Delinquency Schedule to submit to collection services or the County of Mendocino in accordance with the Company's Policies and Procedures.

Customer Service

- Answer customer inquiries via phone, email, or in person regarding billing, account status, service rates, and policies, at the Company office located at 151 Laws Avenue, Ukiah, CA 95482, or at City offices at 300 Seminary Avenue, Ukiah, CA 95482 during regular business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m., except when closed for holidays observed by the City. The City shall notify the Company of any change to this location and contact information.
- Assist customers with new service applications/connection fees, service terminations, and account updates including invoices for connection fees.
- Provide clear explanations of billing statements and resolve disputes.

Exhibit A
Scope of Services

- Maintain customer records and update account information as necessary including updating “Ins” and “Outs.”

Administrative and Clerking Support

- Perform annual file maintenance for updating customer billing amounts.
- Route correspondences as necessary.
- Publish notices in the newspaper, post notices in public places, and/or mail or email letters or notifications to customers as required for hearings or official Board action.
- Attend regular and special Company Board meetings and provide clerking services, including teleconferencing setup, roll call, minute-taking, and preparation of accurate Board meeting minutes.
- Plan and coordinate preparations for Board meetings, including meeting room reservations.
- Prepare, post, and distribute agenda materials in compliance with the Brown Act.
- Print agenda packets for Board Directors and public attendees.
- Maintain official Company records, attest and process official Company documents (e.g., contracts, resolutions, ordinances, minutes) and maintain financial records.
- Inform Board Directors of their obligations to complete annual Form 700s and biennial ethics and harassment prevention training.
- Arrange stipend payments, appointments, meetings, and travel for Board Directors.
- Respond to Public Records Act requests in conjunction with Company General Counsel.

Financial Services

The City shall provide professional financial services customary for local governments, including but not limited to:

- **Accounting and Reporting:** Maintain financial records consistent with governmental accounting standards; prepare monthly, quarterly, and annual financial reports; support year-end closing procedures.
- **Budgeting:** Assist in the preparation of annual operating and capital budgets in coordination with staff and the Board; monitor expenditures and provide budget-to-actual comparisons.

Exhibit A
Scope of Services

- **Audit Management:** Coordinate annual independent financial audits; prepare audit schedules and provide supporting documentation; respond to auditor inquiries and implement audit recommendations.
- **Banking:** Wire funds from the Company's preferred bank no less than semiannually to ensure timely payment of the Company's bond obligations; perform additional banking services as necessary, including fund transfers, account reconciliations, and coordination with financial institutions.
- **Financial Oversight:** Monitor cash flow and investment activity; advise the Company on financial planning and policy; ensure compliance with fiscal policies, debt covenants, and applicable laws.

General Management

The City shall serve as the Company's General Manager and shall perform executive and management functions as necessary to implement Company policy and ensure the effective and efficient operation of Company services. Responsibilities include, but are not limited to:

- Supervising and coordinating all City-provided services outlined in this agreement.
- Advising the Company Board on policy matters, operational issues, and strategic planning.
- Preparing reports and recommendations for Board consideration.
- Coordinating with regulatory agencies and ensuring compliance with applicable laws and permits.
- Representing the Company in interagency meetings and public forums as directed by the Board.
- Implementing the Board's policies and directives.

Operations Services

The City shall provide comprehensive water and sewer operations services, including:

- **Water Treatment/Production:** Operate and maintain water treatment facilities, ensure regulatory compliance with drinking water standards, and perform routine sampling, testing, and reporting.
- **Water Distribution:** Maintain the integrity of the water distribution system, respond to leaks and service outages, perform routine flushing, valve and hydrant maintenance, and install or replace water meters as required.

All operational services will be provided by qualified and certified City staff in accordance with applicable state and federal laws. The City will maintain records of all

Exhibit A
Scope of Services

work performed and coordinate with the Company on capital planning, emergency response, and ongoing maintenance priorities.

Exhibit B

Company shall pay City the compensation for Services provided as follows:

Fiscal Year	Compensation
2025-2026	\$ 39,707.06
2026-2027	\$ 45,964.57
2027-2028	\$ 48,262.80

The Company is receiving a discount on full cost pricing by the City in the first year (FY 2025-26) so that it pays the same for the first six months of this agreement as it did the year prior (FY 2024-25). In subsequent fiscal years, the pricing increases by 5% of the prior year full cost pricing without discount.

Detail on the first-year pricing is as follows:

Exhibit B**FY 2025–26 Pricing Proposal**

City of Ukiah – River Estates Mutual Water Company

Effective July 1, 2025 – June 30, 2026

This pricing proposal outlines the annual charges for operations, billing, and administrative services to be provided by the City of Ukiah to the River Estates Mutual Water Company under the Master Service Agreement. The initial term is for one fiscal year, beginning July 1, 2025.

To assist with cost stability during the transition of services previously performed under contract with Willow County Water District, the City is providing a temporary discount for the first six months of the fiscal year (July 1 through December 31, 2025). During this period, charges will match the Company's current MSA rates. Full cost-based rates will take effect January 1, 2026.

A detailed breakdown of pricing by service component will be provided in Attachment A to this proposal.

Annual Pricing Summary – FY 2025–26

Service Category	Current MSA Amount	Full Cost City MSA	Six-Month Discount	Total FY 2025–26
Operations Services	\$26,596.19	\$32,589.95	(\$2,996.88)	\$29,593.07
Billing & Administrative	\$9,042.16	\$11,185.83	(\$1,071.83)	\$10,113.99
Total	\$35,638.35	\$43,775.78	(\$4,068.71)	\$39,707.06

*Note: "Current MSA Amount" reflects the annualized cost of services under the existing agreement with Willow County Water District for FY 2024–25.

Methodology and Notes

1. Overhead Rate: Overhead is applied at a rate of 13.21%, based on the City's 2026 indirect cost allocation plan.
2. Cost Basis: Rates are derived from budgeted labor rates, materials, equipment usage, and administrative support, consistent with the City's full cost recovery model.
3. Discount Rationale: The discount ensures the Company pays no more than its current MSA rates through the first half of the fiscal year. The full cost rates apply beginning January 1, 2026.
4. Future Increases: Any increase in pricing for future terms will be negotiated or escalated consistent with terms of the Agreement, including inflation or negotiated labor adjustments.

Exhibit B

Attachment A

**Operations - Water and Sewer
Pricing Proposal - River Estates, 2025**

City Methodology	Rate	Hours	Budgetary Cost
Operations			
Labor:			
Operators	\$ 63.23	331	\$ 20,920.69
Management	105.07	21	2,185.47
Materials, supplies, and services ²			1,848.49
Vehicle and equipment usage	10.90	352	3,832.51
Overhead (13.21%) ¹			3,802.78
Total			\$ 32,589.95
Discount, first six months ³			
			\$ (2,996.88)
Total pricing, FY 2025-26			\$ 29,593.07
Current MSA			\$ 26,596.19
Increase from current MSA			\$ 2,996.88
% Change from current MSA			11.27%

Notes:

1. Overhead rate comes from 2026 City indirect cost allocation plan.
2. Certain costs would be incurred by City and charged to District through the MSA, initially at a rate of 8% of personnel costs. Other costs would be charged directly to the District if incurred and applicable just as it was under the former MSA with Willow.
3. Discount results in the district paying the same amount for operations for the first full year after Willow staff was assumed by City, January 1, 2025 through December 31, 2025.

Exhibit B

**Billing and Administrative Services
Pricing Proposal - River Estates, 2025**

City Methodology	Rate	Hours	Budgetary Cost	
Billing Services				
Labor:				
Billing	53.00	104.00	\$	5,512.50
Management	62.37	36.00		2,245.30
Materials, supplies, and services				2,122.80
Overhead (13.21%) ¹				1,305.23
Total			\$	11,185.83
Total billing and administrative			\$	11,185.83
Discount, first six months ²			\$	(1,071.83)
Total pricing, FY 2025-26			\$	10,113.99
Current MSA			\$	9,042.16
Increase from current MSA			\$	1,071.83
% Change from current MSA				11.85%

Notes:

1. Overhead rate comes from 2026 City indirect cost allocation plan.
2. Discount results in the district paying the same amount for admin and billing for the first full year after Willow staff was assumed by City, January 1, 2025 through December 31, 2025.

Exhibit C



Bill To
Lori Martin
Ukiah, City of
300 Seminary Avenue
Ukiah, CA, 95482-5400
USA

Quote Number: 53851
Date Created: 02/04/2025
Valid Until: 04/08/2025
Account Manager: Bart Brockway

Accounting & Utility Billing - Services

Qty	Quoted Line Item	Price
1	Database Conversion from iXp (Optional: River Estates) CIS Data Pull Conversion Services. -Convert minimum data to ensure system functionality. -Convert only accounts, meters, and locations that are active or have either a credit or debit balance. -Convert only one year of monthly summary history, which includes usage, bill amount, and monthly payment total but does not include detailed charges or payment information. -All data will be provided in Excel format, and utility resources will identify data items. Data mapping will be a joint effort between Milsoft and Ukiah. -Milsoft will provide reports and assist with data balancing. Ukiah will confirm that the data is accurate and balanced. -Four data pulls for each water district will be received, converted, and balanced. Each data pull may be reconverted multiple times. However, new data will only be received for the initial test conversion, 2 intermediate pulls in support of reconversions to ensure the process is correct, and a final go live conversion. -The final data pull will be performed after the system cutoff date of 12/31/2025, and the newly converted data in the system will be available and live on an agreed upon date the first week of January, 2026. Changes to this timeline will be agreed upon by both parties. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support not applicable. Contingent upon the execution of quote 53850.	\$3,500.00
1	Acct / Billing Services Blanket Set up and configuration of one (1) additional water company being added to the current Ukiah CIS iXp system. Special Terms: 60% invoiced upon quote acceptance, remaining 40% invoiced at "Go Live" Milsoft Support Not Applicable.	\$1,500.00
Accounting & Utility Billing - Services Total:		\$5,000.00
Grand Total:		\$5,000.00



AGENDA SUMMARY REPORT

SUBJECT: Adoption of a Resolution Approving the Application for the Land And Water Conservation Fund Riverside Park Regeneration Project.

DEPARTMENT: Community Services

PREPARED BY: Neil Davis, Community Services Director

PRESENTER: Neil Davis, Community Services Director

ATTACHMENTS:

1. 2024-04-16 Ukiah Riverside Park CDs
2. LWCF Authorizing Resolution Riverside Park

Summary: Council will consider adopting a resolution approving the application for the Land And Water Conservation Fund Riverside Park Regeneration Project.

Background: The City of Ukiah's Riverside Park is located at the end of East Gobbi Street along the Russian River. The 36-acre park is currently home to a gravel parking lot, Little League fields (installed in ~1984), the Rusty Bowl BMX track, and a 1.6 mile trail system. Prior to its designation and incremental development as a park, the site was home to a shooting range, a waste water treatment plant (demolished in 1958), and was used as a dumping ground for detritus including asphalt and concrete, as well as street sweepings.

The Little League field and BMX track are at the north end of the park. Trails are located at the southern end of the park that wind among and over old depressions that may have once been gravel pits used to dump and cover asphalt and concrete detritus.

In June 2008, the California Natural Resources Agency (CNRA) awarded the City \$810,000 for an initial phase of site restoration. The first phase of the restoration focused on the area closest to the river and removed detritus and non-native plants and restored native plants in the immediate riparian zone. These improvements have been well-received by the community and the location is already a popular destination for dog walkers and nature lovers.

In 2020, the City received an additional grant of \$1,113,700 for a second phase of restoration and park improvements, titled the Riverside Park Regeneration Project. Melton Design Group was contracted to prepare plans for the project and to prepare appropriate environmental documents as needed.

Melton design group completed the 100% plans for the project (Attachment 1). The project will focus on the central area of the park and will 1) remove asphalt and concrete detritus, 2) regrade the area to a more natural contour with low-lying areas, 3) improve the habitat created by the low-lying areas by mimicking wetlands, 4) replant with native plants, and 5) make trail improvements. California Environmental Quality Act (CEQA) documentation was completed on March 15th, 2023.

In the fall of 2024, the project went out to bid, and the lowest bid was twice the available budget. Staff contacted the CNRA. Following discussions with Melton Design Group, the CNRA, and the City Engineer, it was determined that it would be impossible to meet the goals outlined in the grant agreement with the available budget. The CNRA was, however, open to accepting matching funds to allow for completing the project as planned.

Discussion: The California State Parks Land Water and Conservation Fund (LWCF) provides funding for the acquisition or development of land to create new outdoor recreation opportunities for the health and wellness of Californians. The funding opportunity requires a fifty percent match. The Riverside Park Regeneration Project appears to be an excellent fit for the funding criteria. The grant application requires a resolution from the City Council stating the Council is aware of and approves the application. The resolution can be found in Attachment 2.

Staff seeks approval of a resolution in favor of the grant application to the LWCF for the Riverside Park Regeneration Project.

Recommended Action: Adopt a resolution approving the application for the Land And Water Conservation Fund Riverside Park Regeneration Project.

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.:

COORDINATED WITH:

STRATEGIC PLAN (SP):

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

GP-A4 - Public Facilities, Services, and Infrastructure Element

Approved:


Sage Sangiacomo, City Manager

PROJECT PLANS FOR THE CONSTRUCTION OF:

RIVERSIDE PARK REGENERATION

1281 E. GOBBI STREET

UKIAH, CA 95482

PREPARED FOR:



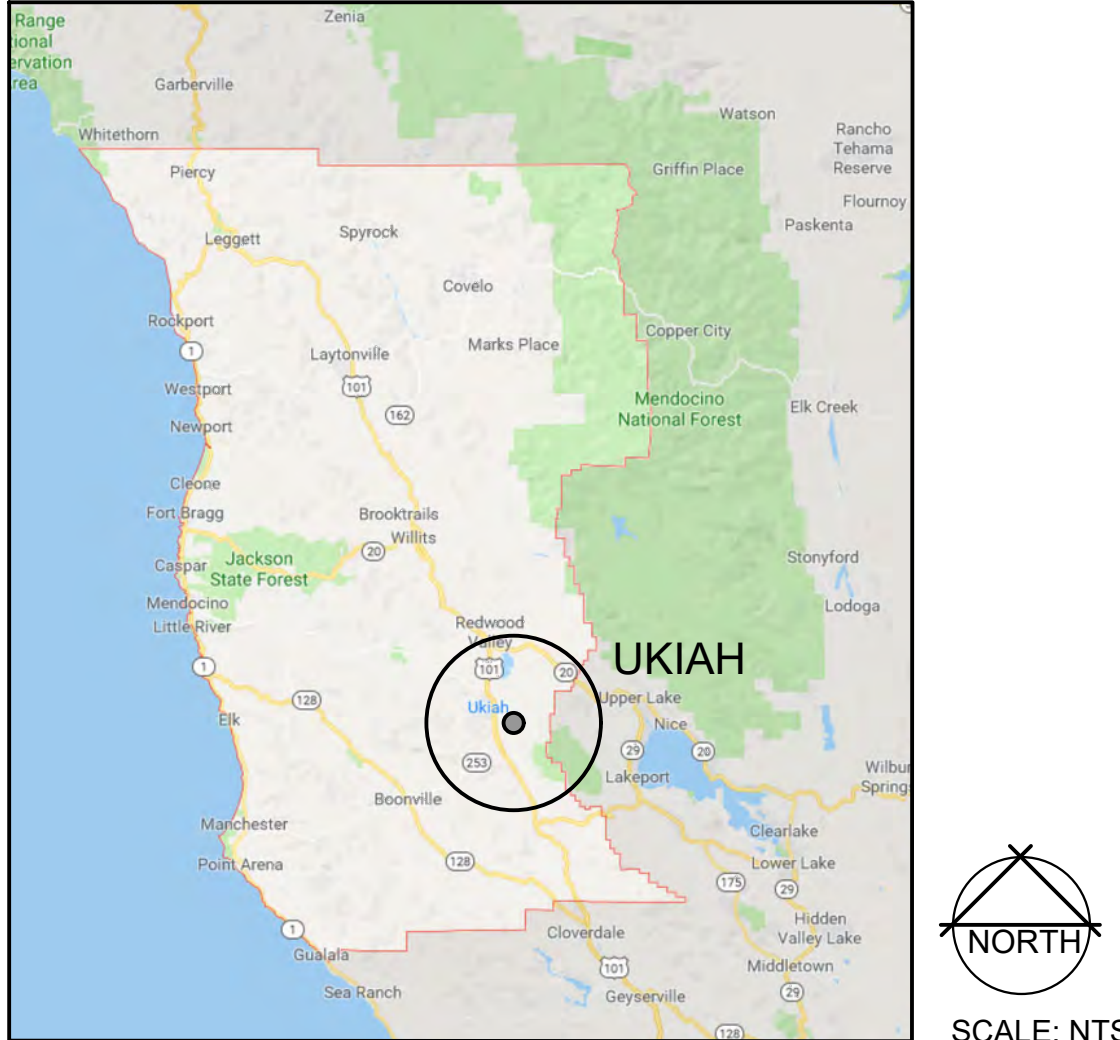
GENERAL CONSTRUCTION NOTE:

CONSTRUCTION UNDER THIS CONTRACT SHALL COMPLY WITH THE LATEST CALIFORNIA BUILDING CODE (CBC), CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA ELECTRICAL CODE (CEC), AND THE 2016 CALIFORNIA ENERGY STANDARDS AS AMENDED BY THE STATE OF CALIFORNIA AND THE LOCAL JURISDICTION.

NOTE TO CONTRACTOR:

PLAN LAYOUT POINTS TO BE PROVIDED TO CONTRACTOR FOR USE BY CONTRACTOR TO STAKE OUT SITE ELEMENTS

KEY MAP OF MENDOCINO COUNTY



PREPARED BY:



PREPARED BY OR UNDER THE SUPERVISION OF:

GREG MELTON
RLA No. 4217

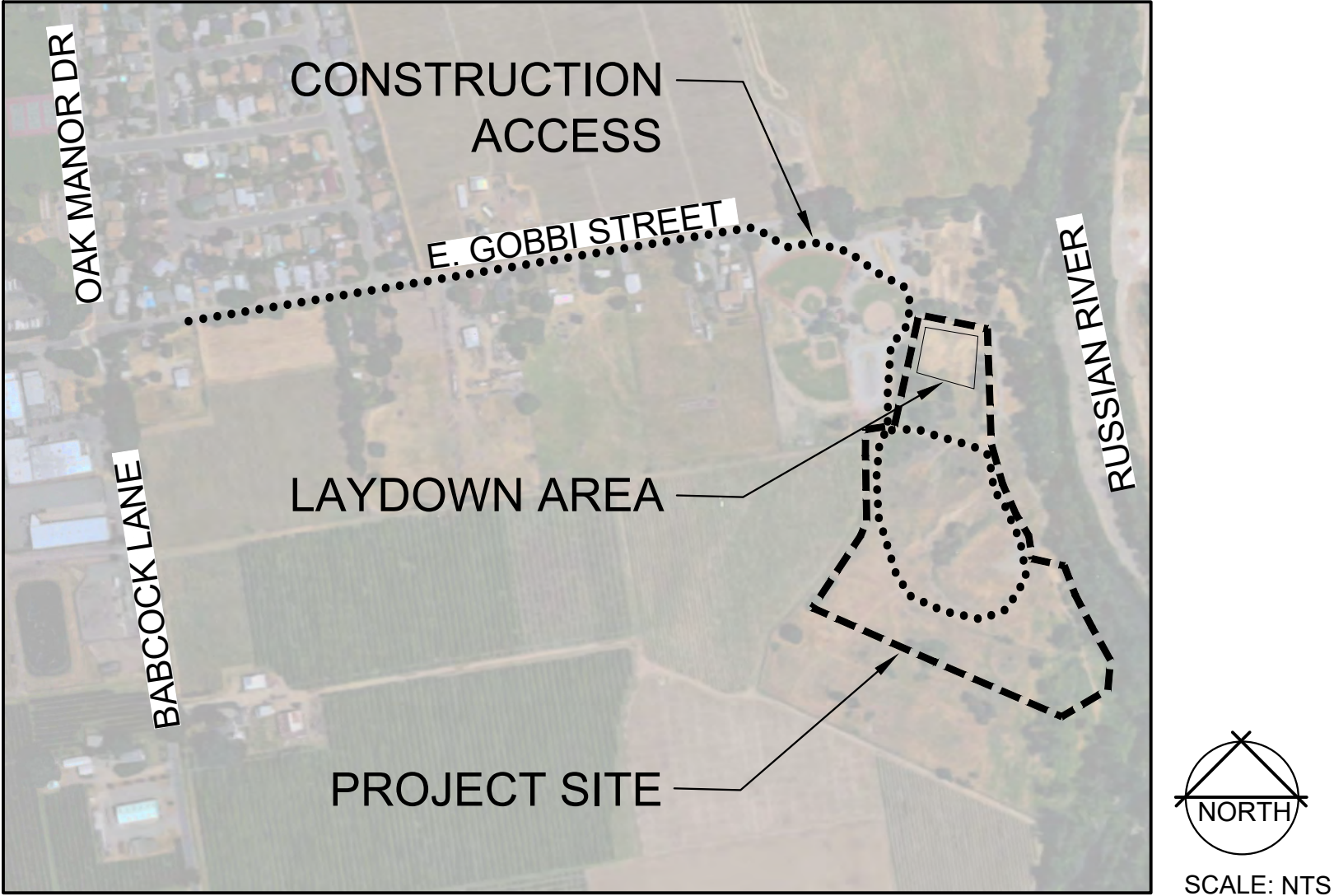
DATE

ACCEPTED BY:

CITY REPRESENTATIVE NAME
REPRESENTATIVE TITLE

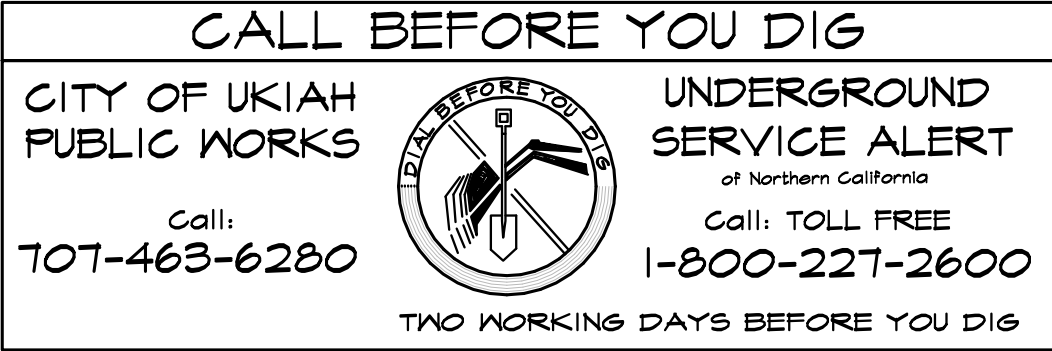
DATE

PROJECT SITE



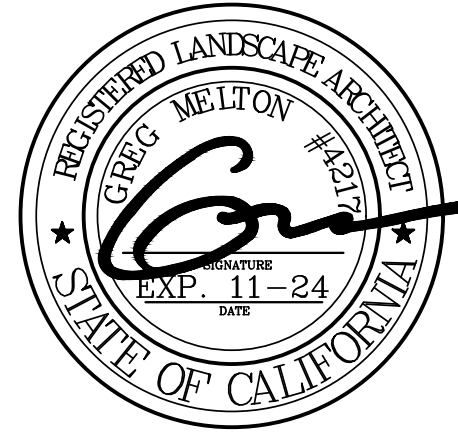
SHEET INDEX

SHEET	TITLE
L0.0	TITLE SHEET
L0.1	PROJECT CHECKLIST
L0.2	EROSION CONTROL PLAN
L0.3	EROSION CONTROL DETAILS
L1.0	EXISTING CONDITIONS, SITE ACCESS, AND DEMOLITION
L1.1	GRADING PLAN
L1.2	GRADING SECTIONS
L1.3	GRADING SECTIONS
L1.4	GRADING SECTIONS
L-2.0	CONSTRUCTION PLAN AND DETAILS
L-3.0	PLANTING PLAN
L-3.1	PLANTING DETAILS
L-4.0	IRRIGATION PLAN
L-4.1	IRRIGATION DETAILS



820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE



CONSULTANT

CLIENT

CITY OF UKIAH

PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE
TITLE SHEET

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L0.0

SHEET 1 OF 14

TREE PROTECTION NOTES

1.

PRIOR TO ANY GROUND DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRUBBING, SCRAPING, OR GRADING, THE SUPERVISING CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION (PRE-GROUND DISTURBANCE) SITE MEETING WITH THE LANDSCAPE ARCHITECT, CITY OF UKIAH, AND THE SUPERVISING CONTRACTOR. THE PURPOSE OF THE PRE-CONSTRUCTION SITE MEETING IS TO VERIFY THAT TREE PROTECTION FENCING IS IN PLACE AND TO INSURE THAT ALL PARTIES ARE FAMILIAR WITH THE NATURE OF THE WORK INVOLVED.
2.

PRIOR TO ANY GROUND DISTURBING ACTIVITIES, AND PRIOR TO THE SUPERVISING CONTRACTOR'S MAKING THE ARRANGEMENTS FOR THE PRE-CONSTRUCTION SITE MEETING, A TEMPORARY CONSTRUCTION FENCE SHALL BE INSTALLED AS INDICATED ON PLANS. THE FENCE SHALL BE 4' MINIMUM HEIGHT, ORANGE POLYETHYLENE FENCING AS MANUFACTURED BY GEOTENAX CORP. (800-356-8495), OR EQUAL. INSTALL WITH METAL "T" STAKES (TO EXTEND TO 4 FOOT MINIMUM HEIGHT ABOVE FINISH GRADE). FENCING SHALL BE SUBSTANTIAL ENOUGH TO RESTRICT ACTIVITY TO OUTSIDE THE AREA AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR OTHER CONSTRUCTION ACTIVITY. DURING CONSTRUCTION, MAINTENANCE SHALL BE PERFORMED SO THAT THE FENCE REMAINS IN GOOD REPAIR. REMOVAL OF THE FENCE SHALL ONLY OCCUR TO ALLOW REQUIRED CONSTRUCTION WITHIN THE AREA OR TO COMPLETE SITE LANDSCAPING. MINIMIZE DAMAGE TO TREE LIMBS, CROWN, CANOPY, AND TRUNK OF TREES TO REMAIN.
3.

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE TREE FROM EXCESS FILL AND/OR THE REMOVAL OF EXCESS SOIL FROM THE TREE ROOT ZONE. THE TREE ROOT ZONE IS A PROJECTED RADIUS ON THE GROUND FORMED BY THE OUTERMOST EDGE OF THE TREE CANOPY.
4.

THE CONTRACTOR SHALL BE RESPONSIBLE TO MINIMIZE COMPACTION OF THE SOIL WITHIN THE TREE ROOT ZONES OF ALL TREES TO REMAIN.
5.

WHEN EXISTING TREE ROOTS ARE ENCOUNTERED DURING THE COURSE OF TRENCHING, THE CONTRACTOR SHALL PREVENT THE TREE ROOTS FROM DESICCATION (DRYING OUT), BY APPLICATION OF A SEALING AGENT AND BY MINIMIZING THE AMOUNT OF TIME THAT TREE ROOTS ARE EXPOSED. TREE ROOTS SHALL ONLY BE EXPOSED WHEN TEMPERATURES ARE ANTICIPATED TO BE ABOVE FORTY DEGREES FAHRENHEIT AND BELOW 90 DEGREES FAHRENHEIT AND SHALL NOT REMAIN EXPOSED LONGER THAN 12 HOURS. IN THE EVENT THAT TRENCHES WITHIN TREE ROOT ZONES CANNOT BE BACKFILLED WITHIN 12 HOURS, THE CONTRACTOR SHALL COVER EXPOSED ROOTS WITH BURLAP AND MAINTAIN MOISTURE BY APPLICATION OF WATER TO MOISTEN BURLAP UNTIL TRENCHES CAN BE BACKFILLED.
6.

UNDERGROUND FACILITIES AND TRENCHES, (e.g., UTILITY SERVICES, SANITARY SEWER, OR STORM DRAINAGE LINES) SHALL BE CONSOLIDATED, TO THE EXTENT FEASIBLE, AND LOCATED TO MINIMIZE IMPACTS UPON TREE ROOT SYSTEMS. ANY TRENCHING OR UNDERGROUND WORK SHOULD BE LOCATED OUTSIDE OF THE TREE DRIPLINE TO THE FULLEST EXTENT FEASIBLE. ANY TRENCHING REQUIRED WITHIN THE TREE DRIPLINE SHALL BE AS FAR FROM THE TREE TRUNK AS POSSIBLE AND SHALL BE EXCAVATED BY HAND OR 'AIR SPADE' OR PNEUMATIC EXCAVATOR TO MINIMIZE IMPACT ON ROOTS.
7.

ROOTS 3/4 IN. OR GREATER IN SIZE ENCOUNTERED DURING TRENCHING SHALL BE CLEANLY HAND PRUNED AND TREATED WITH A SEALING AGENT TO REDUCE LOSS OF MOISTURE TO THE TREE. ROOTS GREATER THAN 1-1/2 IN. SHALL BE PRESERVED AND PROTECTED. CARE SHALL BE TAKEN TO MINIMIZE ABRASIONS TO ROOT BARK.
8.

CONSTRUCTION VEHICLES, EQUIPMENT, OR MATERIALS (INCLUDING, BUT NOT LIMITED TO JOB SHACKS, PORTABLE TOILETS, AND CLEANOUT FACILITIES) SHALL NOT BE PARKED OR STORED WITHIN THE FENCED AREA. NO STAGING OR STORAGE AREA FOR CONSTRUCTION SHALL BE LOCATED CLOSER THAN 20 FEET TO THE DRIPLINE OF ANY TREE TO BE PROTECTED.
9.

ALL CONSTRUCTION WASTES, INCLUDING BUT NOT LIMITED TO BUILDING MATERIAL DEBRIS, ROOFING MATERIALS, CLEANING OF CEMENT TRUCKS, CHEMICALS/ADHESIVES/SOLVENTS, ETC., SHALL BE STORED OR DISPOSED OF NO CLOSER THAN 20 FEET FROM ANY TREE DRIPLINE.
10.

EXISTING TREES TO BE RETAINED AND PROTECTED AS INDICATED ON THE DEMOLITION AND/ OR CONSTRUCTION PLANS.

PROJECT CONSTRUCTION APPROVAL CHECKLIST

CHECK BOX	DESCRIPTION	OWNER REP. INITIALS	GC INITIALS	DATE
☐	PRE-CONSTRUCTION MEETING WITH PROJECT SCHEDULE			
☐	MATERIAL SUBMITTAL PACKAGE (DIGITAL COPY INITIAL- UPON APPROVAL, PROVIDE APPROVED HARD COPIES : 2 COPIES TO CLIENT, 1 COPY TO CLIENT IF APPLICABLE)			
☐	AFTER MASS GRADING THE CONTRACTOR SHALL OBTAIN A SOILS REPORT. SUBMIT TO CLIENT REPRESENTATIVE.			
☐	ROUGH GRADING INSPECTION			
☐	DEROCKING 12" DEEP, REMOVING ALL ROCKS, ROOTS, AND FOREIGN MATERIAL LARGER THAN 1"			
☐	12" RIPPING			
☐	SOIL AMENDMENTS AND TILL INTO TOP 6" - VERIFY AMENDMENT QUANTITIES AND SOIL AMENDMENTS WORKED INTO 6" PRIOR TO FINAL GRADING			
☐	FINAL GRADE INSPECTION AND ACCEPTANCE			
☐	FERTILIZER/ AMENDMENT TAGS. CONTRACTOR IS TO SUBMIT TAGS OF FERTILIZER(S) AND AMENDMENTS TO OWNER'S REPRESENTATIVE FOR VERIFICATION ON QUANTITIES.			
☐	MAINLINE PRESSURE TEST & TRENCH OBSERVATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION PRIOR TO BACK FILL.			
☐	IRRIGATION OPERATION, COVERAGE TEST, LOCATION AND ELEVATION OF ALL MAINLINE TRACKING TAPE, AND IRRIGATION AUDIT (PRIOR TO PLANTING AND INSTALLATION OF MULCH OR SURFACE MATERIAL FOR DRIP SYSTEMS. FOR SPRAY SYSTEMS: AUDIT TO OCCUR PRIOR TO PLANTING.) FINAL APPROVAL OF IRRIGATION			
☐	INITIAL ENTRY INTO MAINTENANCE PERIOD. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.			
☐	PUNCHLIST FOLLOWUP OBSERVATION FOR ENTRY INTO MAINTENANCE PERIOD. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR VERIFICATION OF PUNCHLIST ITEMS			
☐	MAINTENANCE PERIOD PER SPECIFICATIONS START DATE: _____ PROJECTED FINISH DATE: _____			
☐	AS-BUILTS (HARD COPY AND DIGITAL). CONTRACTOR TO SUBMIT TO OWNER'S REPRESENTATIVE AND COORDINATE WITH LANDSCAPE ARCHITECT FOR AS-BUILT APPROVAL.			
☐	CLOSEOUT SUBMITTALS PER SPECIFICATIONS.			
☐	FINAL OBSERVATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.			
☐	CERTIFICATIONS OF COMPLETION. CONTRACTOR IS RESPONSIBLE TO SUBMIT COMPLETED CERTIFICATES OF COMPLETION FROM PROJECT APPLICANT AND LANDSCAPE ARCHITECT TO OWNER.			
☐	NOTIFICATION OF MAINTENANCE PERIOD ENDING TO OWNER.			
☐	1 YEAR ACCEPTANCE OF PLANT WARRANTY PERIOD. DATE TO BE 1 YEAR AFTER APPROVAL OF 90-DAY MAINTENANCE PERIOD: ____			
NOTE: THIS LIST OF REQUIRED SUBMITTALS AND INSPECTIONS IS FOR REFERENCE PURPOSES ONLY. SEE BOOK FORM SPECIFICATIONS AND DETAILS FOR COMPLETE SUBMITTAL AND INSPECTION REQUIREMENTS. PLEASE PROVIDE A MINIMUM OF 2 WORKING DAYS NOTICE FOR ALL OBSERVATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL SUBMITTALS AND INSPECTIONS ARE COMPLETED AS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.				

LANDSCAPE DOCUMENTATION PACKAGE (LDP) CHECKLIST (DESIGN)

CHECK BOX	DESCRIPTION
☐	DATE: _____
☐	PROJECT APPLICANT: (CONTRACTOR) _____
☐	PROJECT ADDRESS: 1281 E GOBBI ST., UKIAH, CA 95482 MENDOCINO COUNTY APN: 1800101000
☐	TOTAL LANDSCAPE AREA (IN SQUARE FEET): 272,400 SF
☐	PROJECT TYPE (CONSTRUCTION OF SEASONAL WETLANDS)
☐	WATER SUPPLY TYPE AND NAME OF LOCAL WATER PURVEYOR: CONTACT SITE OWNER-CITY OF UKIAH DEPT. OF COMMUNITY SERVICES
☐	CHECKLIST OF ALL DOCUMENTS IN THE LDP
☐	CONTACT INFORMATION FOR THE APPLICANT AND PROPERTY OWNER: APPLICANT (CONTRACTOR): PROPERTY OWNER: CITY OF UKIAH 300 SEMINARY AVENUE UKIAH, CA 95482
☐	"I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE."
	APPLICANT SIGNATURE (CONTRACTOR) _____
☐	WATER EFFICIENT LANDSCAPE WORKSHEET INCLUDING: 1) HYDROZONE INFORMATION TABLE 2) WATER BUDGET CALCULATIONS INCLUDING: a. MAX APPLIED WATER ALLOWANCE (MAWA) INCLUDING WATER FEATURES b. ESTIMATED TOTAL WATER USE (ETWU)
☐	SOILS MANAGEMENT REPORT: TO BE PROVIDED BY CONTRACTOR
☐	CONSTRUCTION DESIGN PLAN: SHEET L-2.0
☐	LANDSCAPE DESIGN PLAN: SHEET L-3.0 - L3.1
☐	IRRIGATION DESIGN PLAN: SHEET L-4.0 - L4.1
☐	GRADING DESIGN PLAN: L1.1 - L1.4

SOIL REPORT NOTE

THE PROJECT LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING SOILS ANALYSIS OF SITE SOIL FROM AN ANALYTICAL LABORATORY AND AMENDING THE SOIL AS PER THE RECOMMENDATIONS FOR LANDSCAPES STATED IN RATES OF COMMONLY AVAILABLE AMENDMENTS (CUBIC YARDS OR WEIGHT PER 1,000 SF). RECOMMENDATIONS PENDING LABORATORY ANALYSIS.



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PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE

TITLE SHEET

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

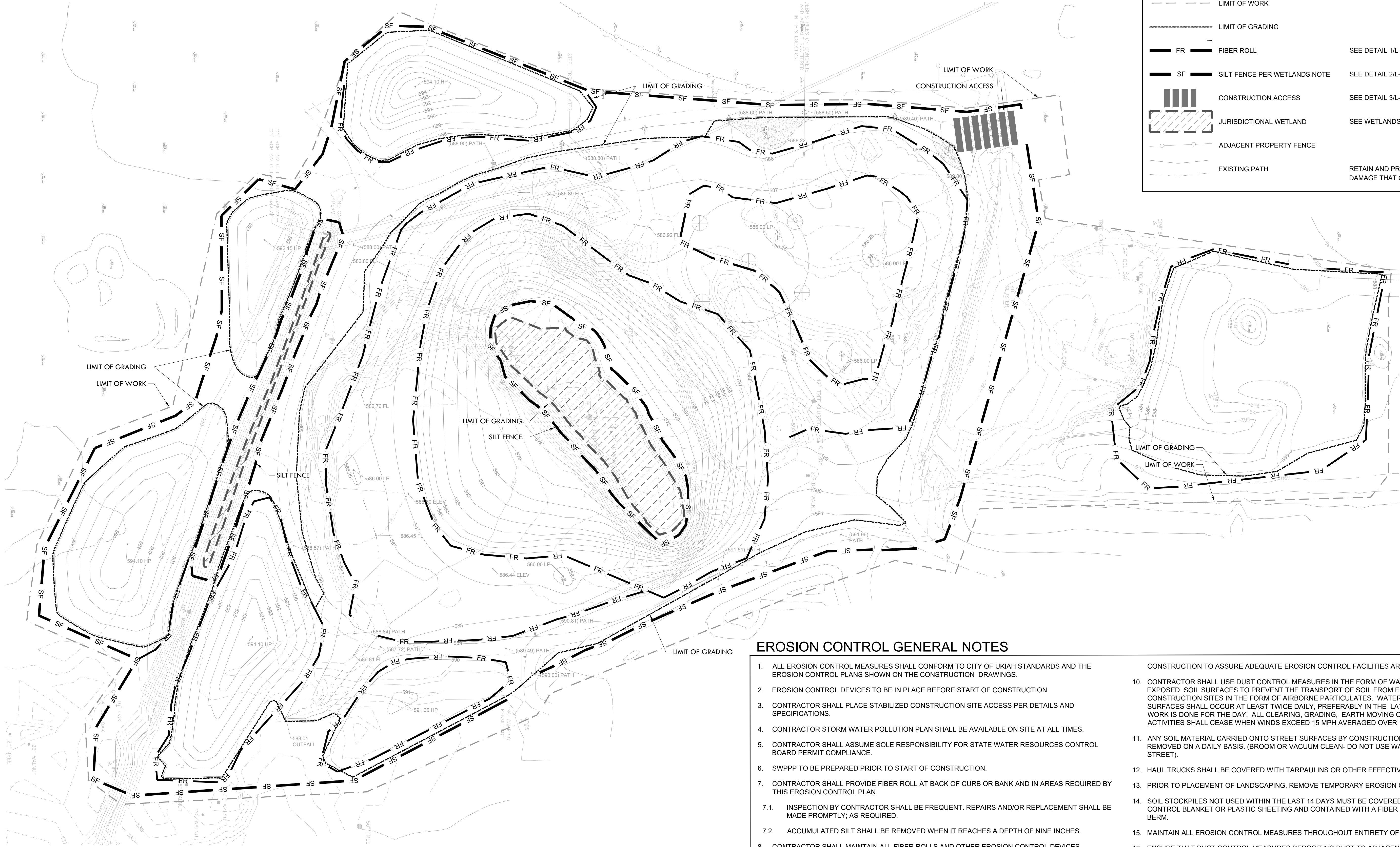
SHEET NUMBER

L0.1

SHEET 2 OF 14

FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\ SHEETS\2369-10.2.EPOS-PLAN.dwg

PLOT DATE: April 16, 2024 - 10:06 AM



SYMBOL LEGEND		
SYMBOL	DESCRIPTION	DESCRIPTION
---	LIMIT OF WORK	
---	LIMIT OF GRADING	
FR	FIBER ROLL	SEE DETAIL 1/L-1.6
SF	SILT FENCE PER WETLANDS NOTE	SEE DETAIL 2/L-1.6
[Hatched Box]	CONSTRUCTION ACCESS	SEE DETAIL 3/L-1.6
[Hatched Box]	JURISDICTIONAL WETLAND	SEE WETLANDS NOTE
---	ADJACENT PROPERTY FENCE	
---	EXISTING PATH	RETAIN AND PROTECT. REPAIR ANY DAMAGE THAT OCCURS.

EROSION CONTROL GENERAL NOTES

- ALL EROSION CONTROL MEASURES SHALL CONFORM TO CITY OF UKIAH STANDARDS AND THE EROSION CONTROL PLANS SHOWN ON THE CONSTRUCTION DRAWINGS.
- EROSION CONTROL DEVICES TO BE IN PLACE BEFORE START OF CONSTRUCTION
- CONTRACTOR SHALL PLACE STABILIZED CONSTRUCTION SITE ACCESS PER DETAILS AND SPECIFICATIONS.
- CONTRACTOR STORM WATER POLLUTION PLAN SHALL BE AVAILABLE ON SITE AT ALL TIMES.
- CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR STATE WATER RESOURCES CONTROL BOARD PERMIT COMPLIANCE.
- SWPPP TO BE PREPARED PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE FIBER ROLL AT BACK OF CURB OR BANK AND IN AREAS REQUIRED BY THIS EROSION CONTROL PLAN.
 - INSPECTION BY CONTRACTOR SHALL BE FREQUENT. REPAIRS AND/OR REPLACEMENT SHALL BE MADE PROMPTLY; AS REQUIRED.
 - ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF NINE INCHES.
- CONTRACTOR SHALL MAINTAIN ALL FIBER ROLLS AND OTHER EROSION CONTROL DEVICES THROUGHOUT CONSTRUCTION. SILT BUILDUP IN SILTING BASIN AREA SHALL BE REMOVED AS NECESSARY. REMOVE ALL STORM WATER POLLUTION PREVENTION DEVICES AT THE END OF CONSTRUCTION.
- INTERIM EROSION CONTROL MEASURES MAY BE NEEDED AND SHALL BE INSTALLED DURING CONSTRUCTION TO ASSURE ADEQUATE EROSION CONTROL FACILITIES ARE IN PLACE AT ALL TIMES.
- CONTRACTOR SHALL USE DUST CONTROL MEASURES IN THE FORM OF WATER APPLICATION TO ALL EXPOSED SOIL SURFACES TO PREVENT THE TRANSPORT OF SOIL FROM EXPOSED SURFACES ON CONSTRUCTION SITES IN THE FORM OF AIRBORNE PARTICULATES. WATERING OF EXPOSED SOIL SURFACES SHALL OCCUR AT LEAST TWICE DAILY, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS DONE FOR THE DAY. ALL CLEARING, GRADING, EARTH MOVING OR EXCAVATION ACTIVITIES SHALL CEASE WHEN WINDS EXCEED 15 MPH AVERAGED OVER 1 HOUR.
- ANY SOIL MATERIAL CARRIED ONTO STREET SURFACES BY CONSTRUCTION EQUIPMENT SHALL BE REMOVED ON A DAILY BASIS. (BROOM OR VACUUM CLEAN- DO NOT USE WATER TO WASH THE STREET).
- HAUL TRUCKS SHALL BE COVERED WITH TARPULINS OR OTHER EFFECTIVE COVERS AT ALL TIMES.
- PRIOR TO PLACEMENT OF LANDSCAPING, REMOVE TEMPORARY EROSION CONTROL MEASURES.
- SOIL STOCKPILES NOT USED WITHIN THE LAST 14 DAYS MUST BE COVERED WITH AN EROSION CONTROL BLANKET OR PLASTIC SHEETING AND CONTAINED WITH A FIBER ROLL OR GRAVEL BAG BERM.
- MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT ENTIRETY OF PROJECT DURATION.
- ENSURE THAT DUST CONTROL MEASURES DEPOSIT NO DUST TO ADJACENT PROPERTY BY NECESSARY MEASURES INCLUDING WATER APPLICATION, DUST CONTROL BARRIERS AND FENCING, AND COVERING DUST PRODUCING AREAS AND ACTIVITIES. STORAGE OF SOIL AND OTHER PARTICULATE MATERIAL MUST BE MAINTAINED AND REPLACED IF NECESSARY TO ENSURE ADJACENT PROPERTY RECEIVES NO DUST OR POWDER DEPOSIT FROM CONSTRUCTION MATERIALS AND EXECUTION.

JURISDICTIONAL WETLANDS NOTE

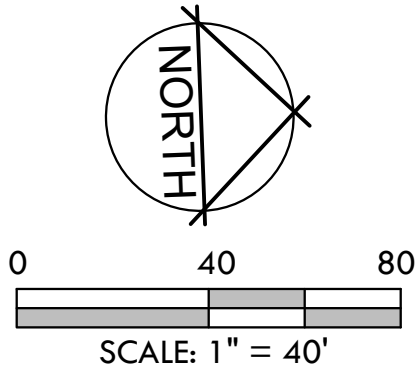
- RETAIN AND PROTECT JURISDICTIONAL WETLAND. STAKE LIMITS FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. MAINTAIN MINIMUM 10' SETBACK WITH SILT FENCE AND FIBER ROLL.
- SILT FENCE AND FIBER ROLL TO BE MAINTAINED THROUGHOUT DURATION OF PROJECT.

CONSTRUCTION ACCESS NOTE

- CONSTRUCTION ENTRY, TRACK OUT, AND CONCRETE WASHOUT AREA LOCATIONS TO BE LOCATED AT NORTHWEST CORNER OF SITE.
- SEE DETAIL 3/L1.1 FOR CONSTRUCTION SITE ACCESS DETAIL.
- SEE DETAIL 4/L1.1 FOR CONCRETE WASHOUT DETAIL.

EXISTING CONDITIONS NOTE

- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING GRAVEL PATHS, HARDSCAPE, ASPHALT PATHS, LANDSCAPING, IRRIGATION, ETC. THAT ARE NOT DESIGNATED FOR DEMOLITION OR MODIFICATION.
- CONTRACTOR SHALL COVER EXISTING ASPHALT PATHS, ROADWAYS, CURBS, MOW CURBS AND OTHER ELEMENTS TO PROTECT FROM DAMAGE DURING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL DAMAGED SURFACES, AMENITIES, HARDSCAPES, LANDSCAPE, IRRIGATION, ETC. DUE TO HIS/HER ACTIVITY OR NEGLIGENCE AND AS APPROVED BY THE CITY.



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PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE

EROSION
CONTROL PLAN

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L0.2

SHEET 8 OF 14

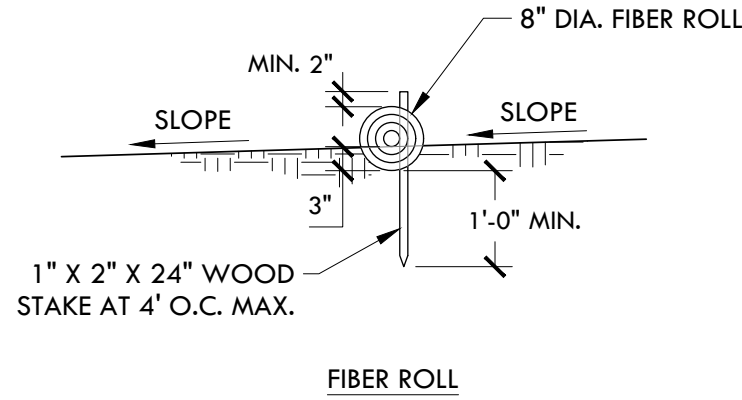
FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\ SHEETS\2369-10.2-EROS-PLAN.dwg

PLOT DATE: April 16, 2024 - 10:06 AM

1
L1.6

FIBER ROLL LAYOUT

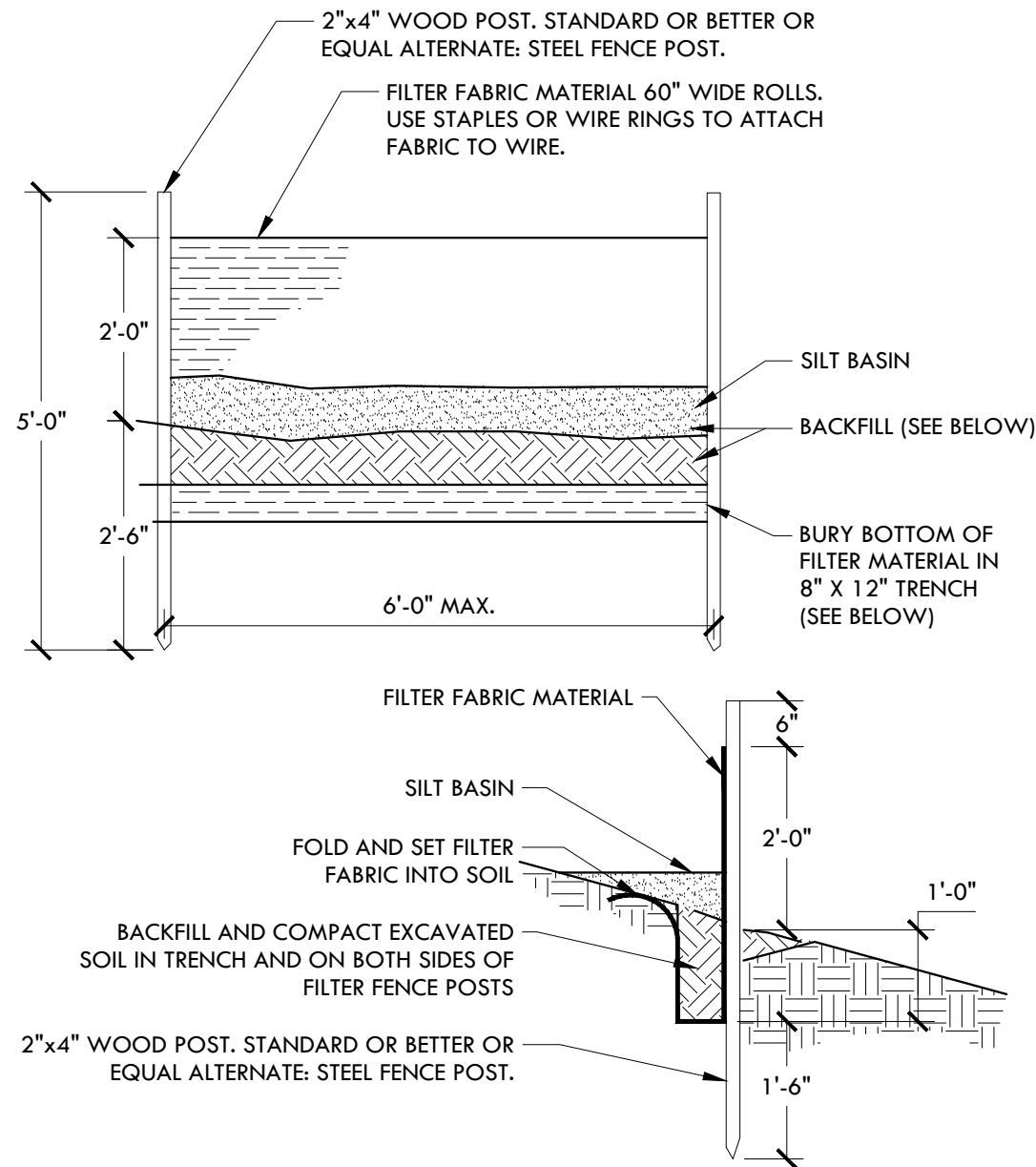
N.T.S.



2
L1.6

SILT FENCE

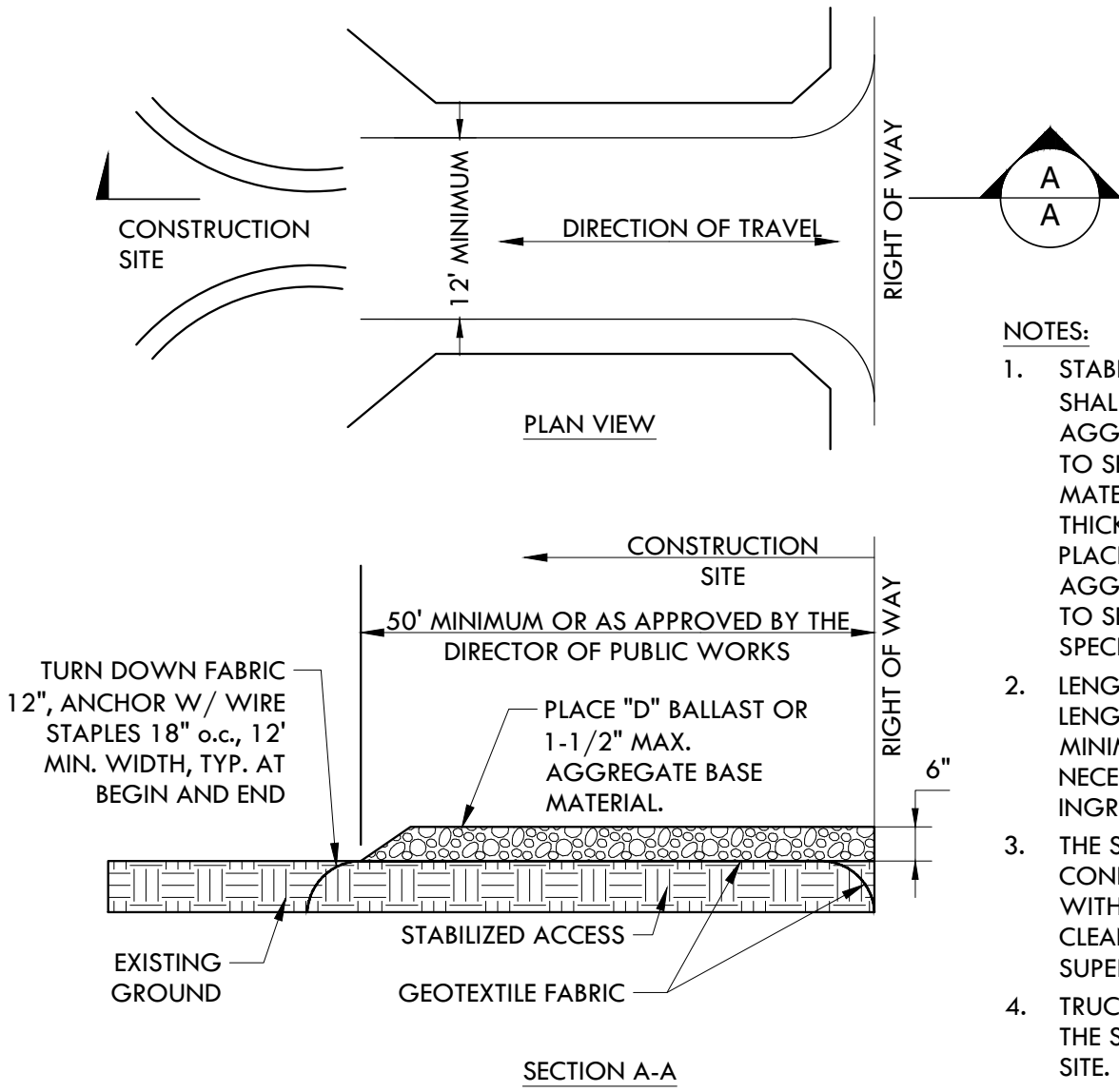
N.T.S.



3
L1.6

TEMPORARY CONSTRUCTION SITE ACCESS

N.T.S.



NOTES:

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 1-1/2" MAXIMUM AGGREGATE BASE MATERIAL CONFORMING TO SECTION 26 OF STATE SPECIFICATIONS. MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF SIX INCHES. THE METHOD OF PLACING, SPREADING AND COMPACTING AGGREGATE BASE MATERIAL SHALL CONFORM TO SECTION 26 OF THE STATE SPECIFICATIONS.
2. LENGTH OF SITE ACCESS SHALL BE A MINIMUM LENGTH OF FIFTY FEET. WIDTH SHALL BE A MINIMUM OF TWENTY FEET, OR GREATER AS NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS.
3. THE SITE ACCESS SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH AGGREGATE BASE MATERIAL OR CLEANED AS DIRECTED BY THE PROJECT SUPERVISOR.
4. TRUCK TIRES SHALL BE WASHED DOWN AND THE SEDIMENT CONTAINED ON THE PROJECT SITE.



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REGENERATION

SHEET TITLE

EROSION
CONTROL
DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

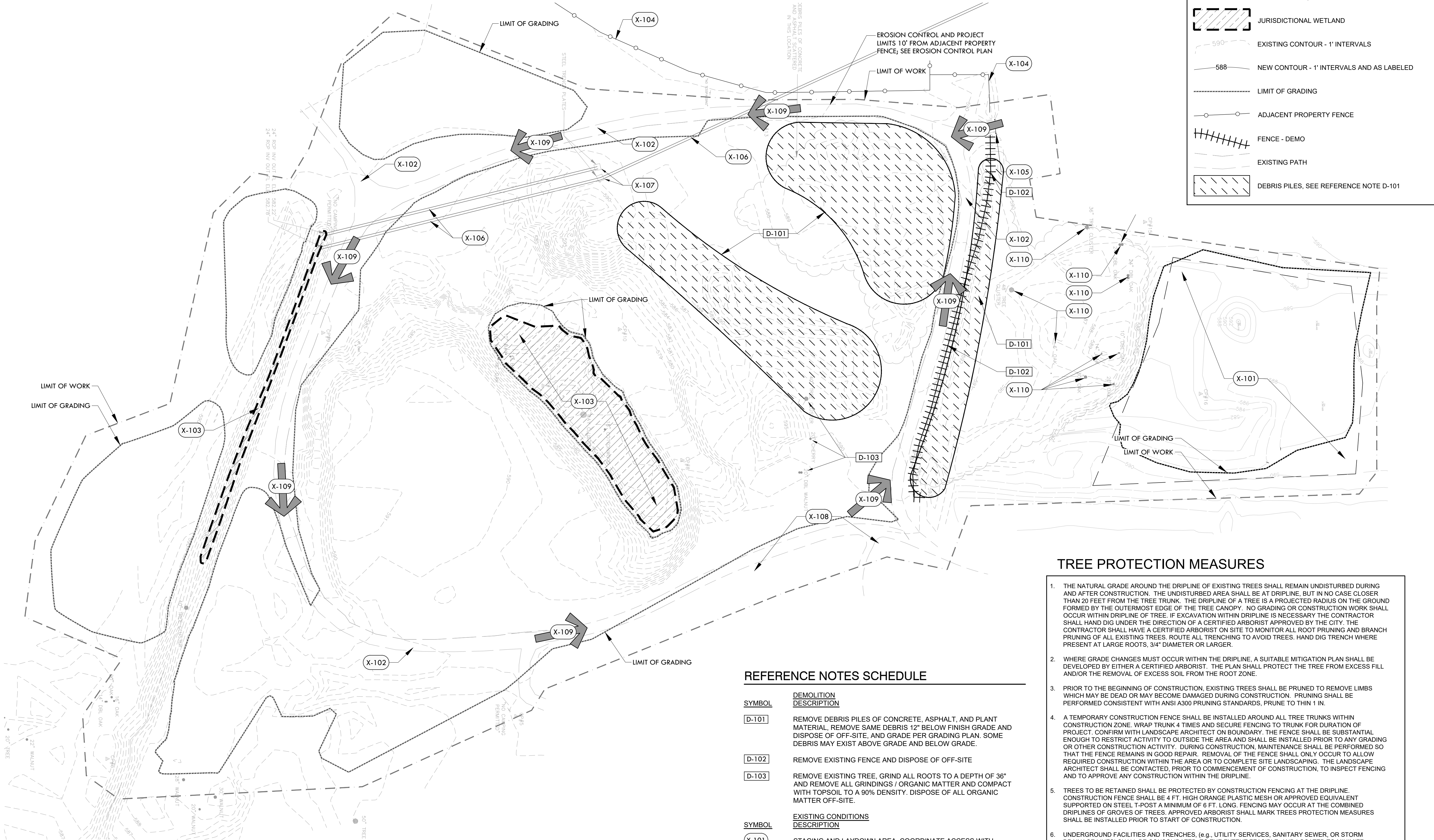
MELTON DESIGN GROUP: 2369

SHEET NUMBER

L0.3

SHEET 9 OF 14

FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\ SHEETS\2369-L1.DWG
PLOT DATE: April 16, 2024 - 1:00:45 AM



SYMBOL LEGEND

SYMBOL	DESCRIPTION
	LIMIT OF WORK, CONSTRUCTION FENCING
	JURISDICTIONAL WETLAND
	EXISTING CONTOUR - 1' INTERVALS
	NEW CONTOUR - 1' INTERVALS AND AS LABELED
	LIMIT OF GRADING
	ADJACENT PROPERTY FENCE
	FENCE - DEMO
	EXISTING PATH
	DEBRIS PILES, SEE REFERENCE NOTE D-101

REFERENCE NOTES SCHEDULE

SYMBOL	DEMOLITION DESCRIPTION
D-101	REMOVE DEBRIS PILES OF CONCRETE, ASPHALT, AND PLANT MATERIAL. REMOVE SAME DEBRIS 12" BELOW FINISH GRADE AND DISPOSE OF OFF-SITE. AND GRADE PER GRADING PLAN. SOME DEBRIS MAY EXIST ABOVE GRADE AND BELOW GRADE.
D-102	REMOVE EXISTING FENCE AND DISPOSE OF OFF-SITE
D-103	REMOVE EXISTING TREE, GRIND ALL ROOTS TO A DEPTH OF 36" AND REMOVE ALL GRINDINGS / ORGANIC MATTER AND COMPACT WITH TOPSOIL TO A 90% DENSITY. DISPOSE OF ALL ORGANIC MATTER OFF-SITE.
SYMBOL	EXISTING CONDITIONS DESCRIPTION
X-101	STAGING AND LAYDOWN AREA. COORDINATE ACCESS WITH OWNER.
X-102	RETAIN AND PROTECT GRAVEL TRAIL SURFACE.
X-103	RETAIN AND PROTECT JURISDICTIONAL WETLAND. STAKE LIMITS FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. SEE ALSO JURISDICTIONAL WETLAND NOTES ON SHEET L1.0.
X-104	RETAIN AND PROTECT EXISTING FENCE
X-105	RETAIN AND PROTECT EXISTING GATE
X-106	RETAIN AND PROTECT BURIED STORM DRAIN.
X-107	RETAIN AND PROTECT STEEL PLATES.
X-108	RETAIN AND PROTECT PLANTING AT EAST OF SITE.
X-109	VEHICULAR ACCESS ROUTE ON EXISTING GRAVEL TRAIL. ENSURE THAT SITE RECEIVES MINIMAL TRAFFIC THROUGHOUT DURATION OF PROJECT. SEE DEMOLITION NOTES #5 REGARDING REPAIRING DAMAGE.
X-110	RETAIN AND PROTECT EXISTING TREE

TREE PROTECTION MEASURES

- THE NATURAL GRADE AROUND THE DRIPLINE OF EXISTING TREES SHALL REMAIN UNDISTURBED DURING AND AFTER CONSTRUCTION. THE UNDISTURBED AREA SHALL BE AT DRIPLINE, BUT IN NO CASE CLOSER THAN 20 FEET FROM THE TREE TRUNK. THE DRIPLINE OF A TREE IS A PROJECTED RADIUS ON THE GROUND FORMED BY THE OUTERMOST EDGE OF THE TREE CANOPY. NO GRADING OR CONSTRUCTION WORK SHALL OCCUR WITHIN DRIPLINE OF TREE. IF EXCAVATION WITHIN DRIPLINE IS NECESSARY THE CONTRACTOR SHALL HAND DIG UNDER THE DIRECTION OF A CERTIFIED ARBORIST APPROVED BY THE CITY. THE CONTRACTOR SHALL HAVE A CERTIFIED ARBORIST ON SITE TO MONITOR ALL ROOT PRUNING AND BRANCH PRUNING OF ALL EXISTING TREES. ROUTE ALL TRENCHING TO AVOID TREES. HAND DIG TRENCH WHERE PRESENT AT LARGE ROOTS, 3/4" DIAMETER OR LARGER.
- WHERE GRADE CHANGES MUST OCCUR WITHIN THE DRIPLINE, A SUITABLE MITIGATION PLAN SHALL BE DEVELOPED BY EITHER A CERTIFIED ARBORIST. THE PLAN SHALL PROTECT THE TREE FROM EXCESS FILL AND/OR THE REMOVAL OF EXCESS SOIL FROM THE ROOT ZONE.
- PRIOR TO THE BEGINNING OF CONSTRUCTION, EXISTING TREES SHALL BE PRUNED TO REMOVE LIMBS WHICH MAY BE DEAD OR MAY BECOME DAMAGED DURING CONSTRUCTION. PRUNING SHALL BE PERFORMED CONSISTENT WITH ANSI A300 PRUNING STANDARDS, PRUNE TO THIN 1 IN.
- A TEMPORARY CONSTRUCTION FENCE SHALL BE INSTALLED AROUND ALL TREE TRUNKS WITHIN CONSTRUCTION ZONE. WRAP TRUNK 4 TIMES AND SECURE FENCING TO TRUNK FOR DURATION OF PROJECT. CONFORM WITH LANDSCAPE ARCHITECT ON BOUNDARY. THE FENCE SHALL BE SUBSTANTIAL ENOUGH TO RESTRICT ACTIVITY TO OUTSIDE THE AREA AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR OTHER CONSTRUCTION ACTIVITY. DURING CONSTRUCTION, MAINTENANCE SHALL BE PERFORMED SO THAT THE FENCE REMAINS IN GOOD REPAIR. REMOVAL OF THE FENCE SHALL ONLY OCCUR TO ALLOW REQUIRED CONSTRUCTION WITHIN THE AREA OR TO COMPLETE SITE LANDSCAPING. THE LANDSCAPE ARCHITECT SHALL BE CONTACTED, PRIOR TO COMMENCEMENT OF CONSTRUCTION, TO INSPECT FENCING AND TO APPROVE ANY CONSTRUCTION WITHIN THE DRIPLINE.
- TREES TO BE RETAINED SHALL BE PROTECTED BY CONSTRUCTION FENCING AT THE DRIPLINE. CONSTRUCTION FENCE SHALL BE 4 FT. HIGH ORANGE PLASTIC MESH OR APPROVED EQUIVALENT SUPPORTED ON STEEL T-POST A MINIMUM OF 6 FT. LONG. FENCING MAY OCCUR AT THE COMBINED DRIPLINES OF GROVES OF TREES. APPROVED ARBORIST SHALL MARK TREES PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION.
- UNDERGROUND FACILITIES AND TRENCHES, (e.g., UTILITY SERVICES, SANITARY SEWER, OR STORM DRAINAGE LINES) SHALL BE CONSOLIDATED, TO THE EXTENT FEASIBLE, AND LOCATED TO MINIMIZE IMPACTS UPON TREE ROOT SYSTEMS. ANY TRENCHING OR UNDERGROUND WORK SHOULD BE LOCATED OUTSIDE OF THE TREE DRIPLINE. ANY TRENCHING REQUIRED WITHIN THE TREE DRIPLINE SHALL BE AS FAR FROM THE TREE TRUNK AS POSSIBLE AND SHALL BE EXCAVATED BY HAND TO MINIMIZE IMPACT ON ROOTS. ALL TRENCHING WITHIN THE DRIPLINE SHALL BE SUPERVISED BY A CERTIFIED ARBORIST.
- ROOTS 3/4 IN. OR GREATER IN SIZE ENCOUNTERED DURING TRENCHING SHALL BE CLEANLY CUT AND TREATED WITH A SEALING AGENT TO REDUCE LOSS OF MOISTURE TO THE TREE. ROOTS GREATER THAN 1-1/2 IN. SHALL BE PRESERVED AND PROTECTED AT THE DIRECTION OF A CERTIFIED ARBORIST.
- CONSTRUCTION VEHICLES, EQUIPMENT, OR MATERIALS SHALL NOT BE PARKED OR STORED WITHIN THE FENCED AREA. NO STAGING OR STORAGE AREA FOR CONSTRUCTION SHALL BE LOCATED CLOSER THAN 50 FEET TO THE DRIPLINE OF ANY TREE TO BE PROTECTED.
- ALL CONSTRUCTION WASTES, INCLUDING BUT NOT LIMITED TO BUILDING MATERIAL DEBRIS, ROOFING MATERIALS, CLEANING OF CEMENT TRUCKS, CHEMICALS/ADHESIVES/SOLVENTS, ETC., SHALL BE STORED NO CLOSER THAN 50 FEET FROM ANY TREE DRIPLINE.

EXISTING CONDITIONS NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING HARDSCAPE, ASPHALT PATHS, LANDSCAPING, IRRIGATION, ETC. THAT ARE NOT DESIGNATED FOR DEMOLITION OR MODIFICATION.
- CONTRACTOR SHALL PROTECT EXISTING ASPHALT PATHS, ROADWAYS, CURBS, MOW CURBS AND OTHER ELEMENTS FROM DAMAGE DURING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL DAMAGED SURFACES, AMENITIES, HARDSCAPES, LANDSCAPE, IRRIGATION, ETC. DUE TO HIS/HER ACTIVITY OR NEGLIGENCE AND AS APPROVED BY THE DISTRICT.

CONSTRUCTION ACCESS NOTES

- CONSTRUCTION ENTRY, TRACK OUT, AND CONCRETE WASHOUT AREA LOCATIONS TO BE LOCATED AT NORTHERN CORNER OF SITE. SEE SITE ACCESS, DEMOLITION, AND EXISTING CONDITIONS PLAN.
- SEE DETAIL 3/L1.1 FOR CONSTRUCTION SITE ACCESS DETAIL.

DEMOLITION NOTES

- CONFIRM ALL LOCATIONS OF EXISTING UTILITIES WITHIN PROJECT SITE PRIOR TO DEMOLITION AND EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND REPAIR OF DAMAGE TO ALL EXISTING UTILITIES DESIGNATED TO REMAIN. CALL ALL APPLICABLE AGENCIES AND USA, (800) 642-2444. THE LANDSCAPE ARCHITECT CANNOT BE RESPONSIBLE FOR THE COMPLETENESS OR ACCURACY OF THIS INFORMATION. PROVISION OF TENTATIVE UTILITY LOCATION DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO CONTACT USA AND APPLICABLE AGENCIES AND CONDUCT FIELD DISCOVERY TO VERIFY EXISTING CONDITIONS.
- CONTRACTOR SHALL OBSERVE ALL SAFETY REGULATIONS PERTAINING TO THIS PROJECT.
- ANY CHANGES SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
- ALL VEGETATION AND OTHER UNSUITABLE MATERIAL IN AREAS OF FOUNDATIONS, CONCRETE SLABS, AND DECOMPOSED GRANITE SHALL BE REMOVED FROM CONSTRUCTION AREA AND DISPOSED OF OFF-SITE.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING HARDSCAPE, AGGREGATE SURFACES AND LANDSCAPES (INCLUDING TREES), UNLESS CALLED OUT FOR DEMOLITION ON THIS SHEET, FROM DAMAGE DURING THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL REPLACE OR REPAIR ANY DAMAGE TO HARDSCAPES, AGGREGATES AND LANDSCAPES RESULTING FROM CONSTRUCTION ACTIVITIES AT CONTRACTOR'S EXPENSE.
- REFER TO BOOK FORM SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE
EXISTING
CONDITIONS, SITE
ACCESS, AND
DEMOLITION

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L1.0

SHEET 3 OF 14



NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-202
2.	90% CD's	08-18-202
3.	100% CD's	04-19-202
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

EXISTING CONDITIONS NOTE

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING HARDCAPE, ASPHALT PATHS, LANDSCAPING, IRRIGATION, ETC. THAT ARE NOT DESIGNATED FOR DEMOLITION OR MODIFICATION.
2. CONTRACTOR SHALL COVER EXISTING ASPHALT PATHS, ROADWAYS, CURBS, MOW STRIPS AND OTHER ELEMENTS TO PROTECT FROM DAMAGE DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL DAMAGED SURFACES, AMENITIES, HARDCAPES, LANDSCAPE, IRRIGATION, ETC. DUE TO HIS/HERS ACTIVITY OR NEGLIGENCE AND AS APPROVED BY THE DISTRICT.
4. NO GRADING SHALL OCCUR IN EXISTING JURISDICTIONAL WETLAND AREAS

GENERAL GRADING NOTES

1. CONTACT LANDSCAPE ARCHITECT PRIOR TO GRADING IN THE EVENT THAT EXISTING GRADES FOR CONDITIONS ARE NOT AS SHOWN ON PLANS.
2. SLOPE TRAIL TO DRAIN. ELIMINATE ALL LOCALIZED DEPRESSIONS OR "BIRD BATHS".
3. PROVIDE SMOOTH CONTINUOUS CURVE AT TOPS AND BOTTOM OF SLOPES AND OVER FIELD GRADE.
4. DIGITAL COPY OF TOPOGRAPHIC AND GRADING PLAN IS AVAILABLE ON REQUEST.
5. SEE BOOK FORM SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. PERFORM SURFACE ROUGHENING ON SLOPES TO TEMPORARILY STABILIZE SOIL. PROVIDE EQUIPMENT WITH A TRACK UNDERCARRIAGE CAPABLE OF PRODUCING LINEAR SOIL IMPRESSIONS MEASURING AT LEAST 12" IN LENGTH BY 2" TO 4" IN WIDTH BY 3/8" TO 2" IN DEPTH. DO NOT EXCEED 12" BETWEEN TRACK CLEATS. INSTALL CONTINUOUS LINEAR TRACK IMPRESSIONS WHERE THE MINIMUM 12" IN LENGTH IS PERPENDICULAR TO THE DIRECTION OF WATER FLOW. PER DETAIL 1/L.1.1
7. REFER TO SHEET L2.0 FOR INSTALLATION AND LIMITS OF CLAY LAYER

GRADING LEGEND

SYMBOL	DESCRIPTION	ABBREVIATIONS
	LIMIT OF WORK	FS FINISH SURFACE FG FINISH GRADE TC TOP OF CURB BC BOTTOM OF CURB TR TOP OF RAMP BR BOTTOM OF RAMP VE EDGE OF VAULT INV DRAIN PIPE INLET ELEVATION RIM TOP OF CATCH BASIN GRATE TS TOE OF SLOPE LP LOW POINT HP HIGH POINT FL FLOWLINE (E) EXISTING (P) PROPOSED
	EXISTING CONTOUR - 1' INTERVALS	
	NEW CONTOUR - 1' INTERVALS AND AS LABELED	
	NEW SPOT ELEVATION	
	DIRECTION AND PERCENT OF SLOPE - SLOPE TO DRAIN	
	TOE OF SLOPE	
	FLOW LINE	
	(E) JURISDICTIONAL WETLAND: RETAIN AND PROTECT	
	LIMIT OF GRADING	

DATUM NOTES

VERTICAL AND HORIZONTAL DATUMS WERE PROVIDED BY
RRMDDESIGNGROUP RIVERSIDE PARK-PHASE ONE ROUGH GRADING
PROJECT CONSTRUCTION DOCUMENTS GRADING PLAN DATED JULY 9, 2010
CONFIRMED AS:

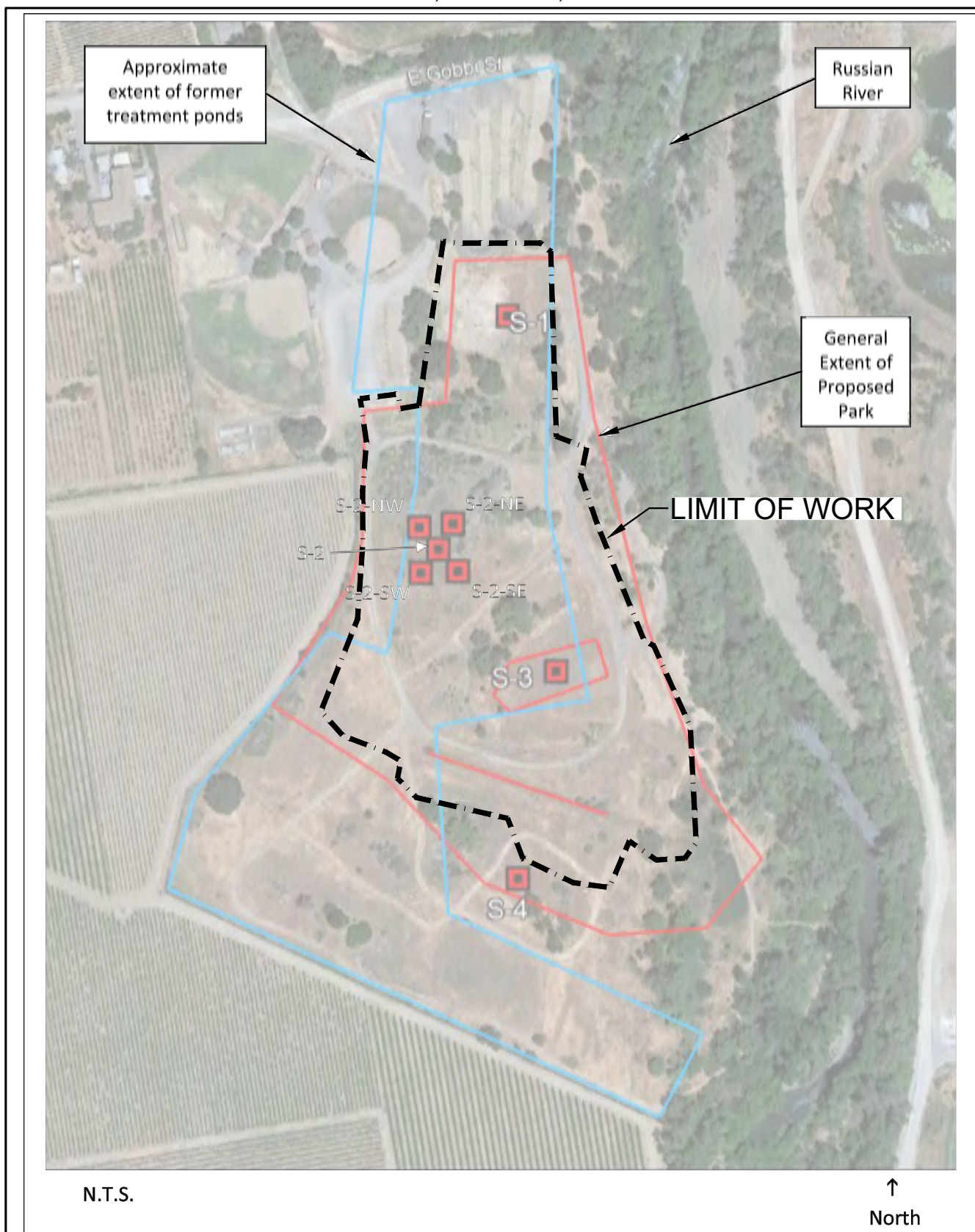
HORIZONTAL DATUM: NAD 83 ZONE 2 BASED UPON GPS OBSERVATIONS, PROCESSED BY NGS OPUS (SEPTEMBER 18, 2019) WITH CORS STATIONS P192, P190 & P185, REFERENCE EPOCH 2010.00 AT CONTROL POINT #200

VERTICAL DATUM: NAVD 88 BASED UPON GPS OBSERVATIONS, PROCESSED BY NGS OPUS (SEPTEMBER 18, 2019) WITH CORS STATIONS P192, P190 & P185, REFERENCE EPOCH 2010.00 AT CONTROL POINT #200

CONTOUR INTERVAL = 1 FOOT

SOIL SAMPLE LOCATION MAP

ESA SOIL CONTAMINATION REPORT #2, 06-05-2022, PAGE 9



Source: Image adapted from GoogleEarth 2021

Proposed Ukiah Riverside Park 201801242.01
Figure 1 – Soil Sample Locations

SOIL DISPOSAL NOTES

EXCERPT - ESA SOIL CONTAMINATION REPORT #1, 04-14-2022



April 14, 2022
Page 4
Draft Soil Sampling Results Report

- Move or dispose of the soil: If soil in the area around Samples S-1 and S-2 is to be graded and moved, the soil could be excavated and disposed of at any Class III non-hazardous waste landfill. Alternatively, the excavated soil could be placed in other onsite areas, provided the soil is covered with three feet of clean soil to isolate the contaminated soil from the public and the environment.

EXCERPT - ESA SOIL CONTAMINATION REPORT #2, 06-05-2022

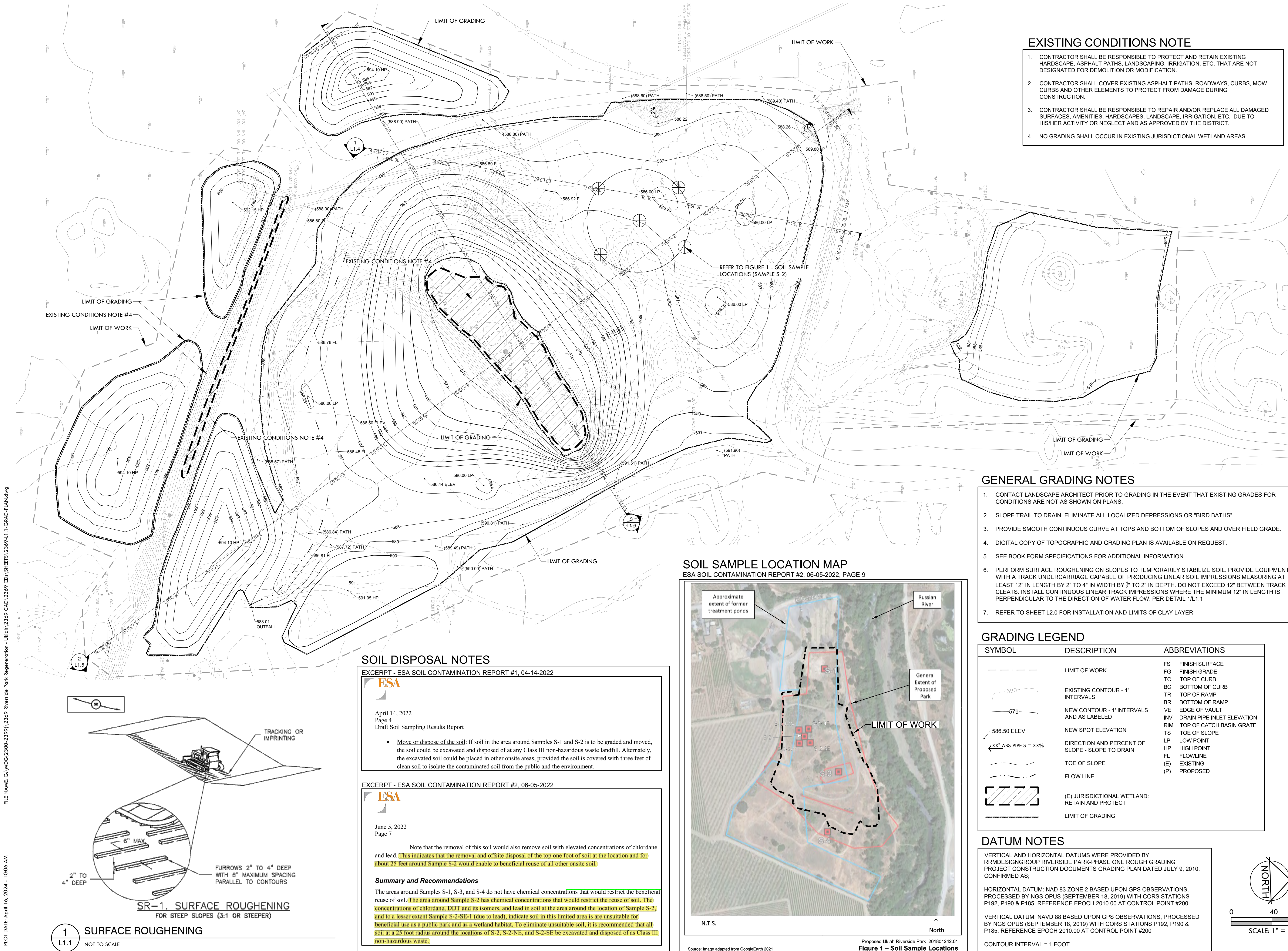


June 5, 2022
Page 7

Note that the removal of this soil would also remove soil with elevated concentrations of chlordane and lead. This indicates that the removal and offsite disposal of the top one foot of soil at the location and for about 25 feet around Sample S-2 would enable to beneficial reuse of all other onsite soil.

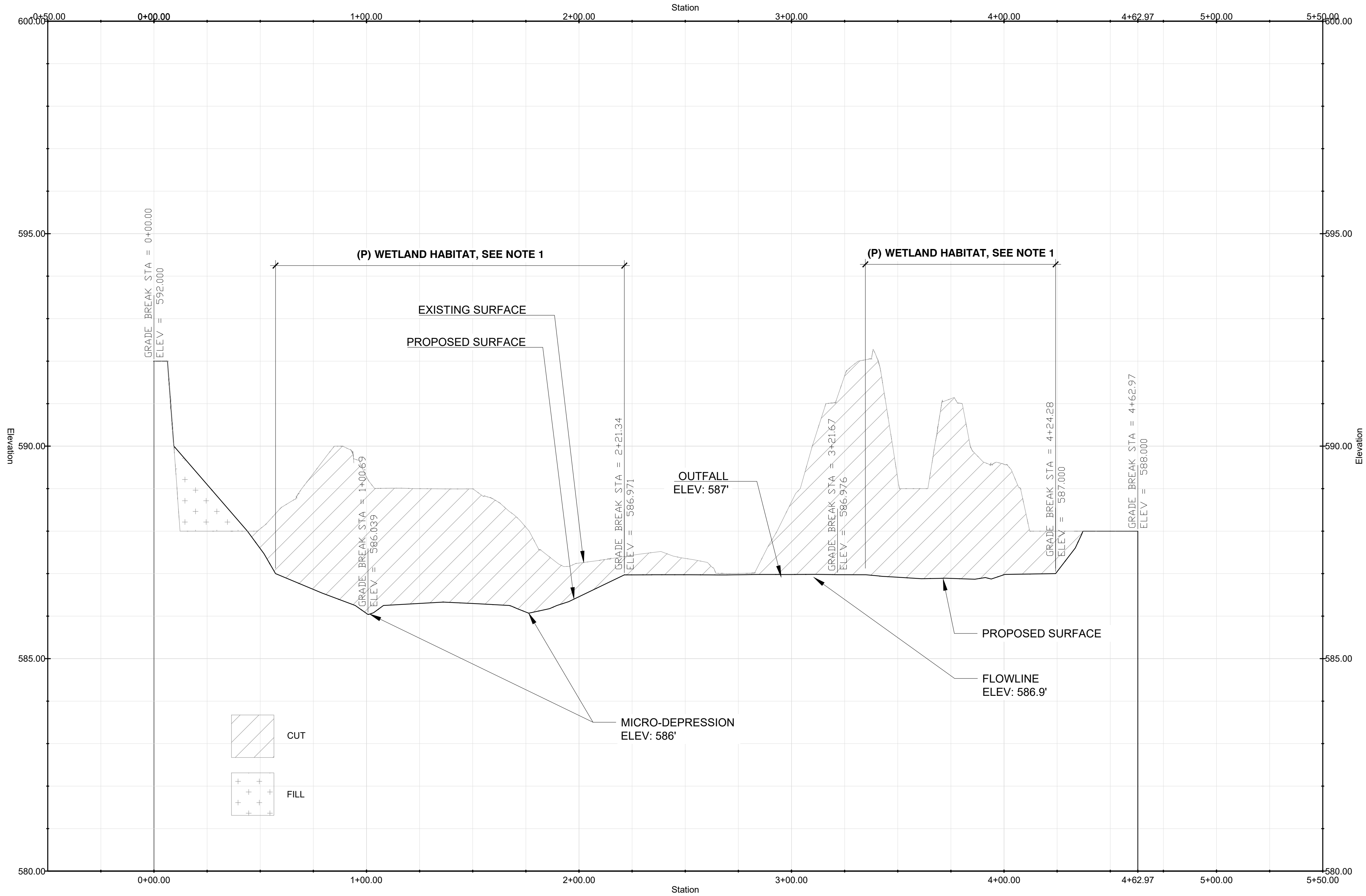
Summary and Recommendations

The areas around Samples S-1, S-3, and S-4 do not have chemical concentrations that would restrict the beneficial reuse of soil. The area around Sample S-2 has chemical concentrations that would restrict the reuse of soil. The concentrations of chlordane, DDT and its isomers, and lead in soil at the area around the location of Sample S-2, and to a lesser extent Sample S-2-SE (due to lead), indicate soil in this limited area is unsuitable for beneficial use as a public park and as a wetland habitat. To eliminate unsuitable soil, it is recommended that all soil at a 25 foot radius around the locations of S-2, S-2-NE, and S-2-SE be excavated and disposed of as Class III non-hazardous waste.



FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\ SHEETS\2369-L1.1-GRAD-PLAN.dwg

PLOT DATE: April 16, 2024 - 10:06 AM



PROFILE VIEW OF GRADING SECTION-1

NOTES:

- OVEREXCAVATE (P) WETLAND HABITAT AREAS AND BACKFILL WITH COMPACTED CLAY AND NATIVE TOPSOIL AS SHOWN IN DETAIL 3, SHEET L2.0



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RIVERSIDE PARK
REGENERATION

SHEET TITLE

GRADING
SECTIONS

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

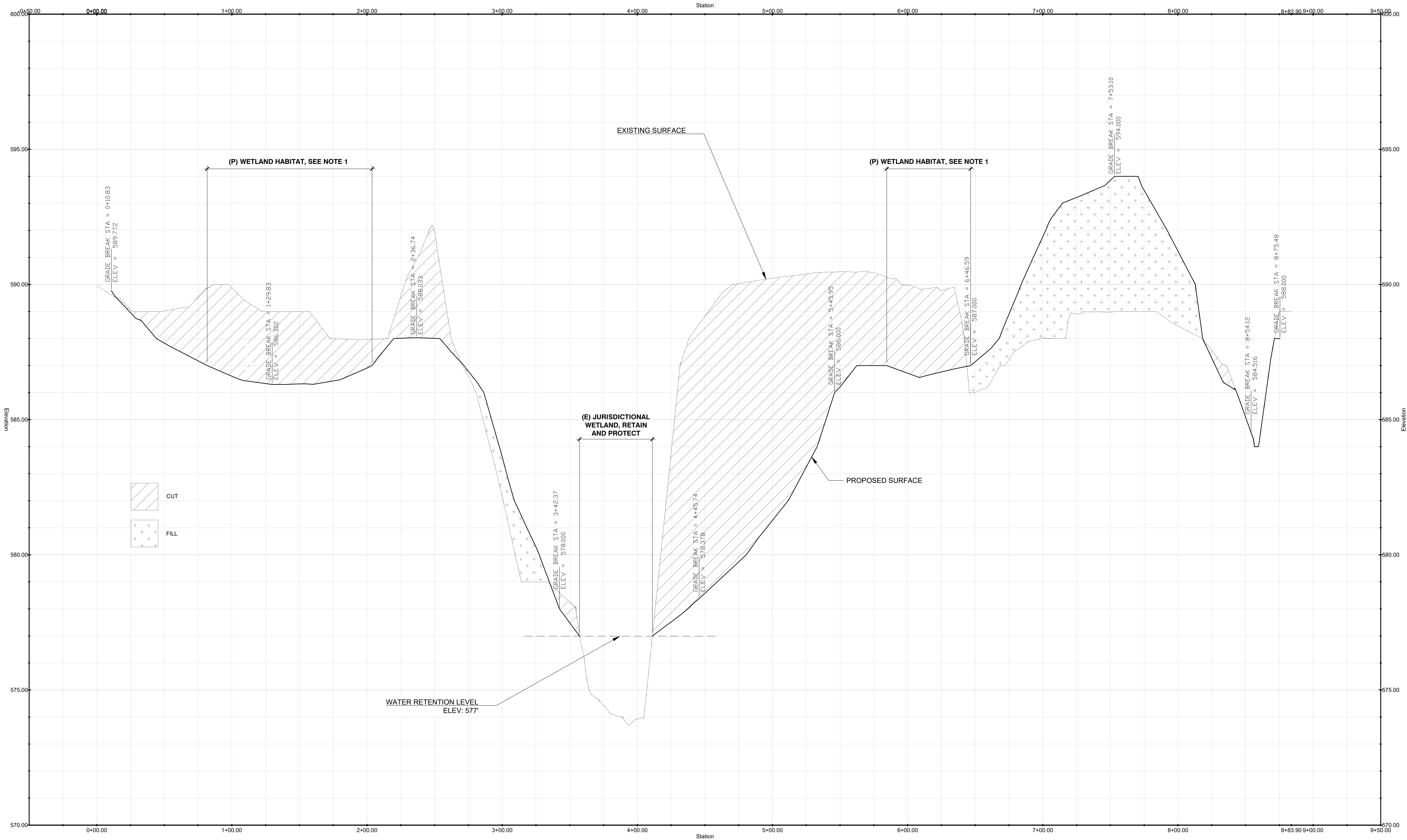
SHEET NUMBER

L1.2

SHEET 5 OF 14

FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\ SHEETS\2369-L1.1-GRAD-PLAN.dwg

PLOT DATE: April 16, 2024 - 10:06 AM



NOTES:

- OVEREXCAVATE (P) WETLAND HABITAT AREAS AND BACKFILL WITH COMPACTED CLAY AND NATIVE TOPSOIL AS SHOWN IN DETAIL 3, SHEET L2.0

PROFILE VIEW OF GRADING SECTION - 2



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7.	--	--
8.	--	--

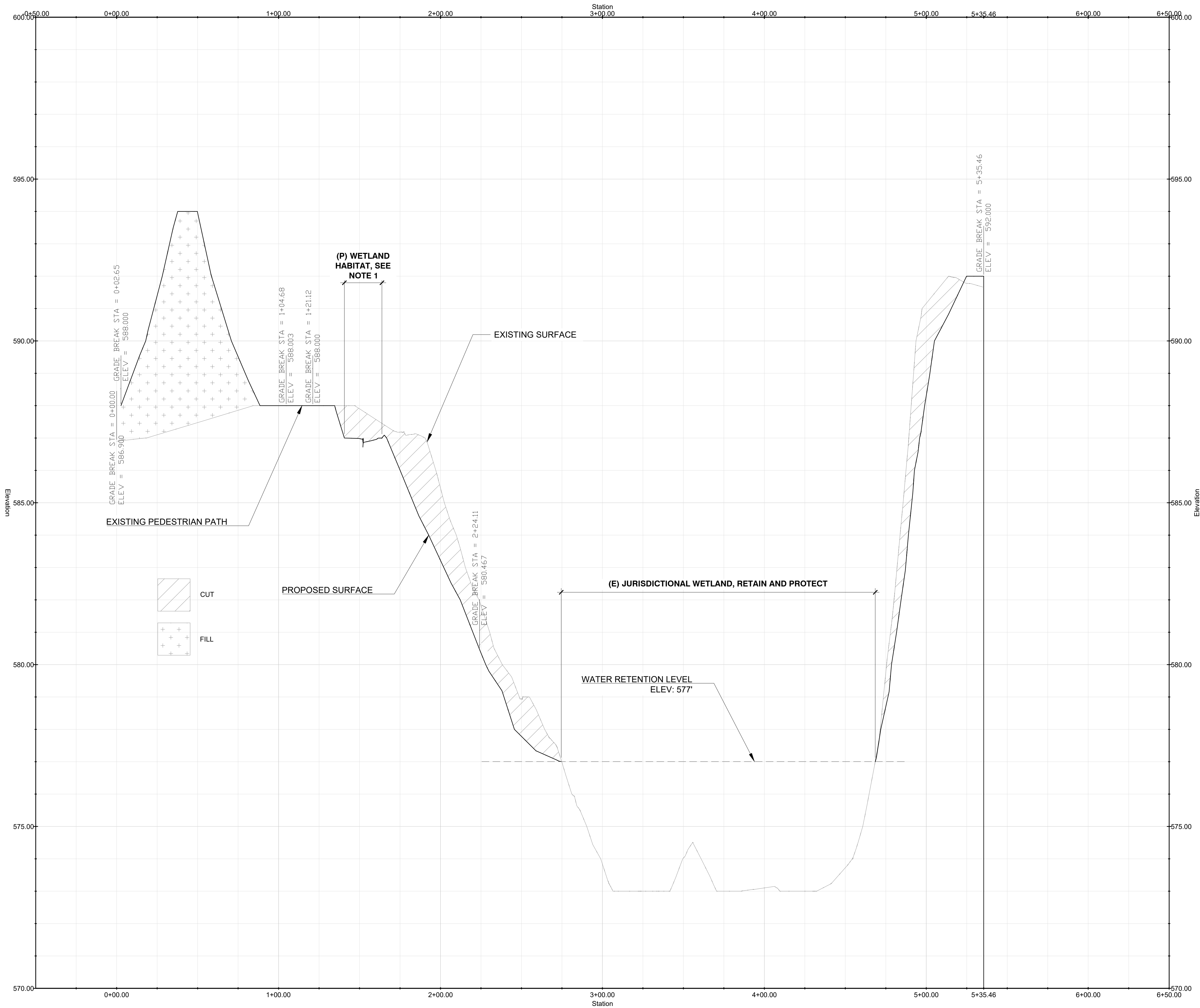
PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L1.3

SHEET 6 OF 14

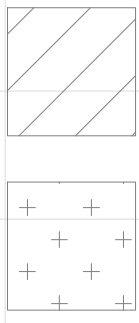


Elevation

Elevation

Station

Station



PROPOSED SURFACE

EXISTING SURFACE

EXISTING PEDESTRIAN PATH

(P) WETLAND HABITAT, SEE NOTE 1

(E) JURISDICTIONAL WETLAND, RETAIN AND PROTECT

WATER RETENTION LEVEL
ELEV: 577'

NOTES:

- OVEREXCAVATE (P) WETLAND HABITAT AREAS AND BACKFILL WITH COMPACTED CLAY AND NATIVE TOPSOIL AS SHOWN IN DETAIL 3, SHEET L2.0



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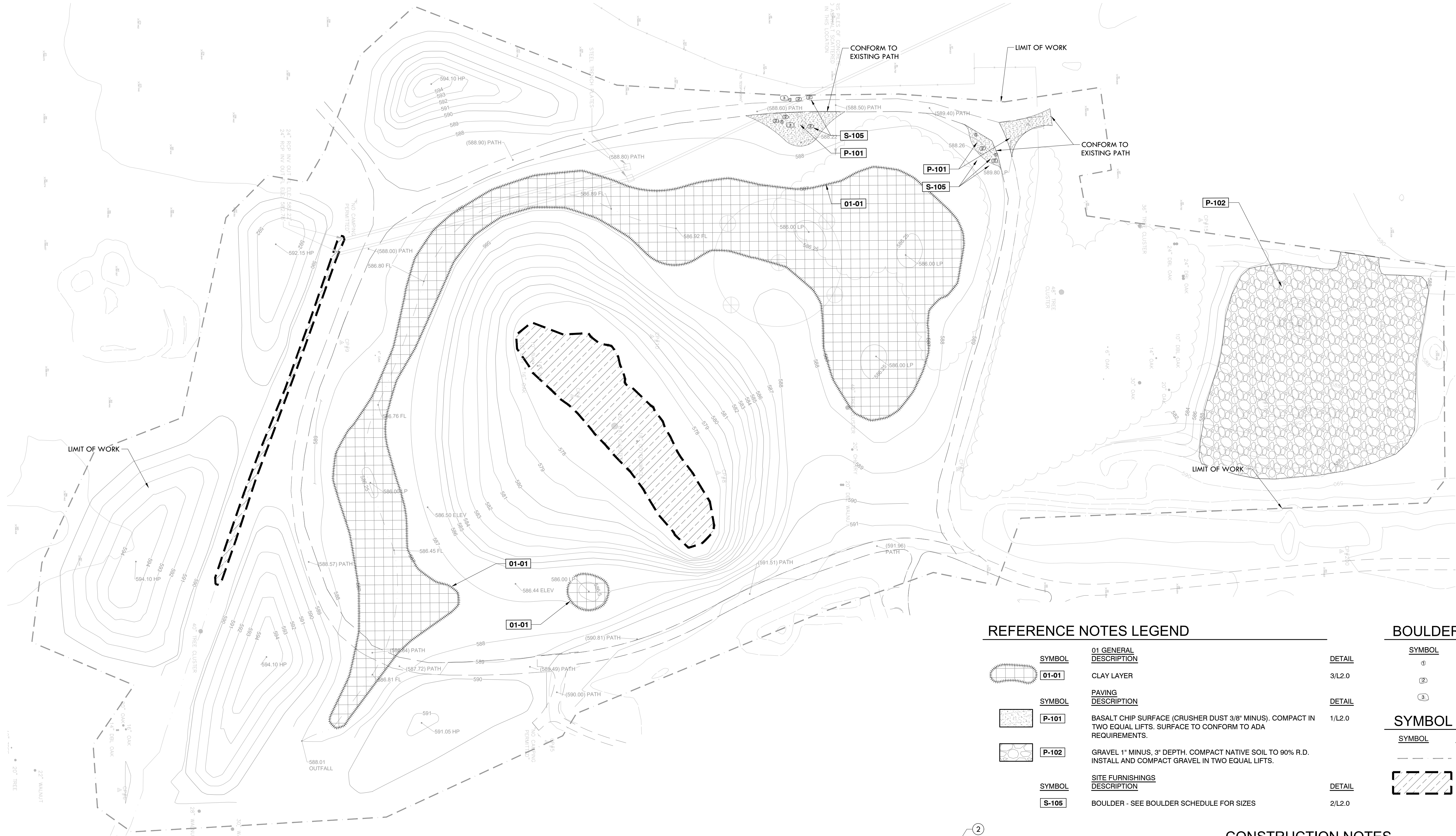
PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

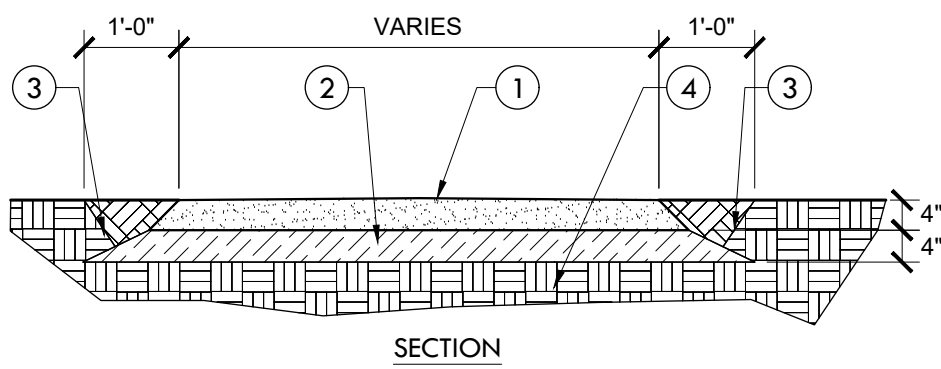
SHEET NUMBER

L1.4

SHEET 7 OF 14



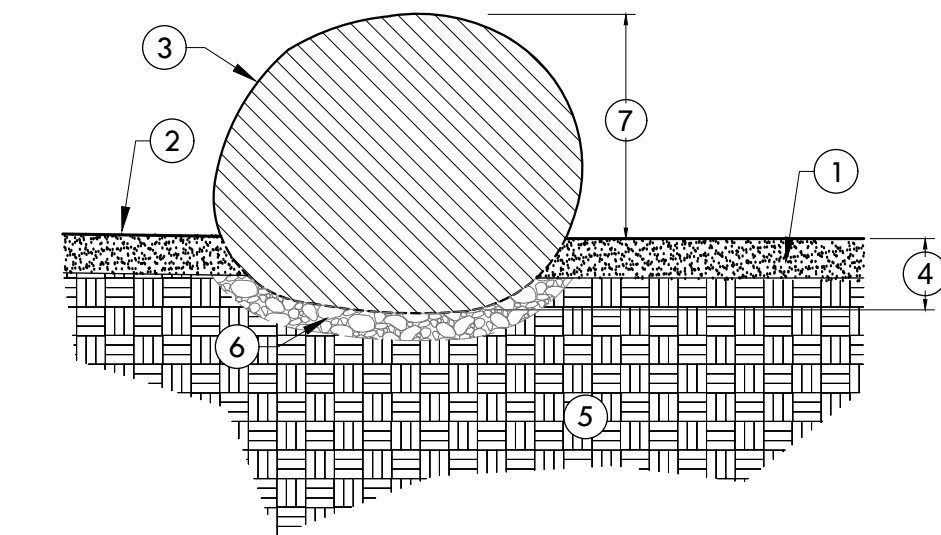
- 1 BASALT CHIP SURFACE PER PLAN. 4" MINIMUM DEPTH AFTER COMPACTION. SLOPE PER GRADING PLAN.
- 2 COMPACTED SUB-GRADE TO 90% RELATIVE DENSITY.
- 3 CLEAN-CUT EDGE FOR INSTALLATION EXCAVATION, REPLACE WITH NATIVE TOPSOIL FOR RE-VEGETATION.
- 4 NATIVE SOIL TO REMAIN UNDISTURBED.



- NOTES:
1. BASALT CHIP SHALL BE BASALT QUARRY FINES, 1/4 INCH OR LESS. COLOR: MATCH EXISTING. CONTRACTOR TO SUBMIT SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT.
 2. APPLY WEED KILLER AND PRE-EMERGENT TO AREA PRIOR TO PLACEMENT OF BASALT CHIP.
 3. INSTALL IN 2 EQUAL LIFTS.
 4. AFTER PLACEMENT OF EACH LIFT, THOROUGHLY WATER UNTIL ENTIRE DEPTH IS MOIST. COMPACT WITH A 1,000 TO 3,000 LB ROLLER AFTER GRADING AND WETTING.

1 BASALT CHIP SURFACE

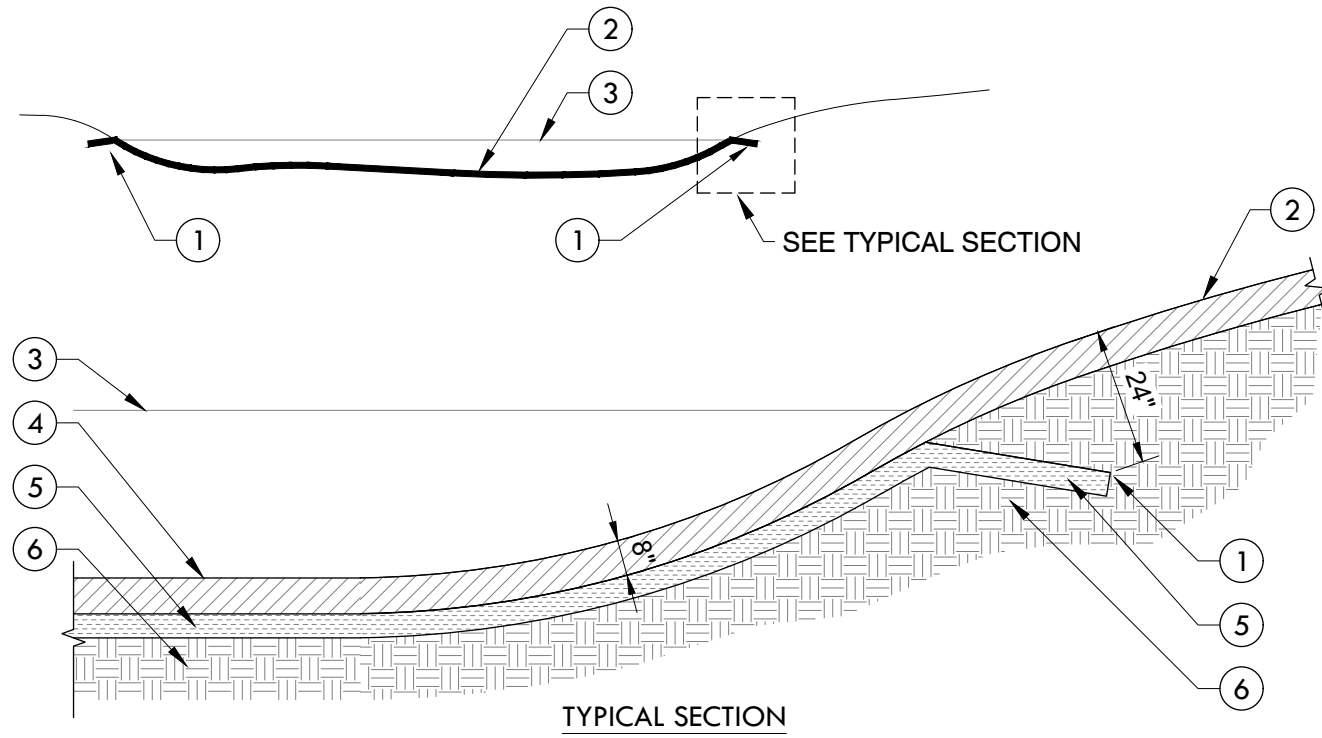
NOT TO SCALE



- 1 SURFACE MATERIAL PER CONSTRUCTION PLAN
- 2 FINISH SURFACE
- 3 WATER WASHED GRANITE BOULDERS, SIZE PER PLAN. AVAILABLE FROM SIERRA BOULDER, ROBERT WRIGHT (916) 953-0649. CONTRACTOR SHALL PROVIDE PHOTO SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
- 4 INSTALL BOULDER SO THAT 25% OF BOULDER IS BELOW FINISH GRADE.
- 5 NATIVE UNDISTURBED SUBGRADE
- 6 6" DEPTH CLASS II AGGREGATE BASE, COMPACT TO 90% RELATIVE DENSITY.
- 7 HEIGHT AND WEIGHT VARIES. SEE BOULDER SCHEDULE, SHEET L-2.0

2 BOULDER INSTALLATION

NOT TO SCALE



- 1 EXTEND CLAY LAYER MINIMUM 24" BELOW FINISH GRADE MEASURED PERPENDICULAR TO SLOPE
- 2 FINISH GRADE
- 3 WATER LEVEL AT FULL POOL. SEE GRADING PLANS
- 4 FINISH GRADE NATIVE SOIL COMPACTED TO 85% RELATIVE DENSITY. 8" DEPTH EXCEPT AT EDGES, WHERE 24" DEEP AS SHOWN. REFER TO GRADING PLAN FOR FINAL GRADES
- 5 BENTONITE CLAY 4" DEPTH. TUCK DOWN 24" AS SHOWN.
- 6 SUBGRADE, NATIVE SOIL COMPACTED TO 90% RELATIVE DENSITY

3 SEASONAL WETLAND MICRO-DEPRESSION

NOT TO SCALE

REFERENCE NOTES LEGEND

SYMBOL	01 GENERAL DESCRIPTION	DETAIL
	01-01 CLAY LAYER	3/L2.0
SYMBOL	PAVING DESCRIPTION	DETAIL
	P-101 BASALT CHIP SURFACE (CRUSHER DUST 3/8" MINUS). COMPACT IN TWO EQUAL LIFTS. SURFACE TO CONFORM TO ADA REQUIREMENTS.	1/L2.0
	P-102 GRAVEL 1" MINUS, 3" DEPTH. COMPACT NATIVE SOIL TO 90% R.D. INSTALL AND COMPACT GRAVEL IN TWO EQUAL LIFTS.	
SYMBOL	SITE FURNISHINGS DESCRIPTION	DETAIL
	S-105 BOULDER - SEE BOULDER SCHEDULE FOR SIZES	2/L2.0

BOULDER SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY
①	2' x 2' BOULDER	4
②	2' x 4' BOULDER	7
③	4' x 6' BOULDER	2

SYMBOL LEGEND

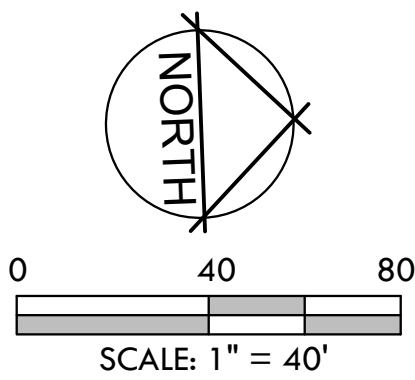
SYMBOL	DESCRIPTION
---	LIMIT OF WORK
	JURISDICTIONAL WETLAND

CONSTRUCTION NOTES

1. CONFIRM ALL LOCATIONS OF EXISTING UTILITIES WITHIN PROJECT SITE PRIOR TO DEMOLITION AND EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING UTILITIES AND THE REPAIR AND/OR REPLACEMENT OF UTILITIES DAMAGED DUE TO CONTRACTORS WORK OR NEGLECT.
2. THE LANDSCAPE ARCHITECT CANNOT BE RESPONSIBLE FOR THE COMPLETENESS OR ACCURACY OF EXISTING INFORMATION. PROVISION OF UTILITY LOCATION DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR RESPONSIBILITY TO CONDUCT FIELD DISCOVERY TO VERIFY EXISTING CONDITIONS.
3. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE HIS WORK WITH THE WORK OF OTHERS.
4. CONSTRUCTION SHALL CONFORM TO ALL UNIFORM BUILDING CODES AND SPECIFICATIONS.
5. CONTRACTOR SHALL OBSERVE ALL SAFETY REGULATIONS PERTAINING TO THIS PROJECT.
6. ANY CHANGES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

EXISTING CONDITIONS NOTE

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING HARDSCAPE, ASPHALT PATHS, LANDSCAPING, IRRIGATION, ETC. THAT ARE NOT DESIGNATED FOR DEMOLITION OR MODIFICATION.
2. CONTRACTOR SHALL COVER EXISTING ASPHALT PATHS, ROADWAYS, CURBS, MOW CURBS AND OTHER ELEMENTS TO PROTECT FROM DAMAGE DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL DAMAGED SURFACES, AMENITIES, HARDSCAPES, LANDSCAPE, IRRIGATION, ETC. DUE TO HIS/HER ACTIVITY OR NEGLECT AND AS DIRECTED BY OWNER.



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PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE

CONSTRUCTION
PLAN AND
DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

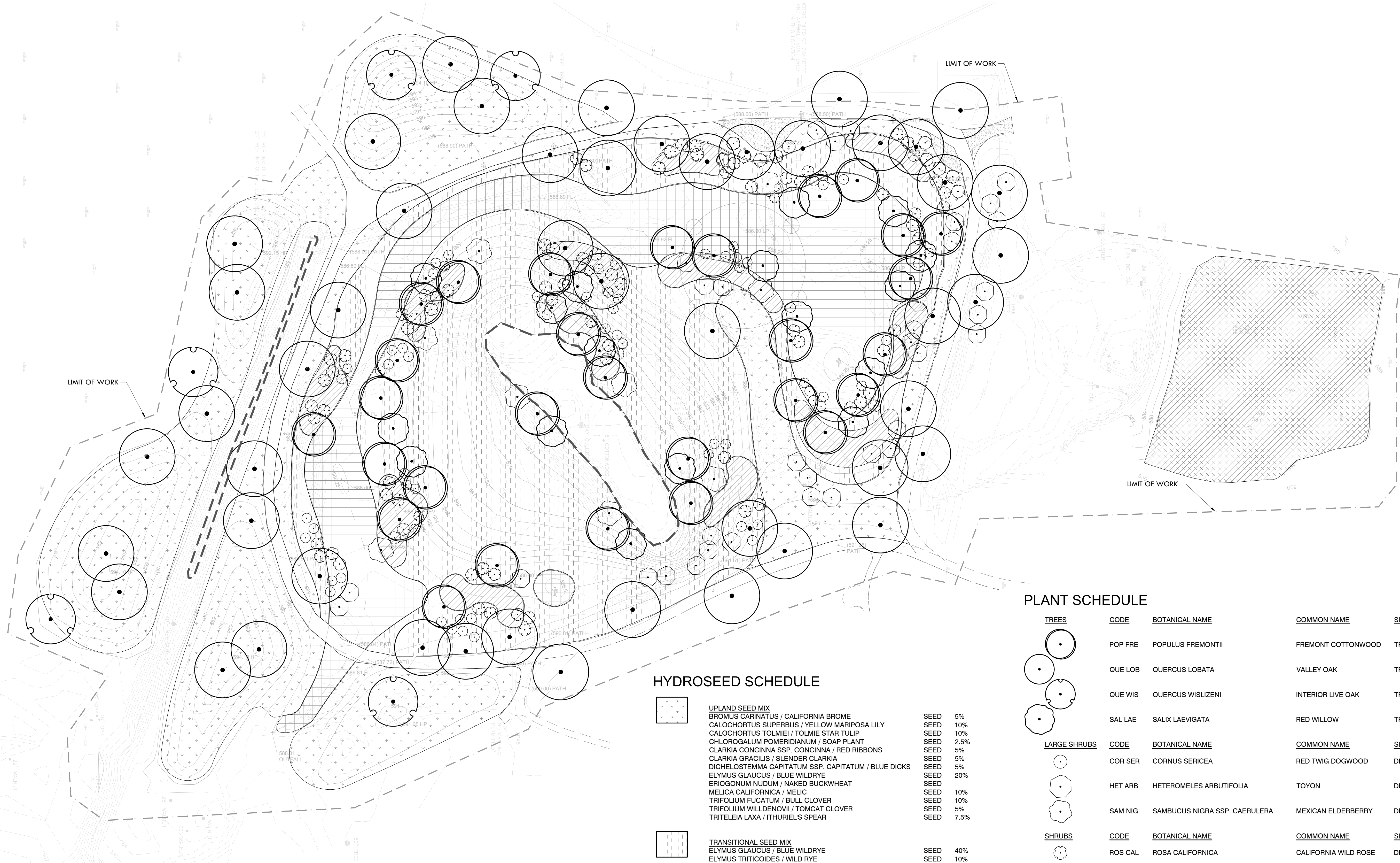
SHEET NUMBER

L2.0

SHEET 10 OF 14

FILE NAME: G:\MDG\2300-2399\2369 Riverside Park Regeneration - Ukiah\2369 CAD\2369 CD\SHEETS\2369-13.0-PLNT-PLAN.dwg

PLOT DATE: April 16, 2024 - 1:06:04 AM



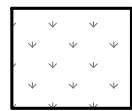
SYMBOL LEGEND

SYMBOL	DESCRIPTION
	LIMIT OF WORK
	JURISDICTIONAL WETLAND

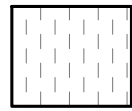
PLANTING NOTES

- VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- ALL PLANT MATERIAL TO BE SET UP FOR REVIEW BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. NO SUBSTITUTIONS FOR PLANT MATERIAL WILL BE ALLOWED UNLESS PRIOR ARRANGEMENTS HAVE BEEN APPROVED BY LANDSCAPE ARCHITECT. IN THE EVENT OF PLANT MATERIAL UNAVAILABILITY, CONTACT LANDSCAPE ARCHITECT FOR ALTERNATIVE SOURCES OR APPROVED SPECIES SUBSTITUTION.
- PLANT QUANTITIES ARE FOR CONVENIENCE OF THE CONTRACTOR. CONTRACTOR TO CONFIRM EXACT NUMBER.
- TREE STAKES ARE TO BE PLACED PERPENDICULAR TO PREVAILING WINDS. REMOVE NURSERY STAKES, REPLACE WITH STAKES PER DETAIL. TREE TIES SHALL BE CINCH-TIE OR EQUAL.
- ALL TREE, SHRUB AND GROUND COVER PLANTINGS TO HAVE BARK MULCH PLACED AROUND PLANT BASE PER PLANTING DETAILS. SEE CONSTRUCTION PLAN.
- REFER TO PLANS, DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PLANT MATERIAL SHALL BE BID ON THE BASIS OF SPECIES AND CONTAINER SIZE, NOT ON CONTAINER SIZE ALONE.

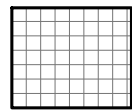
HYDROSEED SCHEDULE



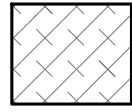
UPLAND SEED MIX			
BROMUS CARINATUS / CALIFORNIA BROME	SEED	5%	
CALOCHORTUS SUPERBUS / YELLOW MARIPOSA LILY	SEED	10%	
CALOCHORTUS TOLMIEI / TOLMIE STAR TULIP	SEED	10%	
CHLOROGALUM POMERIDIANUM / SOAP PLANT	SEED	2.5%	
CLARKIA CONCINNA SSP. CONCINNA / RED RIBBONS	SEED	5%	
CLARKIA GRACILIS / SLENDER CLARKIA	SEED	5%	
DICHELOSTEMMA CAPITATUM SSP. CAPITATUM / BLUE DICKS	SEED	5%	
ELYMUS GLAUCUS / BLUE WILDRYE	SEED	20%	
ERIOGONUM NUDUM / NAKED BUCKWHEAT	SEED		
MELICA CALIFORNICA / MELIC	SEED	10%	
TRIFOLIUM FUCATUM / BULL CLOVER	SEED	10%	
TRIFOLIUM WILLDENOVII / TOMCAT CLOVER	SEED	5%	
TRITELEIA LAXA / ITHURIEL'S SPEAR	SEED	7.5%	



TRANSITIONAL SEED MIX			
ELYMUS GLAUCUS / BLUE WILDRYE	SEED	40%	
ELYMUS TRITICOIDES / WILD RYE	SEED	10%	
GRINDELIA CAMPORUM / GREAT VALLEY GUMWEED	SEED	10%	
SISYRINCHIUM BELLUM / BLUE-EYED GRASS	SEED	5%	



WETLAND SEED MIX			
BROMUS SITCHENSIS VAR. CARINATUS / CALIFORNIA BROME	SEED	5%	
ELYMUS GLAUCUS / BLUE WILDRYE	SEED	5%	
ELYMUS MULTISETUS / BIG SQUIRRELTAIL GRASS	SEED	5%	
ESTRICHOLZIA CALIFORNICA / CALIFORNIA POPPY	SEED	2.5%	
FESTUCA MICROSTACHYS VAR. UPLAND / SMALL FESCUE	SEED	5%	
HELENIUM BOLANDERI / COASTAL SNEEZEWEED	SEED	2.5%	
HORDEUM BRACHYANTHERUM / MEADOW BARLEY	SEED	30%	
LASTHENIA CALIFORNICA / CALIFORNIA GOLDFIELDS	SEED	2.5%	
LUPINUS BICOLOR / MINIATURE LUPINE	SEED	2.5%	
SISYRINCHIUM BELLUM / BLUE-EYED GRASS	SEED	2.5%	
TRIFOLIUM FUCATUM / BULL CLOVER	SEED	2.5%	
TRIFOLIUM MICROCEPHALUM / HAIRY CLOVER	SEED	2.5%	



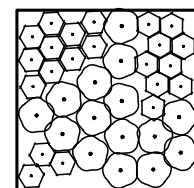
EROSION CONTROL MIX

BULK LBS./AC	PLS lbs/AC.	SPECIES	MINIMUM GERMINATION (%)
25	22.50	Bromus carinatus / California Brome	90
10	8.50	Elymus glaucus / Blue Wildrye	85
6	5.28	Festuca microstachys / Small Fescue	88
4	3.20	Trifolium willdenovii / Tomcat Clover	80

PLANT SCHEDULE

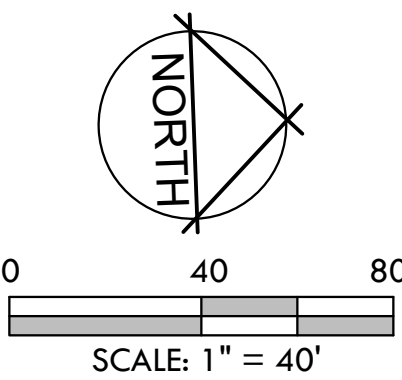
TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	POP FRE	POPULUS FREMONTII	FREMONT COTTONWOOD	TREEPOT4	29
	QUE LOB	QUERCUS LOBATA	VALLEY OAK	TREEPOT4	48
	QUE WIS	QUERCUS WISLIZENI	INTERIOR LIVE OAK	TREEPOT4	5
	SAL LAE	SALIX LAEVIGATA	RED WILLOW	TREEPOT4	17
	COR SER	CORNUS SERICEA	RED TWIG DOGWOOD	DEEPOT (D40)	39
	HET ARB	HETEROMELES ARBUTIFOLIA	TOYON	DEEPOT (D40)	34
	SAM NIG	SAMBUCUS NIGRA SSP. CAERULERA	MEXICAN ELDERBERRY	DEEPOT (D40)	9
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	
	ROS CAL	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	DEEPOT (D40)	33
	SYM ALB	SYMPHORICARPOS ALBUS LAEVIGATUS	COMMON SNOWBERRY	DEEPOT (D40)	79
	FRA CAL	FRANGULA CALIFORNICA	COFFEEBERRY	DEEPOT (D40)	10
GRASSES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	
	CAR BAR	CAREX BARBARAE REFER TO SAMPLE GRASS MIX PATTERN	SANTA BARBARA SEDGE	SUPERCCELL	1,185
	ELY TRI	ELYMUS TRITICOIDES REFER TO SAMPLE GRASS MIX PATTERN	WILD RYE	SUPERCCELL	1,738
				TOTAL GRASSES:	2,923

SAMPLE GRASS MIX PATTERN, 1:1.5 RATIO
CAREX TO ELYMUS



15' x 15' SQUARE (NOT TO SCALE)

- CAREX BARBARAE 36" O.C.
- ELYMUS TRITICOIDES 24" O.C.



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REGENERATION

SHEET TITLE

PLANTING PLAN

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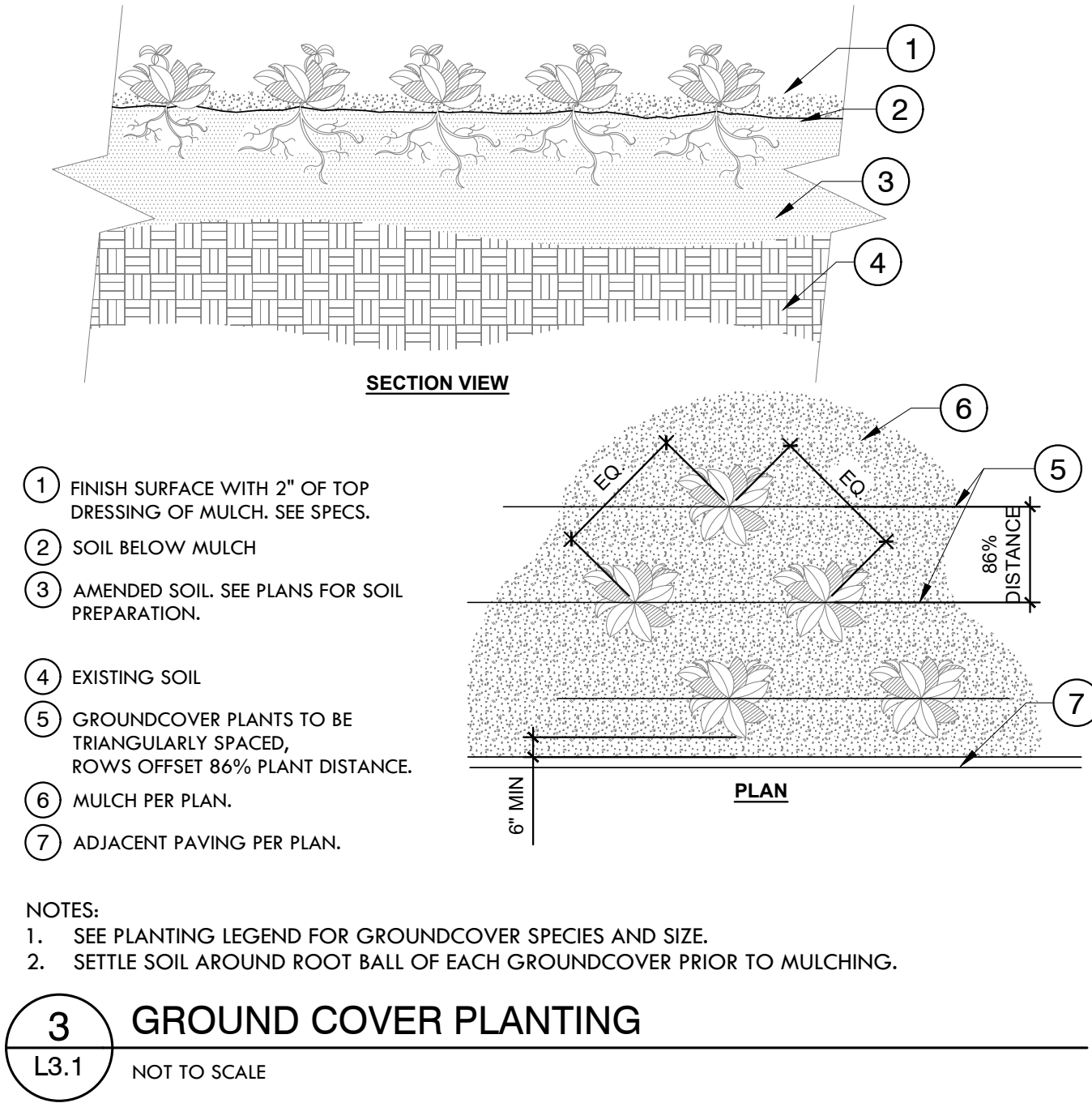
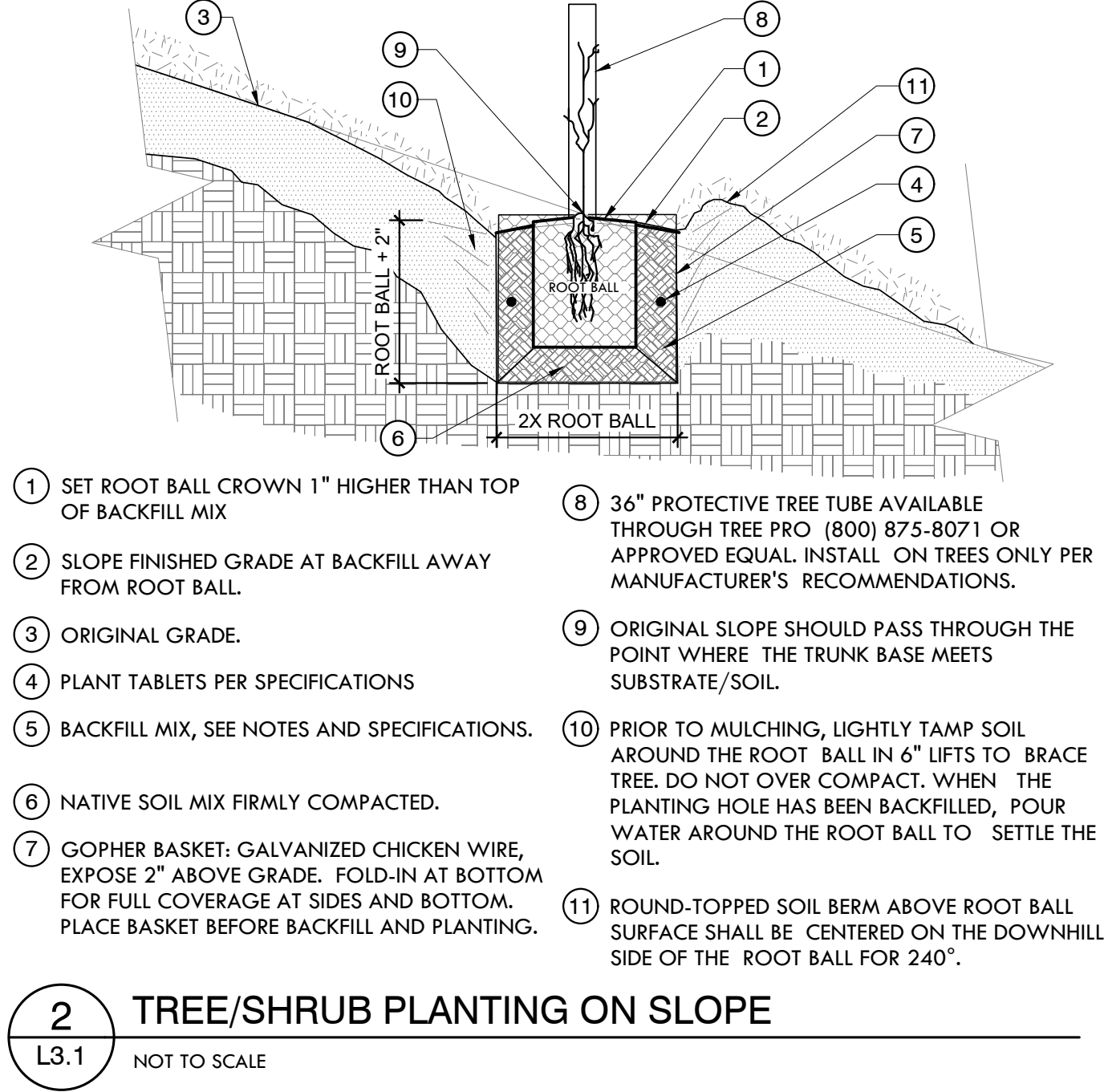
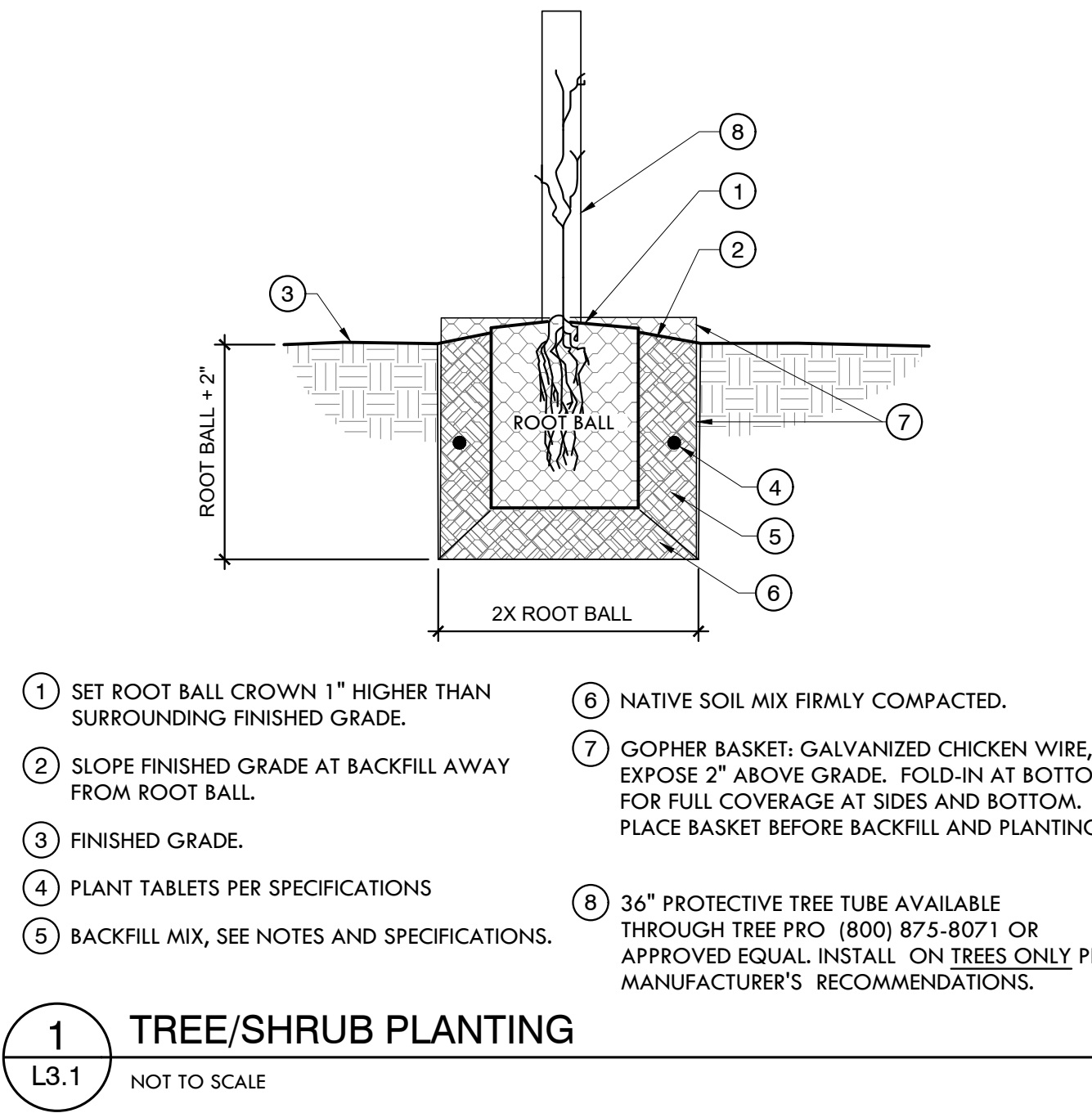
PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L3.0

SHEET 11 OF 14



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RIVERSIDE PARK
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SHEET TITLE

PLANTING
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

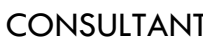
SHEET NUMBER

L3.1

SHEET 12 OF 14



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RIVERSIDE PARK REGENERATION

SHEET TITLE

IRRIGATION PLAN

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
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6.	--	--
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

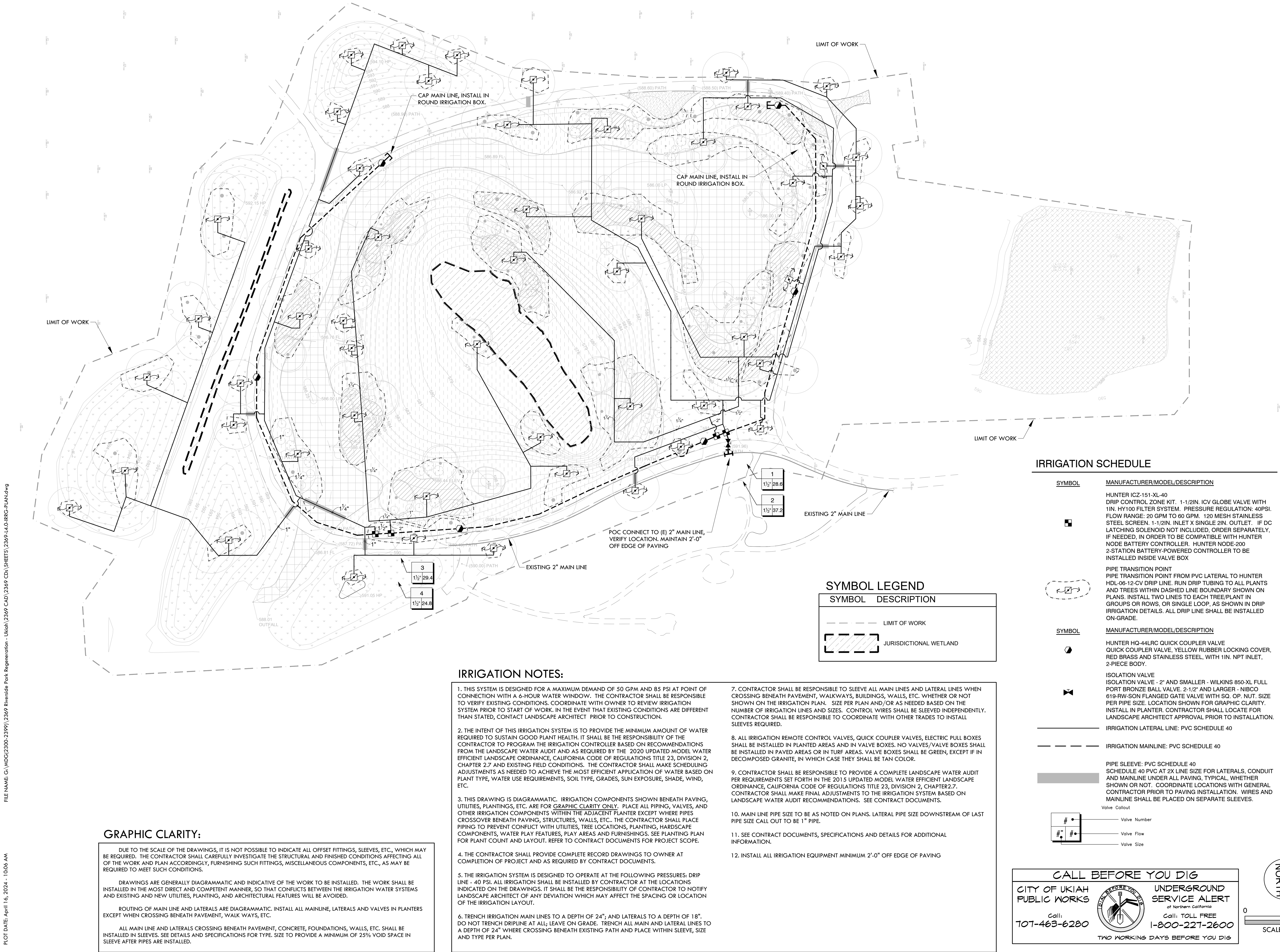
SHEET NUMBER

L4.0

SHEET 13 OF 14

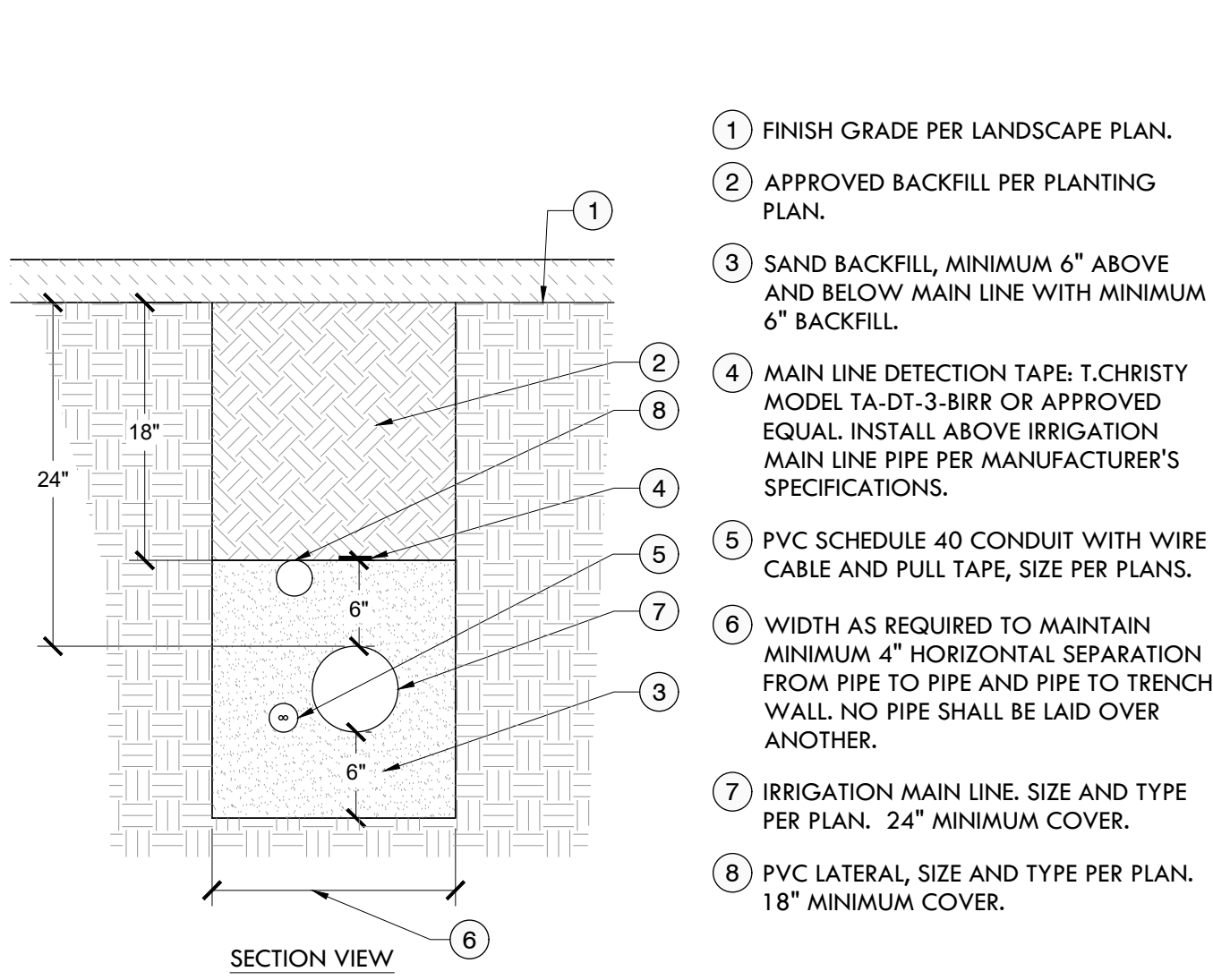
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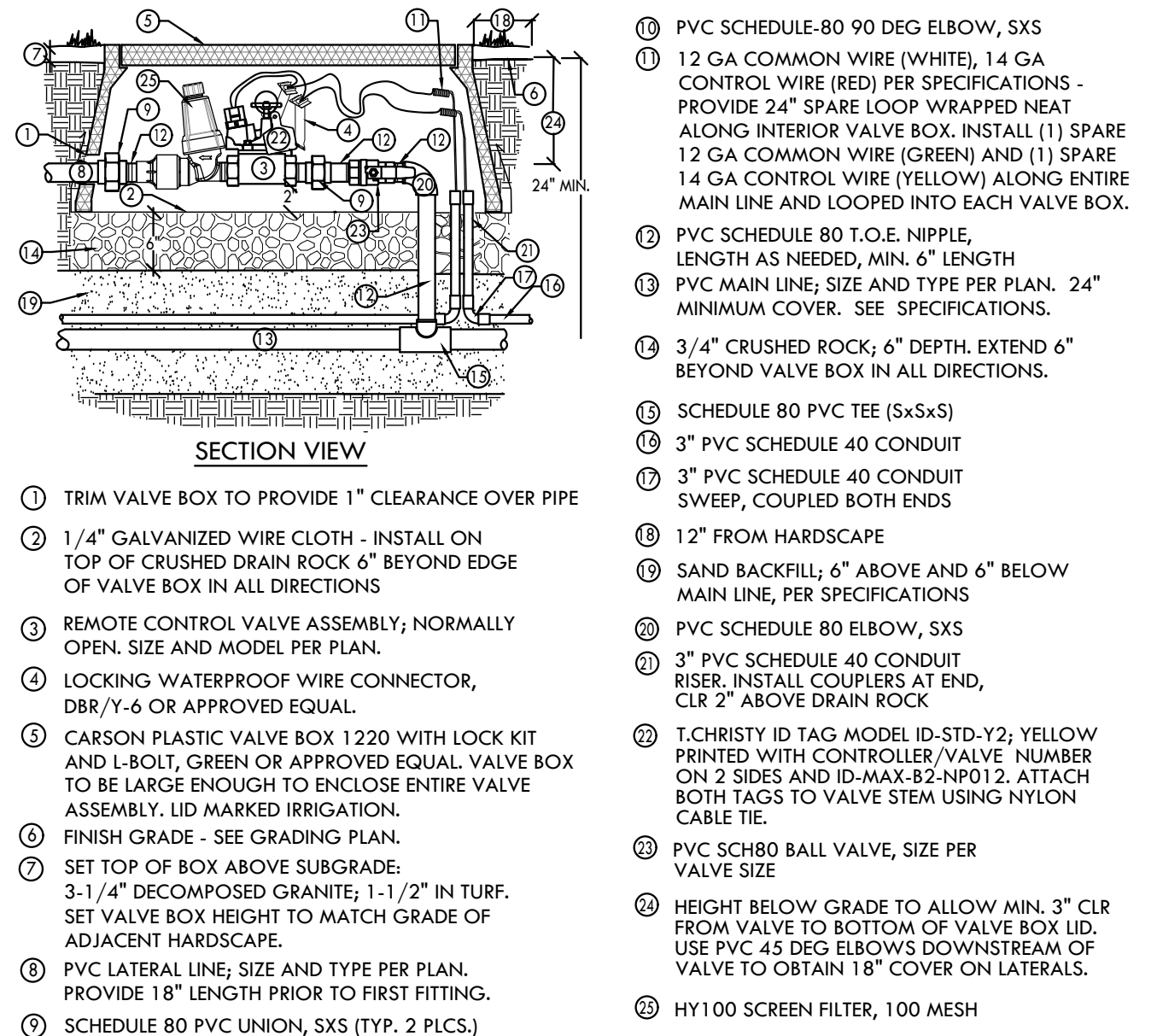


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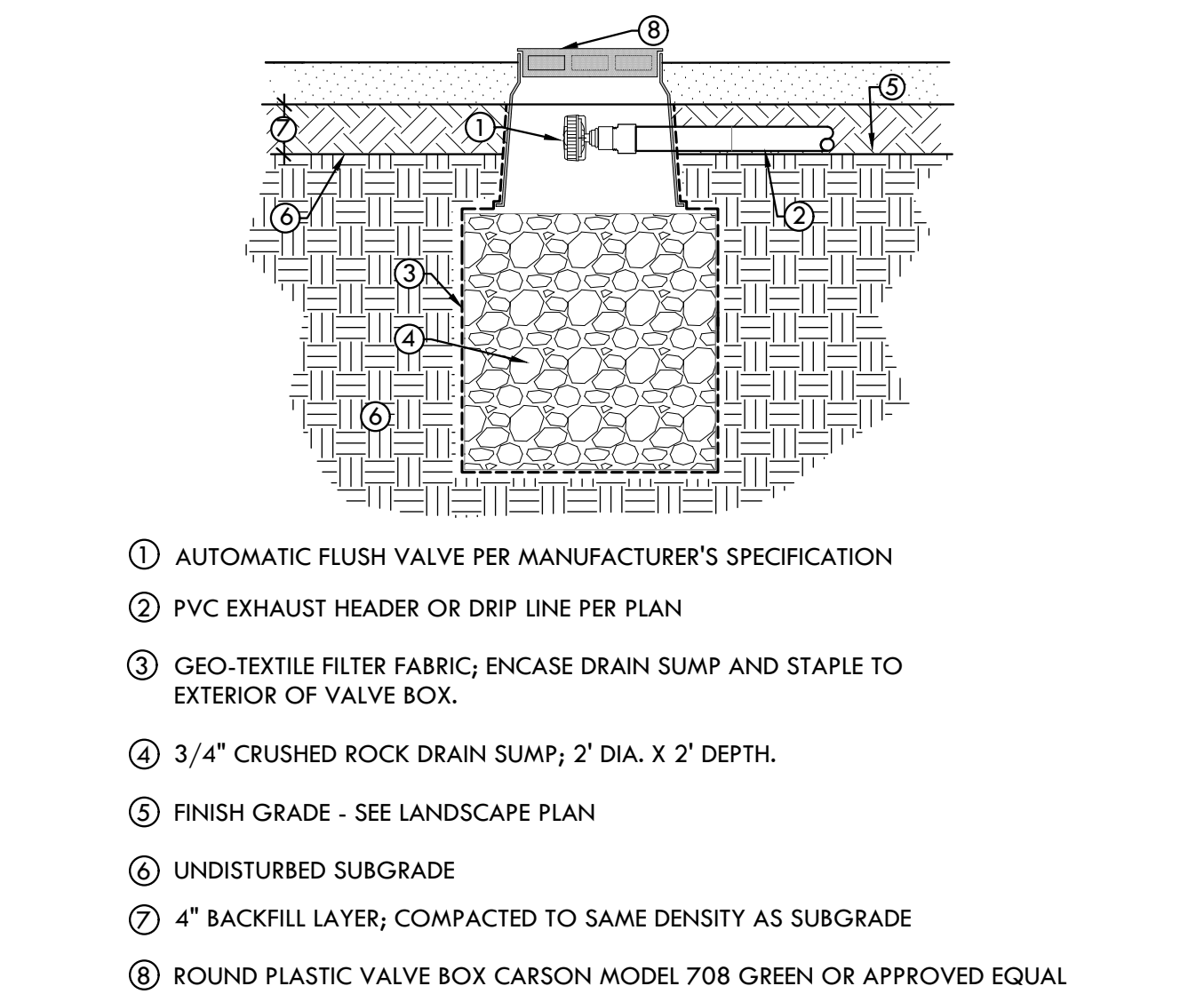
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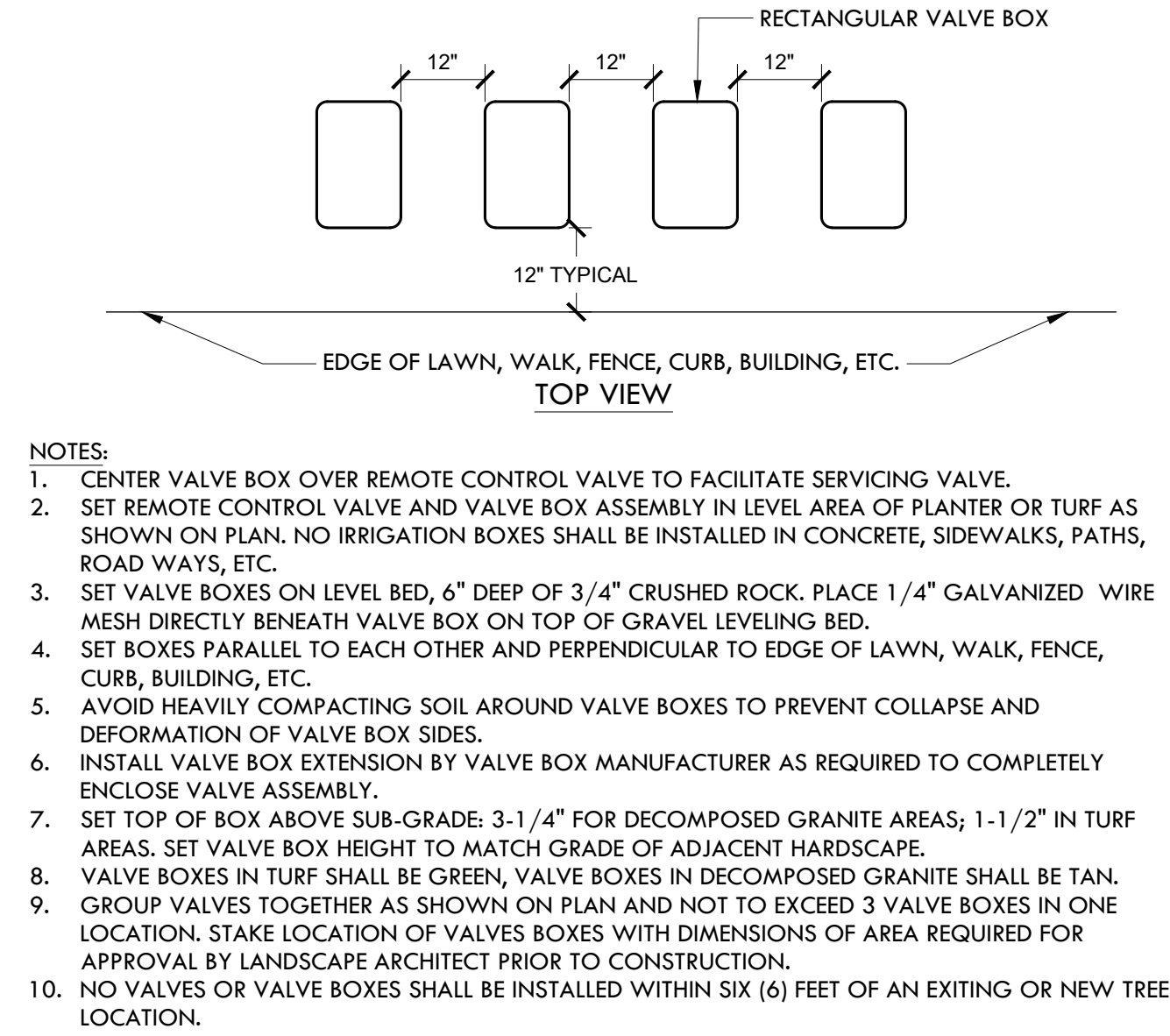
1 TRENCHING
L4.1 NOT TO SCALE



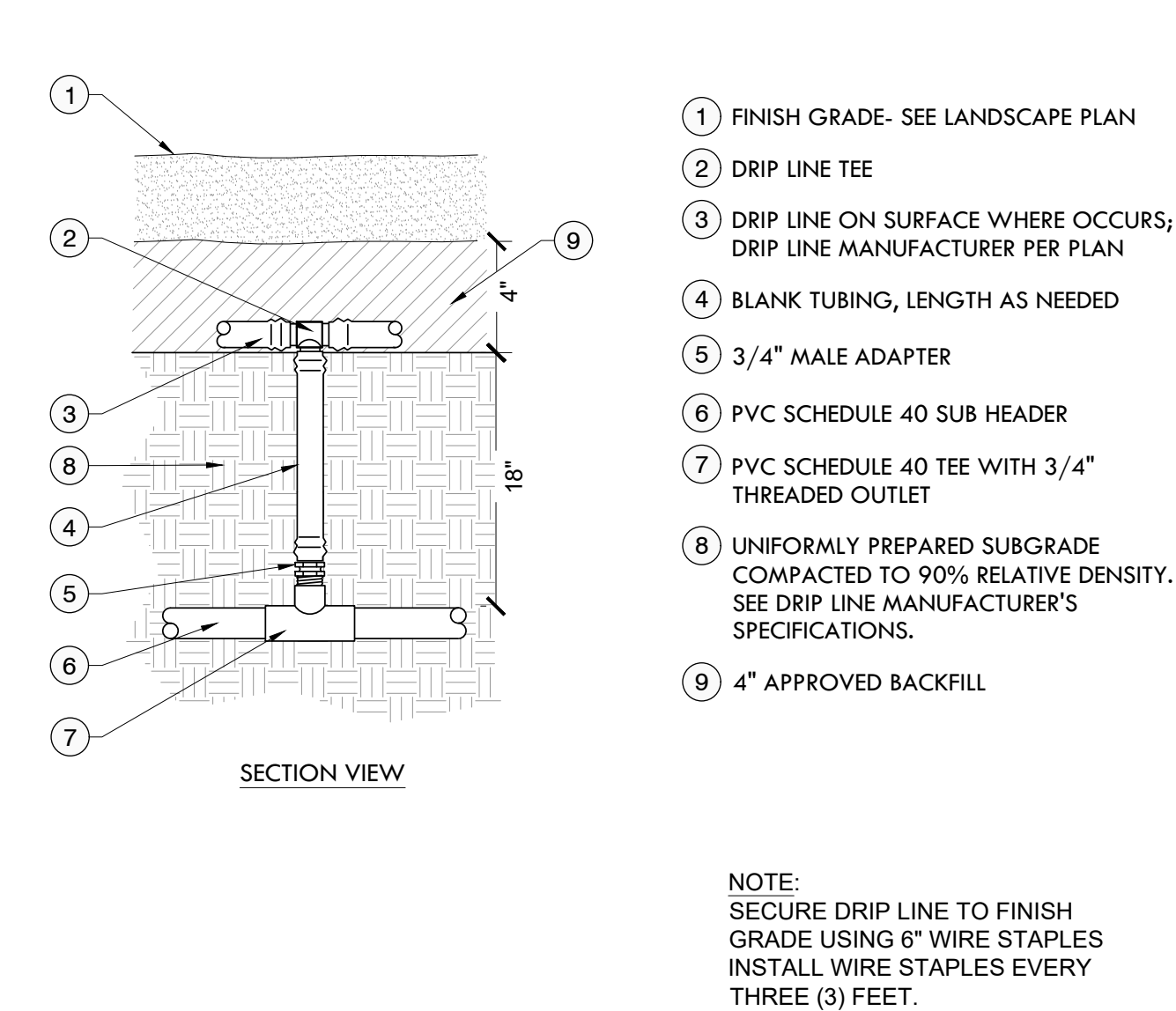
5 REMOTE CONTROL DRIP ZONE ASSEMBLY
L4.1 NOT TO SCALE



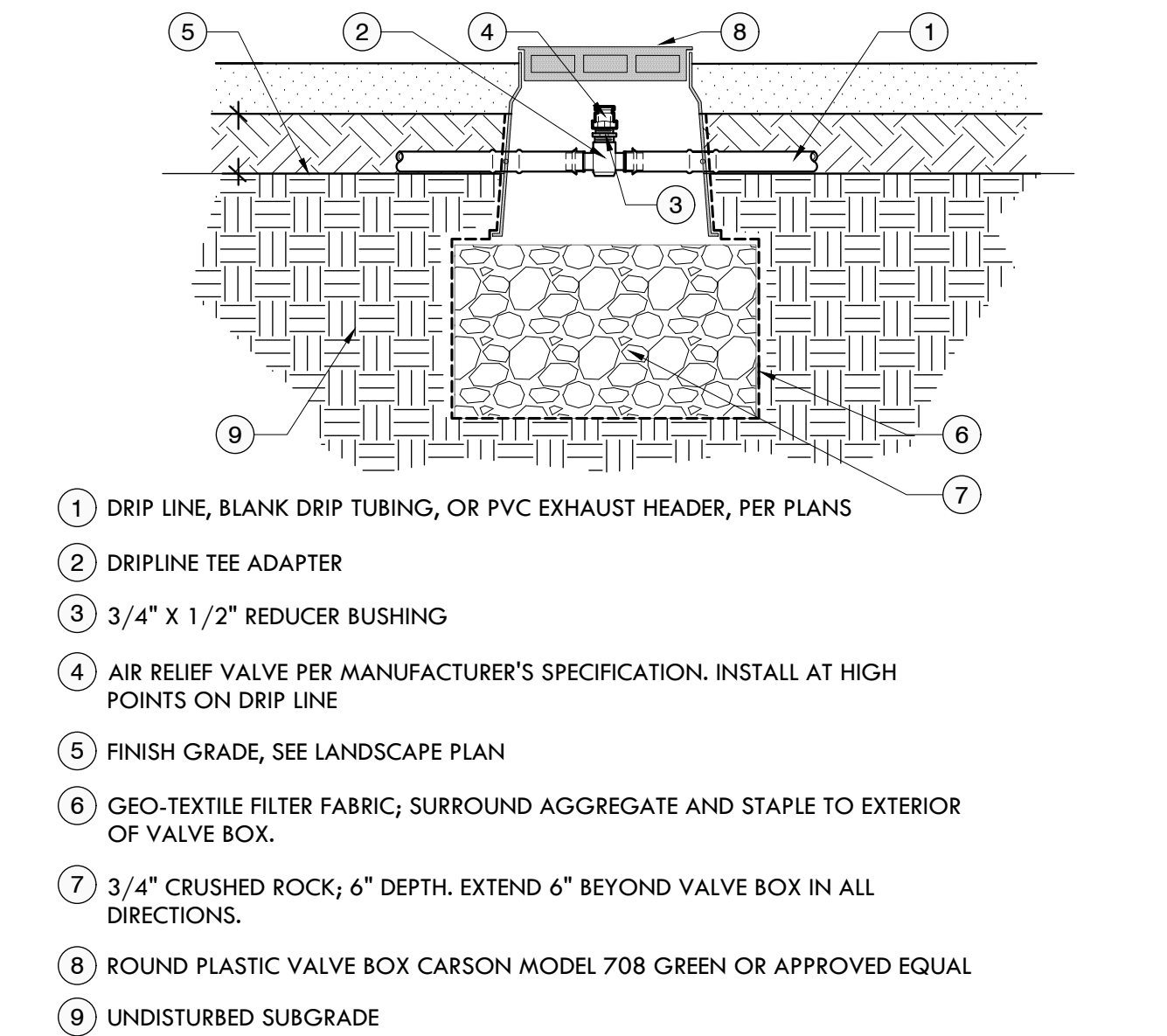
9 DRIP FLUSH VALVE
L4.1 NOT TO SCALE



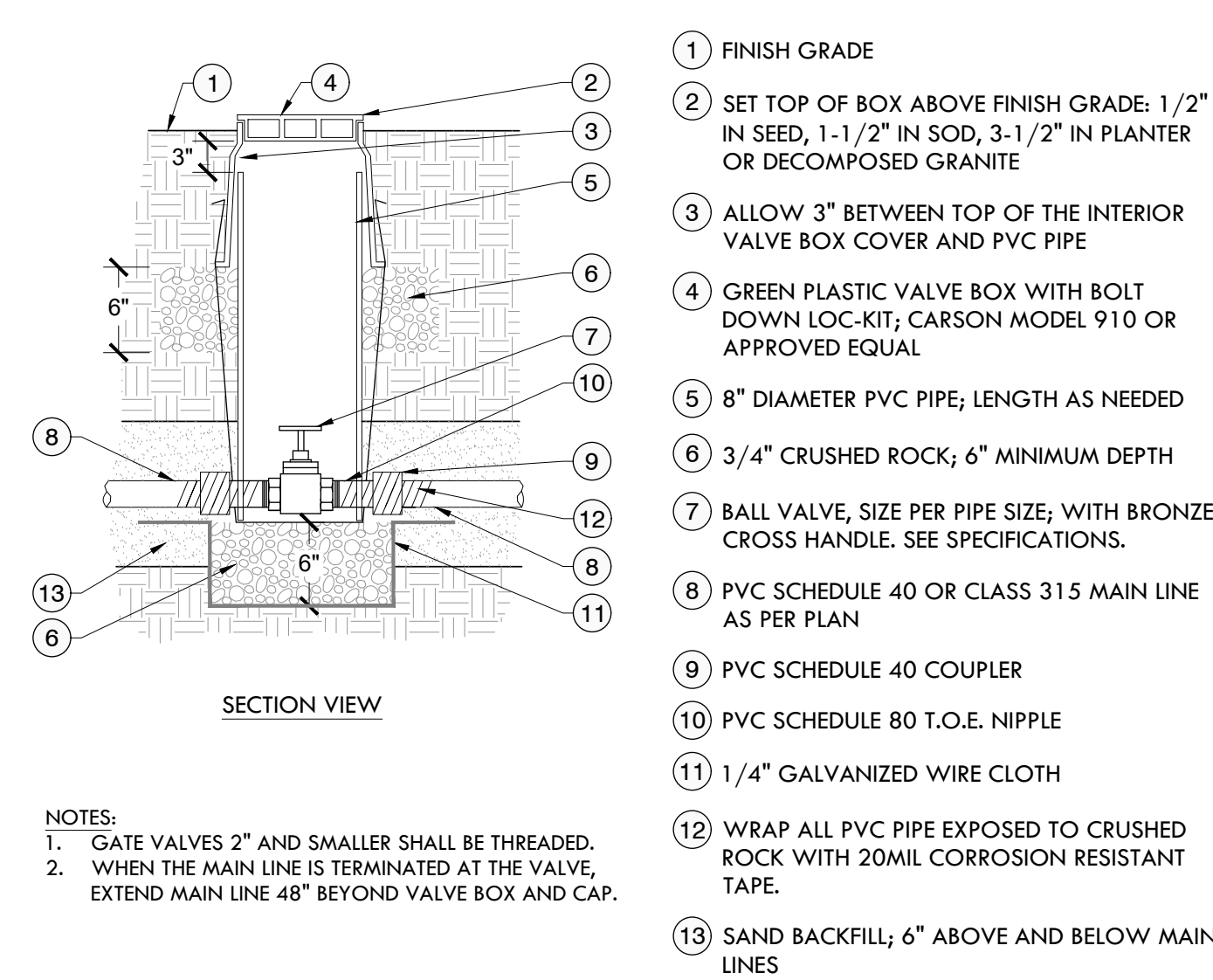
2 IRRIGATION BOX LAYOUT
L4.1 NOT TO SCALE



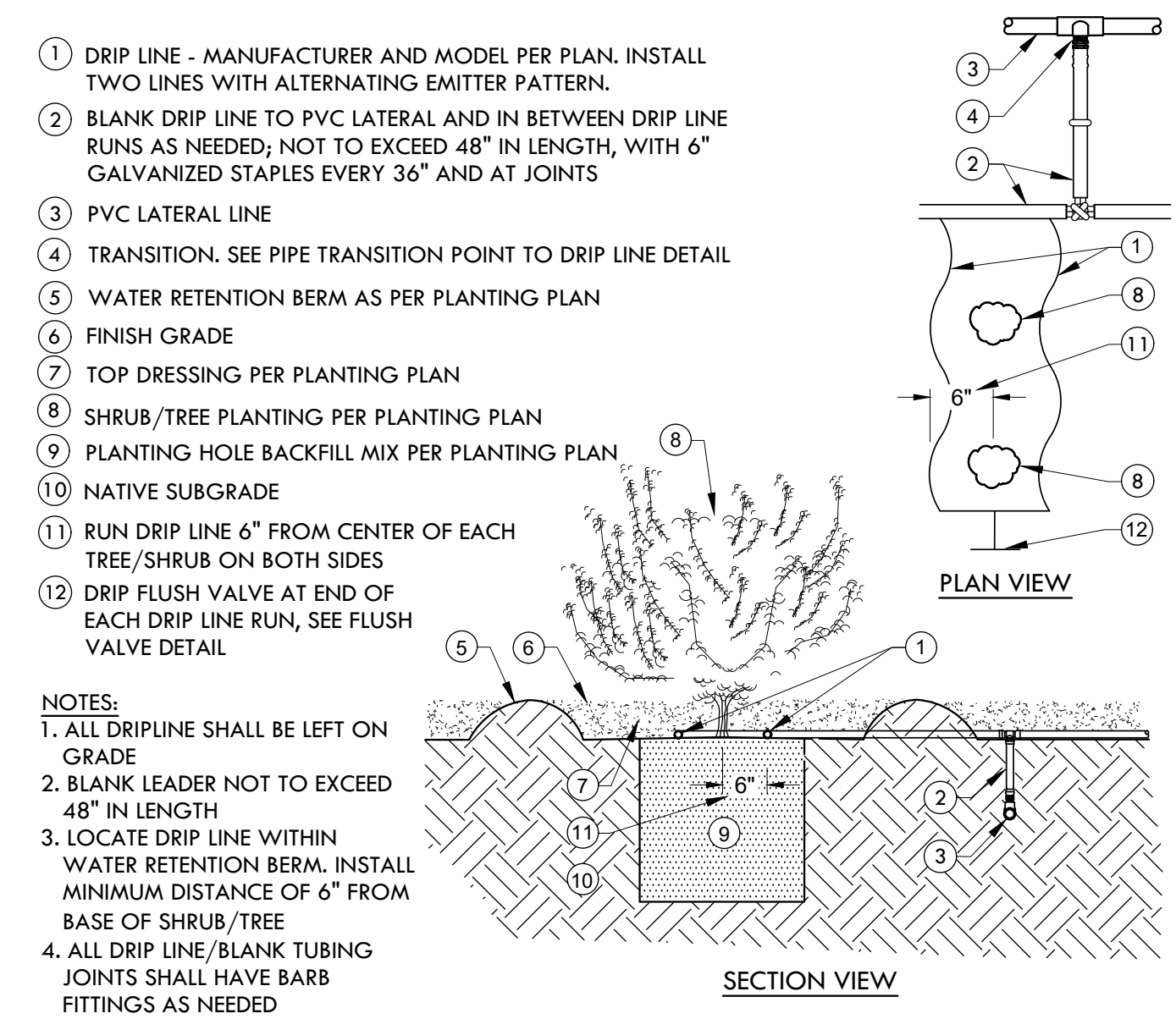
6 PIPE TRANSITION POINT TO DRIP LINE
L4.1 NOT TO SCALE



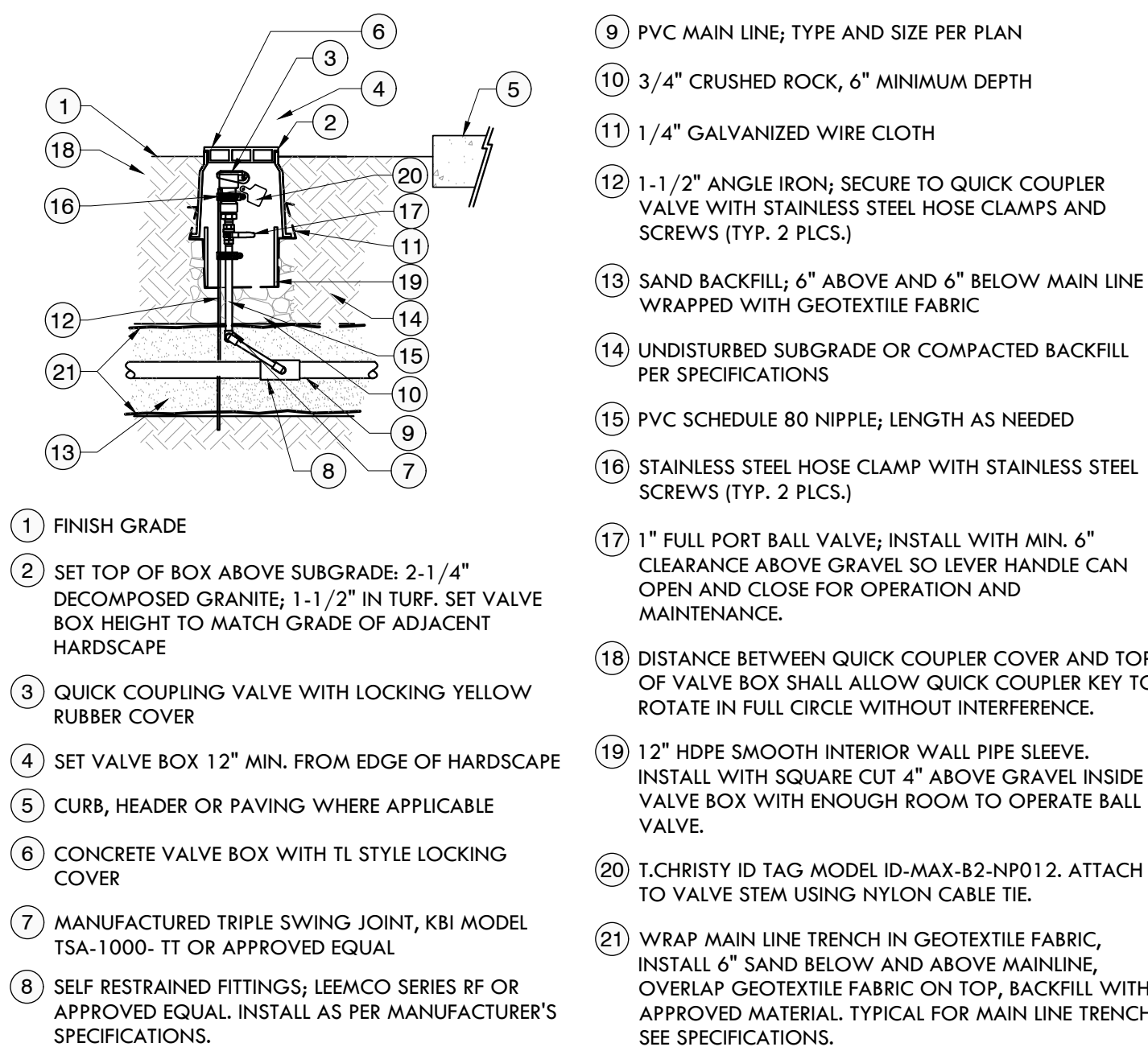
10 AIR RELIEF VALVE
L4.1 NOT TO SCALE



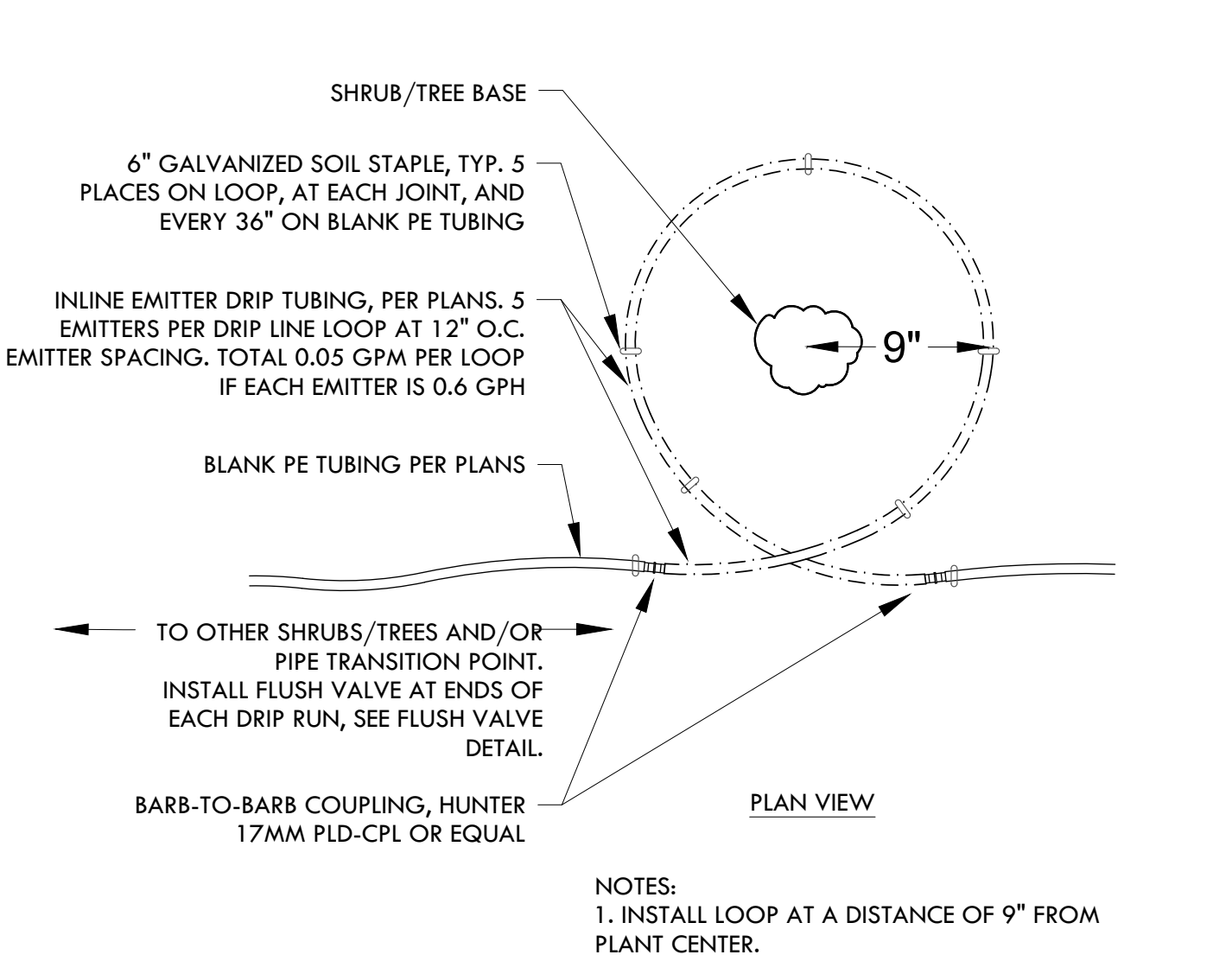
3 GATE VALVE
L4.1 NOT TO SCALE



7 TREES/SHRUBS DRIP - TWO LINES
L4.1 NOT TO SCALE



4 QUICK COUPLER VALVE
L4.1 NOT TO SCALE



8 TREES/SHRUBS DRIP - SINGLE LOOP
L4.1 NOT TO SCALE

MDG
MELTONDESIGNGROUP INC.

820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
melfondg.com

LICENSE



CONSULTANT

CLIENT

CITY OF UKIAH

PROJECT

RIVERSIDE PARK
REGENERATION

SHEET TITLE

IRRIGATION
DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	30% CD's	03-29-2022
2.	90% CD's	08-18-2023
3.	100% CD's	04-19-2024
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PROJECT NUMBERS

MELTON DESIGN GROUP: 2369

SHEET NUMBER

L4.1

SHEET 14 OF 14

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Page 79 of 1257

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH APPROVING THE APPLICATION FOR THE LAND AND WATER CONSERVATION FUND RIVERSIDE PARK REGENERATION PROJECT**

WHEREAS, the Congress under Public Law 88-578 has authorized the establishment of a federal Land and Water Conservation Fund Grant-In-Aid program, providing matching funds to the State of California and its political subdivisions for acquiring lands and developing Facilities for public outdoor recreation purposes; and

WHEREAS, the California Department of Parks and Recreation is responsible for administration of the program in the State, setting up necessary rules and procedures governing applications by local agencies under the program; and

WHEREAS, the applicant certifies by resolution the approval of the application and the availability of eligible matching funds prior to submission of the application to the State.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Ukiah hereby:

1. Approves the filing of an application for Land and Water Conservation Fund assistance for the proposed Riverside Park Regeneration Project; and
2. Certifies that the applicant has reviewed, understands, and agrees to the General Provisions contained in the contract shown in the Grant Administration Guide; and
3. Agrees to abide by 54 U.S.C. §200305(f)(3) which requires, "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation use. The Secretary shall approve a conversion only if the Secretary finds it to be in accordance with the then-existing comprehensive statewide outdoor recreation plan and only on such conditions as the Secretary considers necessary to ensure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location;" and
4. Certifies that said agency has matching funds from eligible source(s) and can finance 100 percent of the project, which up to half may be reimbursed; and
5. Agrees to comply with all applicable federal, state and local laws, ordinances, rules, regulations and guidelines; and
6. Appoints the City Manager as agent of the applicant to conduct all negotiations and execute and submit all documents, including, but not limited to, applications, contracts, amendments, payment requests, and compliance with all applicable current state and federal laws which may be necessary for the completion of the aforementioned project.

PASSED, ADOPTED and APPROVED this 16th day of July, 2025, by the following vote on roll call vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Approval of Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01 and Approve Final Payment of the 5% Retention to Kirby Construction Co.

DEPARTMENT: Electric Utility

PREPARED BY: Diann Lucchetti, Administrative Secretary

PRESENTER: Cindy Sauers, Electric Utility Director

ATTACHMENTS:

1. Spec 24-01 - Hastings Tenant Improvements & Fire Damage Repair
2. Kirby Construction Co. Inc. - Hastings Tenant Impvmts and Fire Damage Repair - 23
3. Change Order No. 7
4. Notice of Completion-Kirby Construction

Summary: City Council will consider approving the Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01, and approve final payment of the 5% Retention to Kirby Construction Co.

Background: The Ukiah City Council approved the purchase of 2.8 acres with a 15,800 sq. ft. building located at 1350 Hasting Rd (the Electric Service Center) to house the Electric Utility Department's operations. The Electric Service Center will centralize electric operations for Engineering, Construction and Technical Services. In addition, the Department intends to use the Electric Service Center for training, material warehousing, and construction preparation.

On December 6, 2023, Council approved the plans and specifications for the Tenant Improvements and Fire Damage Repair Project (Attachment 1). The project consisted of renovation of the interior of the building to convert the existing suites to office space, a conference room, and warehousing. A third phase of the project includes solar generation on the roof and raised structures to increase Ukiah's eligible renewable energy production. Phase 3 is scheduled for Fiscal Year 26.

On March 6, 2024, Council awarded the contract to Kirby Construction Company (Attachment 2) in the amount of \$2,446,340.00 for Specification No. 24-01 Hastings Tenant Improvements and Fire Damage Repair.

Discussion: The contracted work was completed by the contractor in conformance with the approved plans and specifications on June 27, 2025. The original contract amount, based on estimated quantities, was \$2,446,340.00. On January 15, 2025, Council approved Change Order No. 7 (Attachment 3) to cover repairs for unforeseen fire damage repair and various other tasks in the amount of \$25,000. Actual quantities and change orders resulted in a revised total contract amount of \$2,679,643.46. The 5% retention payment will be made to the contractor after 35 days from the date the Notice of Completion (Attachment 4) is filed with the County Recorder.

Staff requests Council approve the Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01; approve final payment of the 5% retention to Kirby Construction Co.; and direct the City Clerk to file the Notice of Completion with the County Recorder.

Recommended Action: Approve the Notice of Completion for the City of Ukiah Electric Service Center Tenant Improvements and Fire Damage Repair, Specification No. 24-01; approve final payment of the 5% retention to Kirby Construction Co.; and direct the City Clerk to file the Notice of Completion with the County Recorder.

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: Yes / No **X** **GRANT:** Yes / **X** 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

CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA

SPECIAL PROVISIONS
FOR
CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR
SPECIFICATION NO. 24-01

MANDATORY PRE-BID MEETING

11 A.M., FEBRUARY 7, 2023
ELECTRIC SERVICE CENTER
1350 HASTINGS ROAD
UKIAH, CALIFORNIA 95482

CITY OF UKIAH
DEPARTMENT OF ELECTRIC UTILITY
300 Seminary Avenue
Ukiah, California 95482-5400

Bids Open: February 22, 2024
2:00 p.m.
Office of City Clerk

CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA

CITY COUNCIL:

JOSEFINA DUENAS - MAYOR
DOUGLAS CRANE – VICE-MAYOR
SUSAN SHER – COUNCIL MEMBER
JUAN OROZCO – COUNCIL MEMBER
MARI RODIN– COUNCIL MEMBER

SAGE SANGIACOMO – CITY MANAGER
CINDY SAUERS – DIRECTOR OF ELECTRIC UTILITY
MARY HORGER – FINANCIAL SERVICES MANAGER
KRISTINE LAWLER – CITY CLERK
R. ALLEN CARTER - CITY TREASURER

CITY OF UKIAH
DEPARTMENT OF ELECTRIC UTILITY
JANUARY 2024

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SUPPORTING PRODUCT DATA AND CUT SHEETS

**CITY OF UKIAH, MENDOCINO COUNTY, CALIFORNIA
NOTICE TO BIDDERS FOR
CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR
SPECIFICATION NO. 24-01**

NOTICE IS HEREBY GIVEN that sealed standard proposals for CITY OF UKIAH ELECTRIC SERVICE CENTER TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR will be received at the Office of the City Clerk, Ukiah Civic Center, 300 Seminary Avenue, Ukiah California until 2:00 p.m. on Thursday, February 22, 2024. Bids shall be addressed to the City Clerk and shall be endorsed "CITY OF UKIAH ELECTRIC SERVICE CENTER TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR." 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.	CSI DIVISION 01 – GENERAL REQUIREMENTS	1	Lump Sum
2.	CSI DIVISION 02 – EXISTING CONDITIONS	1	Lump Sum
3.	CSI DIVISION 03 - CONCRETE	1	Lump Sum
4.	CSI DIVISION 04 – MASONRY	1	Lump Sum
5.	CSI DIVISION 05 – METALS	1	Lump Sum
6.	CSI DIVISION 06 – WOOD, PLASTICS & COMPOSITES	1	Lump Sum
7.	CSI DIVISION 07 – THERMAL & MOISTURE PROTECTION	1	Lump Sum
8.	CSI DIVISION 08 - OPENINGS	1	Lump Sum
9.	CSI DIVISION 09 - FINISHES	1	Lump Sum
10.	CSI DIVISION 10 – SPECIALTIES	1	Lump Sum
11.	CSI DIVISION 12 - FURNISHINGS	1	Lump Sum
12.	CSI DIVISION 13 – SPECIAL CONSTRUCTION	1	Lump Sum
13.	CSI DIVISION 14 – CONVEYING EQUIPMENT	1	Lump Sum
14.	CSI DIVISION 21 – FIRE SUPPRESSION	1	Lump Sum
15.	CSI DIVISION 22 - PLUMBING	1	Lump Sum
16.	CSI DIVISION 23 - HVAC	1	Lump Sum
17.	CSI DIVISION 25 – INTEGRATED AUTOMATION	1	Lump Sum
18.	CSI DIVISION 26 – ELECTRICAL	1	Lump Sum
19.	CSI DIVISION 27 – COMMUNICATIONS	1	Lump Sum
20.	CSI DIVISION 28 – ELECTRONIC SAFETY & SECURITY	1	Lump Sum
21.	CSI DIVISION 31 – EARTHWORK	1	Lump Sum
22.	CSI DIVISION 32 – EXTERIOR IMPROVEMENTS	1	Lump Sum
23.	CSI DIVISION 33 - UTILITIES	1	Lump Sum

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 Mary Horger, Financial Services Manager at (707) 463-6233 or by email at mhorger@cityofukiah.com.

A MANDATORY PRE-BID MEETING will be held at 11:00 a.m., February 7, 2024, at the Electric Utility Service Center located at 1350 Hastings Road, 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: **Jan 18, 2024**

Kristine Lawler
Kristine Lawler (Jan 18, 2024 08:22 PST)

Kristine Lawler, City Clerk, City of Ukiah, California

PUBLISH ONCE: January 24, 2024

INSTRUCTIONS TO BIDDERS

CITY OF UKIAH ELECTRIC SERVICE CENTER TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR shall be performed in accordance with the Plans and Special Provisions therefor 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 ONE HUNDRED EIGHTY (180) calendar 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.

A mandatory pre-bid conference will be held at 11 a.m., February 7, 2024, at the project site located at 1350 Hastings Road, Ukiah, California 95482, to fully acquaint interested Contractors 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. Failure to attend the mandatory bid conference will be just cause for the bid to be rejected as non-responsive. Bidders shall thoroughly examine and be familiar with the Plans and Special Provisions.

Oral statements or instructions made during this visit will not constitute an amendment to this solicitation. The City will determine the appropriate action necessary, if any, and may issue a written amendment to the bid request.

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 fax or email to the following designated contact person:

Mary Horger, Financial Services Manager
Email: mhorger@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 1350 Hastings Road, Ukiah, California 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-erectments 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 \$5,000, 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 Public 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 tenant improvement of an existing 15,800 square foot unconditioned warehouse building of type V-A construction. Situated along highway 101 in Ukiah surrounded by nearby pear orchards, the building was originally constructed in 1999 as an agricultural storage warehouse. The facility (The Electric Service Center) is to house and centralize the Ukiah Electric Utility Department's electrical operations and administrative offices for Engineering, Construction and Technical Services. In addition, the Department intends to use the Electric Service Center for training, material warehousing and construction preparation.

On August 5, 2020, the City Council adopted the plans and specifications for the grading, fencing, roofing and electric equipment relocation. This work was completed on March 2, 2023. On the morning of March 8, 2023, a fire broke out at the core of the building in the existing bathroom beneath the main stair to the second level. The source of the fire was the electrical failure of a bathroom ceiling fan. The automated sprinkler went off throughout the building and The Ukiah Valley Fire Authority responded to the incident and was successful in extinguishing the fire. However, significant smoke and water damage occurred, as well as structural damage to the building's main floor core and second level, including some exterior walls and roofing. On April 7, 2023, all Fire remediation work as a part of a separate contract with West Coast Fire and Water remediation specialists was completed.

In addition to the repair of some exterior siding, replacing windows and roofing at the second level, the exterior of the building will receive a new front entry awning, updated exterior lighting fixtures and the existing metal roll up doors will be replaced with new glazed storefront doors and windows at the new administrative office and showroom portion of the building.

The interior of the building will be repaired where required due to smoke and water damage and renovated to accommodate a new showroom, conference room, individual & shared offices, break room with kitchenette, restrooms, mezzanines, warehouses, a workshop area and storage rooms on the main level and repair of the main stair and entire second level. The interior renovation includes a new building HVAC system, new lighting, electrical outlets, and plumbing throughout. Three existing mezzanine structures will be demolished and replaced with two new mezzanines. Two existing warehouse bays will remain as storage areas for equipment.

Scope of Work Summary by CSI Division:

Div 02 - Existing Conditions: Deconstruct Mezzanines and store onsite, demolish existing flooring & walls where indicated on plans, demo existing doors & windows where indicated on plans and any other existing components (structural or not) uncovered during construction and deemed non salvageable due to fire, smoke or water damage. Patch and repair all bottoms of walls removed due to water damage, as noted on plans.

Div 03 - Concrete: Backfill & back pour ± 260 sq. ft. concrete where indicated on plans.

Div 05 - Metals: Structural steel where indicated on plans, wire mesh panel guards and screening at mezzanines and above offices.

Div 06 - Wood, Plastics & Composites: New wood beams, joists, structural framing, mezzanines, interior wall partition framing, countertops & millwork where indicated on plans.

Div 07 - Thermal & Moisture Protection: Insulation at interior & exterior walls. Waterproofing at all altered exterior walls around doors & windows.

Div 08 - Openings: New aluminum windows where indicated on plans. New interior & exterior aluminum storefront doors & office partitions where indicated on plans. Infill existing roll-up doors and patch infill wall areas with siding to match existing. New roller shades at all new windows.

Div 09 - Finishes: Ceilings, wall finishes, resilient base, flooring, painting and interior and exterior finish patching where indicated on plans.

Div 10 - Specialties: Restroom accessories where indicated on plans.

Div 21 - Fire Suppression: The existing building is sprinklered but will need to have sprinkler heads added where required for new office areas. Fire sprinkler alterations and permit will be performed under purview of general contractor.

Div 22 - Plumbing: Renovate three existing restrooms and construct four new restrooms. New plumbing fixtures & fittings where indicated on plans.

Div 23 - HVAC: New forced air HVAC system throughout building. See mechanical plans.

Div 26 - Electrical: New lighting throughout. Replace existing exterior light fixtures. New switching, receptacles and data outlets where indicated on plans. Relocate one existing electrical panel to accommodate new office partition where indicated on plans.

Div 28 - Electronic Safety & Security: new burglar alarm integration with existing system at new building entry points.

The Contractor should familiarize himself with the local conditions of the project site. 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 Mary Horger at (707) 463-6233.

12-02. Arrangement of Technical Specifications. The Technical Specifications are arranged in sections covering the various phases of work as follows:

Section No.	Title
SECTION 01 10 00	SUMMARY OF WORK AND REQUIREMENTS
SECTION 01 20 13	REQUESTS FOR INTERPRETATION
SECTION 01 31 00	PROJECT COORDINATION
SECTION 01 31 20	PROGRESS MEETINGS
SECTION 01 32 16	PROJECT SCHEDULES
SECTION 01 33 00	SUBMITTALS
SECTION 01 40 00	QUALITY REQUIREMENTS
SECTION 01 41 00	REGULATORY REQUIREMENTS
SECTION 01 51 00	TEMPORARY UTILITIES, FACILITIES AND CONTROLS
SECTION 01 56 10	SITE AND AREA CLEANUP
SECTION 01 57 23	STORMWATER POLLUTION CONTROL SECTION
SECTION 01 73 29	CUTTING AND PATCHING REQUIREMENTS
SECTION 02 41 16	DEMOLITION AND DISPOSAL
SECTION 02 41 19	SELECTIVE INTERIOR DEMOLITION
SECTION 03 20 00	REINFORCING STEEL
SECTION 03 30 00	CAST IN PLACE CONCRETE
SECTION 06 10 00	CARPENTRY
SECTION 06 41 13	ARCHITECTURAL WOOD CASEWORK
SECTION 07 25 00	BUILDING ENVELOPE UNDERLAYMENT
SECTION 07 42 13	SIDING AND ROOFING PANELS (METAL)
SECTION 07 62 00	SHEET METAL FLASHING AND TRIM
SECTION 07 92 00	JOINT SEALANTS
SECTION 08 16 00	COMPOSITE INTERIOR DOORS
SECTION 08 41 13	ALUMINUM STOREFRONTS
SECTION 08 51 13	ALUMINUM WINDOWS
SECTION 08 71 00	DOOR HARDWARE
SECTION 08 80 00	GLAZING

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES
SECTION 09 65 19 - RESILIENT TILE FLOORING
SECTION 09 68 13 - CARPET TILE FLOORING
SECTION 09 90 00 - PAINTING AND COATING
SECTION 10 28 13 - TOILET ACCESSORIES
SECTION 10 40 00 - SIGNAGE
SECTION 12 24 13 - ROLLER SHADES
SECTION 21 10 00 - FIRE SUPPRESSION AND ALARM SYSTEMS
SECTION 22 30 00 - PLUMBING EQUIPMENT
SECTION 23 05 00 - HVAC
SECTION 26 00 01 - ELECTRICAL GENERAL PROVISIONS
SECTION 26 00 02 - ELECTRICAL BASIC MATERIALS AND METHODS
SECTION 26 50 00 - LIGHTING SYSTEM
SECTION 32 31 13 - POLYMER COATED CHAIN LINK FENCING AND GATES

12-03. Arrangement of Plans. General locations and linear quantities of the work are shown in Attachment "A".

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.

12-15. Hazardous Materials. Pursuant to Section 25914.2 of the California Health and Safety Code, in the event the Contractor encounters on the site materials he or she reasonably believes to be asbestos or a hazardous substance, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed safe and shall immediately cease work on the area affected and report the condition to the City in writing. If the City determines that asbestos or hazardous substances which were not disclosed in the bid are present on the site, all work regarding the removal of those substances will be performed pursuant to a separate contract.

SECTION 13 - CONSTRUCTION DETAILS

13-01. Technical Specifications. See Appendix A.

13-02. Contract Drawings. See Attachment A, a separately bound set entitled "100 % Construction Plans Electrical Service Center Tenant Improvement and Fire Damage Repair" dated December 19, 2023.

13-03. Supporting Product Data and Cut Sheets. See Attachment B, a supporting document with products, finishes and cut sheets that are pertinent to the project.

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 32)
 - 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 37)
 - Filled out completely per instruction
- **Worker's Compensation Certificate** (Page 38)
 - Filled out completely per instruction
- **Certification of Non-Discrimination in Employment** (Page 39)
 - Filled out completely per instruction
- **List of Proposed Subcontractors** (Page 40)
 - Filled out completely per instruction
- **Statement of Experience** (Page 41)
- **Signature of Bidder** (Page 42)
 - Filled out completely per instruction
 - Authorized signature provided
- **Bidder's Bond** (Page 43)
 - Filled out completely per instruction
- **Non-Collusion Affidavit** (Page 44)
 - Filled out completely per instruction
 - Notarized
- **Addenda Issued**
 - Check the City website for any addenda issued: www.cityofukiah.com/purchasing.

**CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA**

PROPOSAL

**FOR
CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR**

Specification No. 24-01

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.

NAME OF BIDDER:

SPEC #:

PROJECT NAME:

24-01

CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR

BASE BID

ITEM #	DESCRIPTION	UNIT OF MEASURE	QUANTITY	TOTAL
1	CSI DIVISION 01 – GENERAL REQUIREMENTS	LS	1	\$ _____
2	CSI DIVISION 02 – EXISTING CONDITIONS	LS	1	\$ _____
3	CSI DIVISION 03 - CONCRETE	LS	1	\$ _____
4	CSI DIVISION 04 – MASONRY	LS	1	\$ _____
5	CSI DIVISION 05 – METALS	LS	1	\$ _____
6	CSI DIVISION 06 – WOOD, PLASTICS & COMPOSITES	LS	1	\$ _____
7	CSI DIVISION 07 – THERMAL & MOISTURE PROTECTION	LS	1	\$ _____
8	CSI DIVISION 08 - OPENINGS	LS	1	\$ _____
9	CSI DIVISION 09 - FINISHES	LS	1	\$ _____
10	CSI DIVISION 10 – SPECIALTIES	LS	1	\$ _____
11	CSI DIVISION 12 - FURNISHINGS	LS	1	\$ _____
12	CSI DIVISION 13 – SPECIAL CONSTRUCTION	LS	1	\$ _____
13	CSI DIVISION 14 – CONVEYING EQUIPMENT	LS	1	\$ _____
14	CSI DIVISION 21 – FIRE SUPPRESSION	LS	1	\$ _____
15	CSI DIVISION 22 - PLUMBING	LS	1	\$ _____

16	CSI DIVISION 23 - HVAC	LS	1	\$ _____
17	CSI DIVISION 25 – INTEGRATED AUTOMATION	LS	1	\$ _____
18	CSI DIVISION 26 – ELECTRICAL	LS	1	\$ _____
19	CSI DIVISION 27 – COMMUNICATIONS	LS	1	\$ _____
20	CSI DIVISION 28 – ELECTRONIC SAFETY & SECURITY	LS	1	\$ _____
21	CSI DIVISION 31 – EARTHWORK	LS	1	\$ _____
22	CSI DIVISION 32 – EXTERIOR IMPROVEMENTS	LS	1	\$ _____
23	CSI DIVISION 33 - UTILITIES	LS	1	\$ _____
TOTAL BID ==>>				\$ _____

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.

CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR

(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 _____, 20____

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.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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 FEBRUARY 22, 2023 for CITY OF UKIAH ELECTRIC SERVICE CENTER TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR.

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 CITY OF UKIAH ELECTRIC SERVICE CENTER TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR 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

**CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR**

Specification No. 24-01

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 ONE HUNDRED EIGHTY (180) calendar 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. Addenda
9. Contract Bonds
10. Contract Drawings and Construction Details
11. Standard Drawings
12. 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 given; 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 obligee 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)

_____(Seal)

Surety

CITY OF UKIAH
Mendocino County, California

AGREEMENT

FOR

**CITY OF UKIAH ELECTRIC SERVICE CENTER
TENANT IMPROVEMENTS AND FIRE DAMAGE REPAIR**

Specification No. 24-01

THIS AGREEMENT, made this 7th day of March, 2024, by and between the City of Ukiah, Mendocino County, California, hereinafter called the City and Kirby Construction Company, Inc. 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 ONE HUNDRED EIGHTY (180) calendar 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 an 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. Addenda
9. Contract Bonds
10. Contract Drawings and Construction Details
11. Standard Drawings
12. 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 8th day of March, 2024.

CITY OF UKIAH, MENDOCINO COUNTY, CALIFORNIA

By: [Signature]
CITY MANAGER, CITY OF UKIAH

Attest: [Signature]
CITY CLERK, CITY OF UKIAH

By: York Saccomanno Kirby Constructions Company Inc.
CONTRACTOR

Attest: [Signature]

Title: York Saccomanno Owner, President, & CEO

The foregoing contract is approved as to form and legality this 25th day of March, 2024.

[Signature]
CITY ATTORNEY, CITY OF UKIAH

INDEMNIFICATION AGREEMENT

This Indemnification Agreement is made and entered in Ukiah, California, on March 7, 2024,
by and between the City of Ukiah (Ukiah) and Kirby Construction Company, Inc. (Contractor).

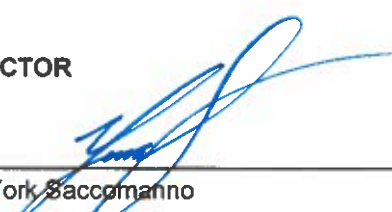
Contractor is
performing work as per Specification No. 24-01 COU Electric Service Center Tenant Improvements
and Fire Damage Repair for Ukiah.

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: 
York Saccomanno
TITLE: Owner, President & CEO

CITY OF UKIAH
Mendocino County, California

PERFORMANCE BOND

BOND No. 57BCSIY2794

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 Kirby Construction Company, Inc. dba Kirby Construction, (hereinafter referred to as the "Contractor") an agreement for Contract No. 24-01 (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 March 7, 2024, (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.

Kirby Construction Company, Inc.
NOW, THEREFORE, we, dba Kirby Construction, the undersigned Contractor and Hartford Fire Insurance Company, 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 Two Million Four Hundred Forty-Six Thousand Three Hundred Forty and No/100-- (\$ 2,446,340.00-----), 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 8th day of March, 2024.

(Corporate Seal)

Kirby Constructions Company, Inc.
dba Kirby Construction
Contractor/Principal

By

Title

OWNER CEO

(Corporate Seal)

Hartford Fire Insurance Company
Surety

By

Attorney-in-Fact

(Attach Attorney-in Fact Certificate)

Title Elizabeth Collodi, Attorney-in-Fact

The rate of premium on this bond is \$10.61 per thousand. The total amount of premium charged is \$25,956.00.

Premium is for contract term and is subject to adjustment based on final contract price.
(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)

Hartford Fire Insurance Company

One Hartford Plaza

Hartford, CT 06155-0001

(Name and Address of Agent or

Amanda Garcia c/o CT Corporation System

Representative for service of process in

330 N. Brand Blvd., Suite 700

California, if different from above)

Glendale, CA 91203

(Telephone number of Surety and Agent
or Representative for service of process in California)

(888) 266-3488

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 Butte)

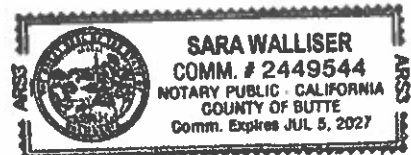
On March 8, 2024 before me, Sara Walliser, Notary Public
(insert name and title of the officer)

personally appeared Elizabeth Collodi,
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)



POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-11

One Hartford Plaza

Hartford, Connecticut 06155

Bond.Claims@thehartford.com

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: INTERWEST INSURANCE SVCS LLC/CHICO

Agency Code: 57-123679

- ☒ Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
☒ Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
☒ Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
☐ Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
☐ Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
☐ Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
☐ Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
☐ Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, up to the amount of Unlimited:

Cassandra Medina, Brad Espinosa, Renee Ramsey, Sara Walliser, Breanna Boatright, Tony Clark, Elizabeth Collodi, Matthew Foster, John Hopkins, Kathleen Le, Jason March, Deanna Quintero, Bill Rapp, Sharon Smith, John Weber of CHICO, California

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, 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.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 23, 2016 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Shelby Wiggins

Shelby Wiggins, Assistant Secretary

Joelle L. LaPierre

Joelle L. LaPierre, Assistant Vice President

STATE OF FLORIDA

COUNTY OF SEMINOLE

ss. Lake Mary

On this 20th day of May, 2021, before me personally came Joelle LaPierre, to me known, who being by me duly sworn, did depose and say: that (s)he resides in Seminole County, State of Florida; that (s)he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that (s)he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that (s)he signed his/her name thereto by like authority.



Jessica Ciccone

Jessica Ciccone
My Commission HH 122780
Expires June 20, 2025

I, the undersigned, Assistant Vice President of the Companies, 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 effective as of March 8, 2024

Signed and sealed in Lake Mary, Florida.



Keith D. Dozois

Keith D. Dozois, Assistant Vice President

CITY OF UKIAH
Mendocino County, California

PAYMENT BOND

BOND No. 57BCSIY2794

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the City of Ukiah ("City") has awarded to Kirby Construction Company, Inc. dba Kirby Construction ("Contractor/Principal") a contract (City Agreement No. 24-01, dated March 7, 2024, referred to as the "Agreement") for the work described as COU Electric Service Center Tenant Improvements and Fire Damage Repair. 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 Kirby Construction Company, Inc. dba Kirby Construction, the undersigned Contractor/Principal, and Hartford Fire Insurance Company ("Surety"), a corporation organized and existing under the laws of the State of Connecticut, 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 \$ 2,446,340.00, 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 obligee 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: Hartford Fire Insurance Company

Address: One Hartford Plaza

City/State/Zip: Hartford, CT 06155-0001

Phone: (888) 266-3488

Fax: (860) 757-5835

Email: Bond.Claims@thehartford.com

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 8th day of March, 2024.

Kirby Constructions Company, Inc.
dba Kirby Construction (SEAL)
Contractor/Principal

By [Signature]
Contractor's Representative

625 Ware Avenue
Contractor/Principal's Address

Santa Rosa, CA 95404
City, State, Zip

Hartford Fire Insurance Company (SEAL)
Surety

By [Signature]
Surety's Representative
Elizabeth Collodi, Attorney-in-Fact

One Hartford Plaza
Surety's Address

Hartford, CT 06155-0001
City, State, Zip

(888) 266-3488
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.

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 Butte)

On March 8, 2024 before me, Sara Walliser, Notary Public
(insert name and title of the officer)

personally appeared Elizabeth Collodi
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)



POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-11

One Hartford Plaza

Hartford, Connecticut 06155

Bond.Claims@thehartford.com

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: INTERWEST INSURANCE SVCS LLC/CHICO

Agency Code: 57-123679

- ☒ Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
☒ Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
☒ Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
☐ Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
☐ Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
☐ Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
☐ Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
☐ Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, up to the amount of Unlimited:

Cassandra Medina, Brad Espinosa, Renee Ramsey, Sara Walliser, Breanna Boatright, Tony Clark, Elizabeth Collodi, Matthew Foster, John Hopkins, Kathleen Le, Jason March, Deanna Quintero, Bill Rapp, Sharon Smith, John Weber of CHICO, California

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, 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.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 23, 2016 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Shelby Wiggins

Shelby Wiggins, Assistant Secretary

Joelle L. LaPierre

Joelle L. LaPierre, Assistant Vice President

STATE OF FLORIDA

COUNTY OF SEMINOLE

ss. Lake Mary

On this 20th day of May, 2021, before me personally came Joelle LaPierre, to me known, who being by me duly sworn, did depose and say: that (s)he resides in Seminole County, State of Florida; that (s)he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that (s)he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that (s)he signed his/her name thereto by like authority.

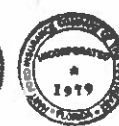


Jessica Ciccone

Jessica Ciccone
My Commission HH 122280
Expires June 20, 2025

I, the undersigned, Assistant Vice President of the Companies, 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 effective as of March 8, 2024

Signed and sealed in Lake Mary, Florida.



Keith D. Dozois

Keith D. Dozois, Assistant Vice President

[illegible]

Agenda Item No: 8.g.MEETING DATE/TIME: 1/15/2025ITEM NO: 2025-26

City of Ukiah

AGENDA SUMMARY REPORT

SUBJECT: Approve Change Order #7 to Contract 2324-169 with Kirby Construction Company to Complete Additional Repairs Discovered During Construction at the Electric Facility on Hastings Road, and Authorize a Budget Amendment in the Amount of \$25,000.

DEPARTMENT: Electric UtilityPREPARED BY: Cindy Sauers, Electric Utility DirectorPRESENTER: Consent Calendar**ATTACHMENTS:**

1. 2202_231117_CD100_BuildingPermit_Compiled_R2 (see clerk to view)
2. Change Orders 1-6
3. COR #015 r.1 - Design Changes

Summary: Staff is requesting approval for a change order to complete various tasks that were not included in the original scope, and approval of a corresponding budget amendment in the amount of \$25,000.

Background: The City Council previously approved the purchase of 2.8 acres, including a 15,800 sq. ft. building located at 1350 Hastings Road, to serve as the Electric Service Center for the Electric Utility Department's operations. The Electric Service Center is designed to centralize electric operations, including Engineering, Construction, and Technical Services. Additionally, the facility will support training activities, material warehousing, and construction preparation.

In early 2023, site improvements were completed, including grading, roofing, fencing, and service equipment upgrades. However, on March 8, 2023, a fire occurred at the facility due to a failed exhaust fan. Immediate actions were taken to remediate the site and revise project drawings to include fire damage repairs.

The City received an insurance payment of \$471,488.51 to address fire-related damages. An additional \$185,138.94 was paid directly by the insurance company to West Coast Fire and Water for remediation activities.

On March 6, 2024, the City Council awarded a construction contract to Kirby Construction Company for the Hastings Tenant Improvements and Fire Damage Repair Project. The project plans are included as Attachment #1. The scope of the project includes renovating the building's interior to create office spaces, a conference room, and warehousing areas.

Discussion: During construction, several unforeseen conditions necessitated change orders to ensure compliance with building codes and address structural issues uncovered during demolition. These included:

- Installation of additional fire sprinklers required by code.
- Relocation of the HVAC system.
- Installation of additional electrical and data ports.
- Repairs due to previously undiscovered fire damage.



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PREPARED BY: Cindy Sauers, Electric Utility Director

PRESENTER: Consent Calendar

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- Relocation of the HVAC system.
- Installation of additional electrical and data ports.
- Repairs due to previously undiscovered fire damage.

Copies of Change Orders #1–#6, totaling \$237,708.78, are provided as Attachment #2. These expenditures have left a balance of just over \$6,900 for the remainder of the project.

During the installation of upstairs flooring, water damage was discovered in the subfloor caused by a long-term leak from a door that had been improperly installed. This newly identified issue requires immediate repair to ensure structural integrity and prevent further damage. Additional items requiring a change order include additional electrical work as well as modifications to safety structures in mechanical areas. These items are addressed in Change Order #7, which totals \$15,472.27 (Attachment #3).

Staff is requesting approval of Change Order #7 and a corresponding budget amendment in the amount \$25,000 to cover the change order and to provide funds should any other issues arise.

Recommended Action: Approve Change Order #7 to Contract 2324-169 with Kirby Construction Company to complete additional repairs discovered during construction, and authorize a corresponding budget amendment in the amount of \$25,000.

BUDGET AMENDMENT REQUIRED: Yes

CURRENT BUDGET AMOUNT: 80126100.80220.17023; \$14,376.87

PROPOSED BUDGET AMOUNT: 80126100.80220.17023; \$39,377

FINANCING SOURCE: 800 Fund

REVENUE: No **GRANT:** No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: 2324-169

COORDINATED WITH: Mary Horger, Financial Services Manager

DIVERSITY-EQUITY INITIATIVES (DEI):

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved:


Sage Sangiacomo, City Manager

Please return to:

CITY OF UKIAH
300 Seminary Avenue
Ukiah, California 95482-5400
(707) 463-6200

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN:

1. That the project described as: Electric Service Center Tenant Improvements and Fire Damage Repair, Spec. No. 24-01.
2. That the nature of the work: Renovation of the interior of building to office space, conference room and warehousing, Specification No. 24-01.
3. That on the 27th of June 2025, the Contract work for this project was actually completed.
4. That the name and address of the Contractor is Kirby Construction Co., 625 Ware Ave., Santa Rosa, CA 95404.
5. That the property location of work performed herein referred to is situated in the County of Mendocino, State of California, and is described as follows: 1350 Hastings Rd., Ukiah, California.

I hereby certify under penalty of perjury that the forgoing is true and correct:

City Council Approval CITY OF UKIAH, a Municipal Corporation

_____	By: _____	_____
Date	Kristine Lawler, City Clerk	Date

State of California

County of Mendocino

Exempt from recording fees pursuant to Government Code Section 27383



AGENDA SUMMARY REPORT

SUBJECT: Consideration of Approval of an Amendment to Contract #2425-199 with Rincon Consultants, Inc., for the Purpose of Providing California Environmental Quality Act (CEQA) Professional Consulting and GIS Services to Assist with the Potential Development of a Draft Reorganization Application.

DEPARTMENT: City Manager /
Admin

PREPARED BY: Maya Simerson, Project & Grant Administrator

PRESENTER: Maya Simerson, Project & Grant Administrator

ATTACHMENTS:

1. Rincon Consultants COU 2425-199
2. Rincon Add Services 1

Summary: Council will consider approval of an amendment to Contract #2425-199 with Rincon Consultants, Inc., for the purpose of providing California Environmental Quality Act (CEQA) professional consulting and GIS services to assist with the potential development of a draft reorganization application..

Background: Rincon Consultants, Inc. ("Rincon"), which specializes in environmental sciences, land use planning, and climate action and sustainability, including environmental analysis under the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"), has worked with the City of Ukiah since 2018 on various projects. In February of 2025, the City Council approved a contract with Rincon (Attachment 1) to provide support services as they relate to the City's work in preparing a draft proposal for potential reorganization.

In response to community input, Staff is reviewing the scope of the draft reorganization proposal. This will require additional support from Rincon (Attachment 2). Additionally, the City recently hired an Associate Planner/GIS Analyst, and the added funds to the contract with Rincon will allow for a smooth transition of data from the consultant to the new internal staffing resource.

Discussion: This additional funding will allow Rincon to continue working alongside the City's planning team and special CEQA Legal Counsel (Pioneer Law Group) to develop CEQA environmental documents and studies, and GIS mapping as might be necessary for evaluating and development of a potential draft application. Rincon is anticipating the bulk of their additional time being directed towards GIS support services as the City evaluates a revised scope. The City is committed to working with the community, stakeholders, County and other public agency partners to support a thoughtful, coordinated approach to land use planning and provision of services.

Staff recommends Council to authorize an amendment in the amount of \$23,522 to Contract #2425-199 with Rincon Consultants, Inc., for the purpose of providing California Environmental Quality Act (CEQA) professional consulting and GIS Services to assist with the potential development of a draft reorganization application.

Recommended Action: Approve an amendment in the amount of \$23,522 to Contract #2425-199 with Rincon Consultants, Inc., for the purpose of providing California Environmental Quality Act (CEQA) professional consulting and GIS services to assist with the potential development of a draft reorganization application.

BUDGET AMENDMENT REQUIRED: N/A
CURRENT BUDGET AMOUNT: 20012200.52304: \$131,200
PROPOSED BUDGET AMOUNT: N/A
FINANCING SOURCE: Cost Allocation
REVENUE: Yes / No GRANT: Yes / No
PREVIOUS CONTRACT/PURCHASE ORDER NO.: COU 2425-199
COORDINATED WITH: Jesse Davis, Chief Planning Manager, and Sage Sangiacomo, City Manager
STRATEGIC PLAN (SP): SP 3A - Review and revise land use planning documents to be reflective of the long-term vision for the community.
CLIMATE INITIATIVES (CI): 5b – Protect against sprawl through completion of annexations.
GENERAL PLAN ELEMENTS (GP): GP-A1 - Land Use Element

Approved: 
Sage Sangiacomo, City Manager

AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES

This Agreement, made and entered into this 20th day of February, 2025 ("Effective Date"), by and between CITY OF UKIAH, CALIFORNIA, hereinafter referred to as "City" and Rincon Consultants, Inc., 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 California Environmental Quality Act (CEQA) environmental analysis, studies, and/or determinations pertaining to the City's 2025 Annexation Application.
- 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 Services set forth in this Agreement.

TERMS OF AGREEMENT

1.0 DESCRIPTION OF PROJECT

- 1.1 The Project will be described in detail when the final Scope-of-Work is complete and available. Rincon will provide environmental analysis services under the California Environmental Quality Act (CEQA) pertaining to the City's application for annexation of areas within the City's 2022 Sphere of Influence.

2.0 SCOPE OF SERVICES

- 2.1 Staff envisions Rincon working alongside the City's planning team and special CEQA Legal Counsel (Pioneer Law Group) to develop CEQA environmental documents and studies. As preparation of the application is at the initial stages, it is not known at this time what level of CEQA review will be necessary. Therefore, Council has authorized the City Manager to negotiate and execute a contract in the amount not to exceed \$75,000, and Rincon will bill for time and materials according to their most recent Fee Schedule (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 upon receipt of a Notice to Proceed from City and shall complete such services within a reasonable time frame, as determined through coordination with the City. 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 maximum dollar amount of \$75,000. Labor charges shall be based upon hourly billing rates for the various classifications of personnel employed by Consultant to perform the work as described in Section 2.1 of this Agreement, 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 the Fee Schedule in Attachment A.
- 4.2 Changes. Should changes in compensation be required because of changes to the work described in Section 2.1 and the pending 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 the pending Scope-of-Work 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 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 one (1) year from the date of final approved invoice.

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 will be identified in the pending Scope-of-Work and will consist of CEQA environmental documents and studies. 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:

CITY OF UKIAH
DEPT. OF COMMUNITY DEVELOPMENT
300 SEMINARY AVENUE
UKIAH, CALIFORNIA 95482-5400

RINCON CONSULTANTS, INC.
4825 J ST STE 200
SACRAMENTO, CA 95819

9.0 SIGNATURES

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

CONSULTANT

BY: 

Date

PRINT NAME: _____

IRS IDN Number

BY:  _____

3/3/2025 Type text here

Date

PRINT NAME: Richard Daulton

CITY OF UKIAH

BY:  _____

03/24/2025

Date

CITY MANAGER

ATTEST


Kristine Lawler (Mar 24, 2025 13:33 PDT)

CITY CLERK

03/24/2025

Date



Standard Fee Schedule for Environmental Sciences and Planning Services

Professional, Technical and Support Personnel*	January 1, 2025 – December 31, 2025
Senior Principal	\$330
Principal	\$318
Director	\$318
Senior Supervisor II	\$302
Supervisor I	\$282
Senior Professional II	\$264
Senior Professional I	\$246
Professional IV	\$218
Professional III	\$203
Professional II	\$180
Professional I	\$160
Associate III	\$135
Associate II	\$121
Associate I	\$113
Field Technician	\$97
Technical Editor	\$152
Project Accountant	\$129
Billing Specialist	\$111
Publishing Specialist	\$124
Clerical	\$111

* Professional classifications include environmental scientists, urban planners, biologists, geologists, marine scientists, GHG verifiers, sustainability experts, cultural resources experts, data technology experts, and other professionals. Expert witness services consisting of depositions or in-court testimony are charged at the hourly rate of \$400.

Reimbursable Expenses

Direct Cost	Rates
Photocopies – B/W	\$0.25 (single-sided), \$0.45 (double-sided)
Photocopies – Color	\$1.55 (single-sided), \$3.10 (double-sided)
Photocopies – 11" by 17"	\$0.55 (B/W), \$3.40 (color)
Oversized Maps	\$8.50/square foot
Digital Production	\$15/CD, \$20/flash drive
Light-Duty and Passenger Vehicles*	\$90/day
4WD and Off-Road Vehicles*	\$150/day

* Current IRS mileage rate for mileage over 50 and for all miles incurred in employee-owned vehicles.

Direct Costs. Other direct costs associated with the execution of a project, that are not included in the hourly rates above, are billed at cost. These may include, but are not limited to, laboratory and drilling services, subcontractor services, authorized travel expenses, permit charges and filing fees, mailings and postage, performance bonds, sample handling and shipment, rental equipment, and vehicles other than covered by the above charges.

Annual Escalation. Standard rates subject to 3.5% annual escalation, on January 1.

Payment Terms. All fees will be billed to Client monthly and shall be due and payable upon receipt or as indicated in the contract provisions for the assignment. Invoices are delinquent if not paid within 10 days from receipt or per the contractually required payment terms.

Effective January 1, 2025



Equipment	Rate
Environmental Site Assessment	
Soil Vapor Extraction Monitoring Equipment	\$160
Four Gas Monitor	\$137
Flame Ionization Detector	\$110
Photo Ionization Detector	\$82
Hand Auger Sampler	\$62
Water Level Indicator, DC Purge Pump	\$46
CAPDash	\$7,500
Natural Resources Field Equipment	
UAS Drone	\$300
Spotting or Fiberoptic Scope	\$170
Pettersson Bat Ultrasound Detector/Recording Equipment	\$170
Sound Level Metering Field Package (Anemometer, Tripod and Digital Camera)	\$113
GPS (Submeter Accuracy)	\$67
Infrared Sensor Digital Camera or Computer Field Equipment	\$57
Scent Station	\$23
Laser Rangefinder/Altitude	\$11
Pitfall Traps, Spotlights, Anemometer, GPS Units, Sterilized Sample Jar	\$9
Mammal Trap, Large/Small	\$1.55/\$0.55
Water and Marine Resources Equipment	
Boat (20-foot Boston Whaler or Similar)	\$800
Multiparameter Sonde (Temperature, Conductivity, Turbidity, DO, pH) with GPS	\$170
Water Quality Equipment (DO, pH, Turbidity, Refractometer, Temperature)	\$62
Refractometer (Salinity) or Turbidity Meter	\$38
Large Block Nets	\$114
Minnow Trap	\$98
Net, Hand/Large Seine	\$57
Field Equipment Packages	
Standard Field Package (Digital Camera, GPS, Thermometer, Binoculars, Tablet, Safety Equipment, and Botanic Collecting Equipment)	\$114
Remote Field Package (Digital Camera, GPS, Thermometer, Binoculars, Tablet and Mifi, Delorme Satellite Beacon, 24-Hour Safety Phone)	\$144
Amphibian/Vernal Pool Field Package (Digital Camera, GPS, Thermometer, Decon Chlorine, Waders, Float Tube, Hand Net, Field Microscope)	\$170
Fisheries Equipment Package (Waders, Wetsuits, Dip Nets, Seine Nets, Bubbles, Buckets)	\$57
Underwater and Marine Sampling Gear (Photo/Video Camera, Scuba Equipment [Tanks, BCD, Regulators, Wetsuits, etc.])	\$57/diver
Marine Field Package (Personal Flotation Devices, 100-foot Reel Tapes with Stainless Carabiners, Pelican Floats, Underwater Slates, Thermometer, Refractometer, Anemometer, Various Field Guides)	\$100
Insurance, Hazard, and Fees	
Historic Research Fees	\$55
L&H Dive Insurance	\$57/diver
Level C Health and Safety	\$70/person



Rincon Consultants, Inc.
 601 University Avenue, Suite 221
 Sacramento, California 95825
 916-706-1374

June 19, 2025
 Project No: 25-17456

Craig Schlatter, AICP
 Department of Community Development
 City of Ukiah
 300 Seminary Avenue
 Ukiah, California 95482
 Via email: [email address](#)

Subject: Proposal to Add Services for the Ukiah Annexation Project

Dear Mr. Schlatter:

This letter is Rincon Consultants, Inc.'s proposal to add services to our authorized scope of work for the Ukiah Annexation Project. The additional services requested by the City of Ukiah consist of continued GIS support for the proposed annexation. Continued GIS support will also require continued project management. The scope of work for these additional services will be as follows.

Continued GIS Support Services

Rincon will continue to provide GIS support services for the proposed annexation consistent with the scope of work described in the executed contract. Generally, this will include:

- Supporting staff with GIS data management, organization and spatial analysis.
- Creating digital maps for reports and presentations.
- Developing, maintaining, and updating interactive web-based GIS tools, dashboards, and data viewers.
- Providing GIS training and documentation (as it relates to the Annexation project files) for both technical and non-technical users.

Based on a meeting with the City on June 13, 2025, the City will not require Rincon to prepare maps used in the LAFCO process of recording the new City limits with the proposed annexation. These maps require the precision of a land surveyor and design software, such as AutoCAD, which Rincon does not perform. However, Rincon will support this effort by providing GIS layers that are created through the ongoing GIS support work described generally above in the bullet list.

Continued Project Management

Rincon will continue to use email communications and have telephone conversations with City staff, as needed, during the course of the project to ensure clear communication. Rincon will prepare monthly invoices with status reports documenting the progress made each month on completing the project, and review and update the schedule when necessary. Additionally, Rincon will continue to attend ongoing weekly meetings with the City through the end of project, which this scope of work assumes to be approximately 3 months away (i.e., approximately 12 more weekly meetings).

Cost Estimate

The cost for the additional services will be \$23,522, as shown in the table below. This would increase Rincon's authorized budget from \$61,600 to \$85,122.



Task	Staff Hours	Cost Estimate
Continued GIS Support Services	82	\$16,684
Continued Project Management	28	\$6,838
Total Add Services Amount:	110	\$23,522

Thank you for your consideration of this proposal to add services. If you have any questions regarding this proposal, please feel free to contact us.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink that reads "George Dix". The signature is fluid and cursive, with the first and last names clearly distinguishable.

George Dix
Project Manager

A handwritten signature in blue ink that reads "Matt Maddox". The signature is stylized and cursive, with the first and last names clearly distinguishable.

Matt Maddox, AICP, MESM
Principal



AGENDA SUMMARY REPORT

SUBJECT: Approve Plans and Specifications for Remodel of Municipal Services Building Located at 501 South State Street, Specification 25-04, and Direct Staff to Advertise for Bids.

DEPARTMENT: Community
Development

PREPARED BY: Myles Fisette, Purchasing Manager

PRESENTER: Consent Calendar

ATTACHMENTS:

1. Ukiah BofA ADA Barrier Removal_Issue for Bid_DWGS
2. Spec 25-04 Remodel of 501 South State Street - Draft
3. Ukiah BofA Cost Estimate

Summary: Council will consider approving the revised plans and specifications for the remodel of the municipal services building located at 501 South State Street, Specification 25-04. Council will also consider directing Staff to advertise for bids for the project.

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.

Discussion: Council previously approved the plans and specifications for this project on January 15, 2025, under Specification 25-01. The bidding process identified multiple items that needed further clarification or more defined specifications. The decision was made to cancel the bid and reissue it at a later date under a new specification number. The revised plans include minor design modifications and incorporate responses to addendum questions from the initial bid process.

The design services for the Phase 2 remodel of the building at 501 South State Street included architectural and engineering design for all upgrades and improvements to make the site ready to serve as the City's future Customer Service Center. See Attachments 1 and 2 for plans and technical specifications. The engineer's estimate for the work, provided in Attachment 3, is \$3,776,071, which includes a 10% contingency. Staff and design professionals expect that bids received will be less than the engineer's estimate.

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.

Staff recommends Council adopt the revised plans and specifications and authorize Staff to advertise for bids. Note: award of bid will require Council approval. If the project does not come in at an acceptable price point, Council will also have the option to reject bids and consider Staff recommendations and/or provide additional direction on how to proceed.

Recommended Action: Approve plans and specifications for remodel of the municipal services building at 501 South State Street, Specification 25-04, and direct Staff to advertise for bids.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

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

BANK OF AMERICA ADA BARRIER REMOVAL



CITY OF UKIAH
BANK OF AMERICA
ADA BARRIER REMOVAL
501 South State St. Ukiah, CA 95482

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

COVER SHEET

Sheet Number:

G000

PROJECT DESCRIPTION:

THE BUILDING AND SITE LOCATED AT 501 SOUTH STATE STREET, UKIAH, CA 95501 IS TO UNDERGO REMODELING CENTERED AROUND ADA BARRIER REMOVAL AND ASSOCIATED UPGRADES.

THE SCOPE OF WORK IS TO INCLUDE:

- NEW ACCESSIBLE TOILET ROOMS
- NEW ACCESSIBLE DRINKING FOUNTAINS
- NEW ACCESSIBLE ELEVATOR
- NEW ACCESSIBLE FIRE EXTINGUISHERS
- NEW ACCESSIBLE SERVICE COUNTER
- NEW ACCESSIBILITY SIGNAGE
- NEW ACCESSIBLE PARKING STALLS
- NEW ACCESSIBLE EXTERIOR RAMP
- NEW ACCESSIBLE STAFF SINK
- NEW SEWER LATERAL
- RECONFIGURED ACCESSIBLE DOORWAYS, DOORS, AND HARDWARE
- NEW EXIT EGRESS INTERIOR STAIRWAY
- REPAIRS TO UNEVEN FLOORING SURFACES

DEFERRED SUBMITTAL & DELEGATED DESIGN:

- NON-STRUCTURAL SEISMIC SUPPORTS
- CONSTRUCTION WASTE MANAGEMENT PLAN PER CGBSC SECTION 5.408.1
- FIRE ALARM SYSTEM PER NFPA 72

RESPONSIBILITY LIST:

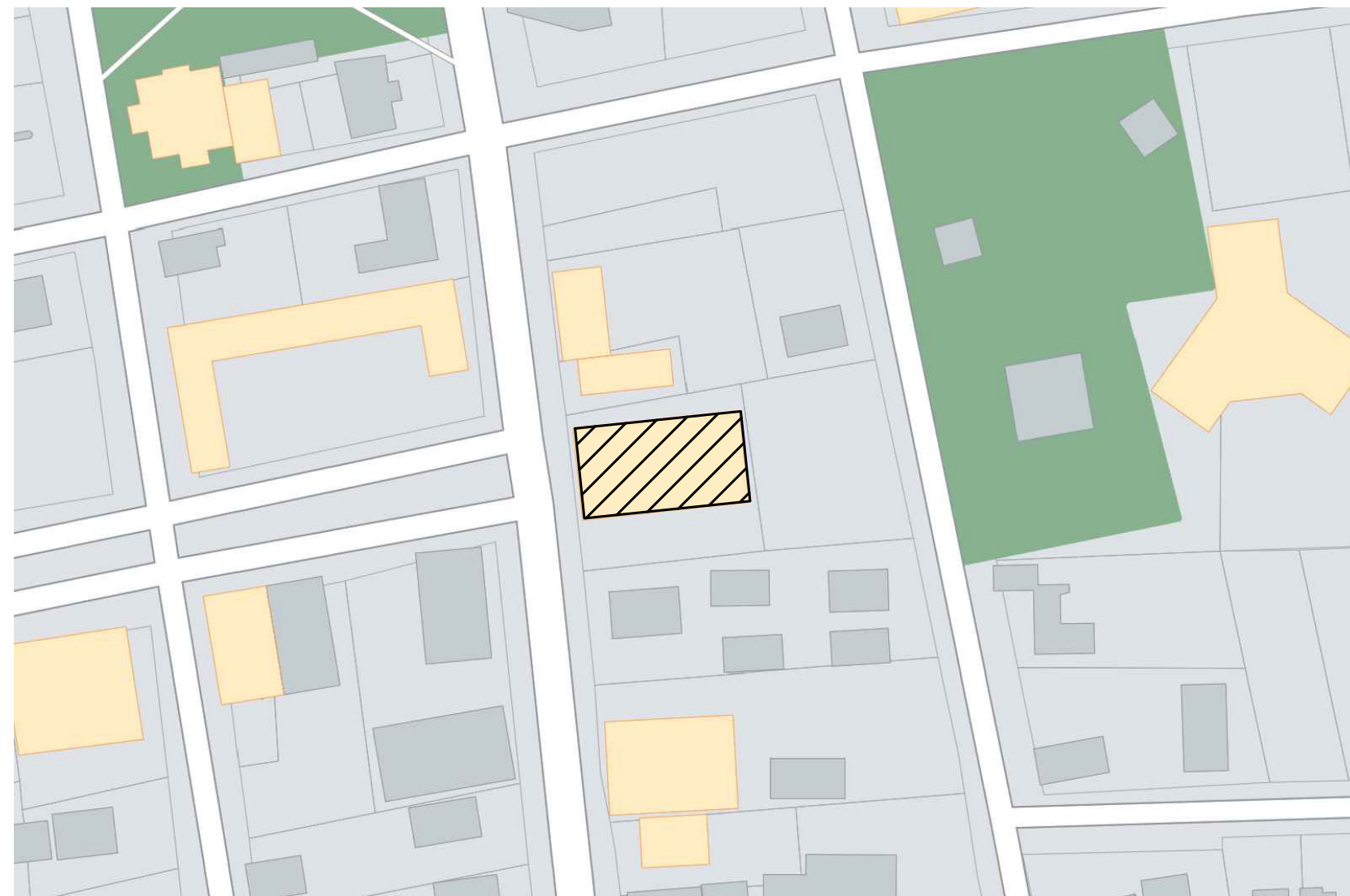
- ACQUIRE 24/7 ELEVATOR MONITORING SERVICE BY OWNER.
- PROVIDE INTERNET ACCESS FOR ELEVATOR BY OWNER.
- REMAINING BALANCE OF PROJECT WORK TO BE PERFORMED BY GENERAL CONTRACTOR.

ABBREVIATIONS:

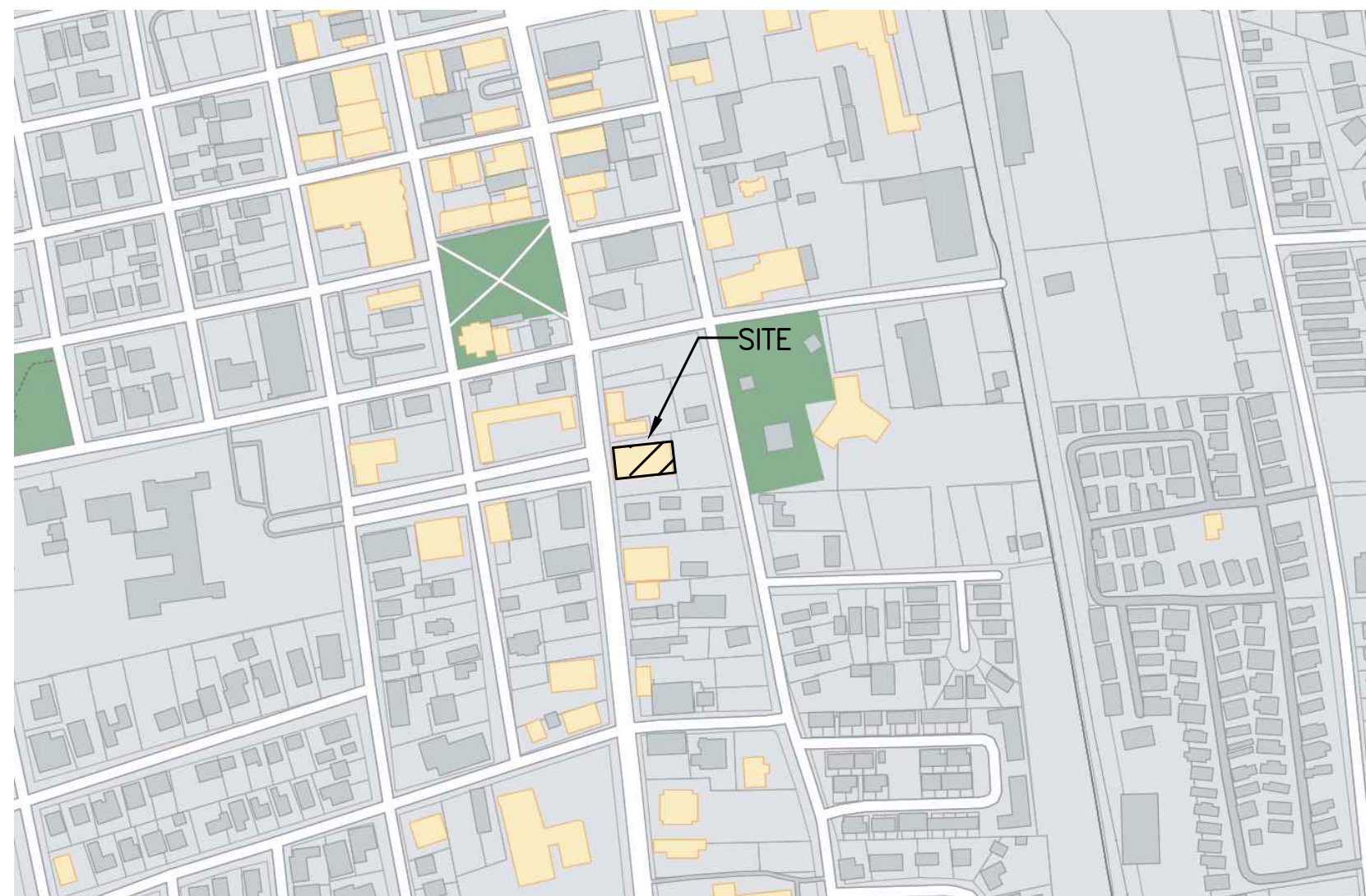
⊙	AT	LAM.	LAMINATE(d)
⊙	CENTERLINE	LB, LBS.	POUND(S)
⊙	DIAMETER OR ROUND	LOC.	LOCATION
#	POUND OR NUMBER	LONG.	LONGITUDINAL
+	WORKING POINT	LT.	LIGHT
"	INCH		
'	FOOT OR FEET		
ABI #	ADDITIVE ALTERNATE BID ITEM (ADD ALT)	MAINT.	MAINTENANCE
ACT	ACOUSTICAL CEILING TILE	MAX.	MAXIMUM
ADA	AMERICANS WITH DISABILITIES ACT	MECH.	MECHANICAL
ADJ.	ADJACENT	MTL.	METAL
A.F.F.	ABOVE FINISH FLOOR	MFR.	MANUFACTURER
ARCH.	ARCHITECTURAL/ARCHITECT	MIN.	MINIMUM
		MISC.	MISCELLANEOUS
		MNTG.	MOUNTING
		(N)	NEW
BLDG.	BUILDING	N	NORTH
BOT.	BOTTOM	N/A	NOT APPLICABLE or NOT AVAILABLE
B.O.	BOTTOM OF	N.I.C.	NOT IN CONTRACT
BTWN.	BETWEEN	NO.	NUMBER
		N.T.S.	NOT TO SCALE
CBC	CALIFORNIA BUILDING CODE	O.C.	ON CENTER
CFCI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	O.D.	OUTSIDE DIAMETER
CFOI	CONTRACTOR FURNISHED/OWNER INSTALLED	OFCl	OWNER FURNISHED/CONTRACTOR INSTALLED
		OFOI	OWNER FURNISHED/OWNER INSTALLED
CLG.	CEILING	O.H.	OPPOSITE HAND
CLR.	CLEAR	OPNG.	OPENING
COL.	COLUMN	OPP.	OPPOSITE
CONC.	CONCRETE		
CONT.	CONTINUOUS		
		P.A.F.	POWDER ACTUATED FASTENER
d	PENNY (NAIL SIZE)	PERP.	PERPENDICULAR
DEMO	DEMOLITION	P.I.V.	POST INDICATOR VALVE
DET.	DETAIL	PL	PLATE
DIA.	DIAMETER	PLYWD.	PLYWOOD
DIAG.	DIAGONAL	PSF	POUNDS PER SQUARE FOOT
DIM(S)	DIMENSION(S)	P.T.	PRESSURE TREATED
DWG(S)	DRAWINGS		
		QTY.	QUANTITY
(E)	EXISTING		
EA.	EACH	R	RADIUS
E.F.	EACH FACE	R.C.P.	REFLECTED CEILING PLAN
EFTR	EXISTING FINISH TO REMAIN	REINF.	REINFORCED/REINFORCING
ELEC.	ELECTRICAL	REQ'D	REQUIRED
ELEV.	ELEVATION	REV	REVISION
ENG.	ENGINEER	RM.	ROOM
EQ.	EQUAL		
EQUIP.	EQUIPMENT	S.A.D.	SEE ARCHITECTURAL DWGS
ETR.	EXISTING TO REMAIN	SDI	STORM DRAIN INLET
EXT.	EXTERIOR	S.E.D.	SEE ELECTRICAL DWGS
EXP.	EXPOSED	SF.	SQUARE FOOT
		SIM.	SIMILAR
F.E.C.	FIRE EXTINGUISHER CABINET	S.M.D.	SEE MECHANICAL DRAWINGS
F.F.	FINISH FLOOR	SMS	SHEET METAL SCREW
F.O.F.	FACE OF FINISH	S.P.D.	SEE PLUMBING DWGS
FT.	FOOT OR FEET	SPEC.	SPECIFICATION
FURR.	FURRING	STL.	STEEL
		STRUCT.	STRUCTURE/STRUCTURAL
		SUSP.	SUSPEND(ED)
GA.	GAUGE OR GAGE	T&B	TOP & BOTTOM
GALV.	GALVANIZED	THRU	THROUGH
CG.	CORNER GUARD	T.O.C.	TOP OF CONCRETE
GL.	GLASS or GLAZED	T.O.S.	TOP OF STEEL
GR.	GRADE	TYP.	TYPICAL
G.S.M.	GALVANIZED SHEET METAL		
		U.L.	UNDERWRITER'S LABORATORY
H.M.	HOLLOW METAL	U.O.N.	UNLESS OTHERWISE NOTED
HR.	HOUR	U.N.O.	UNLESS NOTED OTHERWISE
HT.	HEIGHT		
H.V.A.C.	HEATING/VENTILATING /AIR CONDITIONING	V.I.F.	VERIFY IN FIELD
IN.	INCHES	W/	WITH
INFO	INFORMATION	WD.	WOOD
INSUL.	INSULATION	W/O	WITHOUT
INT.	INTERIOR	W.R.B.	WEATHER RESISTIVE BARRIER
JT.	JOINT		

AREA MAPS:

PROJECT LOCATION



LOCAL VICINITY MAP



SHEET INDEX:

GENERAL	
G000	COVER SHEET
G001	SHEET INDEX, ABBREVIATIONS, AND LEGEND
G002	GENERAL NOTES
G003	GENERAL NOTES
G004	ACCESSIBILITY PLAN
G005	CODE COMPLIANCE
G006	ELEVATOR
CIVIL	
CD101	SITE DEMOLITION PLAN
CD501	EXISTING SITE PHOTOS
C101	SITE PLAN
C102	SITE UTILITY PLAN
C401	ENLARGED SITE PLAN
C402	ENLARGED SITE UTILITY PLANS AND DETAILS
C501	SITE DETAILS
C502	SITE DETAILS
C503	SITE DETAILS
C504	SITE DETAILS
STRUCTURAL	
S101	FOUNDATION AND FRAMING PLANS
S102	STRUCTURAL FIRST FLOOR PLAN
S501	DETAILS
S502	DETAILS
S503	DETAILS
ARCHITECTURAL	
AD101	FIRST AND SECOND FLOOR DEMOLITION PLANS
AD111	FIRST AND SECOND FLOOR DEMOLITION REFLECTED CEILING PLANS
A101	FIRST FLOOR PLAN
A102	SECOND FLOOR PLAN
A103	ROOF PLAN
A111	FIRST FLOOR REFLECTED CEILING PLAN
A112	SECOND FLOOR REFLECTED CEILING PLAN
A210	INTERIOR ELEVATIONS
A301	SECTIONS AND DETAILS
A302	BUILDING SECTIONS
A303	BUILDING SECTIONS
A401	ENLARGED FLOOR PLANS
A402	ENLARGED TOILET ROOM PLANS AND TYPICAL MOUNTING HEIGHTS
A501	DETAILS
A511	PARTITION TYPES
A512A	TYPICAL WOOD FRAMING DETAILS
A512B	TYPICAL WOOD FRAMING DETAILS
A513	TYPICAL CEILING DETAILS
A514	MILLWORK COUNTER PLAN AND ELEVATIONS
A515	MILLWORK PLANS, ELEVATIONS AND DETAILS
A516	MILLWORK COUNTER DETAILS
A601	FINISH SCHEDULE
A602	DOOR SCHEDULE
A603	DOOR DETAILS
A604	DOOR/MISC. DETAILS
A605	WINDOW TYPES AND DETAILS
A606	FIRST FLOOR SIGNAGE PLAN
A607	SECOND FLOOR SIGNAGE PLAN
A608	SIGNAGE PLAN SCHEDULE, AND DETAILS
A901	FIRST FLOOR FURNITURE PLAN (FOR REFERENCE ONLY)
A902	SECOND FLOOR FURNITURE PLAN (FOR REFERENCE ONLY)

FIRE PROTECTION	
FP101	FIRST AND SECOND FLOOR FIRE PROTECTION PLANS

PLUMBING	
P001	PLUMBING DETAILS AND LEGENDS
P002	PLUMBING SCHEDULES
PD101	FIRST AND SECOND FLOOR PLUMBING DEMOLITION
P101	UNDERSLAB PLUMBING PLAN
P102	FIRST FLOOR PLUMBING PLAN
P103	SECOND FLOOR PLUMBING PLAN
P104	SECOND FLOOR DWV PLUMBING PLAN

MECHANICAL	
M001	MECHANICAL LEGENDS
M002	MECHANICAL DETAILS AND SCHEDULES
M101	FIRST FLOOR MECHANICAL PLAN
M102	SECOND FLOOR MECHANICAL PLAN
M103	ROOF MECHANICAL PLAN

ELECTRICAL	
E000	ELECTRICAL LEGEND, GENERAL NOTES AND SCHEDULES
ES100	SITE PLAN - ELECTRICAL
ED100	FIRST AND SECOND FLOOR PLAN - ELECTRICAL DEMOLITION
E100	FIRST AND SECOND FLOOR PLAN - LIGHTING
E200	FIRST AND SECOND FLOOR PLAN - POWER/SYSTEMS
E201	ROOF PLAN POWER
E300	ELECTRICAL DETAILS
E400	PANEL SCHEDULES

PROJECT TEAM:

OWNER:	ARCHITECT/STRUCTURE/CIVIL:
CITY OF UKIAH 300 SEMINARY AVENUE UKIAH, CA 95482	THE KPA GROUP 6700 KOLL CENTER PARKWAY, STE 125 PLEASANTON, CA 94566
ELECTRICAL:	MECHANICAL/PLUMBING:
KEITH PHARIS ENGINEERING 7110 AUSTINWOOD ROAD LOUISVILLE, KY 40214	MORRISON-MAIERLE 315 N. 25TH ST. SUITE 102 KALISPELL MT OFFICE, 59101

LEGEND:

NORTH 	NORTH DIRECTION CENTERLINE/GRIDLINE		ALIGN		SITE PHOTO
18/A600	DETAIL # SHEET NAME	0000	ROOM NAME & ROOM NUMBER		DETAIL CUT
5 S.3	DETAIL NUMBER SHEET WHERE DETAIL OCCURS	A1	DOOR NUMBER		CEILING FINISH TAG
	BUILDING SECTION		PARTITION TYPE, SEE SHEET A511		WINDOW TYPE TAG
	KEYED NOTE		PLAN/DETAIL CALLOUT		REVISION NUMBER
	WORK POINT, DATUM, ELEVATION				EXTENT OF REVISION

KPA ENGINEERS
ARCHITECTS
THE KPA GROUP
1840 Fourth Street, 2nd Floor
Livermore, CALIFORNIA 94550
TEL 925.223.8217 www.thekpagroup.com
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CITY OF UKIAH
BANK OF AMERICA
ADA BARRIER REMOVAL
501 South State St. Ukiah, CA 95482

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SHEET INDEX,
ABBREVIATIONS,
AND LEGEND

Sheet Number:

G001

GENERAL NOTES:

1.

THE CONTRACTOR SHALL BE IN RECEIPT OF APPROVED PLANS PRIOR TO BIDDING AND CONSTRUCTION. A SET OF SIGNED PLANS AND A SET OF SPECIFICATIONS WILL BE KEPT AT ALL TIMES AT THE JOB SITE ON WHICH ALL CHANGES OR VARIATIONS IN THE WORK, INCLUDING ALL EXISTING UTILITIES, ARE TO BE RECORDED AND/OR CORRECTED DAILY AND SUBMITTED TO THE ENGINEER WHEN THE WORK TO BE DONE IS COMPLETED ("AS-BUILTS").
2.

THE CONTRACTOR SHALL POSSESS THE CLASS OR CLASSES OF LICENSE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3.

A COMPONENT IN ONE CONTRACT PART APPLIES AS IF APPEARING IN EACH. THE PLANS AND SPECIFICATIONS PARTS ARE COMPLEMENTARY AND DESCRIBE AND PROVIDE FOR A COMPLETE WORK. IF A DISCREPANCY IS FOUND OR CONFUSION ARISES, REQUEST CORRECTION OR CLARIFICATION IN WRITING. ANY DEVIATION FROM THE APPROVED PLANS AND SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER AND ALL CHANGES SHALL BE BY WRITTEN PERMISSION ONLY.
4.

ALL WORK SHALL BE IN ACCORDANCE WITH THE PLANS, DETAILS AND SPECIFICATIONS PREPARED FOR THE PROJECT. ANY DEVIATION FROM APPROVED PLANS DURING CONSTRUCTION WILL REQUIRE 48 HOURS PRIOR WRITTEN NOTICE TO AND SUBJECT TO THE APPROVAL OF THE CITY. ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO THESE PLANS, THE LATEST CALIFORNIA BUILDING, PLUMBING AND ELECTRICAL CODES, THE NAPA COUNTY ROAD AND STREET STANDARDS, THE CONTRACT SPECIFICATIONS FOR THIS PROJECT, THE LATEST EDITION CALTRANS STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED, INSOFAR AS THEY MAY APPLY.
5.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD THE CITY AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
6.

CONTRACTOR SHALL CONTACT THE CITY ENGINEER, OR HIS/HER DESIGNEE, TO ARRANGE A PRE-CONSTRUCTION CONFERENCE FOR THE PURPOSE OF REVIEWING JOB REQUIREMENTS AND CITY PROCEDURES.
7.

CONTRACTOR SHALL PROVIDE A CONSTRUCTION SCHEDULE AT THE PRE- CONSTRUCTION CONFERENCE, NO LESS THAN 2 WEEKS PRIOR TO THE START OF WORK.
8.

CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OR HIS/HER DESIGNEE, AT LEAST 72 HOURS IN ADVANCE OF COMMENCEMENT OF ANY PART OF THE WORK.
9.

CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT TEMPORARY BARRICADES TO PROVIDE FOR THE SAFETY OF THE STAFF AND PUBLIC TO THE SATISFACTION OF THE ENGINEER.
10.

CONTRACTOR SHALL VERIFY LOCATIONS, LEVELS, DISTANCES, AND FEATURES THAT MAY AFFECT THE WORK. SHOULD EXISTING CONDITIONS DIFFER FROM THOSE SHOWN OR INDICATED IN THESE PLANS, STANDARD SPECIFICATIONS, AND SPECIAL PROVISIONS, OR IF IT APPEARS THAT THESE PLANS, STANDARD SPECIFICATIONS, AND SPECIAL PROVISIONS DO NOT ADEQUATELY DETAIL THE WORK TO BE DONE, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WITH ANY RELATED WORK. NO ALLOWANCE WILL BE MADE IN THE CONTRACTOR'S BEHALF FOR ANY EXTRA EXPENSE RESULTING FROM FAILURE OR NEGLECT IN DETERMINING THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE.
11.

ALL MATERIALS SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
12.

CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING STRUCTURES AND UTILITIES DURING CONSTRUCTION.
13.

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL AND/OR ERECT THE CONSTRUCTION AS REQUIRED TO PROPERLY COMPLETE THE WORK. MISCELLANEOUS ITEMS OF WORK, MATERIAL, EQUIPMENT, ETC. NECESSARY TO COMPLETE THE INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR WHETHER OR NOT MENTIONED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS.
14.

CONTRACTOR SHALL PROVIDE FOR INGRESS AND EGRESS TO MAINTAIN A FUNCTIONAL SHELTER THROUGHOUT THE PERIOD OF CONSTRUCTION.
15.

WORK SHALL NOT INTERFERE WITH SHELTER OPERATIONS. WORK SHALL BE PHASED PER PLAN.

16.

CONTRACTOR SHALL PROPERLY COORDINATE HIS WORK WITH THE WORK UNDER OTHER CONTRACTS THAT MAY BE UNDERWAY CONCURRENTLY WITH THIS PROJECT.
17.

REFER TO THE CIVIL UTILITY PLANS AND OTHER DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND WORK. UTILITY AND SERVICE MODIFICATION AND ROUTING MAY EXTEND OUTSIDE THE BOUNDARY OF THE LIMIT OF PROJECT WORK. CONTRACTOR SHALL INCLUDE IN BID ALL COSTS AND MATERIALS ASSOCIATED WITH UTILITY AND SERVICE WORK OUTSIDE LIMIT OF PROJECT WORK BOUNDARY.
18.

PROPERLY DIVERT EXISTING STORMWATER STRUCTURES, DOWNSPOUTS, AND RAINWATER LEADER DURING CONSTRUCTION.
19.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF ANY DIFFERENCES IN LOCATIONS OF EXISTING UTILITIES FROM THAT SHOWN, OR ANY CONFLICTS WITH THE DESIGN BEFORE CONTINUING WORK IN THAT AREA.
20.

ALL REVISIONS TO THESE DOCUMENTS SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION AND SHALL BE ACCURATELY REPRESENTED IN REVISED PLANS PRIOR TO THE ACCEPTANCE OF THE WORK AS COMPLETE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE CITY.
21.

THE CONTRACTOR SHALL PROVIDE PROMPT, WRITTEN NOTIFICATION TO CITY'S REPRESENTATIVE CONCERNING CONFLICTS WITH, OR RECOMMENDED DEVIATIONS FROM CODES, LAWS, REGULATIONS, STANDARDS, AND OPINIONS OF REVIEW OFFICIALS AS DESCRIBED ABOVE.
22.

ALL MONUMENTS SHOWN HEREON MUST BE PROTECTED PER STATE LAND SURVEYORS STANDARD SPECIFICATION SECTION. NOTIFY THE CITY'S REPRESENTATIVE TO REPORT ANY MONUMENTS IN DANGER OF DESTRUCTION OR REMOVAL. MONUMENTS AND SURVEY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AND A CORNER RECORD FILED WITH THE CITY SURVEYOR'S OFFICE AT THE CONTRACTOR'S EXPENSE.
23.

CONTRACTOR SHALL SATISFY HIM/HERSELF AS TO THE CORRECTNESS OF THE EXISTING TOPOGRAPHY AND OTHER SITE CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY AND OBTAIN WRITTEN APPROVAL FROM THE CITY OF UKIAH IF ANY DISCREPANCIES, REVISIONS, AND ADDITIONAL WORK THAT IS REQUIRED AS A RESULT OF SUCH FIELD INVESTIGATION PRIOR TO BEGINNING ANY WORK.
24.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN PERMITS NECESSARY TO PERFORM THE WORK SHOWN IN THESE DRAWINGS FROM THE APPROPRIATE AGENCIES.
25.

SAFETY OF PERSONNEL AND PROPERTY DURING DEMOLITION AND EXCAVATION WORK IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. ONLY THE EXTENT OF THE WORK IS INDICATED; AND NOT THE METHOD, SEQUENCE, OR SAFETY PROCEDURES AND CONSIDERATIONS. REVIEW OF THE CONTRACTOR'S SUBMITTALS IS NOT INTENDED TO RELIEVE HIM/HER OF ANY OF THE ABOVE RESPONSIBILITY.
26.

THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY.
27.

THE NOISE LEVEL OF THE CONTRACTOR'S OPERATING SHALL BE KEPT TO A MINIMUM AS PER LOCAL STANDARDS.
28.

THE CONTRACTOR SHALL EMPLOY MEANS NECESSARY TO CONTROL DUST AT AND NEAR THE SITE OF WORK AND ALONG APPROACH ROUTES TO THE CONSTRUCTION SITE. ADJACENT STREETS ARE TO BE CLEANSED DAILY OF DIRT AND DEBRIS THAT ARE THE RESULT OF OPERATION. CONTROL DUST AS NEED DICTATES.
29.

DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS. AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION, THE CONTRACTOR, OR SUBCONTRACTOR OPERATING EQUIPMENT ON THE SITE, SHALL PREVENT THE FORMATION OF ANY AIRBORNE NUISANCE BY WATERING AND/OR TREATING THE SITE OF THE WORK IN SUCH A MANNER THAT WILL CONFINE DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGED CAUSED BY CONTRACTOR OR HIS SUBCONTRACTOR ACTIVITIES IN PERFORMING THE WORK UNDER THIS CONTRACT AND SHALL BE RESPONSIBLE FOR ANY CITATIONS, FINES OR CHARGES RESULTING FROM DUST NUISANCE.
30.

THE CONTRACTOR SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

A.

WATERING OR COVERING OF STOCKPILES OF DEBRIS, SOIL, SAND OR OTHER MATERIALS THAT CAN BE BLOWN BY WIND

B.

COVER ALL TRUCKS HAULING SOIL, SAND AND OTHER LOOSE, MATERIALS OR ALL TRUCKS SHALL MAINTAIN TWO FEET CLEAR, BETWEEN HAULED MATERIALS AND THE TOP OF THE TRUCK BED

31.

IF ANY CULTURAL FEATURES OR ARCHEOLOGICAL MATERIALS ARE UNCOVERED DURING GRADING, TRENCHING OR OTHER EXCAVATION WORK ALL WORK WITHIN 100 FEET OF THESE MATERIALS SHALL BE STOPPED UNTIL A PROFESSIONAL ARCHEOLOGIST (SOPA) AND/OR THE SOCIETY OF CALIFORNIA ARCHEOLOGY (SCA) HAS HAD THE OPPORTUNITY TO EVALUATE THE SIGNIFICANCE OF THE FIND APPROPRIATE MITIGATION MEASURES HAVE BEEN DETERMINED AND IMPLEMENTED THE CONTRACTOR SHALL ALSO IMMEDIATELY NOTIFY THE CITY'S REPRESENTATIVE.
32.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE CALIFORNIA STORM WATER CONSTRUCTION BMP HANDBOOK. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING STORM WATER BMP's AND MAINTAINING THEM DURING CONSTRUCTION AS REQUIRED.
33.

THE CONTRACTOR SHALL MEET AND FOLLOW ALL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM REQUIREMENTS IN EFFECT AT THE TIME OF CONSTRUCTION.
34.

CONTRACTOR SHALL MAINTAIN GOOD HOUSEKEEPING PRACTICES AT THE JOB SITE. EXCESS BUILDING MATERIALS AND DEBRIS SHALL BE REMOVED PROMPTLY FROM THE JOB SITE AND DISPOSED OF AT AN APPROVED DUMPSITE. THE JOB SITE SHALL BE LEFT CLEAN AT THE END OF EACH WORKDAY.
35.

THE CONTRACTOR MUST MAINTAIN THE STREETS, SIDEWALKS, AND ANY OTHER PUBLIC & PRIVATE RIGHTS-OF-WAY IN A CLEAN, SAFE, AND USABLE CONDITION. ANY SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS MUST BE REMOVED AND SWEEP CLEAN FROM THE PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT.
36.

CONSTRUCTION OPERATIONS – WASTEWATER GENERATED DURING CONSTRUCTION SHALL NOT BE DISCHARGED TO THE STORM DRAIN SYSTEM. THIS INCLUDES WASTE FROM PAINTING, SAWCUTTING, CONCRETE WORK, ETC. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO ELIMINATE DISCHARGE TO THE STORM DRAIN SYSTEM AND, IF NECESSARY, PROVIDE AN AREA FOR ON-SITE WASHING ACTIVITIES DURING CONSTRUCTION. MATERIALS, WHICH COULD CONTAMINATE STORM RUNOFF, SHALL BE STORED IN AREAS WHICH ARE DESIGNED TO PREVENT EXPOSURE TO RAINFALL AND NOT ALLOW STORM WATER TO RUN ONTO THE AREA.
37.

FLUSHING OF STREETS AND PARKING LOTS TO REMOVE DIRT AND CONSTRUCTION DEBRIS IS PROHIBITED UNLESS PROPER SEDIMENT CONTROLS ARE USED. PREFERABLY, AREAS REQUIRING CLEANING SHOULD BE SWEPT.
38.

CONTRACTOR SHALL PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CITY OF UKIAH. BARRICADES, SIGNS, LIGHTS, ETC., REQUIRED FOR THE PROTECTION OF PERSONNEL, THE PUBLIC PROPERTY AND MATERIAL SHALL BE PROVIDED FOR AND MAINTAINED DURING CONSTRUCTION BY THE CONTRACTOR, AND SHALL CONFORM TO ALL GOVERNING CODES, ORDINANCES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF PUBLIC AND PRIVATE IMPROVEMENTS/FACILITIES DAMAGED BY OPERATIONS INCLUDING BUT NOT LIMITED TO MONUMENTS, BENCHMARKS, AC PAVEMENT, PAVEMENT MARKINGS, TRAFFIC STRIPING AND SIGNAGE, TRAFFIC LOOPS, EXISTING FIBER OPTIC, EXISTING SEWER MAINS ETC.
39.

THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UTILITIES AS SHOWN ON DRAWINGS ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. ONLY ACTUAL DEMOLITION WILL REVEAL THE TYPES, EXTENT, SIZES AND LOCATIONS OF SUCH UTILITIES.
40.

ALL UNDERGROUND UTILITIES SHALL BE COMPLETE BEFORE PLACING OF BASE ROCK UNLESS OTHERWISE NOTED.
41.

ALL KNOWN EXISTING UTILITY LINES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL EXERCISE ALL NECESSARY CAUTION TO AVOID DAMAGE TO ANY EXISTING UTILITY LINES OR FACILITIES TO REMAIN IN PLACE, WHETHER OR NOT SUCH LINES OR FACILITIES ARE SHOWN ON THESE PLANS, AND SHALL BEAR FULL RESPONSIBILITY FOR ANY DAMAGE THERETO. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH. NEITHER THE CITY OF UKIAH NOR THE DESIGN TEAM ASSUMES RESPONSIBILITIES THAT EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THOSE ENCOUNTERED. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL NOTIFY AN UNDERGROUND UTILITY LOCATING COMPANY HIRED BY THE CONTRACTOR FIVE (5) WORKING DAYS IN ADVANCE OF CONSTRUCTION TO FIELD LOCATE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION ALL WORK SHALL BE BORNE BY THE CONTRACTOR.

42.

CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK TO AVOID CONFLICTS BETWEEN SEWER, STORM DRAINS, WATER, GAS, STEAM AND ELECTRICAL MAINS. THE GENERAL CONTRACTOR SHALL EMPLOY A UTILITY AND SERVICE LOCATOR APPROVED BY THE CITY OF UKIAH IN LOCATING BURIED UTILITIES AND SERVICES AT (AND IN THE VICINITY OF) THE PROJECT.
43.

CONTRACTOR IS RESPONSIBLE FOR HAVING EXISTING GAS LINES, POWER LINES, WATER LINES, SEWER LINES, COMMUNICATION LINES, CABLE, ELECTRICAL LINES, ETC. DISCONNECTED AND RELOCATED AS NECESSARY. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (U.S.A.) AT (800) 227- 2600 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, FOR MARK OUTS OF EXISTING UNDERGROUND FACILITIES. CONTRACTOR SHALL COORDINATE WORK WITH UTILITY COMPANIES.
44.

UTILITIES OR SERVICES TEMPORARILY REMOVED OR DISCONNECTED IN ORDER TO PERFORM THE WORK SHALL BE REBUILT OR REPLACED TO MATCH THE (E) CONDITION PRIOR TO THEIR REMOVAL AND REINSTALLATION. SUCH WORK SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF UKIAH.
45.

UTILITY CONNECTIONS AND DISCONNECTIONS NECESSARY TO COMPLETE THE WORK WILL BE PERFORMED IN SUCH MANNER IN ORDER TO MINIMIZE UTILITY SERVICE INTERRUPTIONS TO FACILITY OPERATIONS IN THE VICINITY OF CONSTRUCTION. THE CONTRACTOR WILL COORDINATE ALL UTILITY INTERRUPTIONS DURING ALL PHASES OF CONSTRUCTION WITH THE CITY'S REPRESENTATIVE. COORDINATE ALL "DOWN TIME" WITH THE CITY OF UKIAH.
46.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF ANY DIFFERENCES IN LOCATIONS OF EXISTING UTILITIES FROM THAT SHOWN, OR ANY CONFLICTS WITH THE DESIGN BEFORE CONTINUE WORK IN THAT AREA.
47.

ALL EXCAVATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH CAL OSHA REQUIREMENTS.
48.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE ALL MATERIAL AND LABOR REQUIRED WITHIN THE BID PRICE, FOR EARTHWORK CONSTRUCTION, TO CARRY OUT THE CUT/FILL AND/OR IMPORT/EXPORT AS NECESSARY TO MEET THE DESIGN GRADES SHOWN ON THE PLANS. CONTRACTOR IS TO DELIVER TO THE CITY OF UKIAH THE PROJECT IN A COMPLETE AND OPERATIONAL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY INVESTIGATION OR STUDIES THAT ARE REQUIRED BY THE CONTRACTOR TO SATISFY THIS REQUIREMENT. NO ADDITIONAL COMPENSATION SHALL BE PAID FOR SAID CUT/FILL AND/OR IMPORT/EXPORT.
49.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH STATE AND LOCAL LAWS AND MEASURES.
50.

ADJUSTMENTS SHALL BE MADE TO CONSTRUCTION PHASING PLAN AS NECESSARY TO WORK WITH THE CONSTRUCTION PHASING OF THE PROJECT. SUBMIT PHASING PLAN TO THE CITY OF UKIAH FOR APPROVAL.
51.

THE CONTROL PLAN MAY NOT COVER ALL THE SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS AND ADDITIONS MAY BE MADE BY THE CONTRACTOR TO THIS PLAN WITH APPROVAL BY THE CITY.
52.

VACUUM, DUST, SWEEP AND REMOVE DEBRIS DAILY.
53.

ANY NOISE CAUSED BY CONSTRUCTION (INCLUDING BUT NOT LIMITED BY DEMOLITION, DRYWALL INSTALLATION AND OTHER DISRUPTIVE PORTIONS OF WORK) SHOULD NOT EXCEED OSHA's PERMISSIBLE EXPOSURE LIMIT (PEL) FOR NOISE DURING THE HOURS OF 7:00 AM TO 5:00 PM MONDAY THROUGH FRIDAY. ANY CONSTRUCTION WORK EXCEEDING OSHA NOISE THRESHOLD SHOULD BE DONE DURING OFF HOURS INCLUDING WEEKENDS, HOLIDAYS, EVENINGS AND NIGHTS.
54.

COORDINATE ANY NECESSARY ELECTRICAL OR OTHER SYSTEM SHUTDOWN WITH THE CITY OF UKIAH AT LEAST 30 DAYS IN ADVANCE. PROVIDE ALL NECESSARY LIFE SAFETY, SECURITY AND MONITORING DURING SHUTDOWN.
55.

PROTECT ALL EXISTING ITEMS AND FINISHES TO REMAIN FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
56.

PROTECT COUNTY AND SHELTER PROPERTY, DESKS, OFFICE PAPERS AND EQUIPMENT. INSTALL PLASTIC DUST COVERING TO KEEP AREA CLEAN.
57.

PROTECT EXISTING TREES AND VEGETATION TO REMAIN. EXISTING VEGETATION SHALL BE REMOVED ONLY AS DIRECTED BY THE CITY'S REPRESENTATIVE.
58.

PROTECT EXISTING WATER VALVE, IRRIGATION WIRING, UTILITIES, COMMUNICATION AND OTHER SITE ATTRIBUTES AS REQUIRED DURING DEMOLITION AND NEW CONSTRUCTION.

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GENERAL NOTES

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G002

GENERAL NOTES:

59. REPLACE ALL (E) ITEMS TO REMAIN THAT ARE DAMAGED/REMOVED BY CONSTRUCTION ACTIVITIES, AT NO ADDITIONAL COST TO CITY OF UKIAH.
60. PROVIDE ANY NECESSARY OFF–SITE STORAGE AND STAGING.
61. MAINTAIN 6’–0” HIGH CONSTRUCTION BARRIERS (FENCE WITH VISUAL CONTROLS) AT ALL TIMES. ALL CONSTRUCTIONS BARRIERS ARE DIAGRAMMATIC. ADJUST LOCATION AND CONFIGURATION OF CONSTRUCTION BARRIERS DURING PROJECT AS NECESSARY. PROVIDE ADEQUATE SAFETY BARRICADES AT NO ADDITIONAL COST TO CITY OF UKIAH.
62. MAINTAIN FREE AND UNOBSTRUCTED PATHWAYS AND DESIGNATE ALTERNATE PATHWAY WHEN REQUIRED.
63. CONTRACTOR IS RESPONSIBLE FOR FINAL CONSTRUCTION PHASING SEQUENCE.
64. SEE SPECIFICATIONS FOR WORK HOURS. VERIFY HOURS WITH CITY STAFF AT THE PRECONSTRUCTION MEETING.
65. ALL WORK SHALL BE IN ACCORDANCE WITH THE PLANS, DETAILS AND SPECIFICATIONS PREPARED FOR THE PROJECT. ANY DEVIATION FROM APPROVED PLANS DURING CONSTRUCTION WILL REQUIRE 48 HOURS PRIOR WRITTEN NOTICE TO AND SUBJECT TO THE APPROVAL OF THE CITY OF UKIAH.
66. NO RECORD OR EXISTING DRAWINGS ARE PROVIDED/AVAILABLE FOR THIS BUILDING. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT.
67. CONTRACTOR SHALL ANTICIPATE MINOR DIMENSIONAL ADJUSTMENTS TO MATCH/FIT NEW AND EXISTING CONDITIONS. MINOR DIMENSIONAL ADJUSTMENTS SHALL BE AT NO ADDITIONAL COST TO CONTRACT SUM.
68. EXISTING BUILDING SYSTEMS ARE PARTIALLY SUSPENDED FROM ROOF STRUCTURE AND PARTIALLY SUPPORTED BY EXISTING WOOD STUD PARTITION WALLS. PORTIONS OF EXISTING WALLS SHALL BE REMOVED AND CEILING SYSTEMS WILL REQUIRE TEMPORARILY AND PERMANENT SUPPORT.
69. EXISTING STAIRWAY SHALL BE DEMOLISHED AND RECONSTRUCTED TO ALLOW ACCESS FOR CONSTRUCTION OF NEW ELEVATOR SHAFT. RECONSTRUCTED WOOD STAIRWAY SHALL MEET CBC 2019 REQUIREMENTS.
70. EXISTING CEILINGS, WALLS, AND CONCRETE SLAB–ON–GRADE REQUIRE PARTIAL DEMOLITION, RECONSTRUCTION, AND REFINISHING TO ALLOW ACCESS FOR NEW MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS.
71. A TWO (2) STORY CONCRETE VAULT FORMALLY USED BY BANK AS VAULT AND SECURED STORAGE SHALL REMAIN.
72. CONTRACT TO PROVIDE SURVEY SERVICES TO LAYOUT, CONFIRM AND COORDINATE REQUIRED CODE SLOPES AND DIMENSIONS WITH EXISTING CONDITIONS.
73. CONTRACTOR SHALL REMOVE FROM SITE ALL EXCAVATED SOILS, AND INCLUDING ROCK, NOT SUITABLE FOR TRENCH OR BUILDING BACKFILL.
74. SEWER LATERAL SHALL COMPLY WITH UTILITY DETAILS, STANDARDS AND BE COORDINATED WITH EXISTING SITE AND UNDERGROUND CONDITIONS.



CITY OF UKIAH

BANK OF AMERICA

ADA BARRIER REMOVAL

501 South State St. Ukiah, CA 95482

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ACCESSIBILITY PLAN

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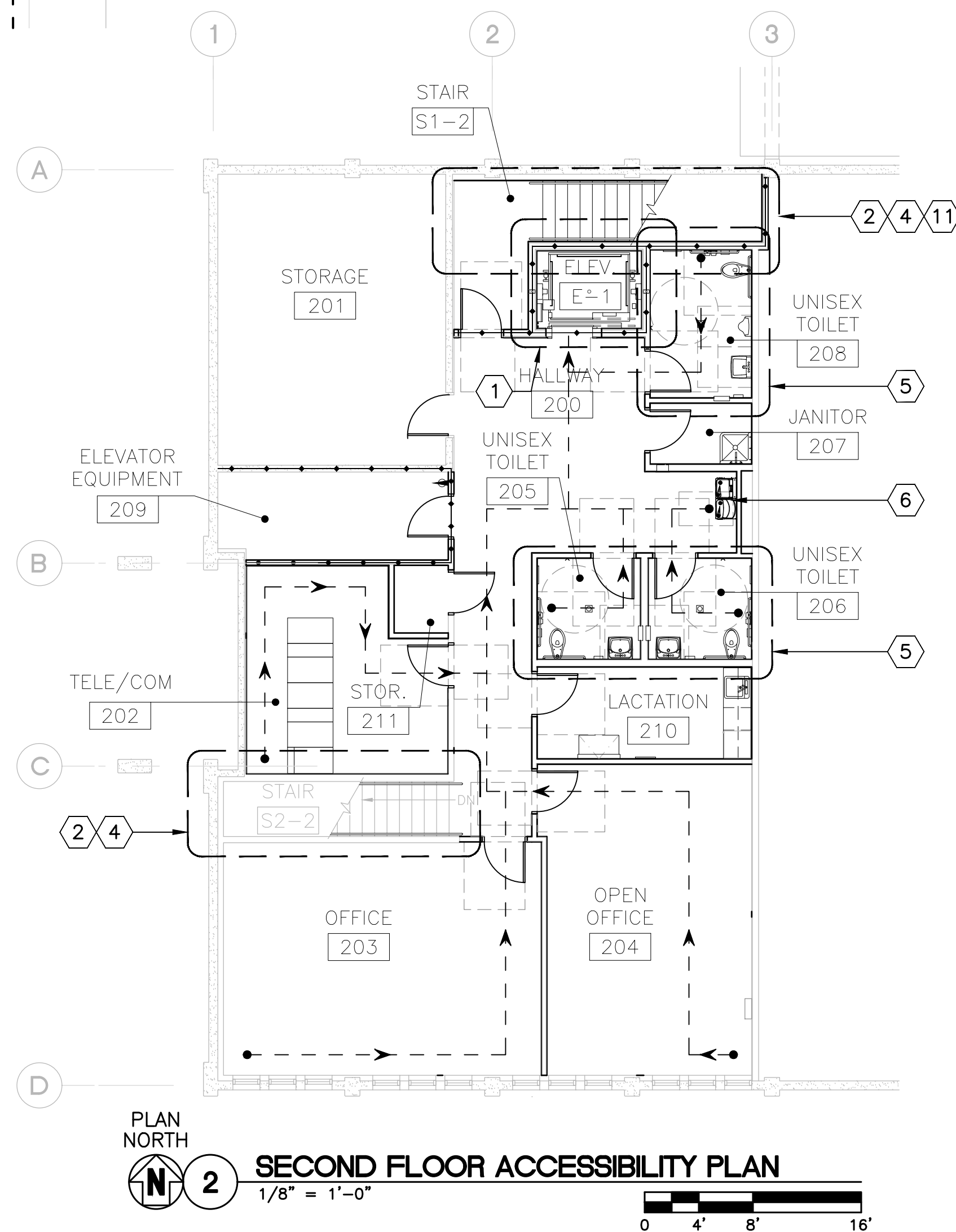
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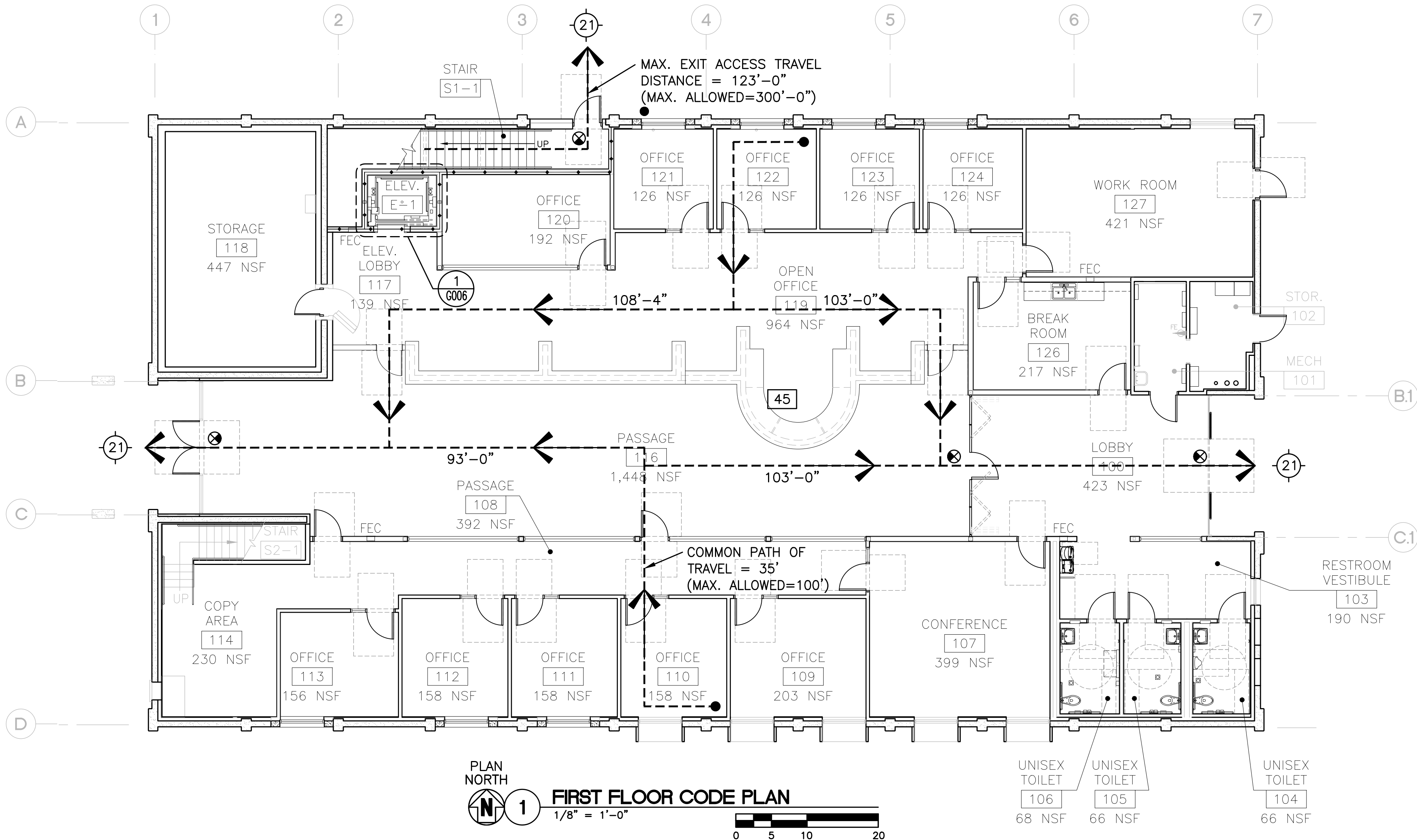
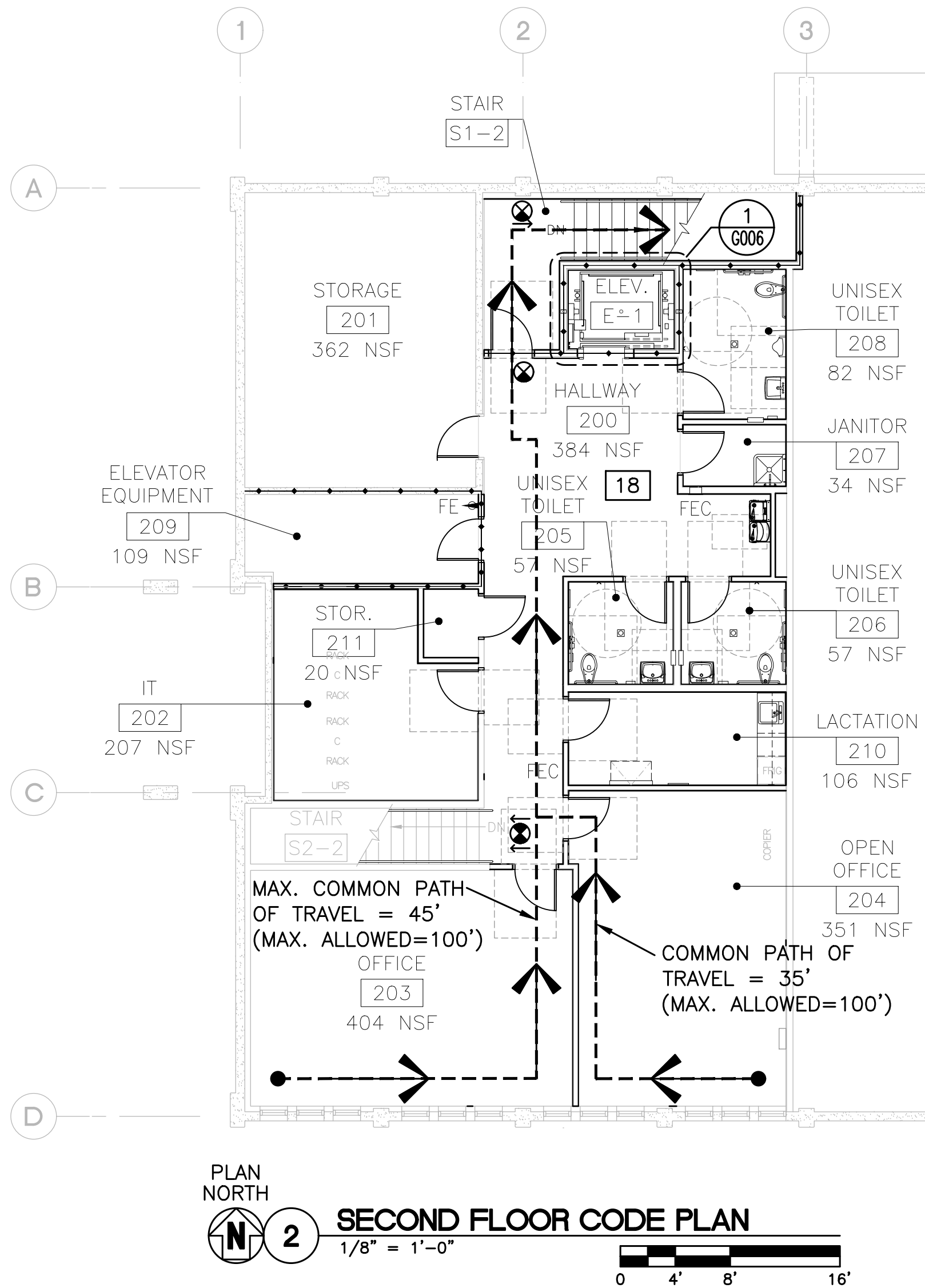


- ① PROVIDE NEW ACCESSIBLE ELEVATOR
- ② PROVIDE ADA COMPLIANT STAIR HANDRAILS
- ③ PROVIDE NEW ACCESSIBLE SERVICE COUNTER AT LOBBY
- ④ PROVIDE ADA COMPLIANT STAIR WARNING SURFACES
- ⑤ PROVIDE NEW ACCESSIBLE UNISEX TOILET ROOMS
- ⑥ PROVIDE NEW ACCESSIBLE DRINKING FOUNTAINS
W/ BOTTLE FILLER.
- ⑦ SERVICE ENTRY ONLY.
- ⑧ PROVIDE NEW ACCESSIBLE ROUTE FROM PARKING TO ENTRY
- ⑨ PROVIDE NEW ADA PARKING STALLS AND SIGNAGE TO MEET
ADA REQUIREMENTS
- ⑩ PROVIDE ACCESSIBLE ROUTE AND SIDEWALK FROM STREET TO
THE BUILDING
- ⑪ PROVIDE NEW ACCESSIBLE STAIR AND VESTIBULE
- ⑫ PROVIDE NEW ACCESSIBLE BREAK ROOM COUNTER AND SINK
- ⑬ ELECTRIC HAND HOLE COVER TO BE INSTALLED FLUSH
W/ SLOPED WALKWAY.

1. ALL NEW DOORS, DOOR FRAMES, AND DOOR HARDWARE TO MEET ALL APPLICABLE ACCESSIBILITY STANDARDS. SEE SHEET A602 FOR DOOR SCHEDULE AND DETAILS.
2. SEE SHEETS A606, A607, AND A608 FOR SIGNAGE PLAN, SCHEDULE, AND DETAILS.
3. PROVIDE SMOOTH, ACCESSIBLE FLOOR SURFACES THROUGHOUT.

 5'-0" CLEAR TURNING RADIUS,
 MAX. SLOPE 1:48 IN ALL DIRECTIONS
 ---➔--- ACCESSIBLE PATH





APPLICABLE BUILDING CODES:

BUILDING CODE: 2022 CALIFORNIA BUILDING CODE
STRUCTURAL CODE: 2022 CALIFORNIA BUILDING CODE
PLUMBING CODE: 2022 CALIFORNIA PLUMBING CODE
MECHANICAL CODE: 2022 CALIFORNIA MECHANICAL CODE
ELECTRICAL CODE: 2022 CALIFORNIA ELECTRIC CODE
NFPA 70 – 2023 NATIONAL ELECTRICAL CODE
FIRE PROTECTION: 2022 CALIFORNIA FIRE CODE
NFPA 13 – 2022
ENERGY CODE: 2022 CALIFORNIA ENERGY CODE
SUSTAINABILITY: 2022 CALIFORNIA GREEN BUILDING STANDARDS

1. USE AND OCCUPANCY CLASSIFICATION

304 – BUSINESS GROUP B

2. FIRE PROTECTION SYSTEMS

EXISTING BUILDING NOT SPRINKLERED. SPRINKLER SYSTEM ADDED TO THIS PROJECT PER OWNER.

907.2.2 – GROUP B
A MANUAL FIRE ALARM SYSTEM IS NOT REQUIRED (OCCUPANT LOAD IS LESS THAN 100) & SPRINKLERED
906.1 – GROUP B
PORTABLE FIRE EXTINGUISHERS ARE REQUIRED
TABLE 906.3(1) CLASS A–75' MAX. TO EXTINGUISHER (2–A)

3. OCCUPANCY SEPARATIONS

508.2.4 NO SEPARATION IS REQUIRED BETWEEN ACCESSORY OCCUPANCIES AND THE MAIN OCCUPANCY.

4. BUILDING CONSTRUCTION TYPE

TABLES 601 – CONSTRUCTION CLASSIFICATION	TYPE V–B
PRIMARY STRUCTURAL FRAME	0 HOUR
BEARING WALLS – EXTERIOR	0 HOUR
BEARING WALLS – INTERIOR	0 HOUR
NON-BEARING WALLS AND PARTITIONS – INTERIOR	0 HOUR
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	0 HOUR
ROOF CONSTRUCTION AND SECONDARY MEMBERS	0 HOUR

TABLE 705.5 – FIRE–RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

EXTERIOR WALLS X < 10'	1 HOUR
EXTERIOR WALLS X ≥ 30'	0 HOUR

713.4 FIRE RESISTANCE RATING – SHAFTS: 1 HOUR (< 4 STORIES)

5. BUILDING HEIGHT AND AREA

504 – BUILDING HEIGHT AND NUMBER OF STORIES (SPRINKLERED)
TABLE 504.3 – ALLOWABLE BUILDING HEIGHT 60'
ACTUAL BUILDING HEIGHT 26'
TABLE 504.4 – ALLOWABLE NUMBER OF STORIES 3
ACTUAL NUMBER OF STORIES 2

506 – BUILDING AREA
TABLE 506.2 ALLOWABLE AREA (TYPE V–B, B OCCUPANCY)

	ALLOWABLE AREA	ACTUAL AREA
1ST FL	27,000 SF	6,616 SF
2ND FL	27,000 SF	2,585 SF
TOTAL	54,000 SF	9,201 SF

6. DESIGN OCCUPANT LOAD AND EXIT ACCESS

TABLE 1004.5	LOAD FACTOR	AREA	OCCUPANTS
1ST FL (BUSINESS)	150 GROSS	6,616 GSF	45
2ND FL (BUSINESS)	150 GROSS	2,585 GSF	18

BUILDING TOTAL: 63

7. MEANS OF EGRESS

TABLE 1006.2.1 & 1006.3.3(2) – EXITS & COMMON PATH OF TRAVEL

LEVEL	REQUIRED EXITS	PROVIDED	COMMON PATH
FIRST	2	3	100' MAX.
SECOND	2	2	100' MAX.

TABLE 1017.2 – EXIT ACCESS TRAVEL DISTANCE
GROUP B 300' (SPRINKLERED)
ALL EXIT DISTANCES < 140'–0"

1005.3.1 STAIRWAY WIDTH: 0.3" PER OCC. 18.9"

1011.2 WIDTH AND CAPACITY

	REQUIRED	PROVIDED
1ST FLOOR	44" MIN.	54" MIN.
2ND FLOOR	44" MIN.	54" MIN.

1005.3.2 EXIT WIDTH:
0.2" PER OCC. (SPRINKLERED) 12.4"
ACTUAL PROVIDED 144" MIN

8. INTERIOR FINISHES

PER TABLE 803.13 – SPRINKLERED

- INTERIOR EXIT, STAIRWAYS, RAMPS, AND EXIT PASSAGEWAYS CLASS B
- CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS CLASS C
- ROOMS AND ENCLOSED SPACES CLASS C

9. ROOF ASSEMBLY

705.11 PARAPETS, EXCEPTION 6 – A PARAPET NEED NOT BE PROVIDED ON AN EXTERIOR WALL

1505.1 ROOF ASSEMBLIES
TYPE V–B – CLASS C ROOF ASSEMBLY

10. PLUMBING FIXTURES

*CPC 2022: 422.4.1 ACCESS TO TOILET FACILITIES:
IN MULTI-STORY BUILDINGS, ACCESSIBILITY TO THE REQUIRED TOILET FACILITIES SHALL NOT EXCEED ONE VERTICAL STORY. CUSTOMER ACCESS TO TOILETS SHALL NOT PASS THROUGH EMPLOYEE ONLY AREAS.

*CALIFORNIA PLUMBING CODE – TABLE 422.1 TABLE A AND TABLE 4–1

OCCUPANT TOTALS*	OCC.		FIXTURES REQ'D		PROVIDED	
	M	W	M	W	M	W
WATER CLOSETS	32	32	1	3	3	3
URINALS	32	32	1	—	2	—
LAVATORIES	32	32	1	1	3	3
DRINKING FOUNTAIN	63		1		4	
SERVICE SINKS	63		1		1	

11. AUTHORITY HAVING JURISDICTION (AHJ)

CITY OF UKIAH – BUILDING AND CODE ENFORCEMENT SERVICES DIVISION

LEGEND:

- LONGEST EGRESS DISTANCE FROM ROOM
- OCCUPANT LOAD AT EXIT
- NEW EXIT SIGNS
- OCCUPANCY LOAD WITHIN SUITE/ROOM
- COMMON PATH OF TRAVEL
- RATED WALLS – 1 HR (FIRE)
- FIRE EXTINGUISHER CABINET
- FIRE EXTINGUISHER

12. PARKING

TABLE 11B–208.2: PARKING SPACES

*TOTAL PARKING STALLS ON SITE: 41
*TOTAL ADA PARKING REQUIRED: 2

TABLE 11B–208.2.4: VAN PARKING SPACES
FOR EVERY 6 PARKING SPACES, AT LEAST 1 SHALL BE A VAN PARKING SPACE

MINIMUM # OF ACCESSIBLE PARKING STALLS:		
TOTAL STALLS	VAN	CAR
41	REQUIRED: 1	1
	PROVIDED: 1	1

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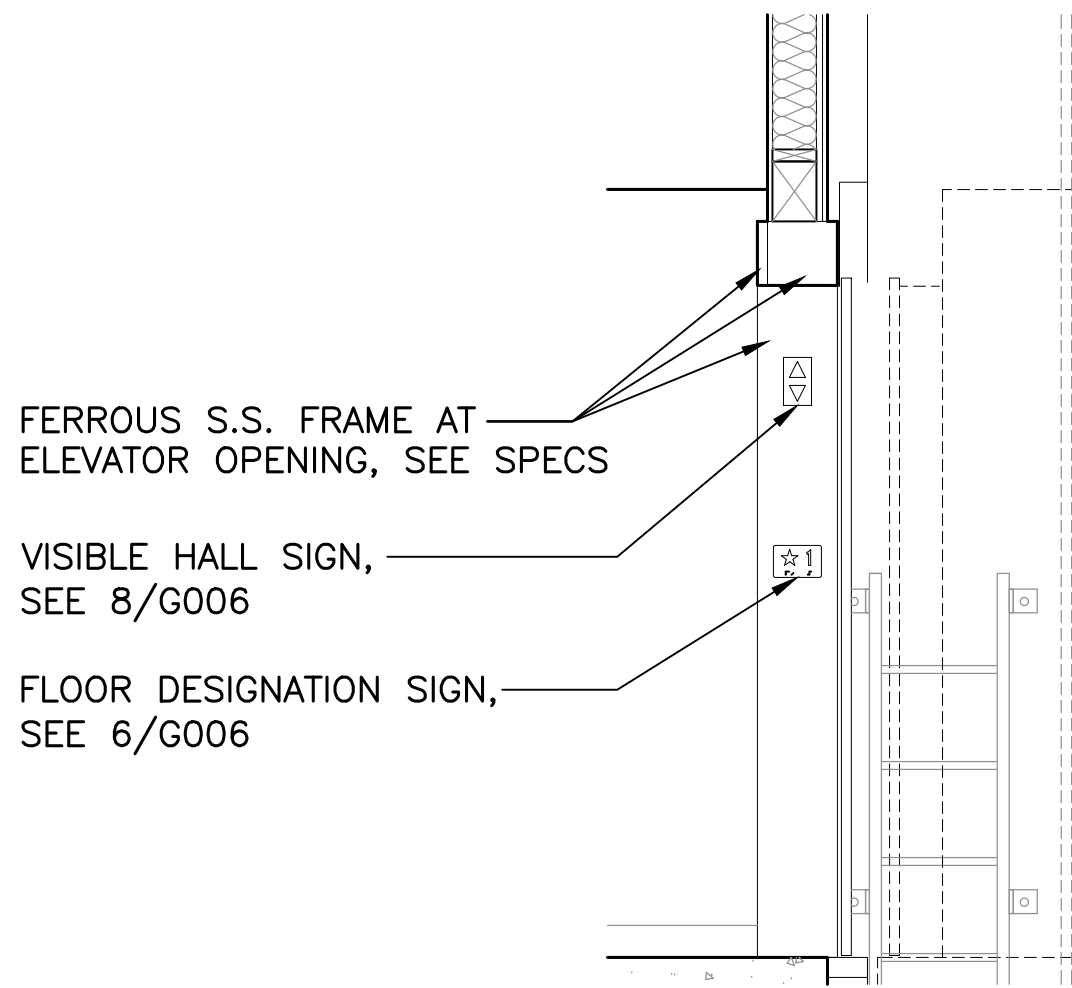
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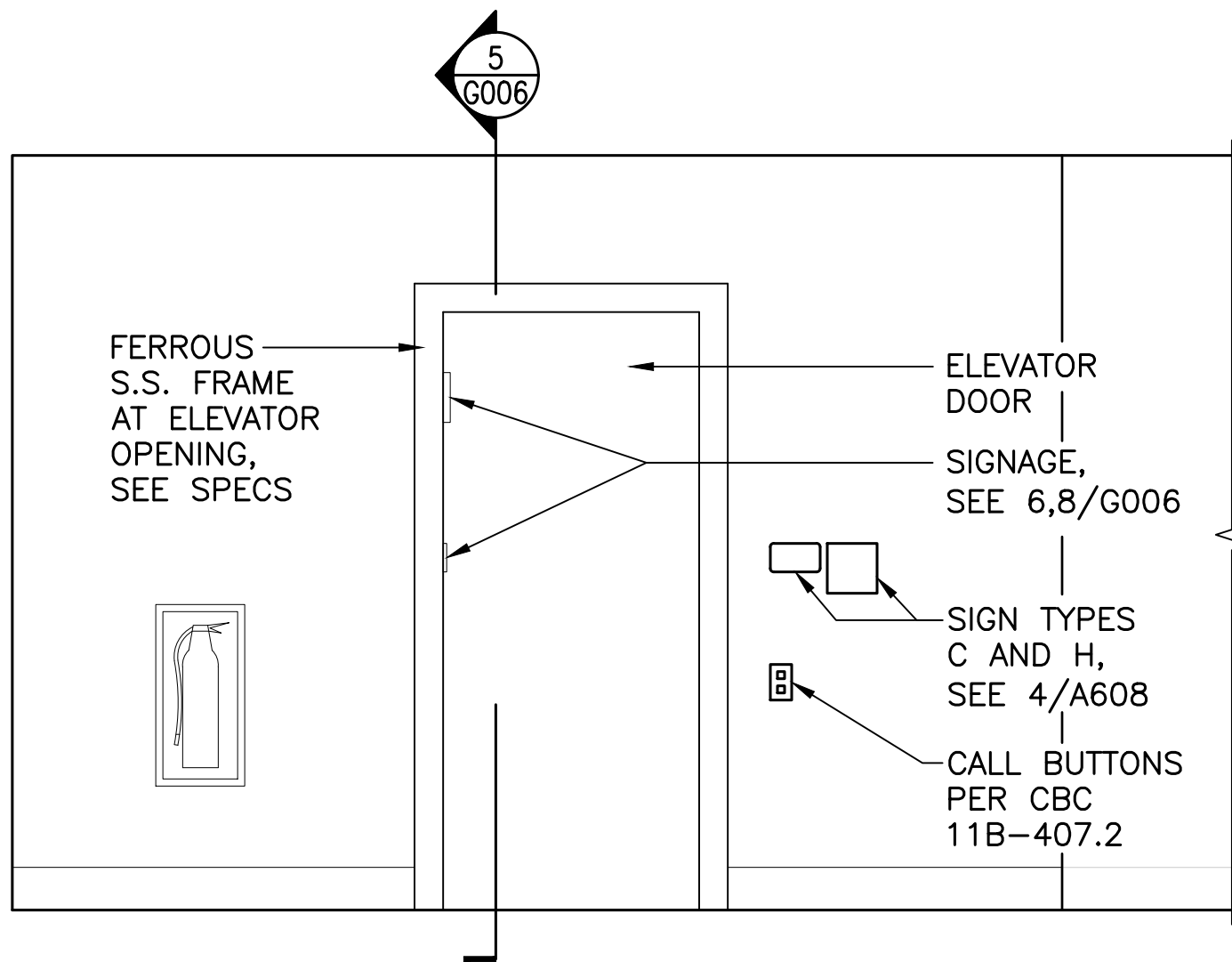
CODE COMPLIANCE

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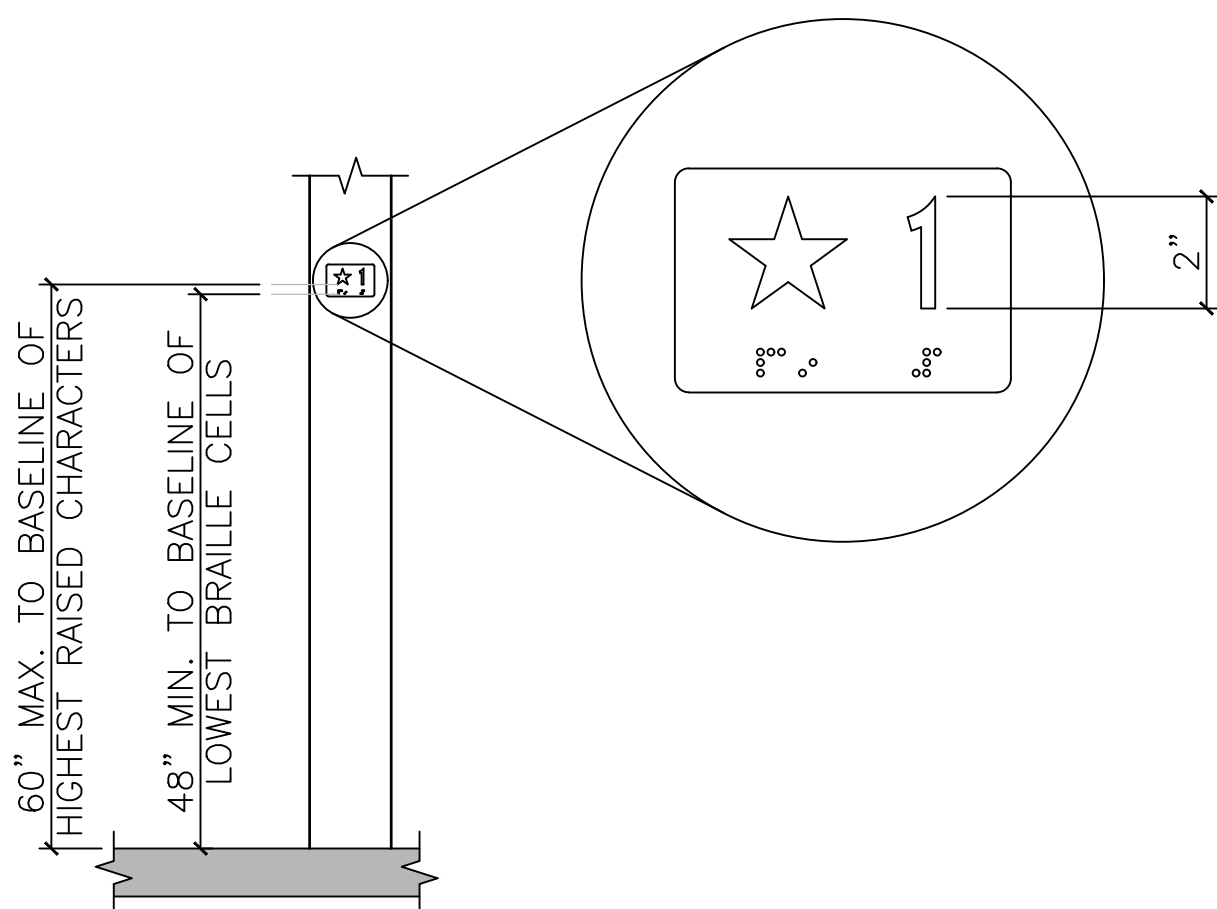
G005



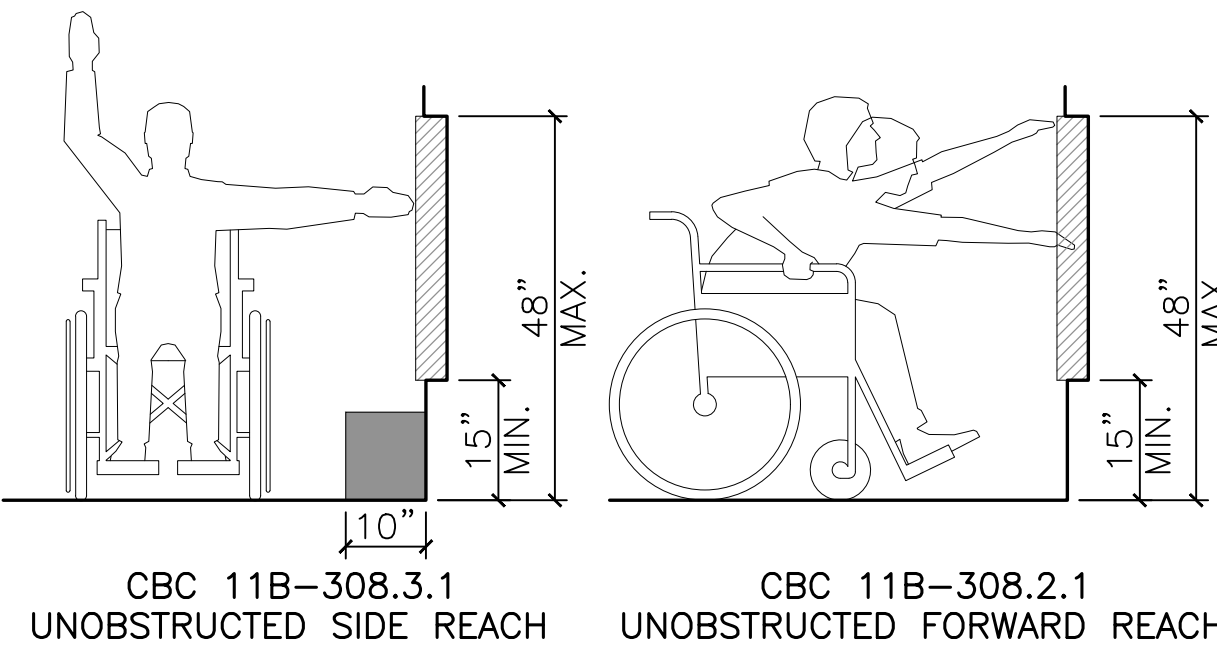
5 TYPICAL SECTION AT ELEVATOR
1/2" = 1'-0"



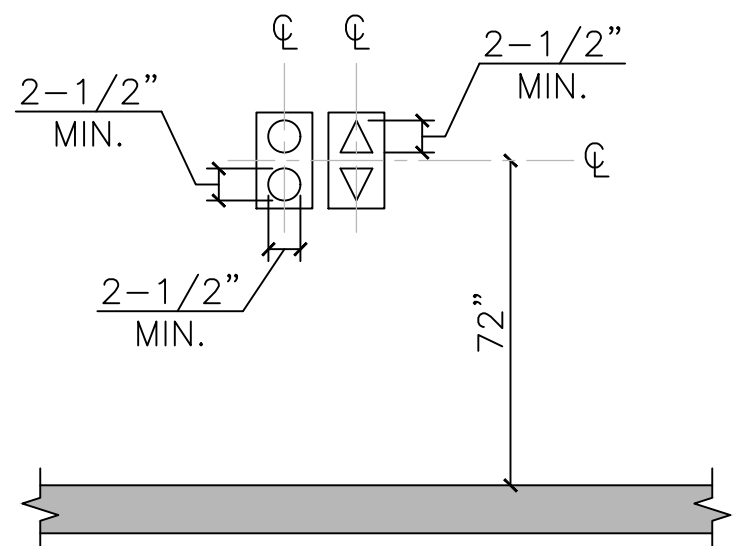
2 NORTH ELEVATION - ELEVATOR LOBBY 117
1/2" = 1'-0"



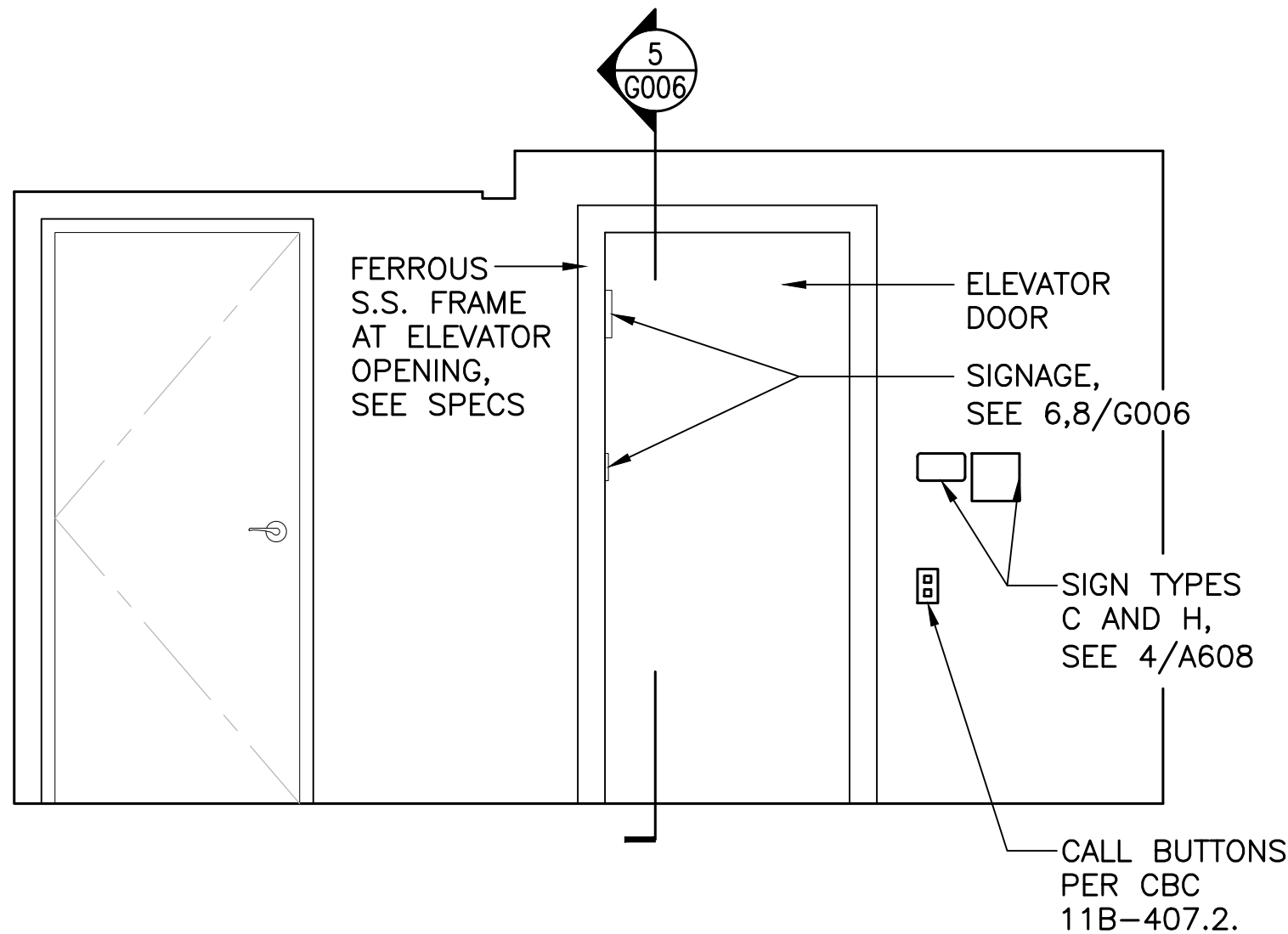
6 FLOOR DESIGNATIONS ON JAMBS OF ELEVATOR HOISTWAY ENTRANCES
NOT TO SCALE
CBC 11B-407.2.3.1



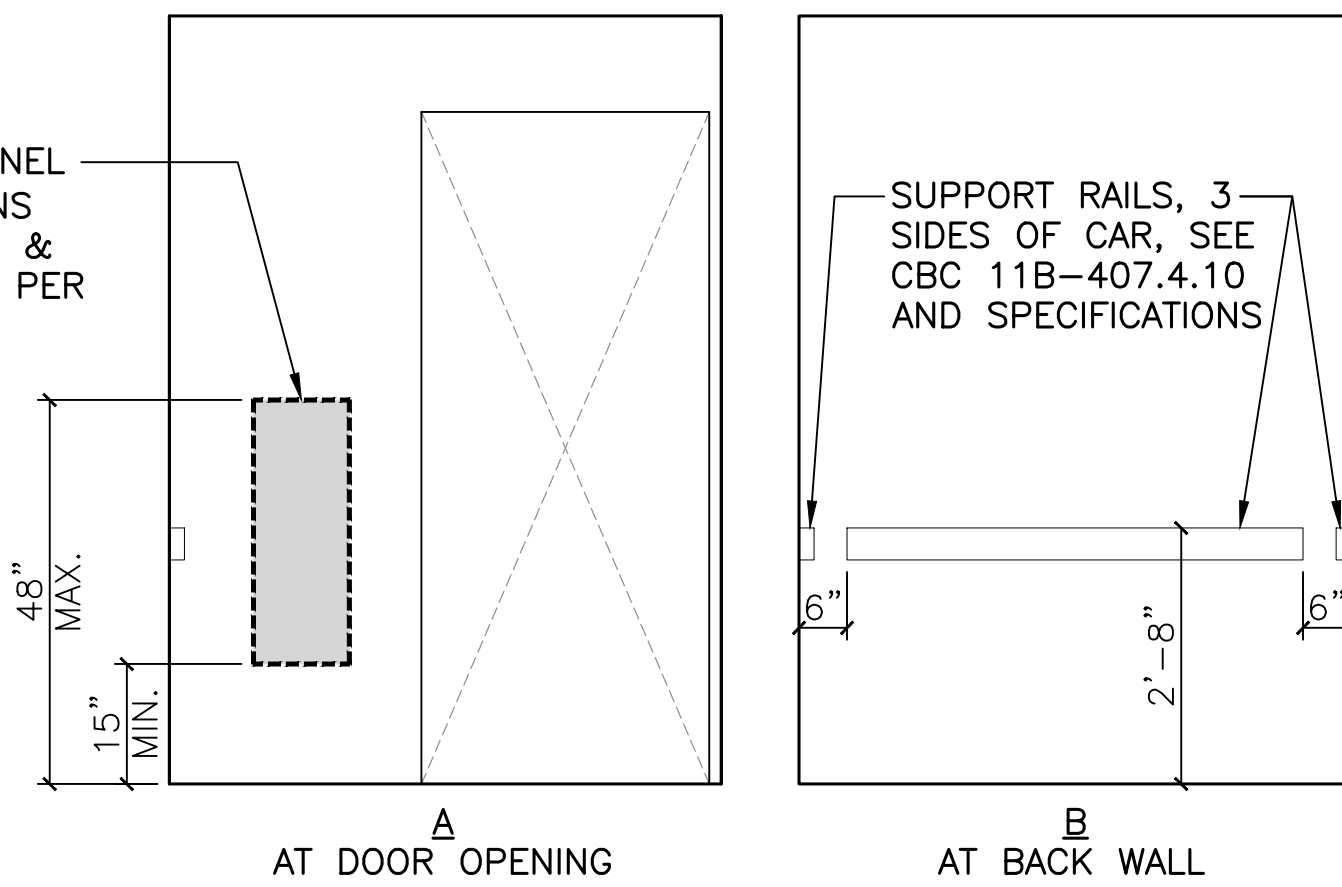
7 TYPICAL CBC CODE DIAGRAMS
NO SCALE



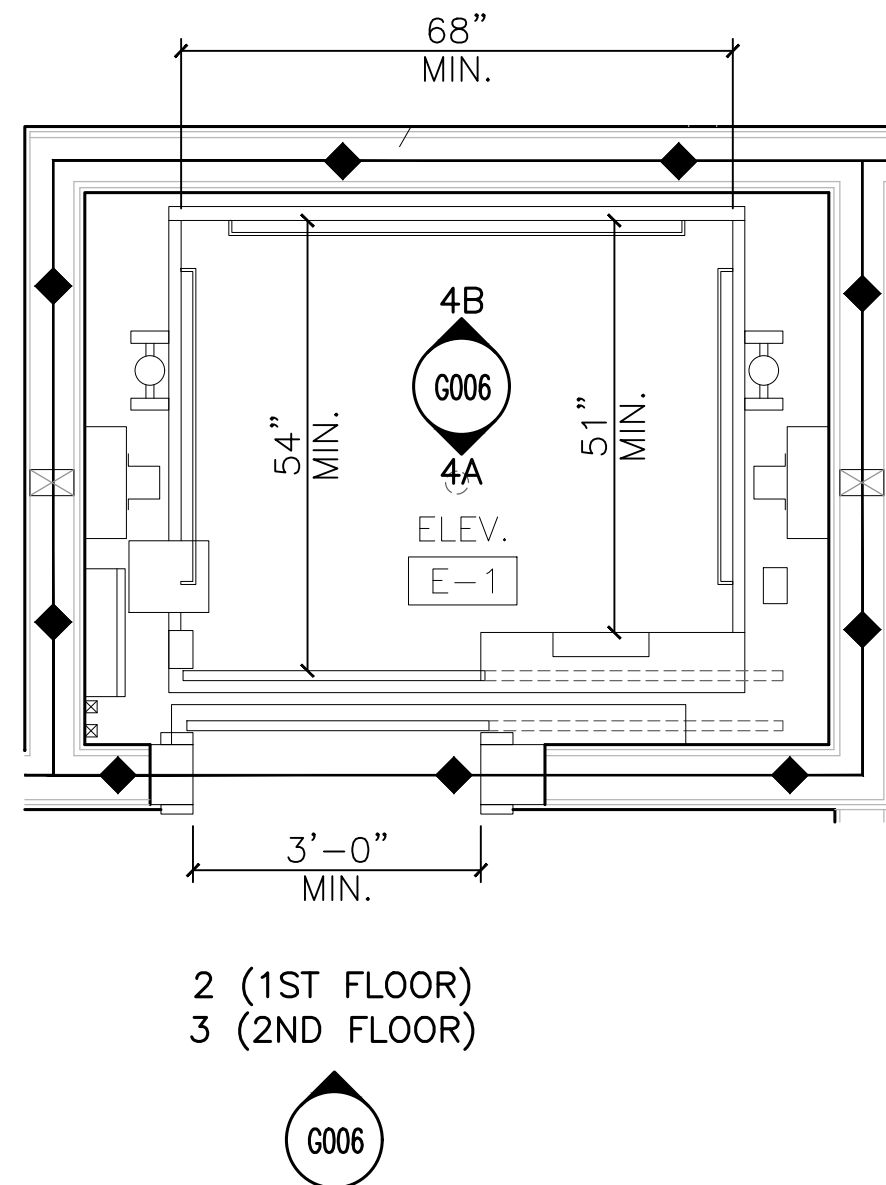
8 VISIBLE HALL SIGNS
NOT TO SCALE
CBC 11B-407.2.2.2



3 NORTH ELEVATION - HALLWAY 200
1/2" = 1'-0"



4 TYPICAL ELEVATIONS - ELEVATOR CAR
NO SCALE



1 ELEVATOR CAR PLAN
1/2" = 1'-0"

APPLICABLE BUILDING CODES

BUILDING CODE:	2022 CALIFORNIA BUILDING CODE
STRUCTURAL CODE:	2022 CALIFORNIA BUILDING CODE
PLUMBING CODE:	2022 CALIFORNIA PLUMBING CODE
MECHANICAL CODE:	2022 CALIFORNIA MECHANICAL CODE
ELECTRICAL CODE:	2022 CALIFORNIA ELECTRIC CODE
FIRE PROTECTION:	NFPA 70 - 2023 NATIONAL ELECTRICAL CODE
ENERGY CODE:	NFPA 13 - 2022
SUSTAINABILITY:	2022 CALIFORNIA ENERGY CODE
	2022 CALIFORNIA GREEN BUILDING STANDARDS

ELEVATOR

CBC 11B-407.1 GENERAL - ELEVATORS SHALL COMPLY WITH SECTION CBC 11B-407 AND ASME A17.1. THEY SHALL BE PASSENGER ELEVATORS AS CLASSIFIED BY 11B-407.1 & OPERATION SHALL BE AUTOMATIC.

CBC 11B-309.4 OPERATION - OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND WITH FORCE OF 5 LBS MAXIMUM.

CBC 11B-407.2 - ELEVATOR LANDING REQUIREMENTS.

CBC 11B-407.2.1.1 HEIGHT - CALL BUTTONS AND KEYPADS SHALL BE LOCATED PER SECTION 11B-308, MEASURED TO CENTERLINE OF HIGHEST OPERABLE PART.

CBC 11B-407.3 ELEVATOR DOOR REQUIREMENTS - HOISTWAY AND CAR DOORS SHALL COMPLY WITH SECTION 11B-407.3.

CBC 11B-407.4 - ELEVATOR CAR REQUIREMENTS

CBC CHAPTER 30 - ELEVATORS SHALL COMPLY WITH THIS CHAPTER.

CBC 3001.2 - EMERGENCY ELEVATOR COMMUNICATION SYSTEMS FOR THE DEAF, HARD OF HEARING AND SPEECH IMPAIRED.

AN EMERGENCY TWO-WAY COMMUNICATION SYSTEM SHALL BE PROVIDED. THE SYSTEM SHALL PROVIDE VISIBLE TEXT AND AUDIBLE MODES THAT MEET ALL THE FOLLOWING REQUIREMENTS:

1. WHEN OPERATING IN EACH MODE, INCLUDE A LIVE INTERACTION SYSTEM THAT ALLOWS BACK AND FORTH CONVERSATION BETWEEN THE ELEVATOR OCCUPANTS AND EMERGENCY PERSONNEL.
2. IS OPERATIONAL WHEN THE ELEVATOR IS OPERATIONAL.
3. ALLOWS ELEVATOR OCCUPANTS TO SELECT THE TEXT-BASED OR AUDIBLE MODE DEPENDING ON THEIR COMMUNICATION NEEDS TO INTERACT WITH EMERGENCY PERSONNEL.

CBC 3006.2 & 3006.3 - HOISTWAY OPENING PROTECTION NOT REQUIRED BECAUSE ELEVATOR ONLY SPANS 2 FLOORS, BUILDING IS SPRINKLERED, AND IS A "B" OCCUPANCY.

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

ELEVATOR

Sheet Number:

G006

Revisions:

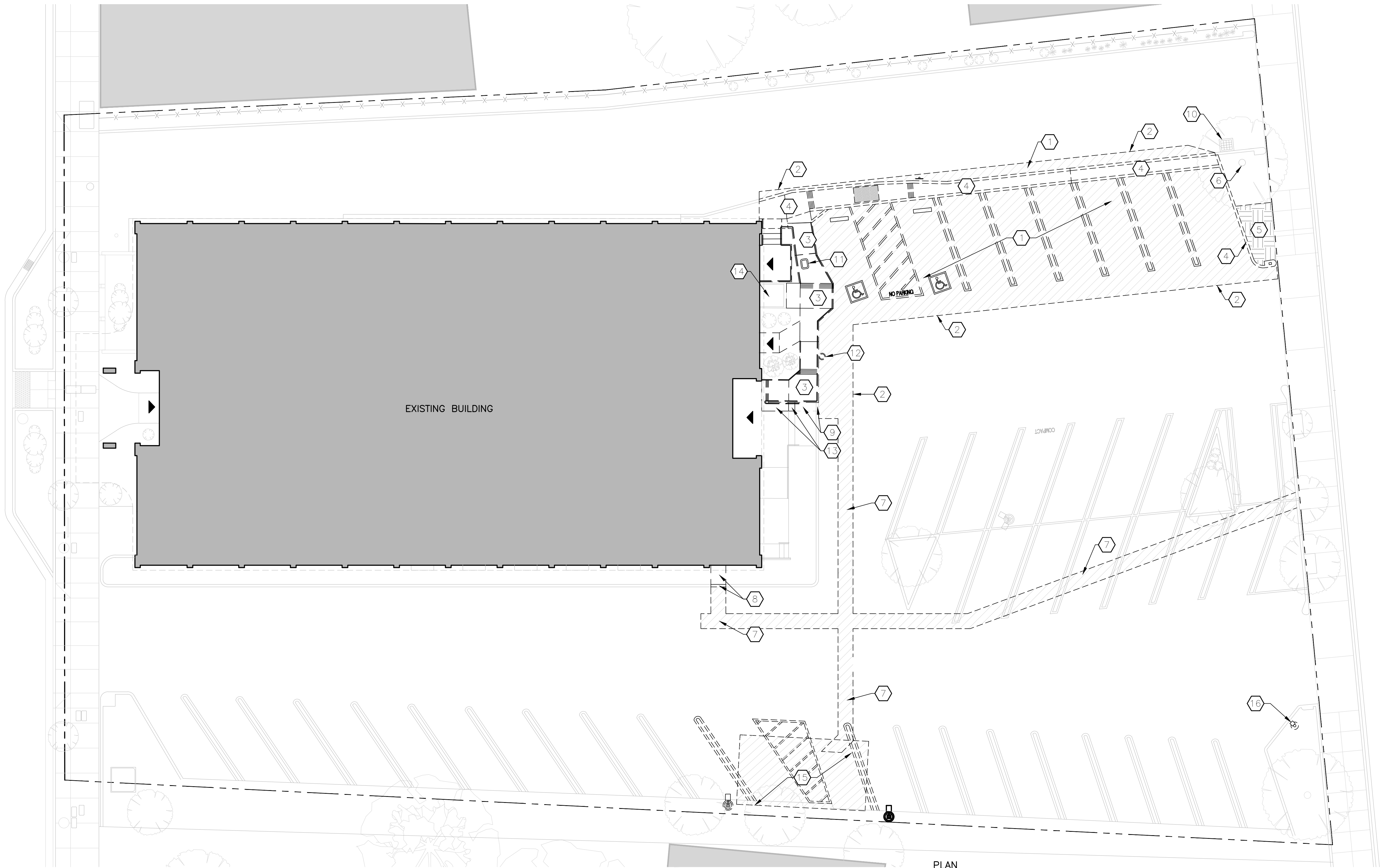
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SITE DEMOLITION PLAN

Sheet Number:

CD101



KEYED NOTES:

- 1 SAWCUT AND REMOVE (E) ASPHALT PAVEMENT
- 2 EXTENT OF PAVEMENT REMOVAL
- 3 DEMOLISH (E) RAMP AND GUARDRAIL/HANDRAIL
- 4 DEMOLISH (E) SIDEWALK AND/OR CURB AS SHOWN
- 5 REMOVE (E) LANDSCAPE MATERIAL AND SOILS AS REQUIRED BY (N) WORK
- 6 (E) TREE TO REMAIN, PROTECT TREE AND ROOT ZONE DURING ALL DEMOLITION AND CONSTRUCTION ACTIVITIES
- 7 SAW CUT AND REMOVE (E) ASPHALT AND DIG UTILITY TRENCH, SEE UTILITY PLAN C102
- 8 REMOVE PORTION OF CONCRETE CURB AND LANDSCAPE MATERIALS/SOILS AS REQUIRED FOR UTILITY TRENCH PER CITY STANDARDS
- 9 PORTION OF (E) LANDING/CURB TO REMAIN, TO BE COVERED BY SLOPED WALK AND GUARDRAIL IN (N) WORK
- 10 (E) STORM DRAIN INLET TO REMAIN, DO NOT DISTURB STRUCTURE OR PIPING
- 11 (E) ELECTRICAL HAND HOLE TO BE RELOCATED, SEE ENLARGED PLAN C401
- 12 (E) SUB-GRADE WATER VALVE TO BE RELOCATED, SEE ENLARGED PLAN C401

- 13 PORTION OF LANDING/STAIR TO BE SAWCUT, DEMOLISHED, AND REMOVED
- 14 (E) TRANSFORMER TO REMAIN PENDING LOCAL UTILITY APPROVAL, SEE ELECTRICAL DESIGNS, PROTECT DURING CONSTRUCTION
- 15 EXCAVATE AREA FOR NEW CONCRETE EQUIPMENT PAD FOR NEW GENERATOR
- 16 DEMOLISH (E) LIGHT, POLE, AND FOUNDATION

LEGEND:

- PROPERTY LINE
- ▼ ENTRANCE
- ASPHALT PAVEMENT TO BE DEMOLISHED

GENERAL NOTES:

1. REMOVE PAVEMENT, BASE COURSE, SOILS, SIGNAGE, CONCRETE, FOUNDATIONS, FOOTINGS AND RAILS AS NECESSARY TO INSTALL NEW CONSTRUCTION
2. USE DIMENSIONS ON ENLARGED SITE PLAN C401 TO DETERMINE EXTENTS OF ASPHALT PAVEMENT REMOVAL REQUIRED BY (N) WORK.
3. SEE SHEET CD501 FOR SITE DEMOLITION PHOTOS.



1 PHOTO



2 PHOTO



3 PHOTO



4 PHOTO

Revisions:

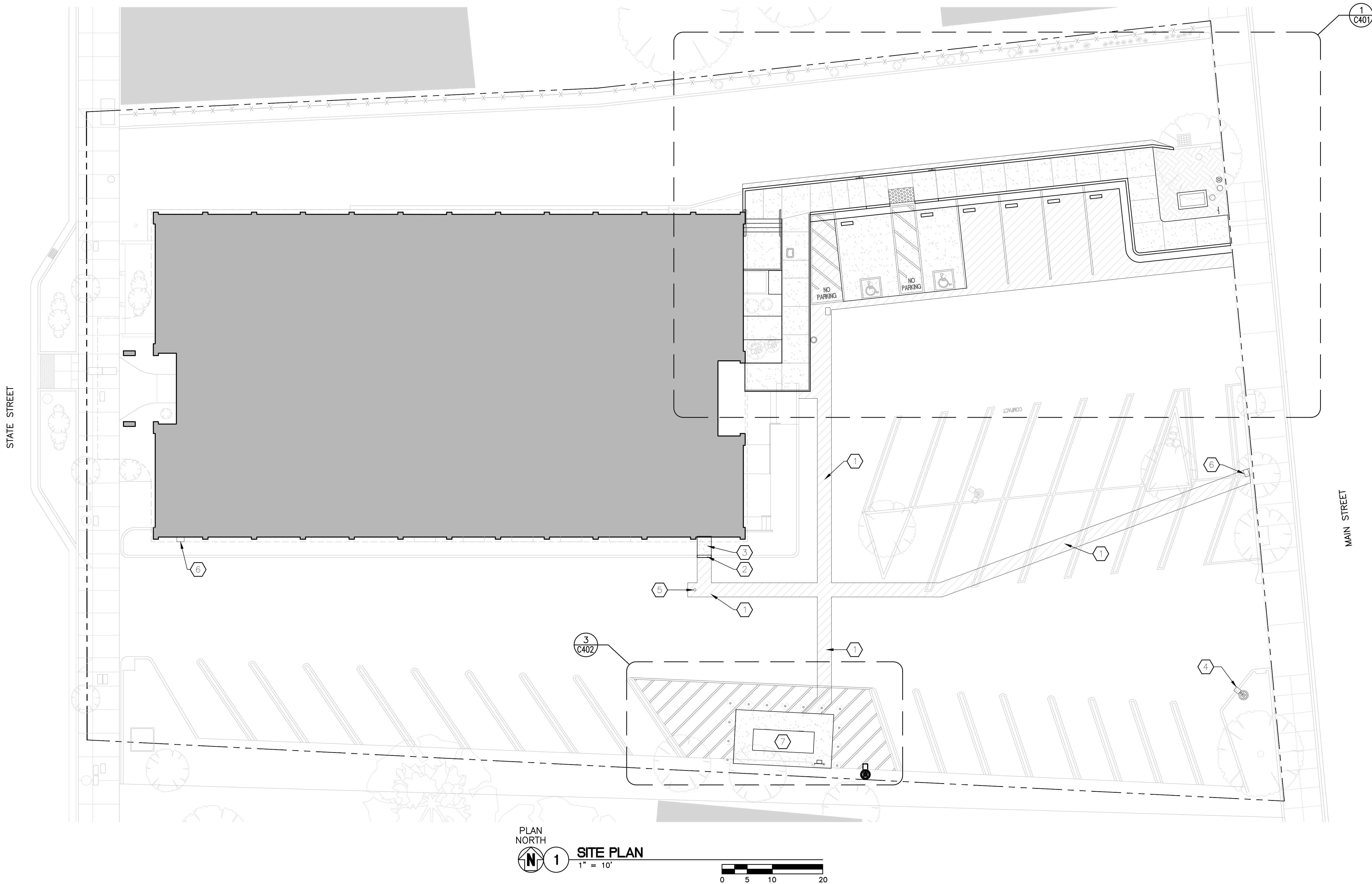
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

EXISTING SITE PHOTOS

Sheet Number:

CD501



KEYED NOTES:

- (1) (N) UTILITY TRENCH PER CITY STANDARDS, COVER WITH ASPHALT PAVEMENT TO MATCH ADJACENT MATERIAL AND GRADE OF (E) PER CITY STANDARDS, SEE UTILITY PLAN C102
- (2) (N) PORTION OF CONCRETE CURB TO MATCH MATERIAL, DESIGN, AND ELEVATIONS OF ADJACENT (E)
- (3) (N) SOILS AND LANDSCAPE COVERING TO MATCH (E) ADJACENT
- (4) NEW SITE LIGHT, POLE, AND FOUNDATION, SEE ELECTRICAL DRAWINGS AND DETAIL 10/C503

- (5) 4" SANITARY SEWER CLEAN OUT
- (6) UTILITY HANDHOLE, SEE UTILITY PLAN C102
- (7) EMERGENCY GENERATOR ON CONCRETE EQUIPMENT PAD, SEE PAD DETAIL 2/C503

LEGEND:

- PROPERTY LINE
- ▼ ENTRANCE
- (N) ASPHALT PAVEMENT

GENERAL NOTES:

- 1. VERIFY ALL SITE CONDITIONS. BRING ANY UNFORESEEN CIRCUMSTANCES TO THE ATTENTION OF THE ARCHITECT/ ENGINEER PRIOR TO START OF WORK FOR RESOLUTION.
- 2. FINAL ROUTE OF IT/COMMUNICATIONS CABLING TO BE COORDINATED WITH SERVICE PROVIDER.

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SITE PLAN

Sheet Number:

C101

Revisions:

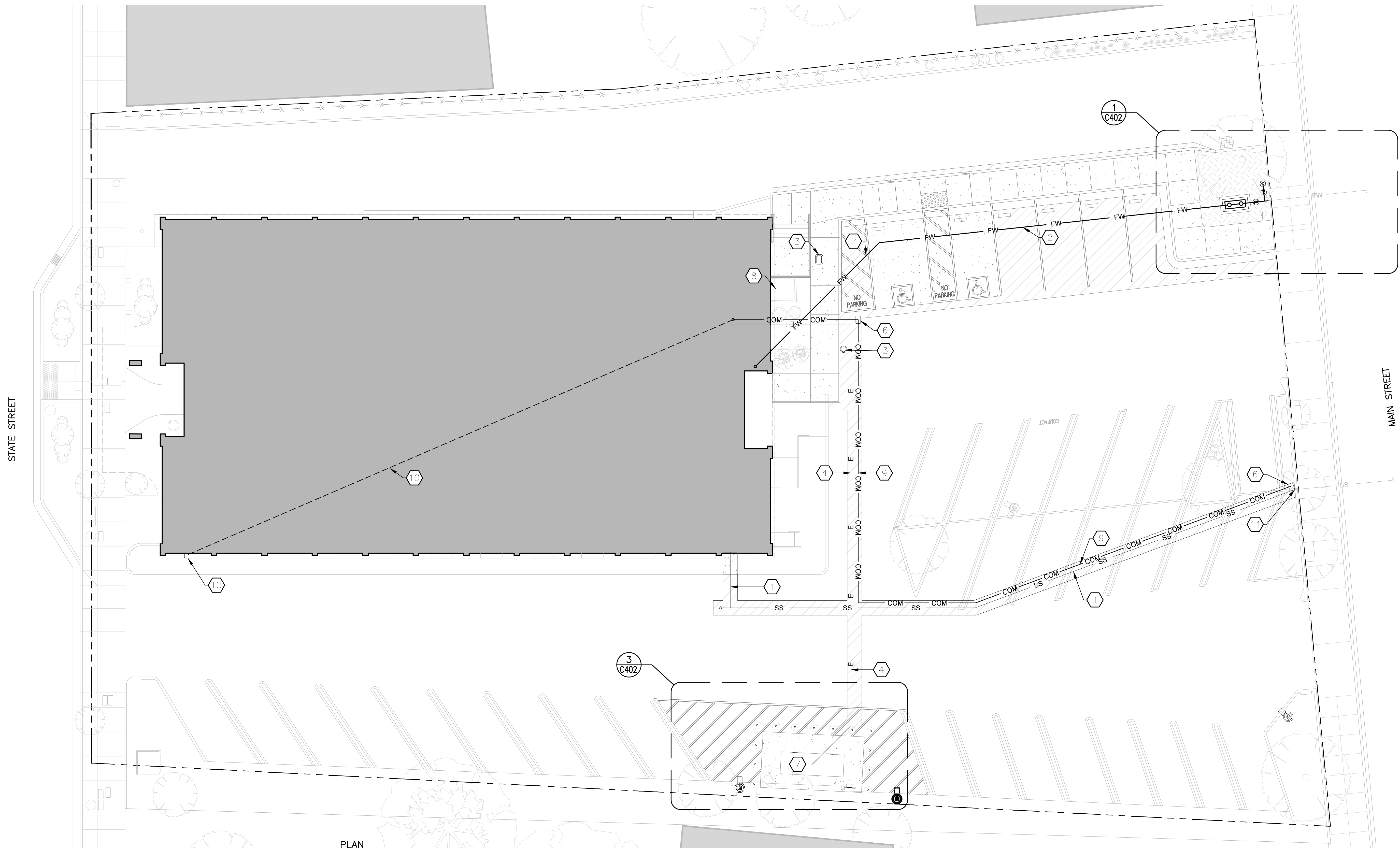
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SITE UTILITY PLAN

Sheet Number:

C102



1 SITE UTILITY PLAN

1" = 10'



KEYED NOTES:

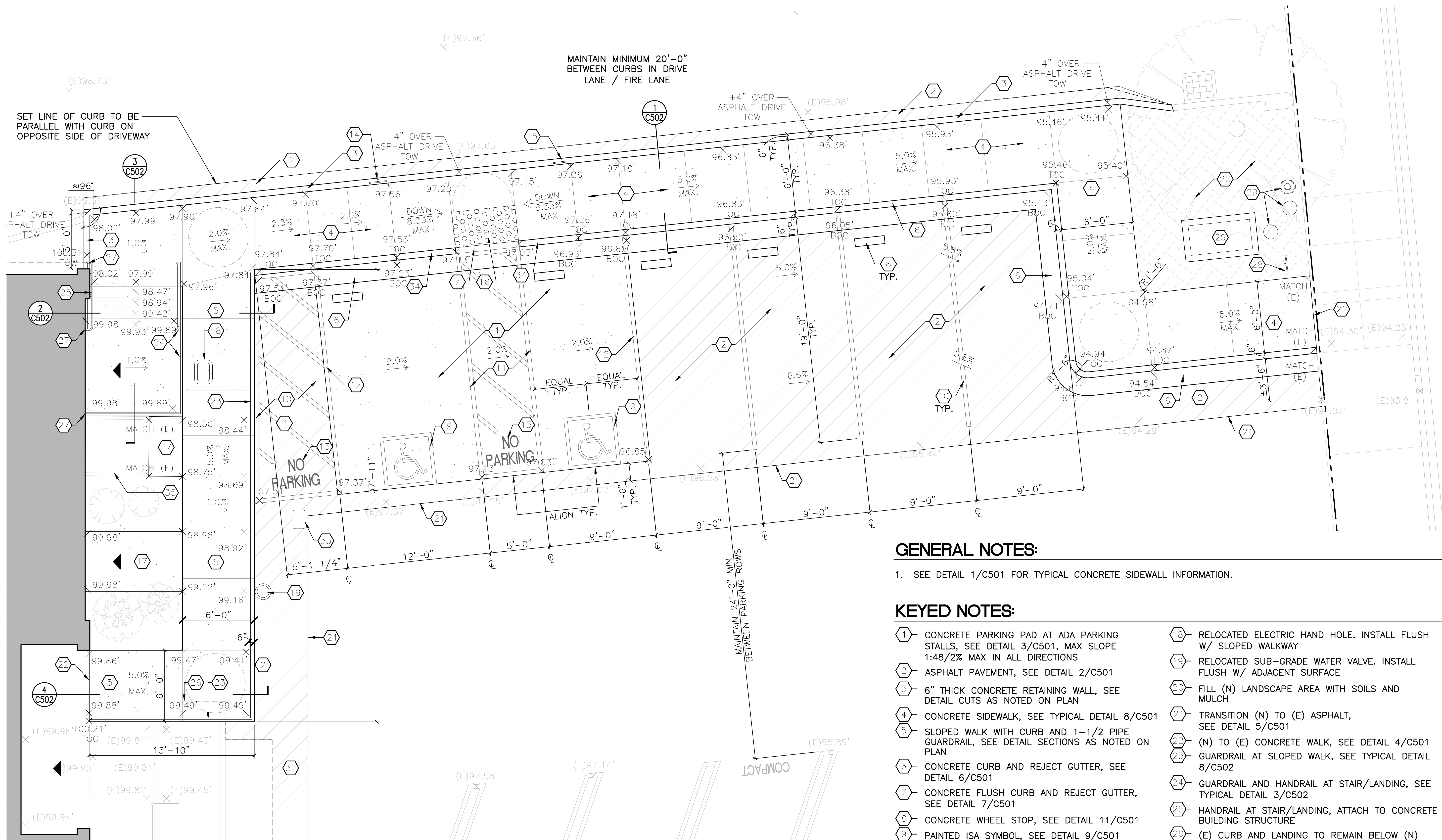
- | | |
|---|---|
| 1- 4" SANITARY SEWER PIPING TO CITY SERVICE LINE STUBBED NEAR SIDEWALK, TRENCH AND COVER PER CITY STANDARDS, ALSO SEE SHEET C101 | 7- EMERGENCY GENERATOR ON CONCRETE EQUIPMENT PAD |
| 2- 6" FIRE WATER PIPING TO CITY SERVICE LINE AT STREET, TRENCH AND COVER PER CITY STANDARDS. UNDERGROUND PORTIONS OF PIPE SHALL BE PVC AWWA C900. ALSO SEE SHEET C101 | 8- (E) TRANSFORMER TO REMAIN PENDING LOCAL UTILITY APPROVAL, SEE ELECTRICAL DESIGNS, PROTECT DURING CONSTRUCTION |
| 3- MATCH EXISTING UTILITY INFRASTRUCTURE TO NEW GRADES, SEE ENLARGED SITE PLAN C401 FOR TOPOGRAPHY | 9- (2) EMPTY 2" PVC CONDUITS EXTENDING FROM ELECTRICAL ROOM TO PULL BOX AT BACK OF WALK BY SEWER LINE |
| 4- ELECTRICAL CONDUIT AND CONDUCTOR TO AND FROM EMERGENCY GENERATOR, TRENCH AND COVER PER CITY STANDARDS | 10- (N) (2) AH EMPTY 2 INCH PVC CONDUITS EXTENDING FROM THE ELECTRICAL ROOM TO THE CORNER OF THE BUILDING. CONDUITS TO TERMINATE IN A PULL BOX AT PLANTER BED |
| 5- NOT USED | 11- CONNECT TO PREVIOUSLY INSTALLED SANITARY SEWER STUB OUT. SEWER LATERAL AT THE BACK OF THE SIDEWALK IS ROUGHLY 5.60' FROM SURFACE TO FLOW LINE |
| 6- HANDHOLE | |

LEGEND:

- PROPERTY LINE
▼ ENTRANCE

GENERAL NOTES:

1. VERIFY ALL SITE CONDITIONS. BRING ANY UNFORESEEN CIRCUMSTANCES TO THE ATTENTION OF THE ARCHITECT/ ENGINEER PRIOR TO START OF WORK FOR RESOLUTION.
2. SEE ARCHITECTURAL PLANS FOR EXTENSIONS WITHIN BUILDING
3. FINAL ROUTE OF IT/COMMUNICATIONS CABLING TO BE COORDINATED WITH SERVICE PROVIDER.



PLAN NORTH
1 ENLARGED SITE PLAN
1/4" = 1'-0"

LEGEND:

- PROPERTY LINE
▲ ENTRANCE
▨ (N) ASPHALT PAVEMENT
○ 60" ACCESSIBLE TURN RADIUS, 2% SLOPE MAX. IN ALL DIRECTIONS

GENERAL NOTES:

1. SEE DETAIL 1/C501 FOR TYPICAL CONCRETE SIDEWALL INFORMATION.

KEYED NOTES:

- 1 CONCRETE PARKING PAD AT ADA PARKING STALLS, SEE DETAIL 3/C501, MAX SLOPE 1:48/2% MAX IN ALL DIRECTIONS
2 ASPHALT PAVEMENT, SEE DETAIL 2/C501
3 6" THICK CONCRETE RETAINING WALL, SEE DETAIL CUTS AS NOTED ON PLAN
4 CONCRETE SIDEWALK, SEE TYPICAL DETAIL 8/C501
5 SLOPED WALK WITH CURB AND 1-1/2 PIPE GUARDRAIL, SEE DETAIL SECTIONS AS NOTED ON PLAN
6 CONCRETE CURB AND REJECT GUTTER, SEE DETAIL 6/C501
7 CONCRETE FLUSH CURB AND REJECT GUTTER, SEE DETAIL 7/C501
8 CONCRETE WHEEL STOP, SEE DETAIL 11/C501
9 PAINTED ISA SYMBOL, SEE DETAIL 9/C501
10 4" WIDE WHITE PARKING STRIPING W/, WHERE APPLICABLE, FIELD OF 4" WIDE STRIPES AT 36" O.C.
11 4" WIDE BLUE PARKING STRIPE BORDER/ PERIMETER WITH FIELD OF 4" WIDE WHITE STRIPES AT 36" O.C. AT ADA PARKING ACCESS AISLE
12 4" WIDE BLUE PARKING STRIPE
13 PAINTED TEXT TO READ "NO PARKING" SEE DETAIL 12/C501
14 ACCESSIBLE VAN PARKING ONLY SIGN ON 1-1/2 STEEL POST SET IN RETAINING WALL, SEE DETAIL 10B/C501
15 ACCESSIBLE PARKING ONLY SIGN ON 1-1/2 STEEL POST SET IN RETAINING WALL, SEE DETAIL 10A/C501
16 TRUNCATED DOME TACTILE WARNING, 36" DEEP x FULL WIDTH OF CURB CUT, SEE DETAIL 13/C501
17 WARPED CONCRETE WALK, NON ACCESSIBLE
18 RELOCATED ELECTRIC HAND HOLE. INSTALL FLUSH W/ SLOPED WALKWAY
19 RELOCATED SUB-GRADE WATER VALVE. INSTALL FLUSH W/ ADJACENT SURFACE
20 FILL (N) LANDSCAPE AREA WITH SOILS AND MULCH
21 TRANSITION (N) TO (E) ASPHALT, SEE DETAIL 5/C501
22 (N) TO (E) CONCRETE WALK, SEE DETAIL 4/C501
23 GUARDRAIL AT SLOPED WALK, SEE TYPICAL DETAIL 8/C502
24 GUARDRAIL AND HANDRAIL AT STAIR/LANDING, SEE TYPICAL DETAIL 3/C502
25 HANDRAIL AT STAIR/LANDING, ATTACH TO CONCRETE BUILDING STRUCTURE
26 (E) CURB AND LANDING TO REMAIN BELOW (N) CONCRETE WALK, SEE 4/C502
27 HANDRAIL RETURN TO BUILDING FACE
28 SITE ENTRY SIGNAGE, SEE DETAIL 1/C503
29 FIRE WATER UTILITY INFRASTRUCTURE, SEE UTILITY PLAN C102 AND ENLARGED UTILITY PLAN C402
30 NOT USED
31 NOT USED
32 ASPHALT PAVEMENT OVER UTILITY TRENCHING, BLEND GRADES TO (E), SEE DETAIL 2/C501
33 UTILITY HANDHOLE, SEE UTILITY PLAN C102
34 CURB SLOPES WITH GRADE OF RAMP
35 (E) TRANSFORMER TO REMAIN PENDING LOCAL UTILITY APPROVAL, SEE ELECTRICAL DESIGNS, PROTECT DURING CONSTRUCTION

KEYED NOTES:

- 1

NEW 6" FIRE WATER PIPE. UNDERGROUND PORTIONS OF PIPE SHALL BE PVC AWWA C900.
- 2

NEW 6" FIRE WATER SHUT-OFF VALVE IN LANDSCAPING
- 3

NEW 6" FIRE WATER BACKFLOW PREVENTER WITH 1" CONDUIT AND SENSOR CONDUCTOR, ENCLOSURE, AND CONCRETE PAD, SEE DETAIL 2/C402
- 4

NEW FIRE HYDRANT
- 5

EMERGENCY GENERATOR
- 6

CONCRETE GENERATOR PAD, SEE DETAIL 2/C503
- 7

4" BOLLARD AND CONCRETE FOUNDATION SET IN ASPHALT PAVING AROUND (3) SIDES OF THE GENERATOR PAD, (F-FIXED BOLLARD, R-REMOVABLE BOLLARD) SEE DETAILS 3 & 4/C503, BOLLARDS TO BE SPACED AT A MAXIMUM CLEAR DISTANCE OF 48"
- 8

4" WIDE WHITE PARKING STRIPING W/, WHERE APPLICABLE, FIELD OF 4" WIDE STRIPES AT 36" O.C.
- 9

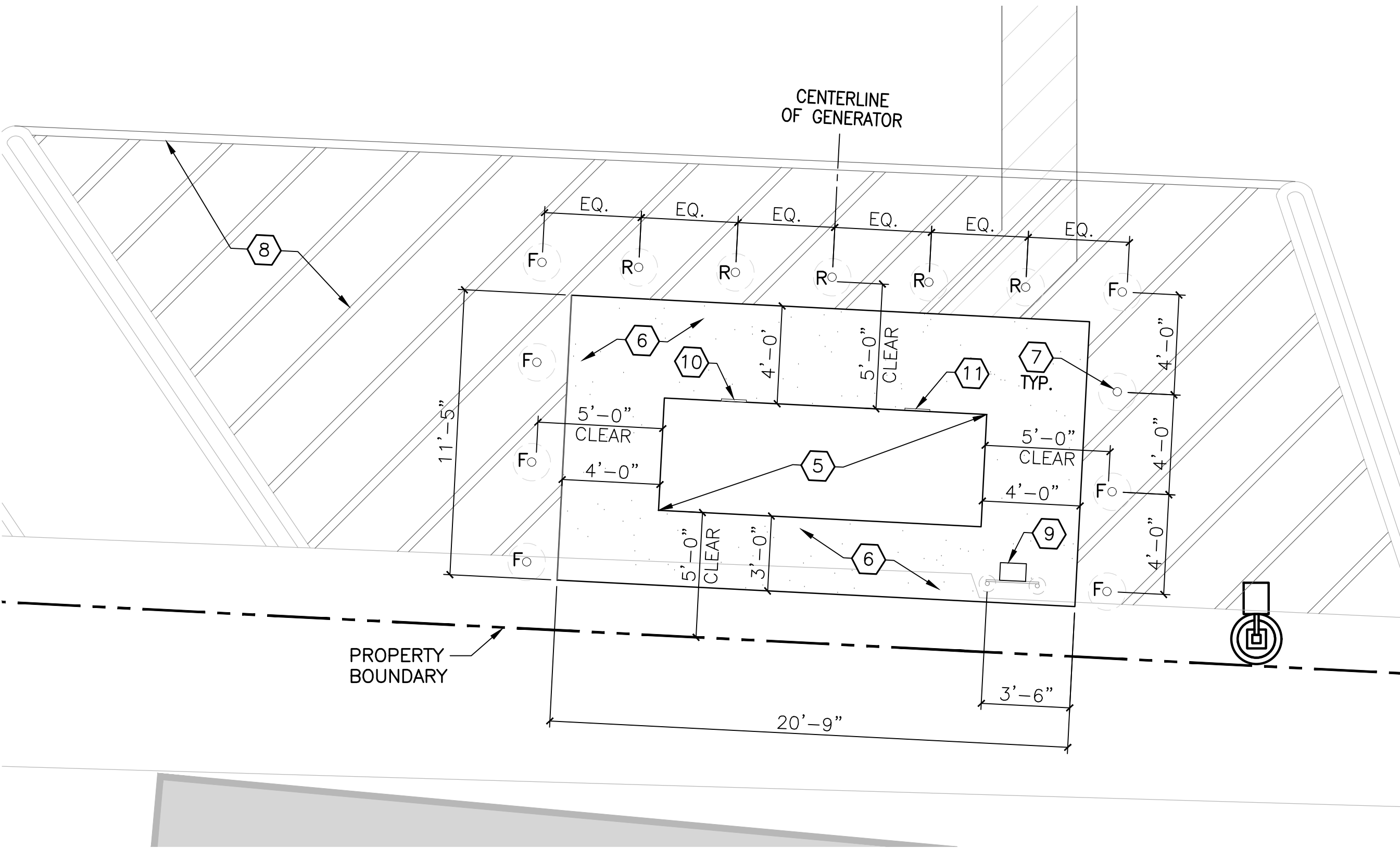
OUTDOOR FIRE EXTINGUISHER CABINET TOP OF CABINET 60" MAX. ABOVE GRADE, MOUNT TO FENCE
- 10

PROVIDE NFPA 704 PLACARD AND A "NO SMOKING" SIGN MOUNTED ON GENERATOR HOUSING, SEE DETAILS 7/C503 & 8/C503
- 11

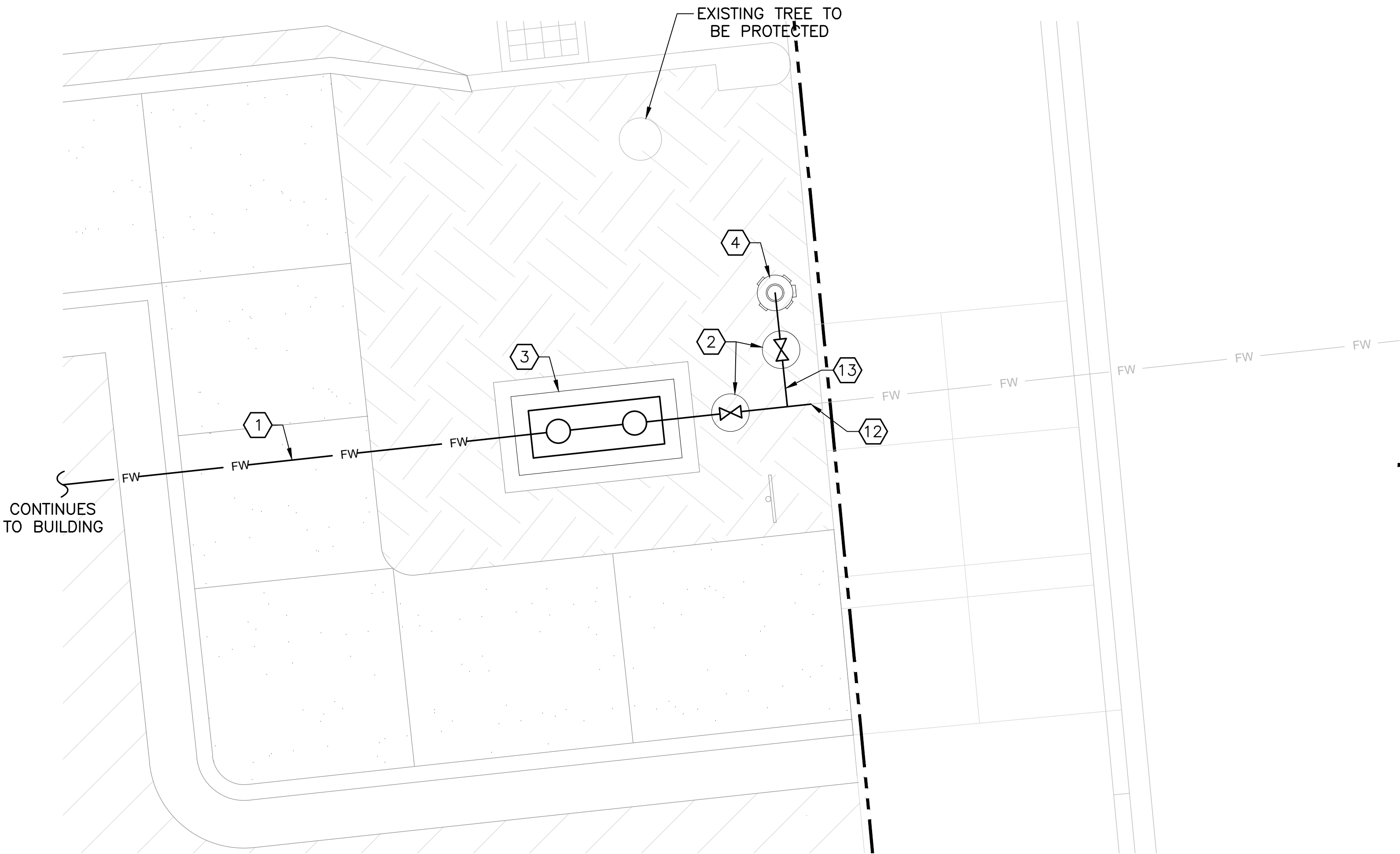
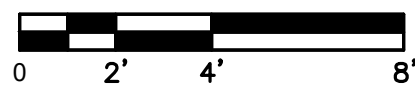
PROVIDE A "NO SMOKING OR OPEN FLAME" SIGNAGE, SEE DETAIL 9/C503
- 12

CONNECT TO PREVIOUSLY INSTALLED FIRE WATER STUB OUT
- 13

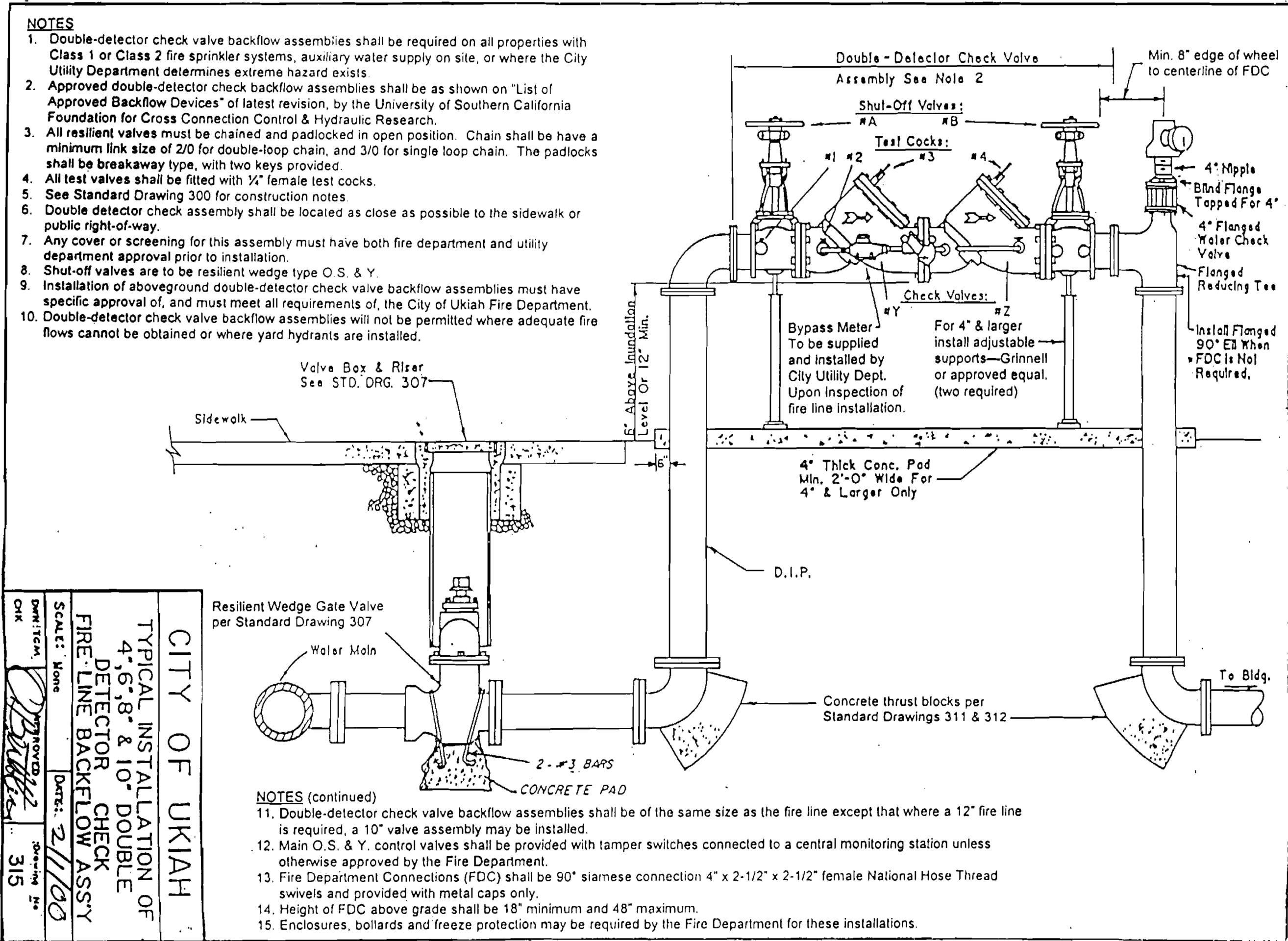
NEW 6" FIRE WATER PIPE. UNDERGROUND PORTIONS OF PIPE SHALL BE PVC AWWA C900., SEE DETAIL 305 ON SHEET C504



PLAN NORTH
3
1/4" = 1'-0"



PLAN NORTH
1
3/8" = 1'-0"



2
CITY OF UKIAH STANDARD DETAIL - FIRE WATER BACKFLOW PREVENTER
NOT TO SCALE

Revisions:

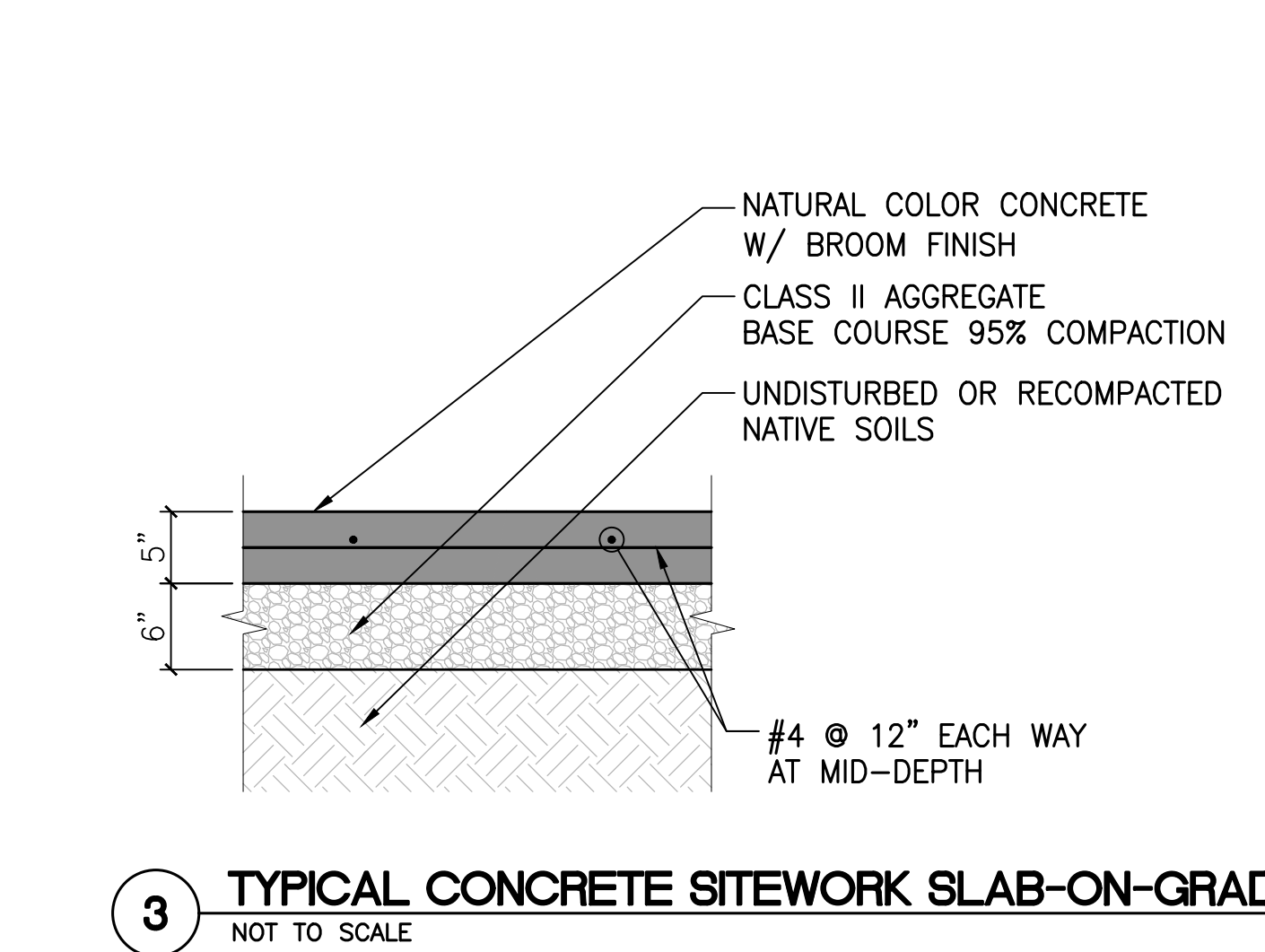
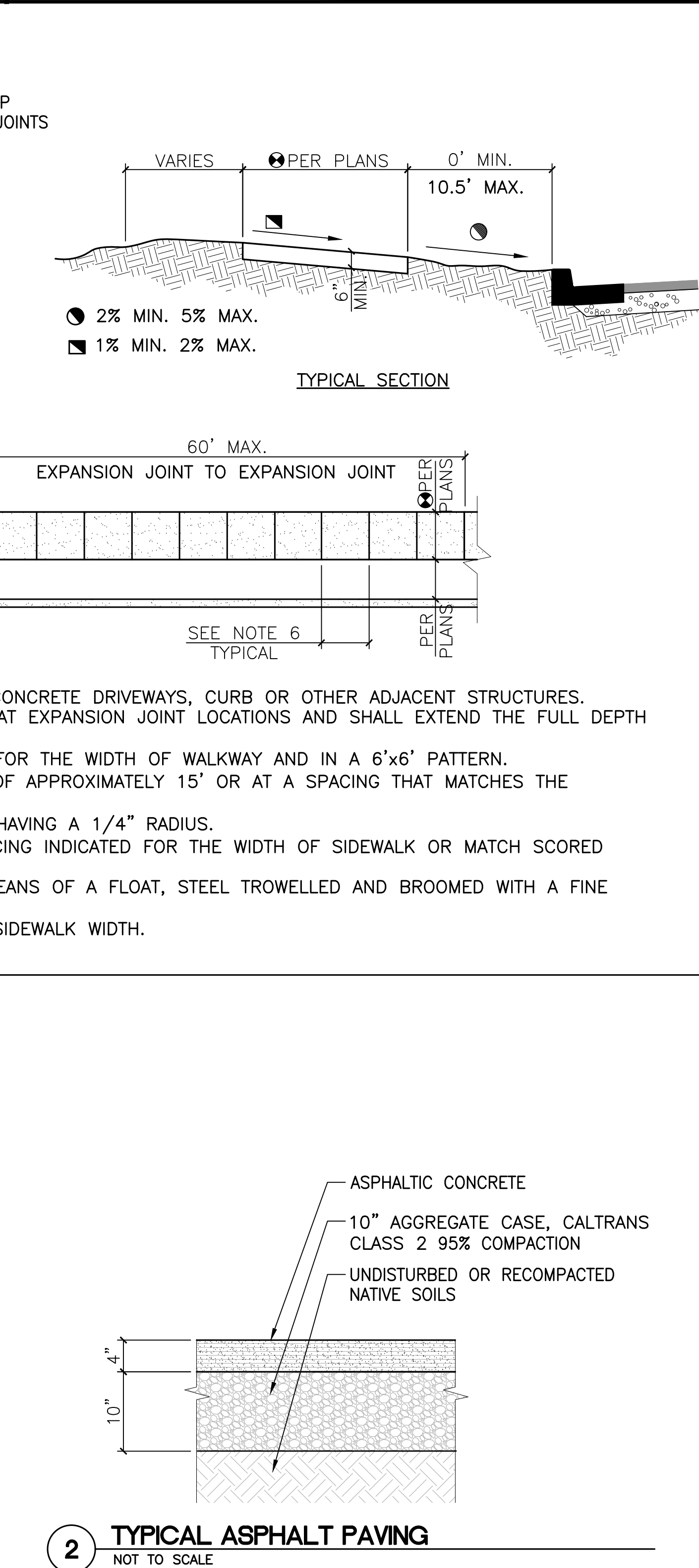
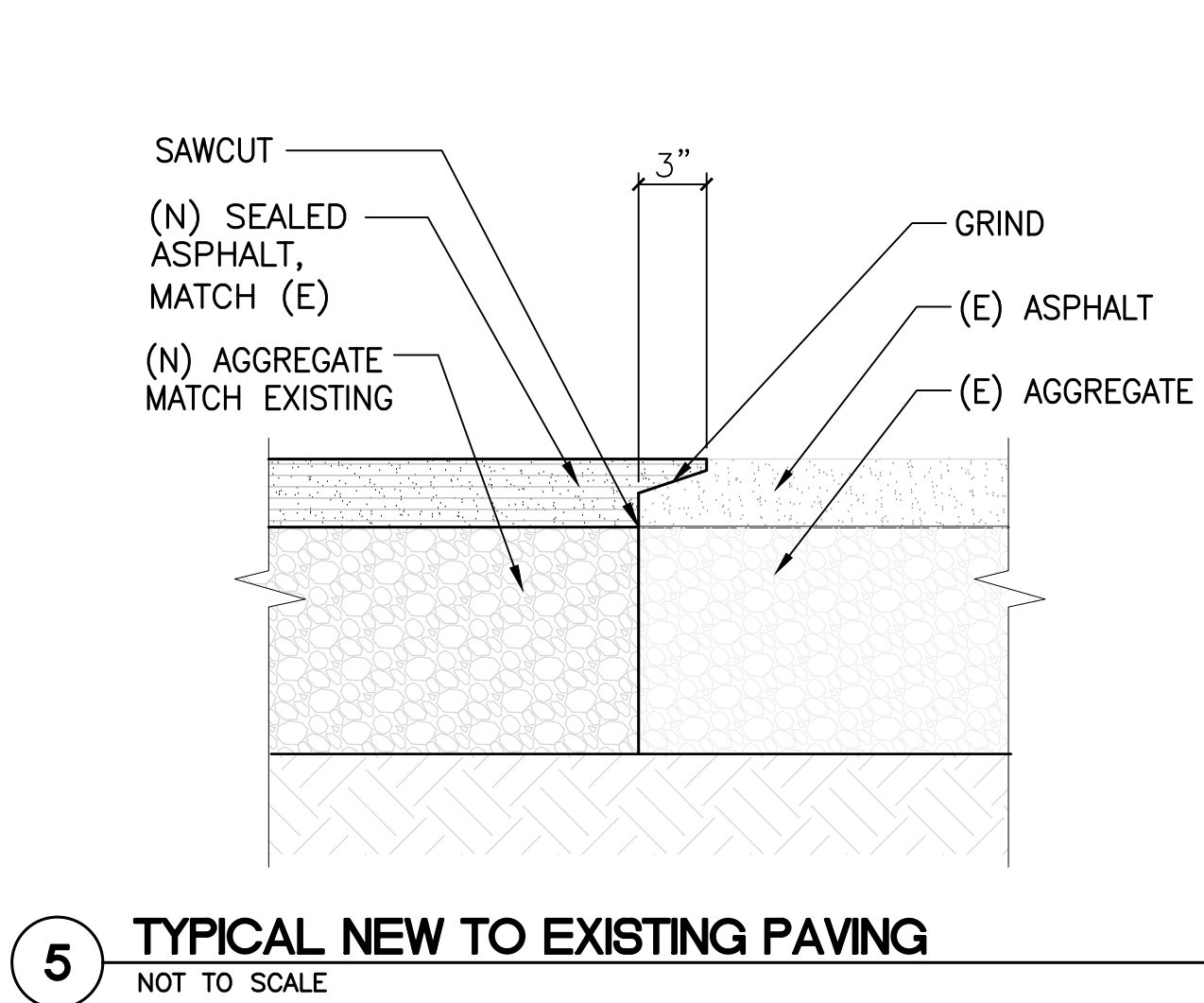
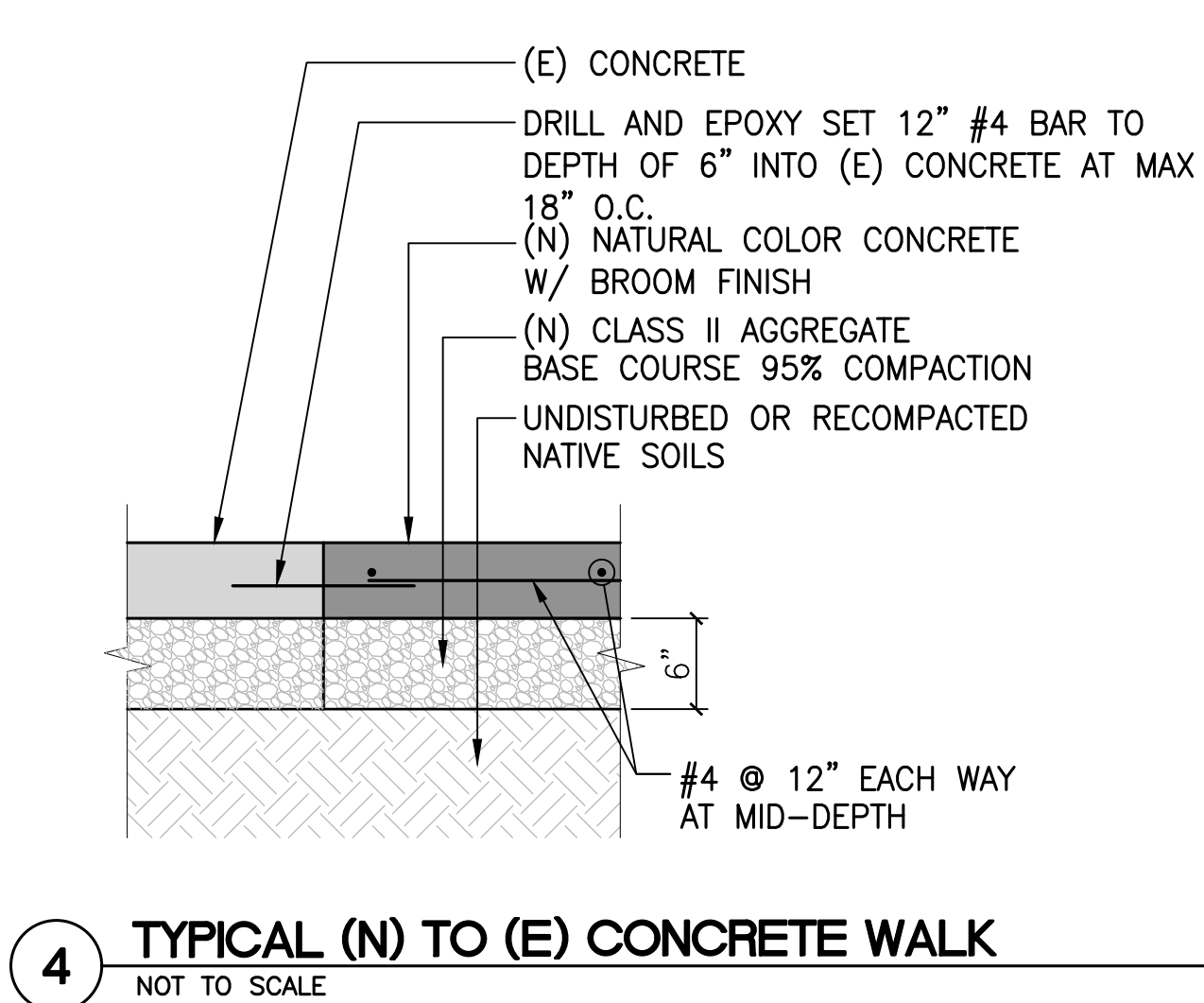
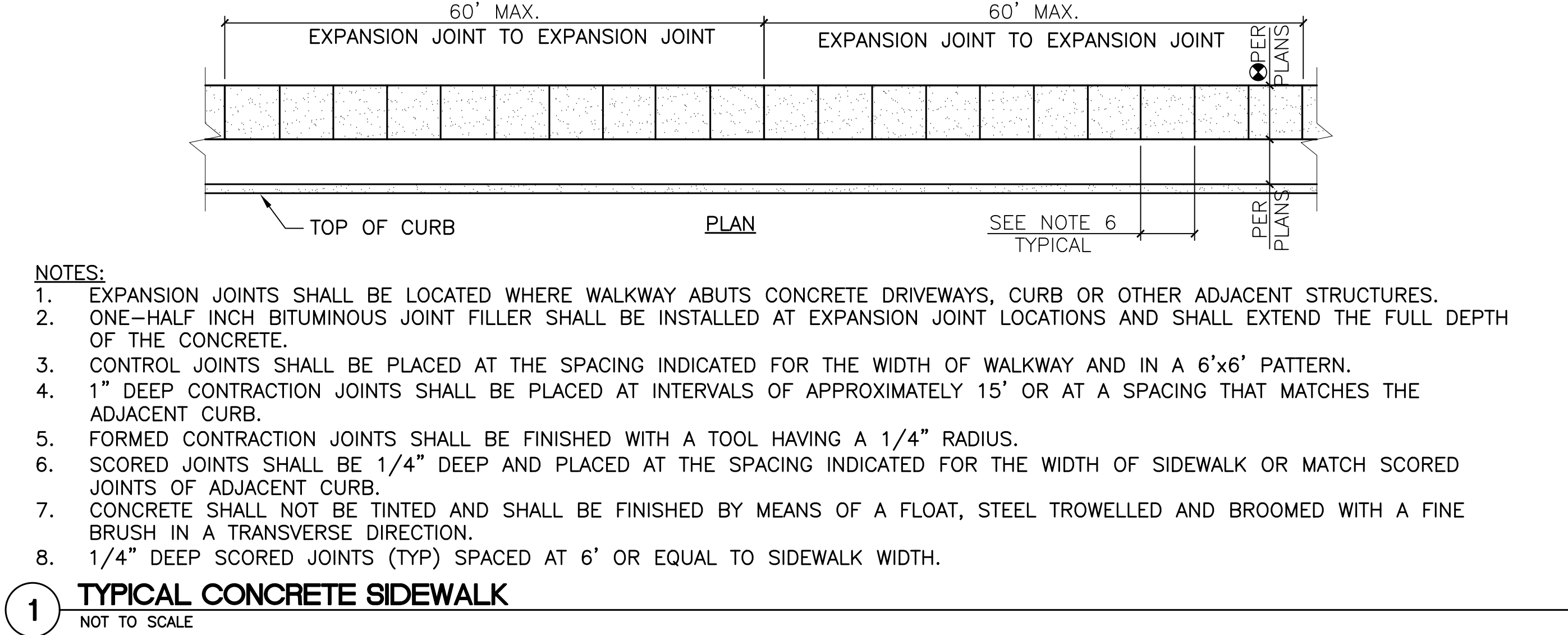
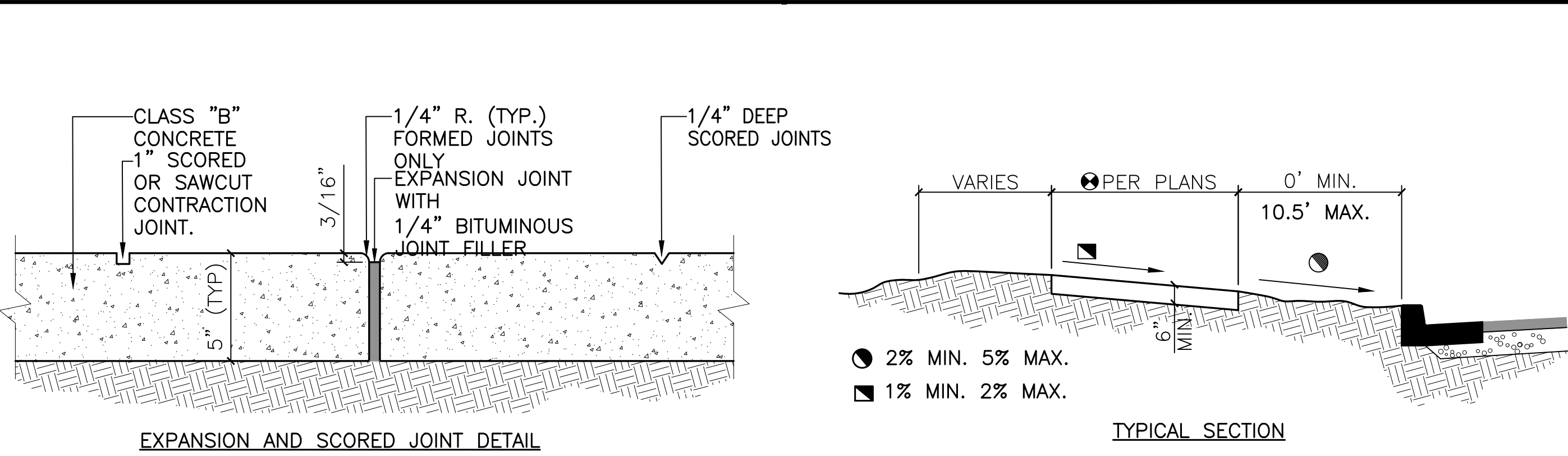
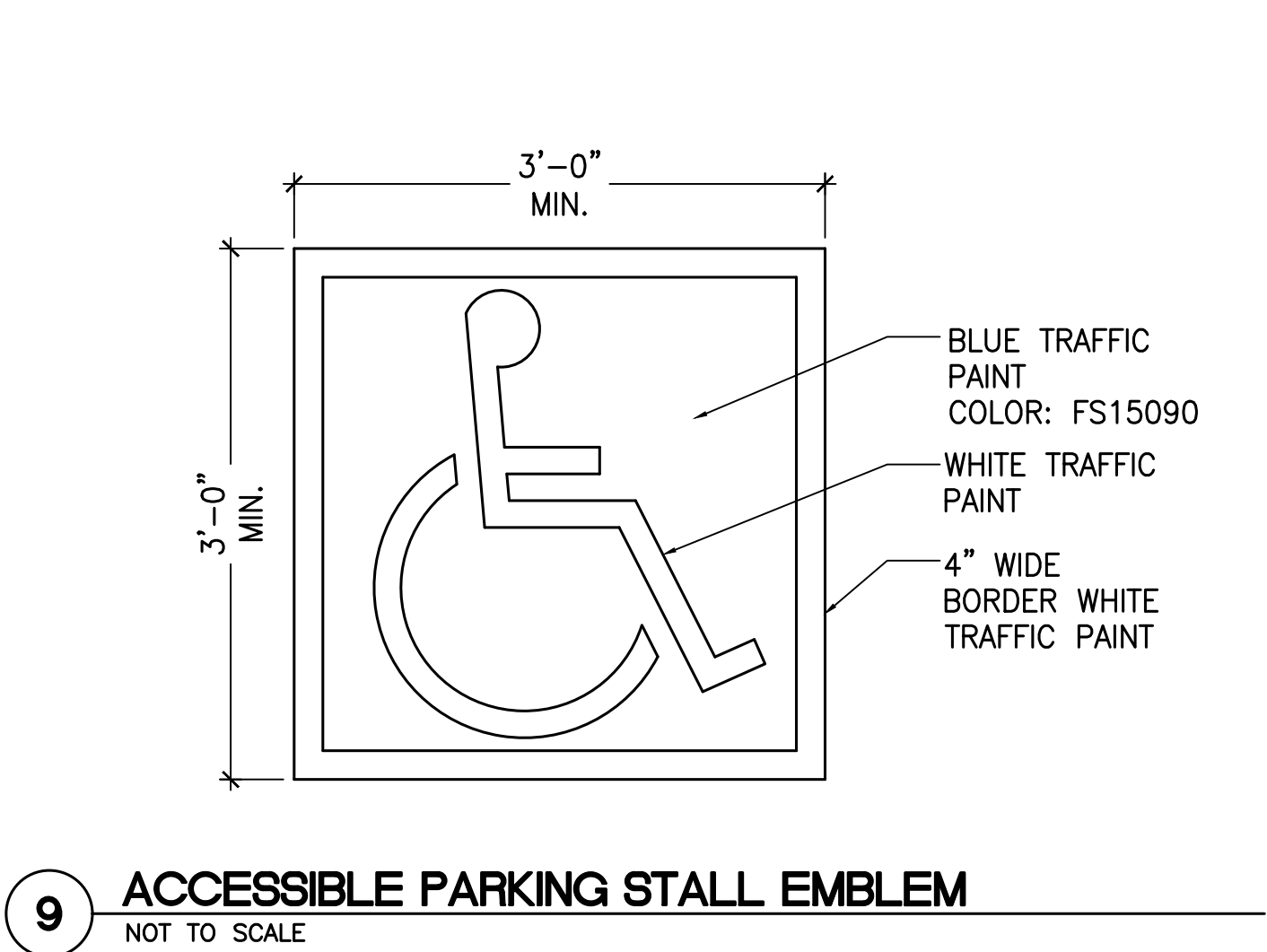
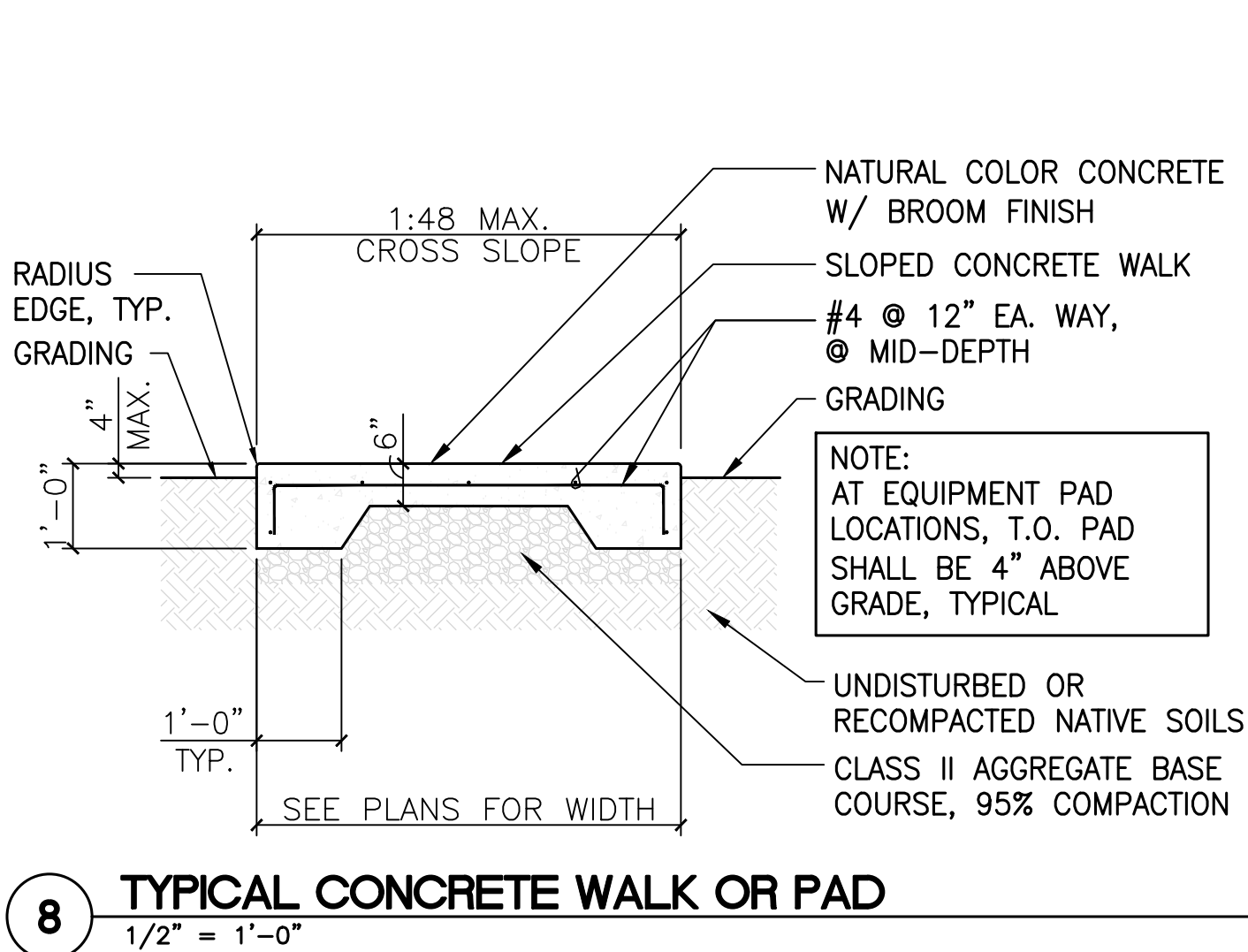
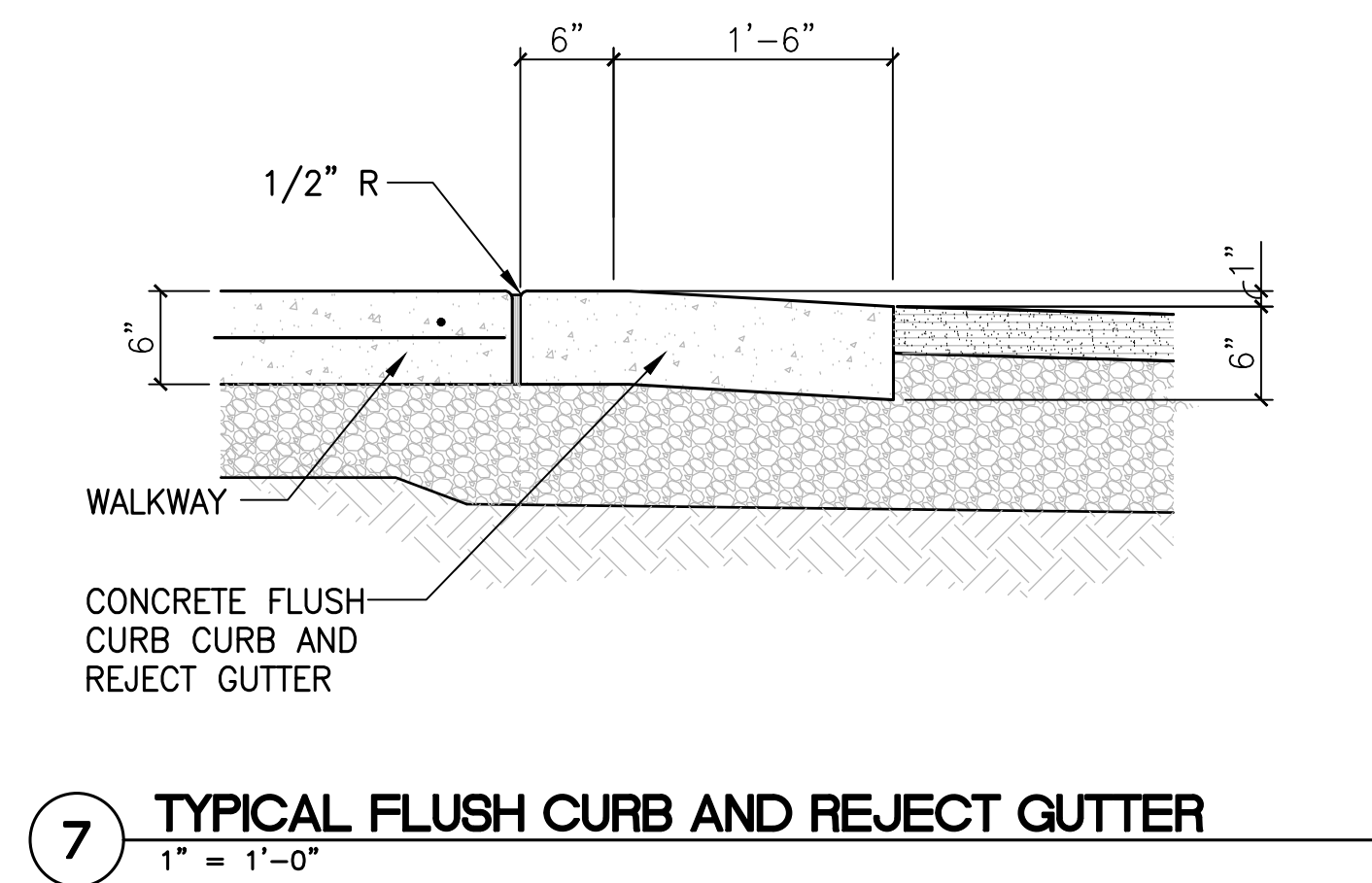
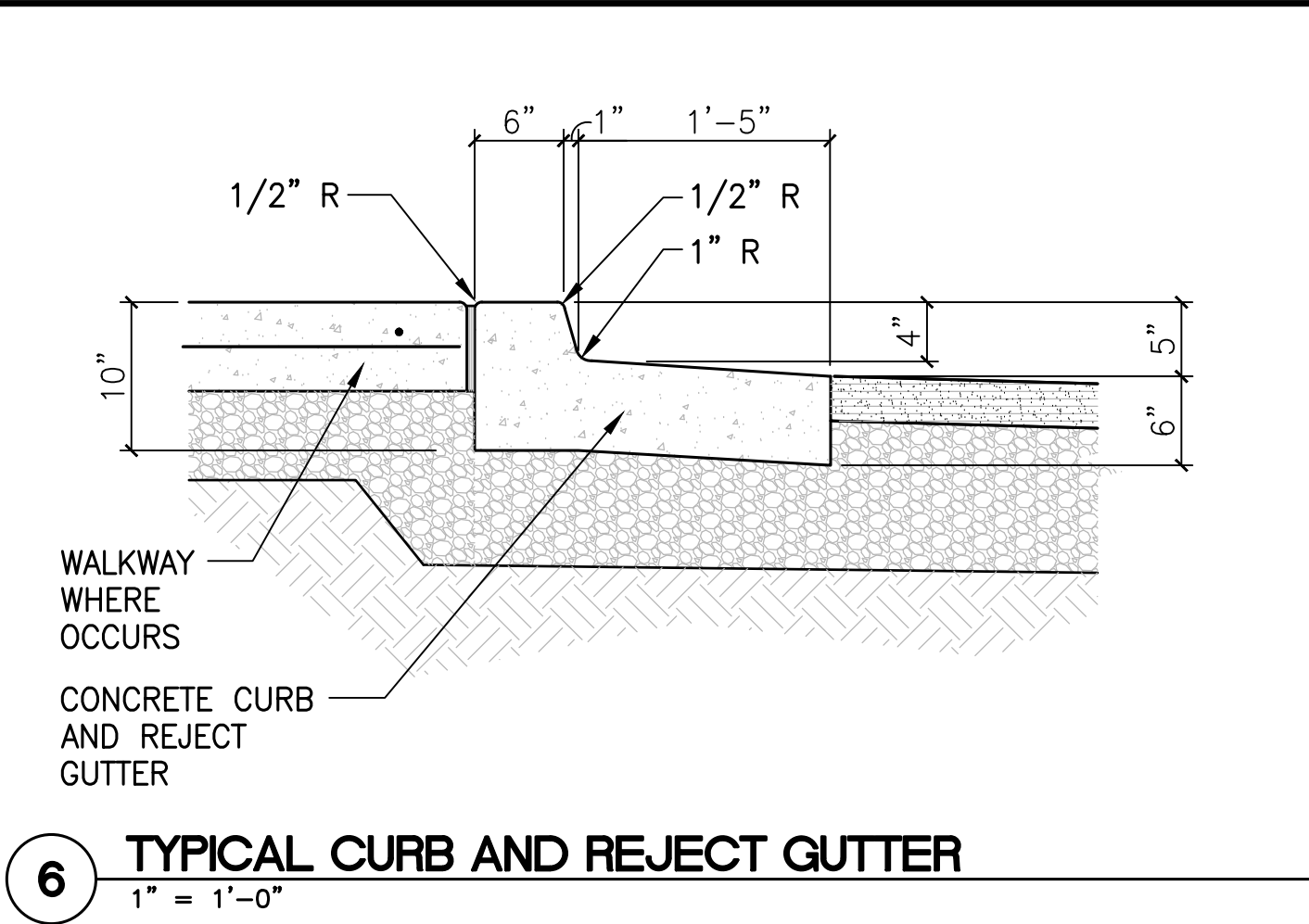
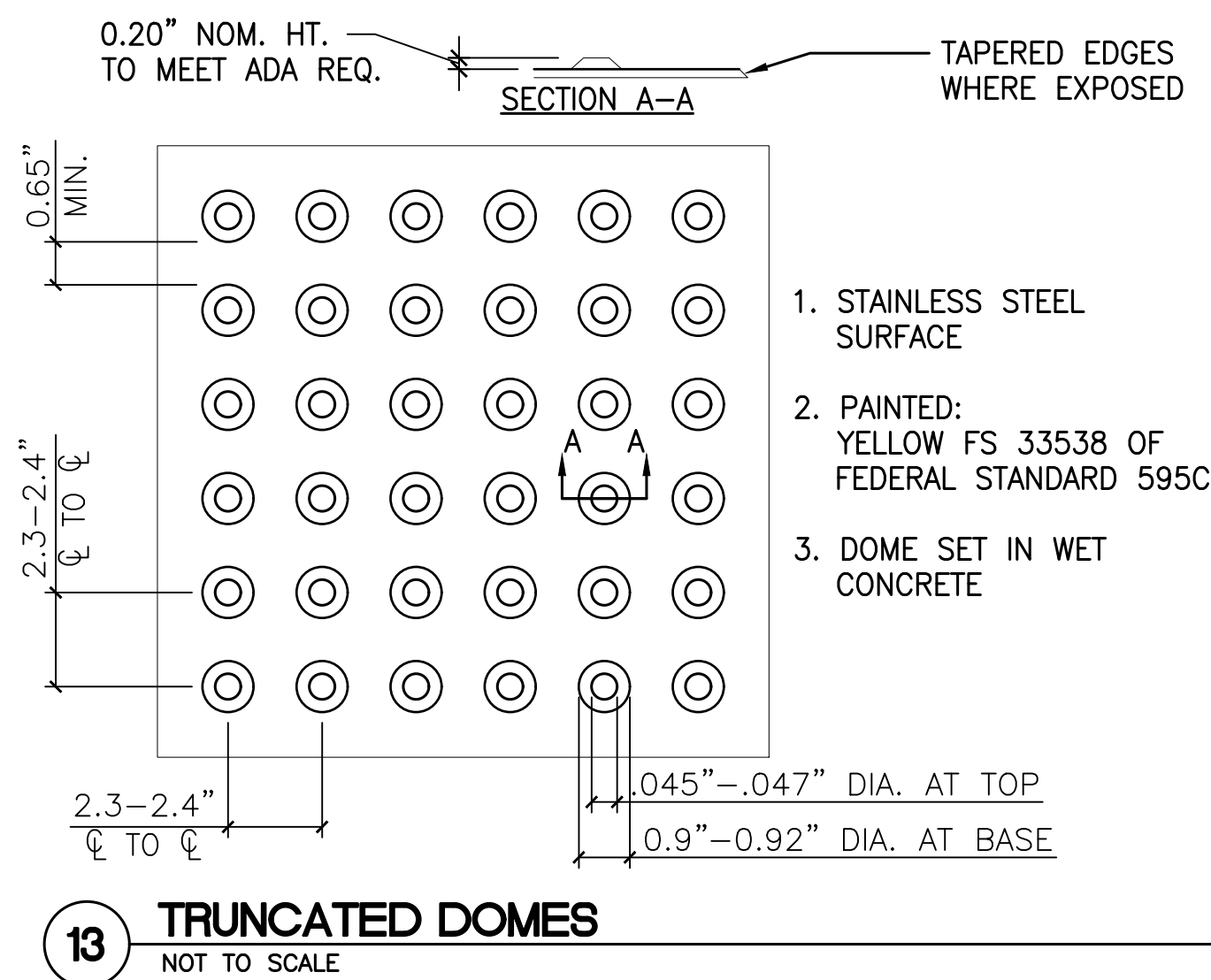
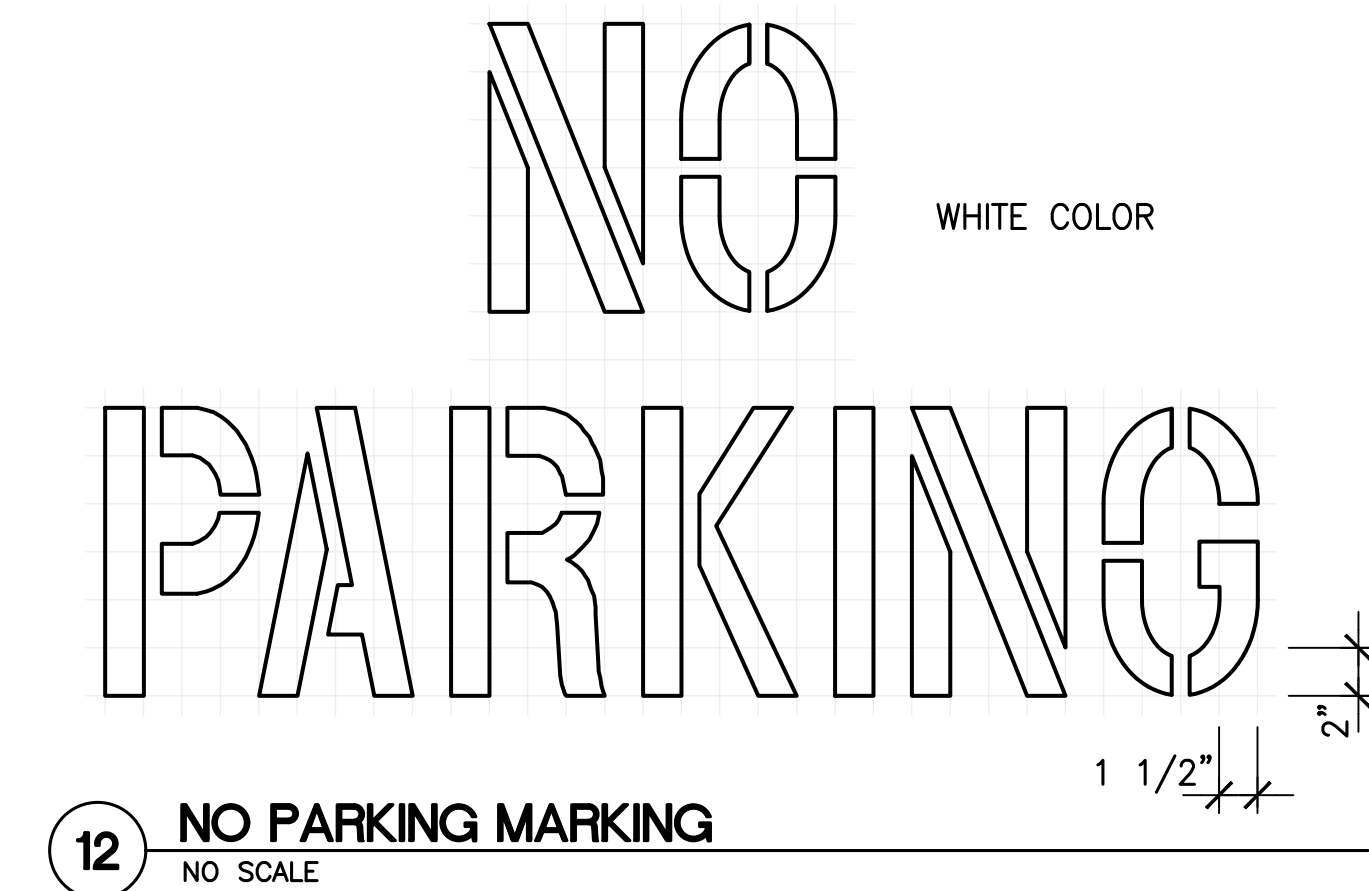
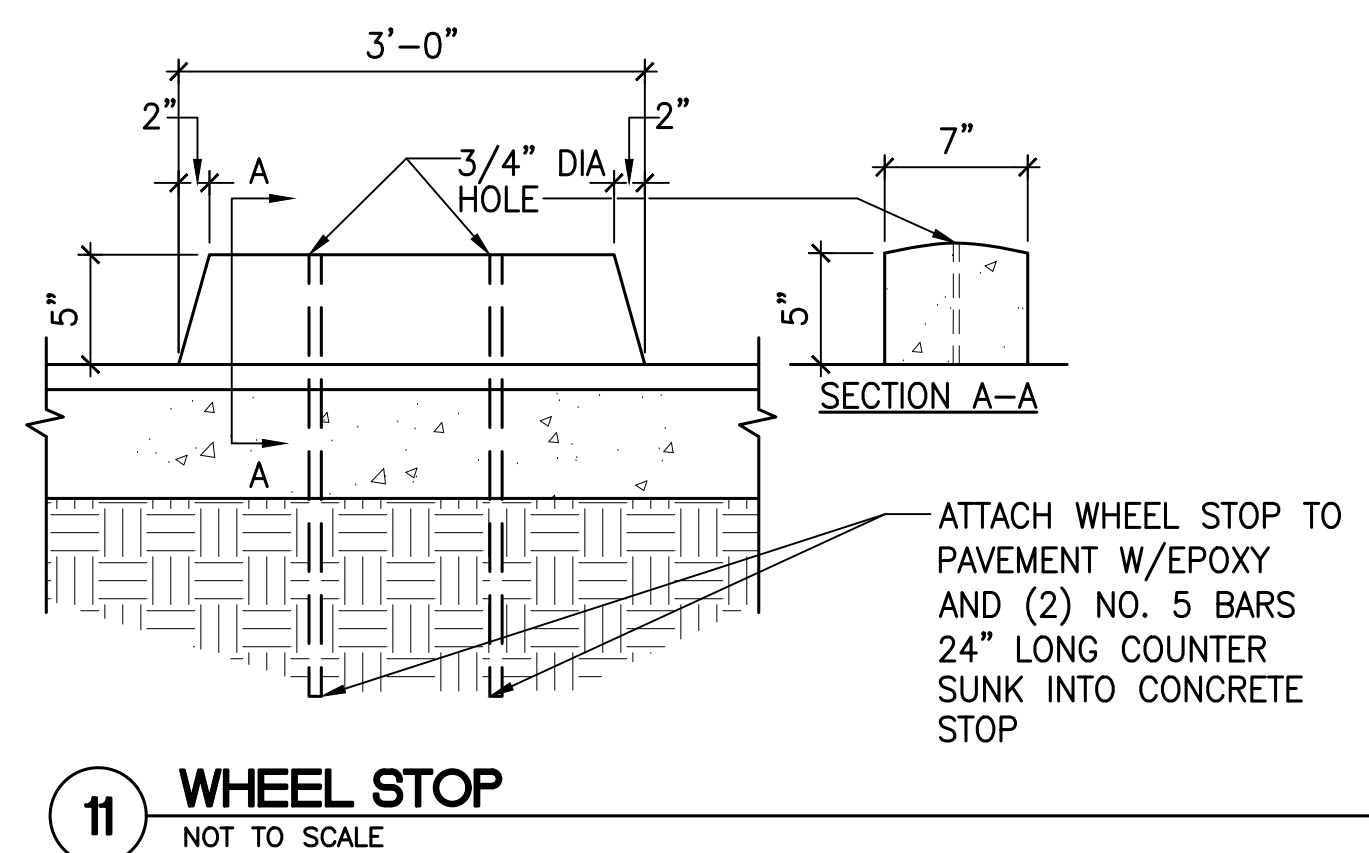
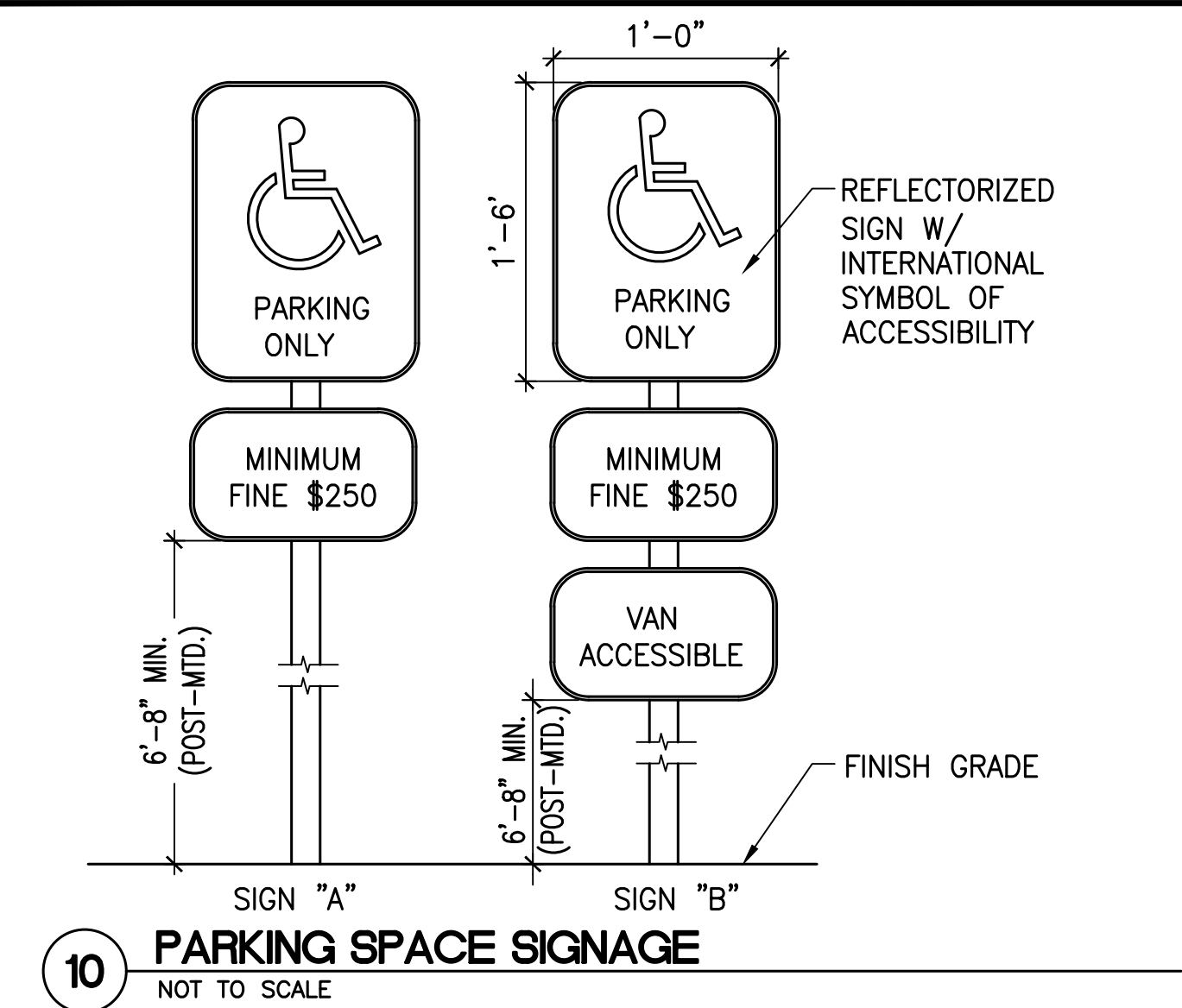
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APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

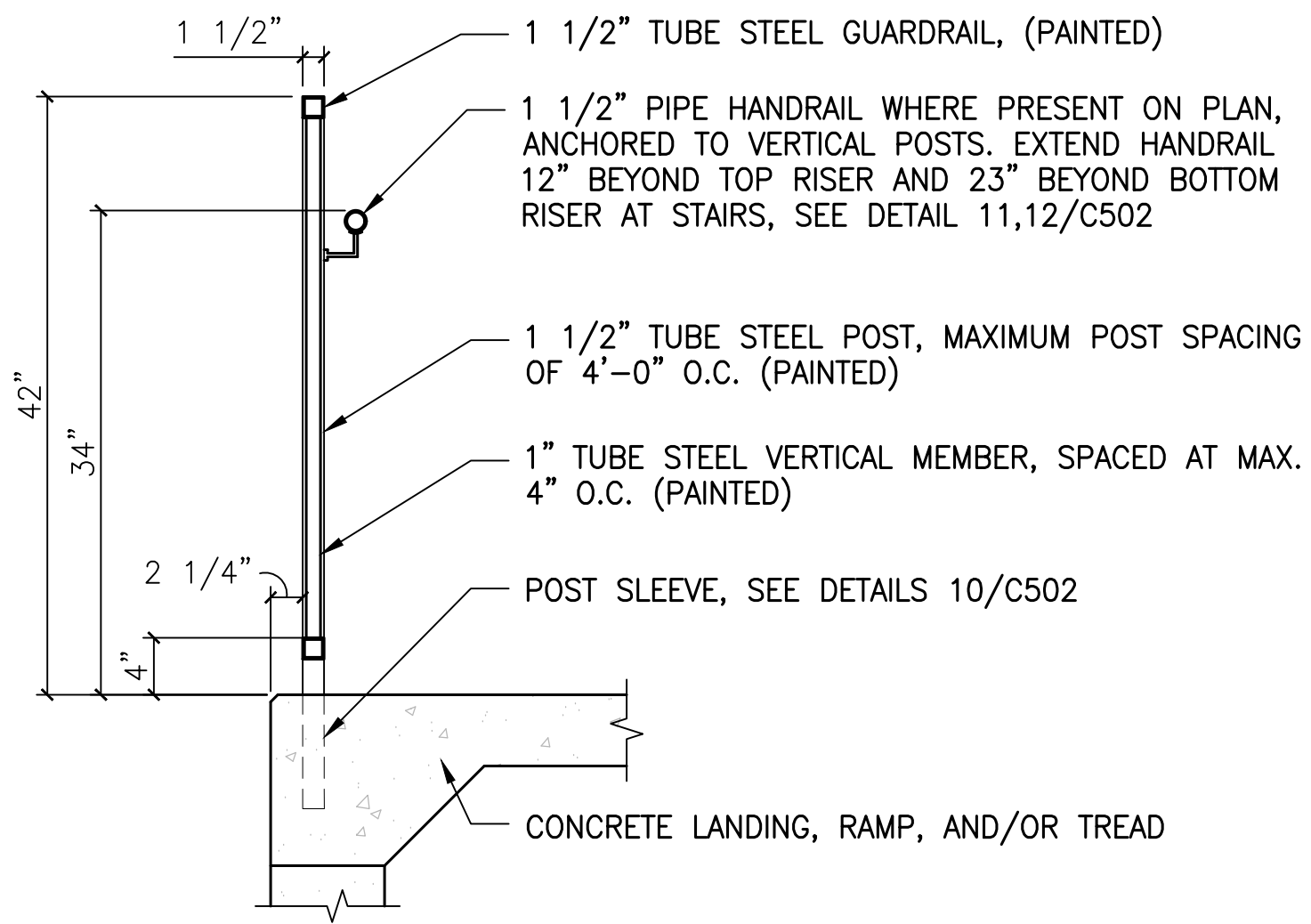
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ENLARGED SITE
UTILITY PLAN AND
DETAILS

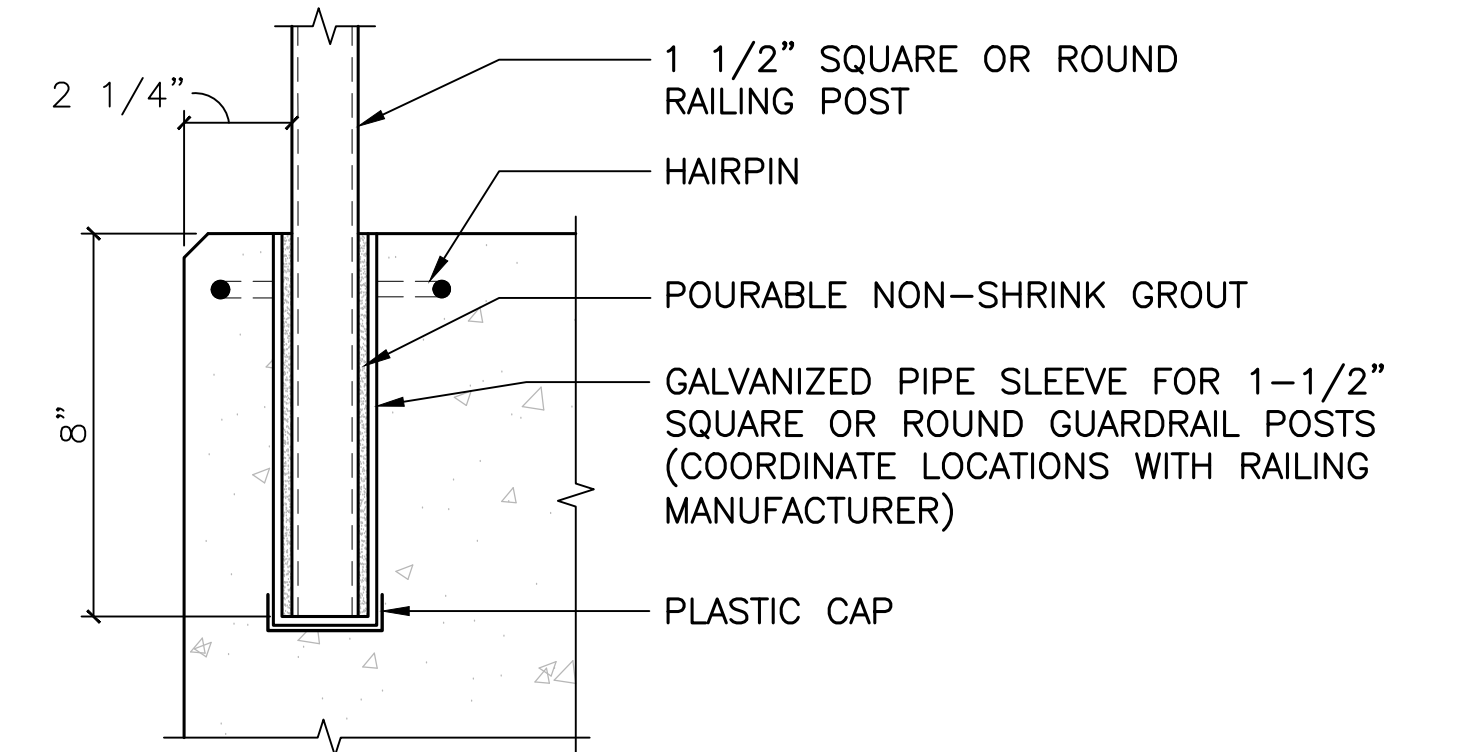
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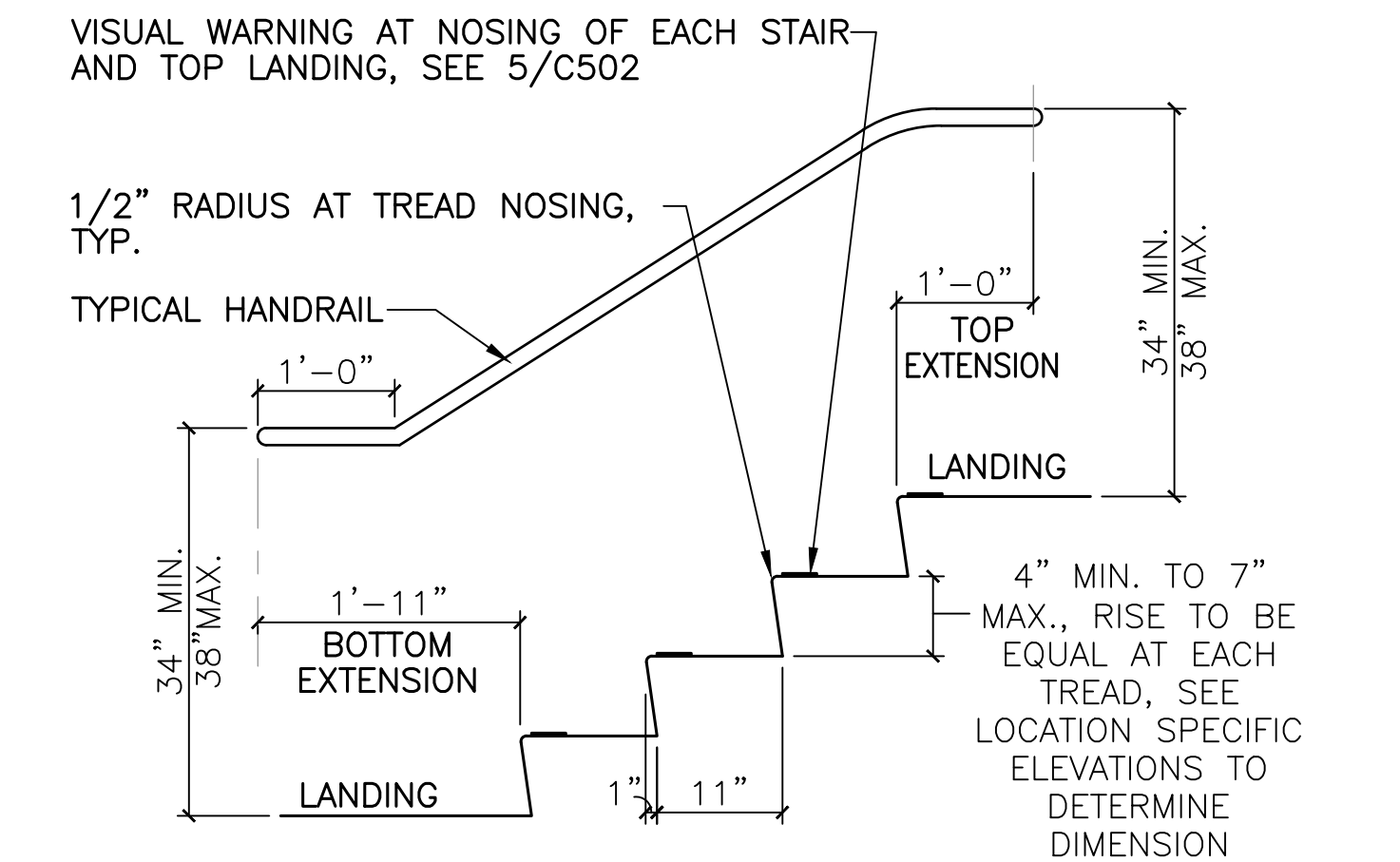




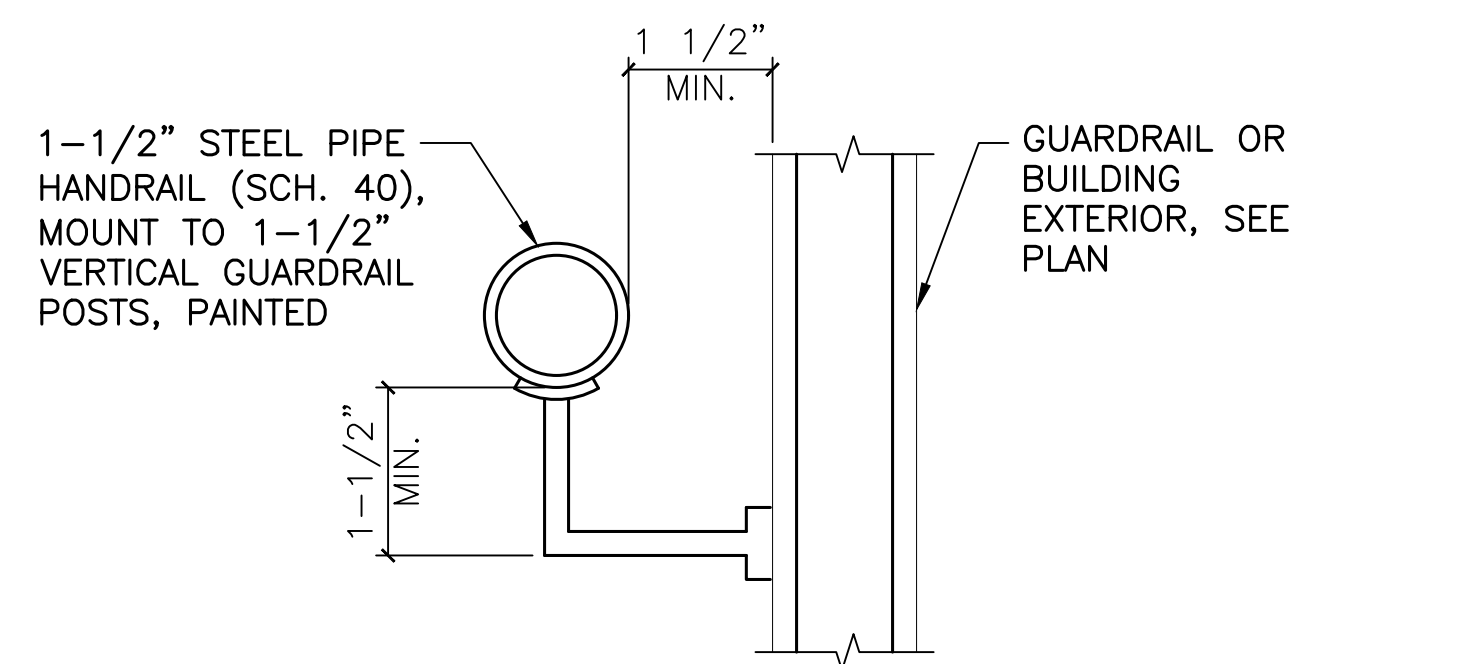
9 TYPICAL GUARDRAIL / HANDRAIL SECTION
1" = 1'-0"



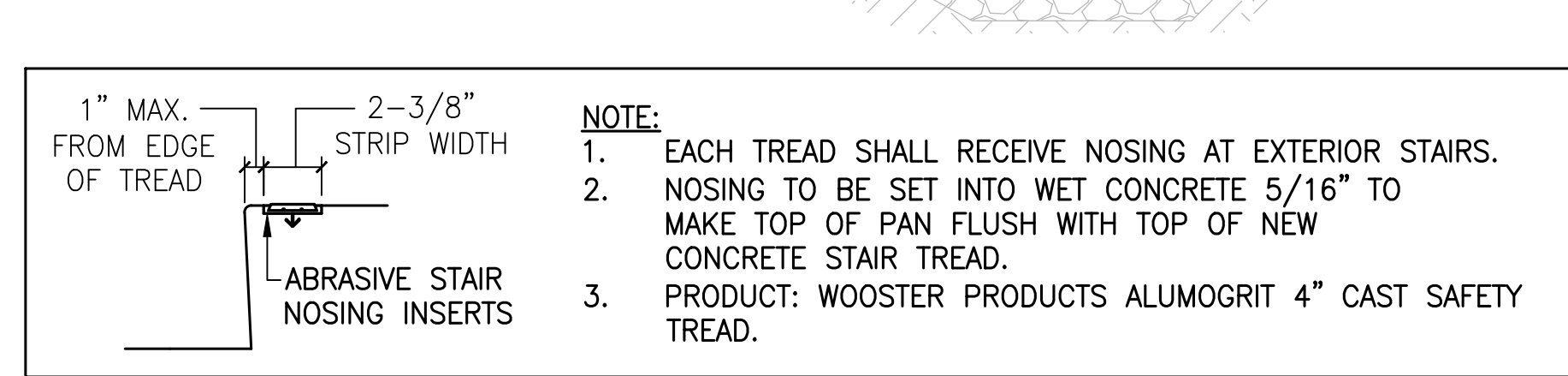
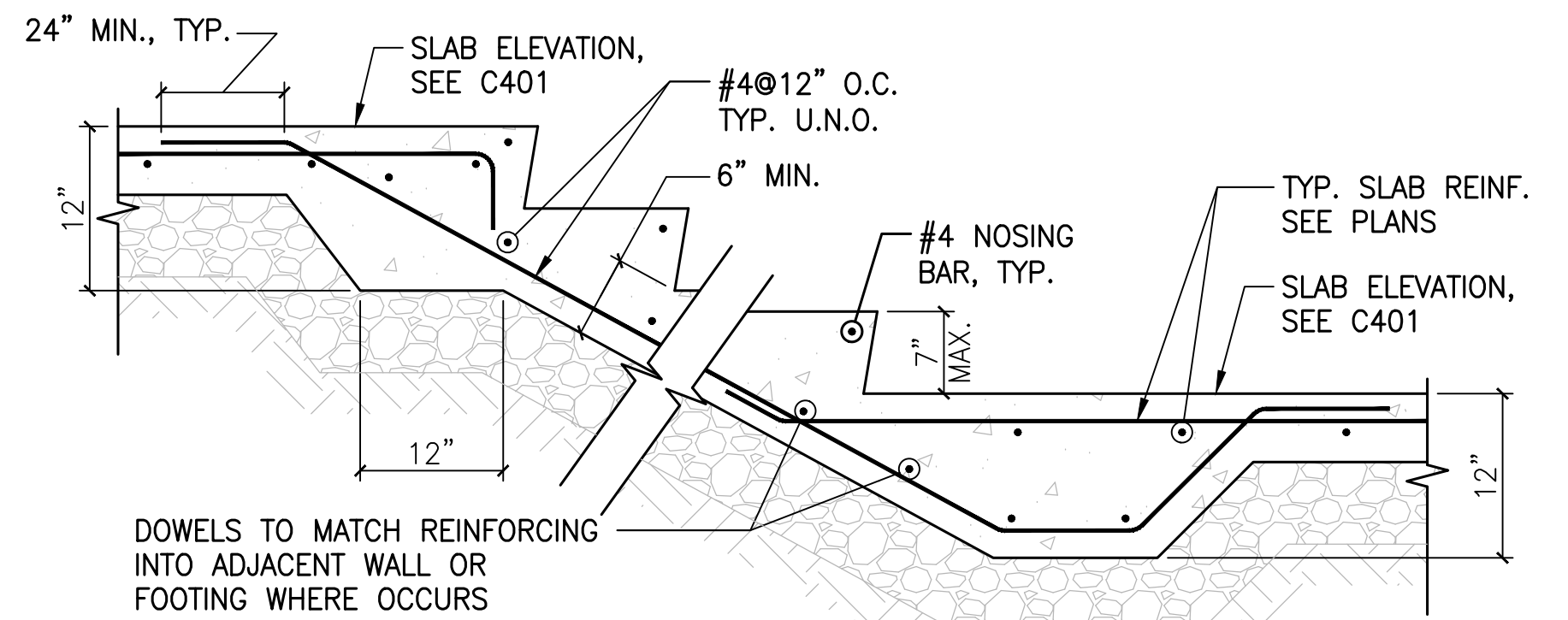
10 GUARDRAIL POST BASE W/ SLEEVE
3" = 1'-0"



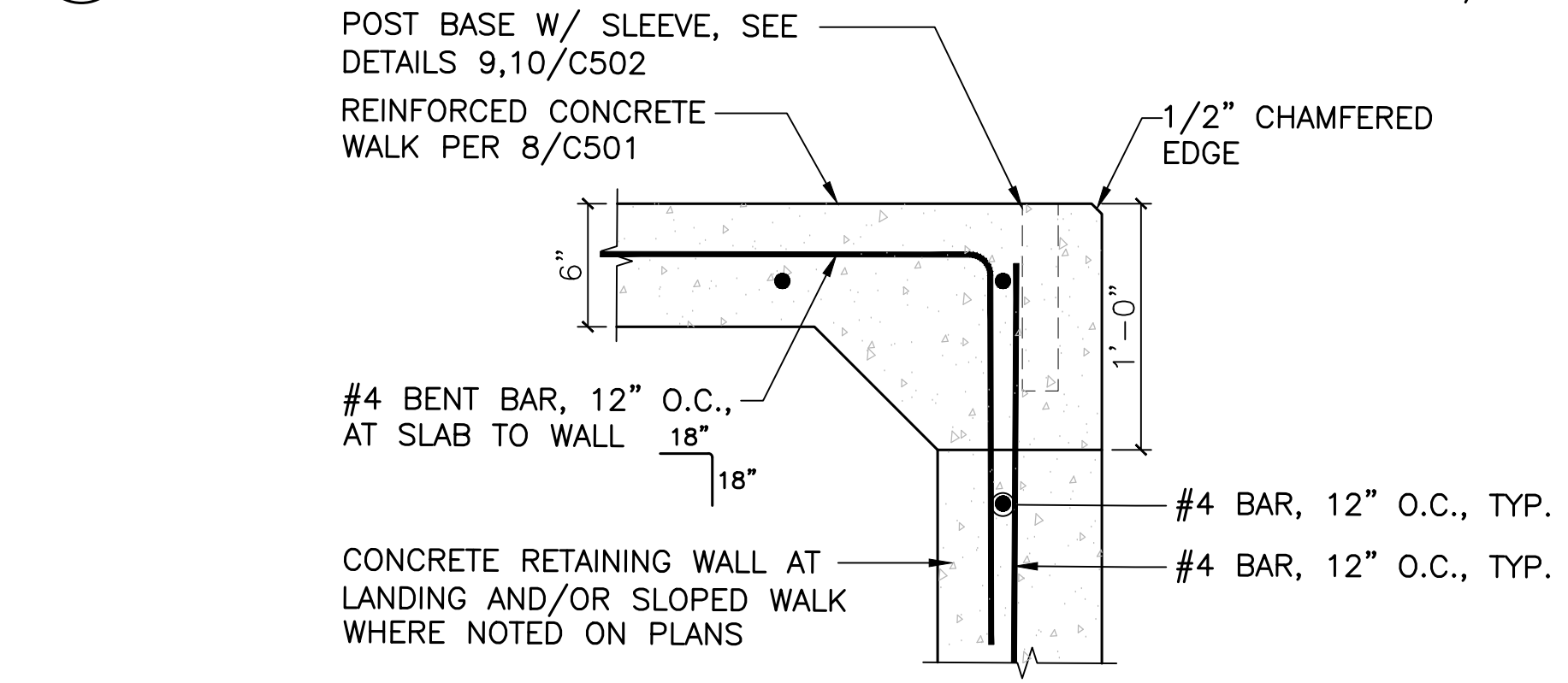
11 TYPICAL HANDRAIL AND STAIR DETAIL
NOT TO SCALE



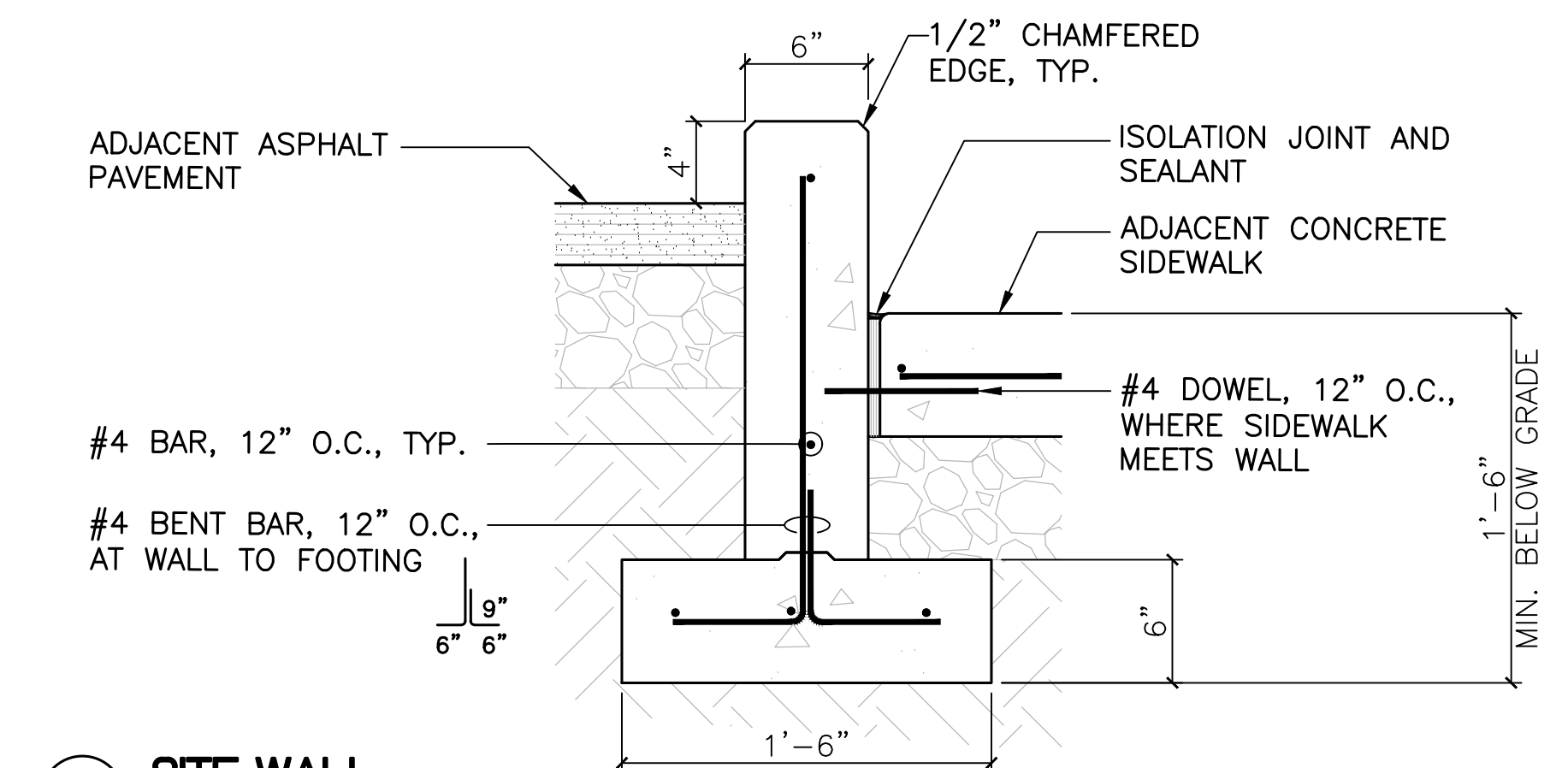
12 TYPICAL HANDRAIL DETAIL
NOT TO SCALE



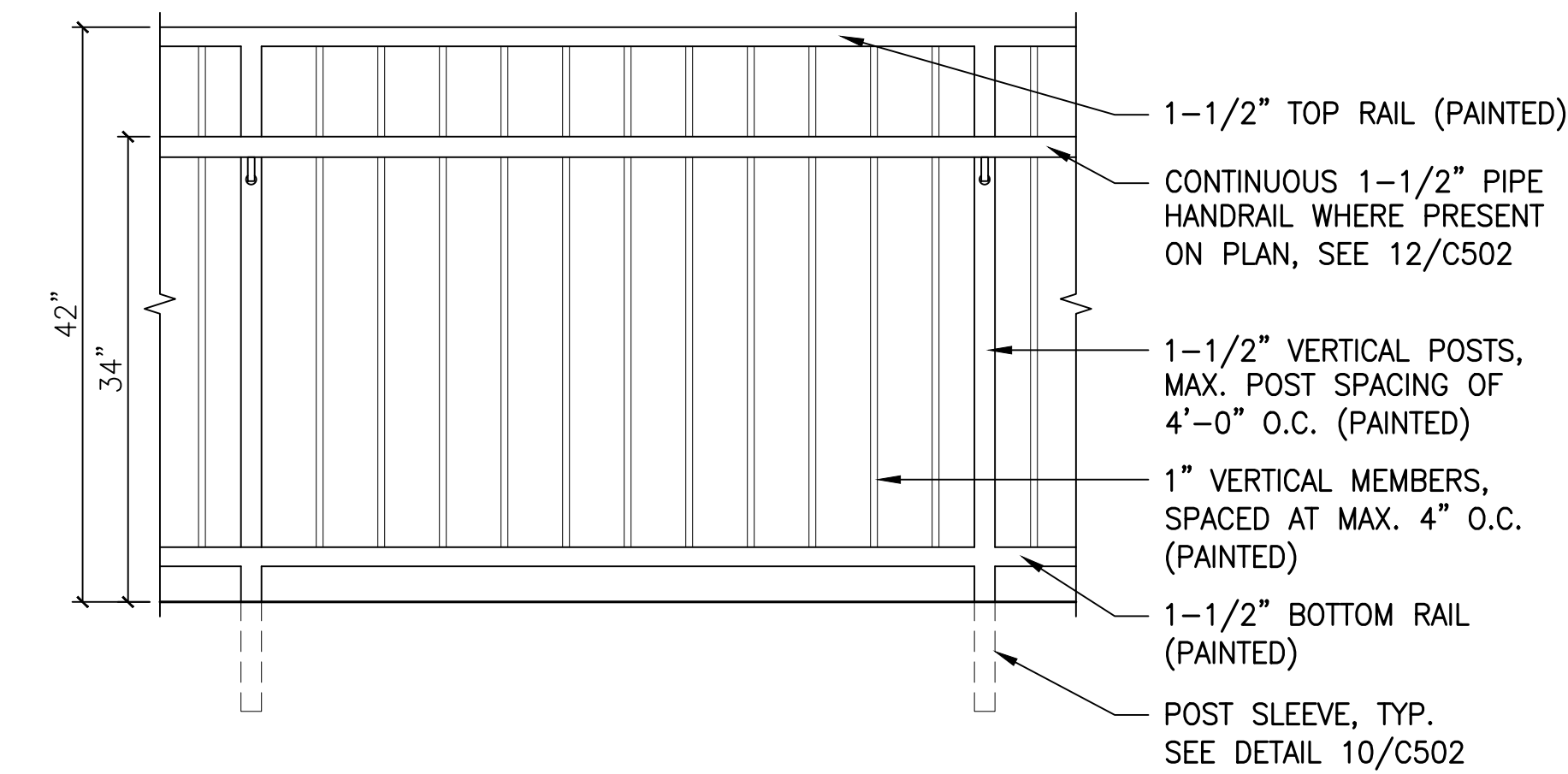
5 TYPICAL STAIR ON GRADE
NO SCALE



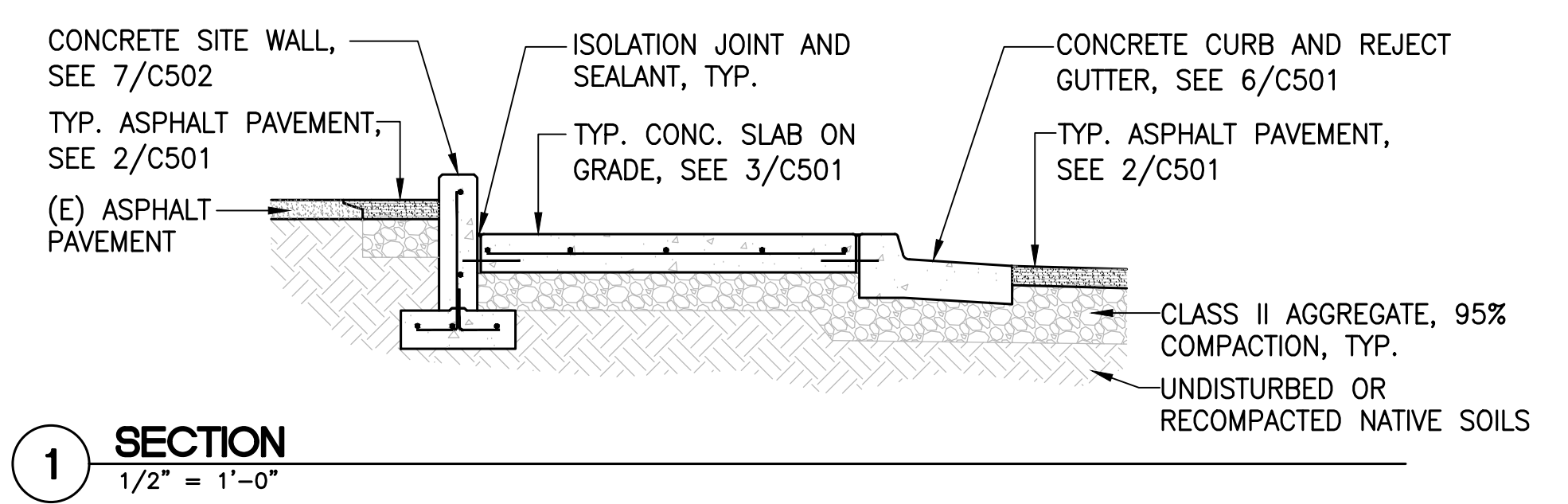
6 EDGE OF RAISED OR SLOPED WALK
1-1/2" = 1'-0"



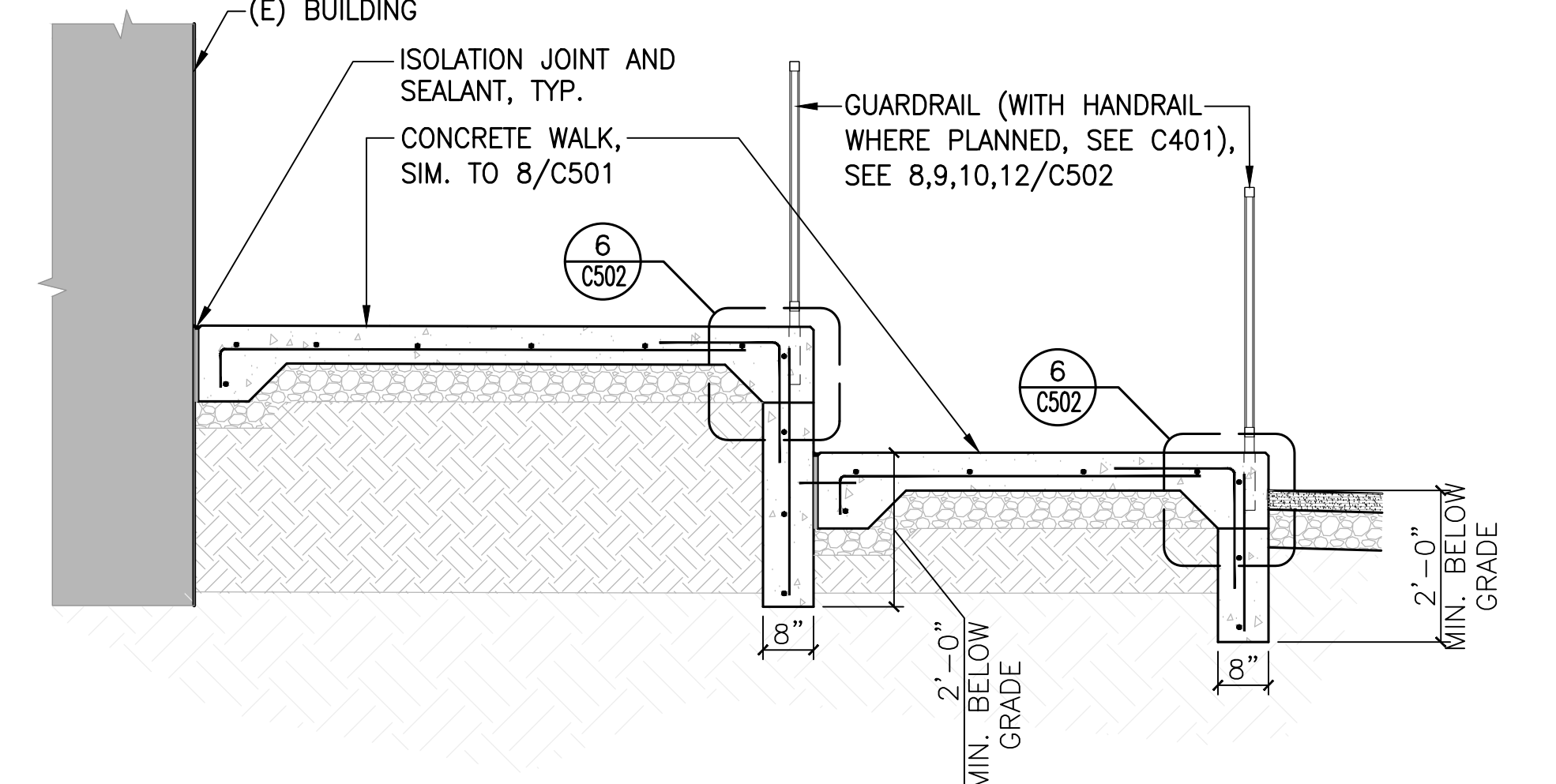
7 SITE WALL
1-1/2" = 1'-0"



8 TYPICAL PERMANENT GUARDRAIL / HANDRAIL ELEVATION
1" = 1'-0"

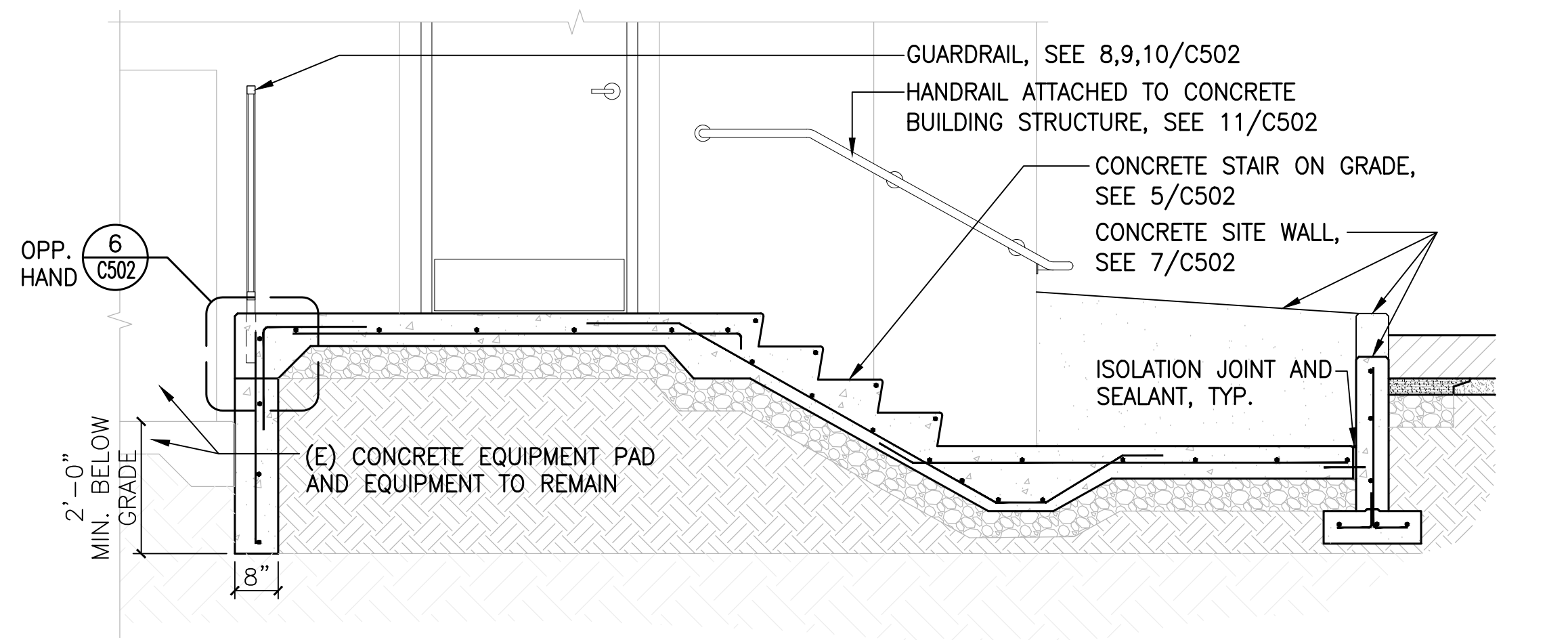


1 SECTION
1/2" = 1'-0"



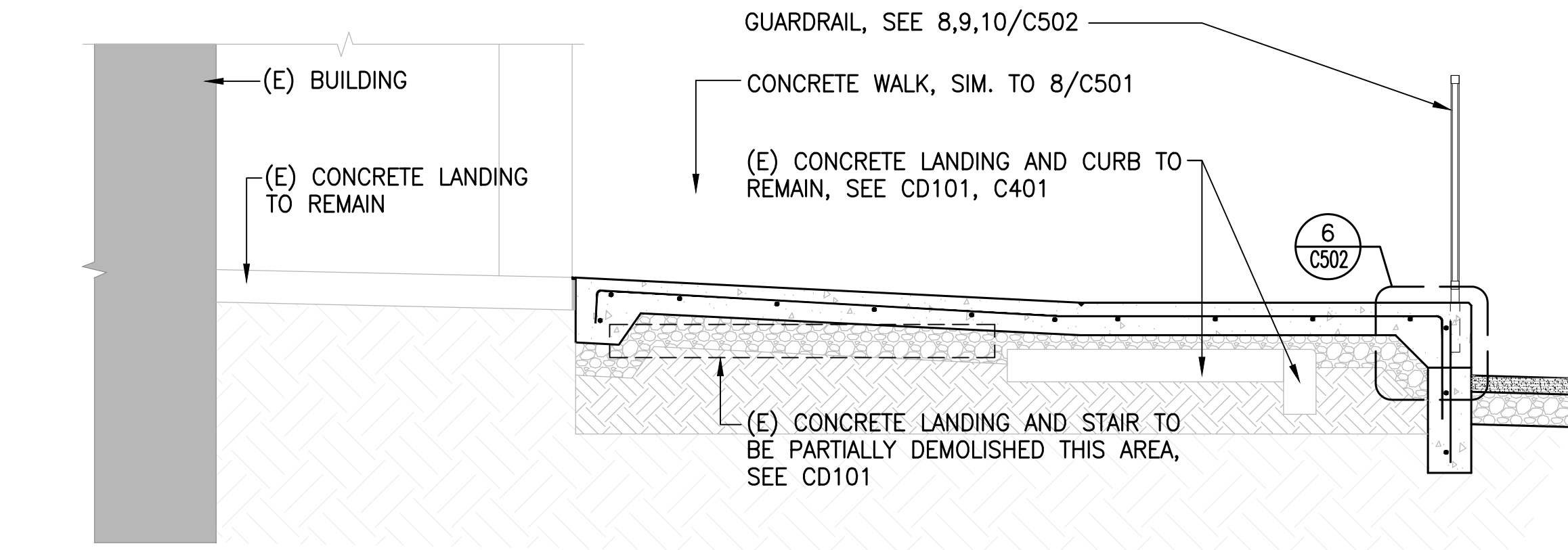
2 SECTION
1/2" = 1'-0"

NOTE: FOR ITEMS NOT NOTED HERE, SEE 1/C502



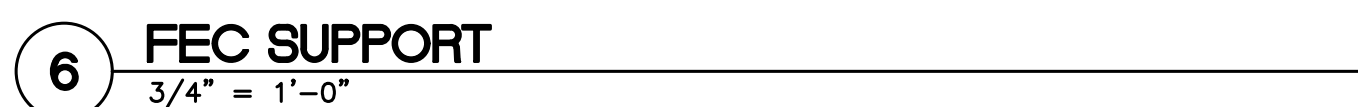
3 SECTION
1/2" = 1'-0"

NOTE: FOR ITEMS NOT NOTED HERE, SEE 1/C502



4 SECTION
1/2" = 1'-0"

NOTE: FOR ITEMS NOT NOTED HERE, SEE 1/C502





CITY OF UKIAH

BANK OF AMERICA

ADA BARRIER REMOVAL

501 South State St. Ukiah, CA 95482

Revisions:

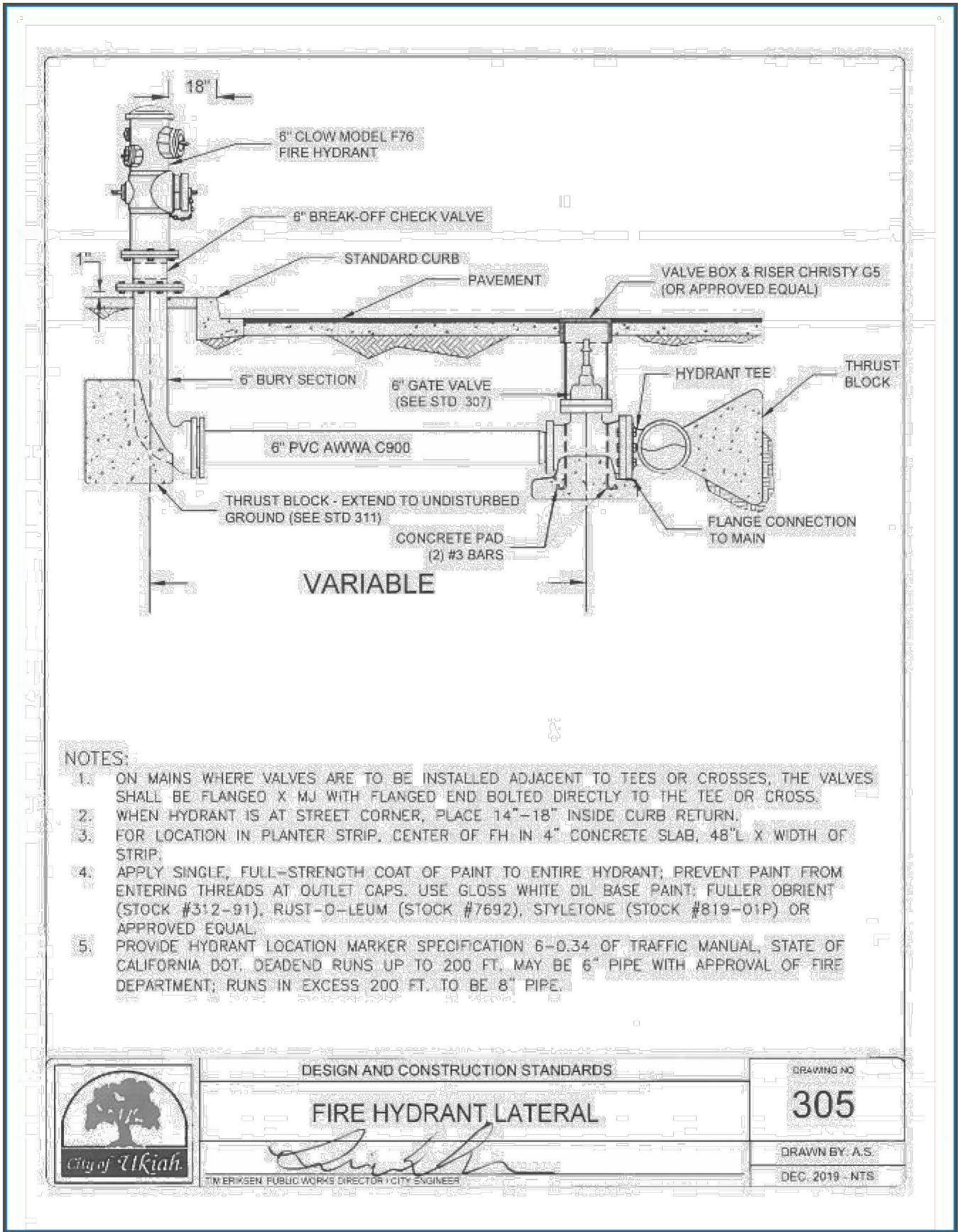
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

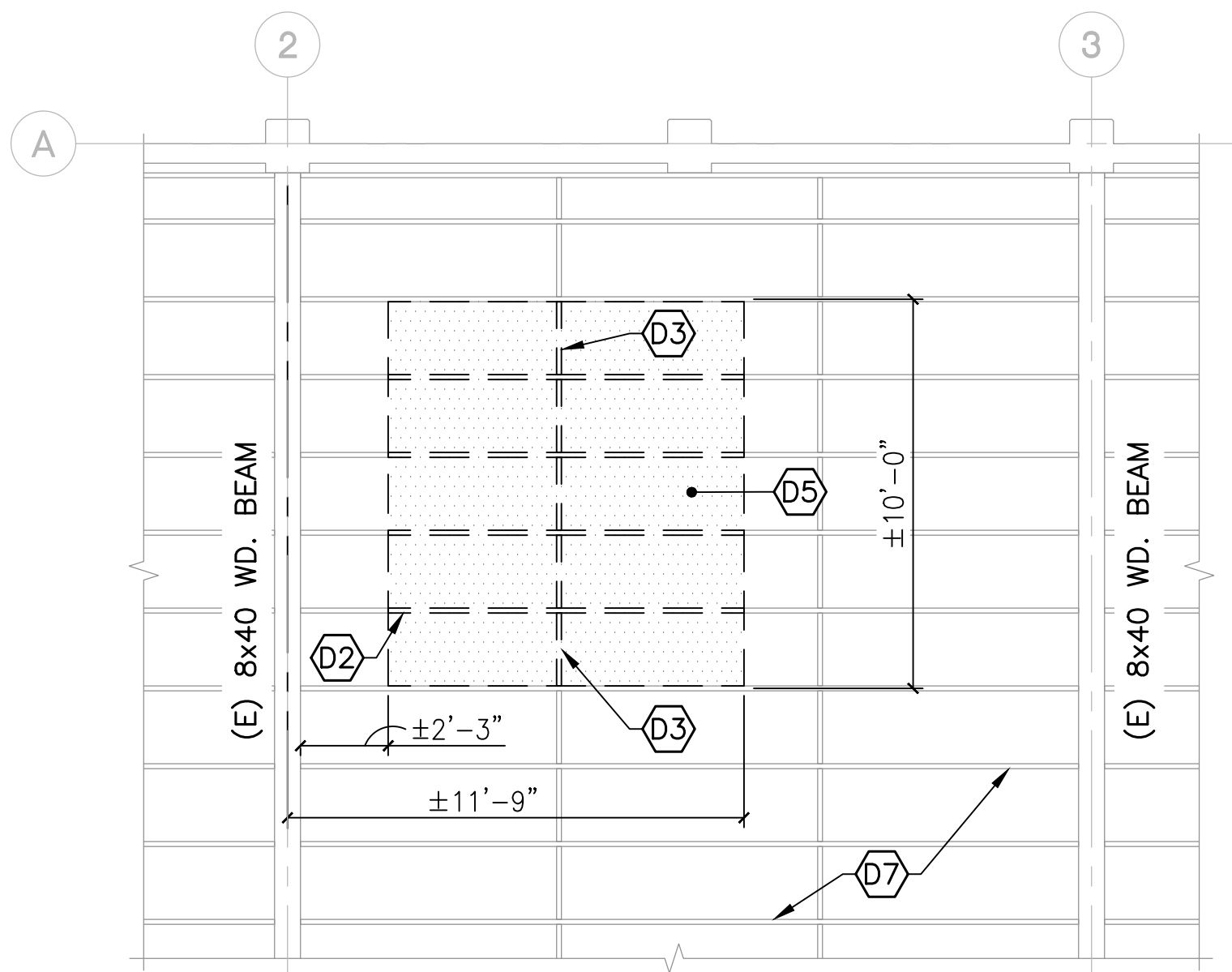
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SITE DETAILS

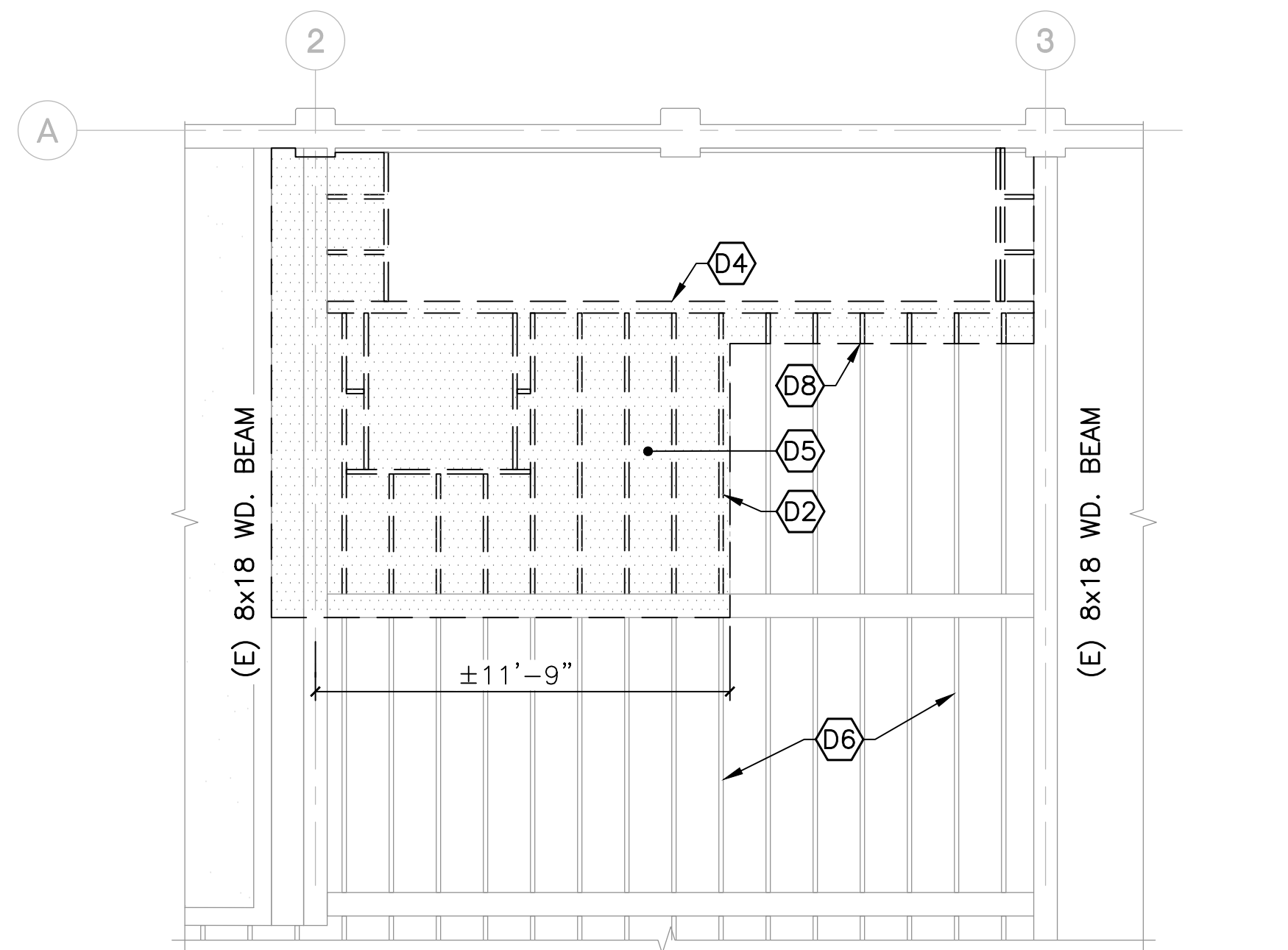
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C504

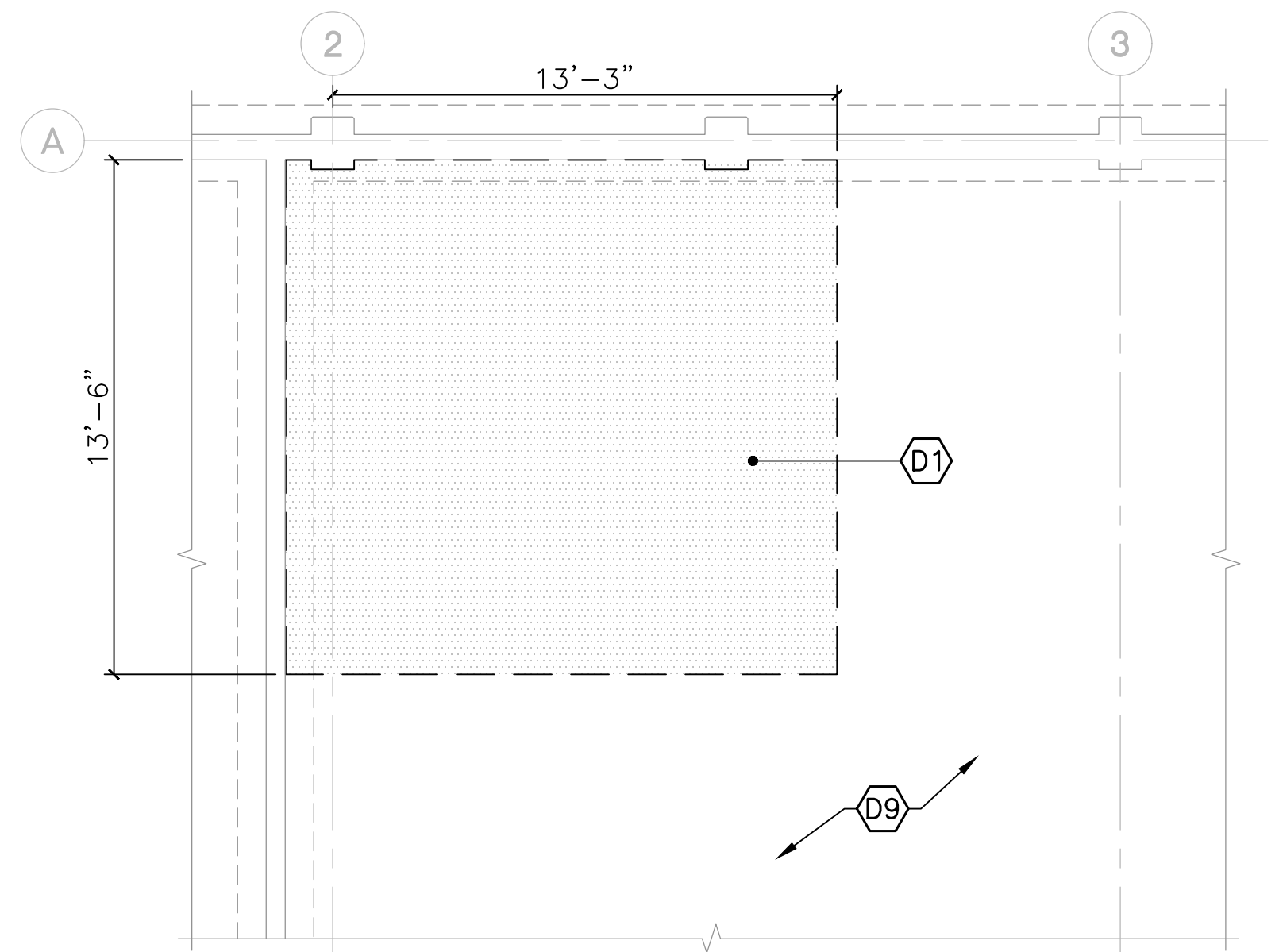




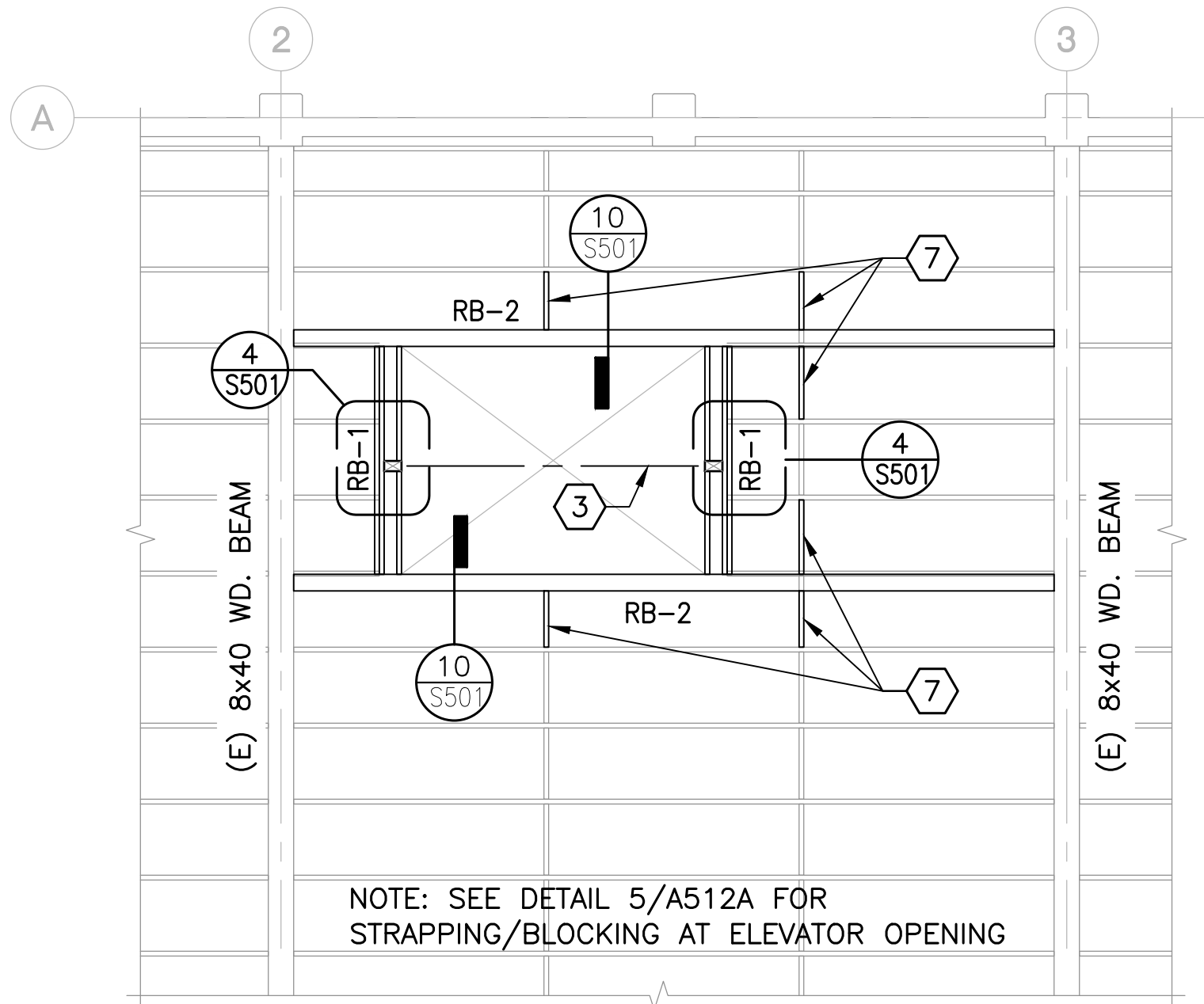
PLAN NORTH
5
ROOF DEMOLITION
FRAMING PLAN AT NEW ELEVATOR SHAFT
1/4" = 1'-0"



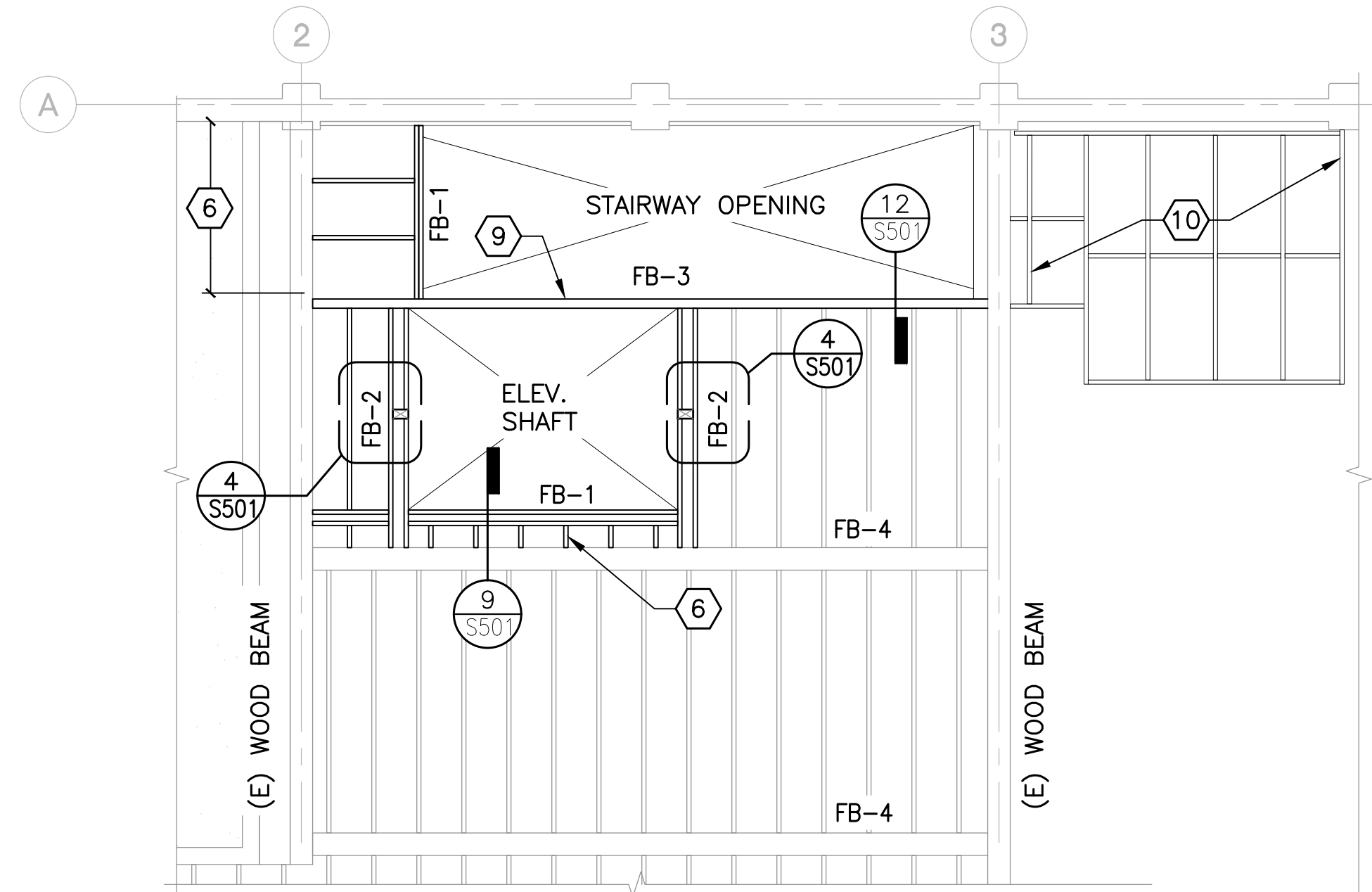
PLAN NORTH
3
SECOND FLOOR DEMOLITION FRAMING PLAN
AT NEW ELEVATOR SHAFT/STAIR OPENING
1/4" = 1'-0"



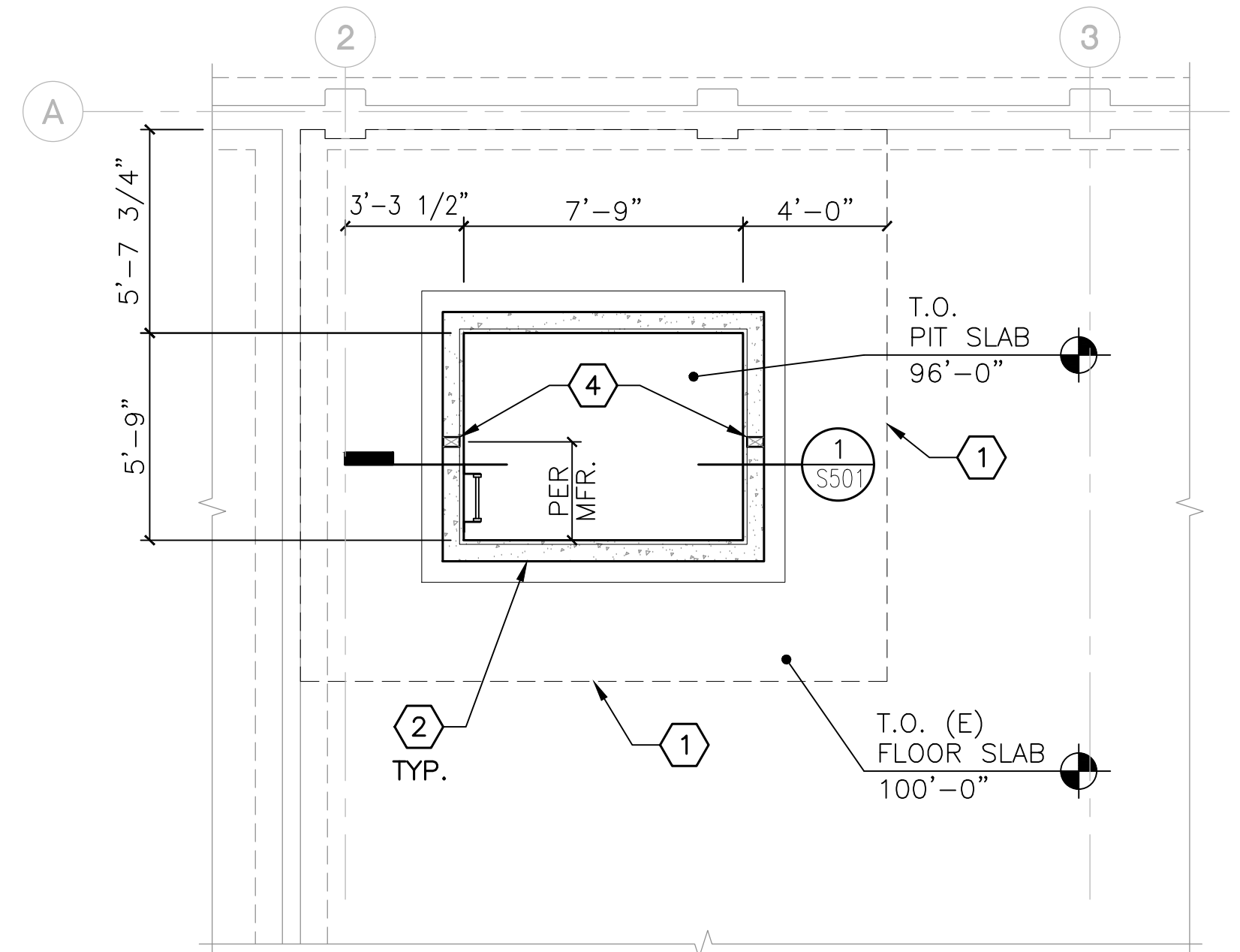
PLAN NORTH
1
DEMOLITION
SLAB PLAN AT NEW ELEVATOR PIT
1/4" = 1'-0"



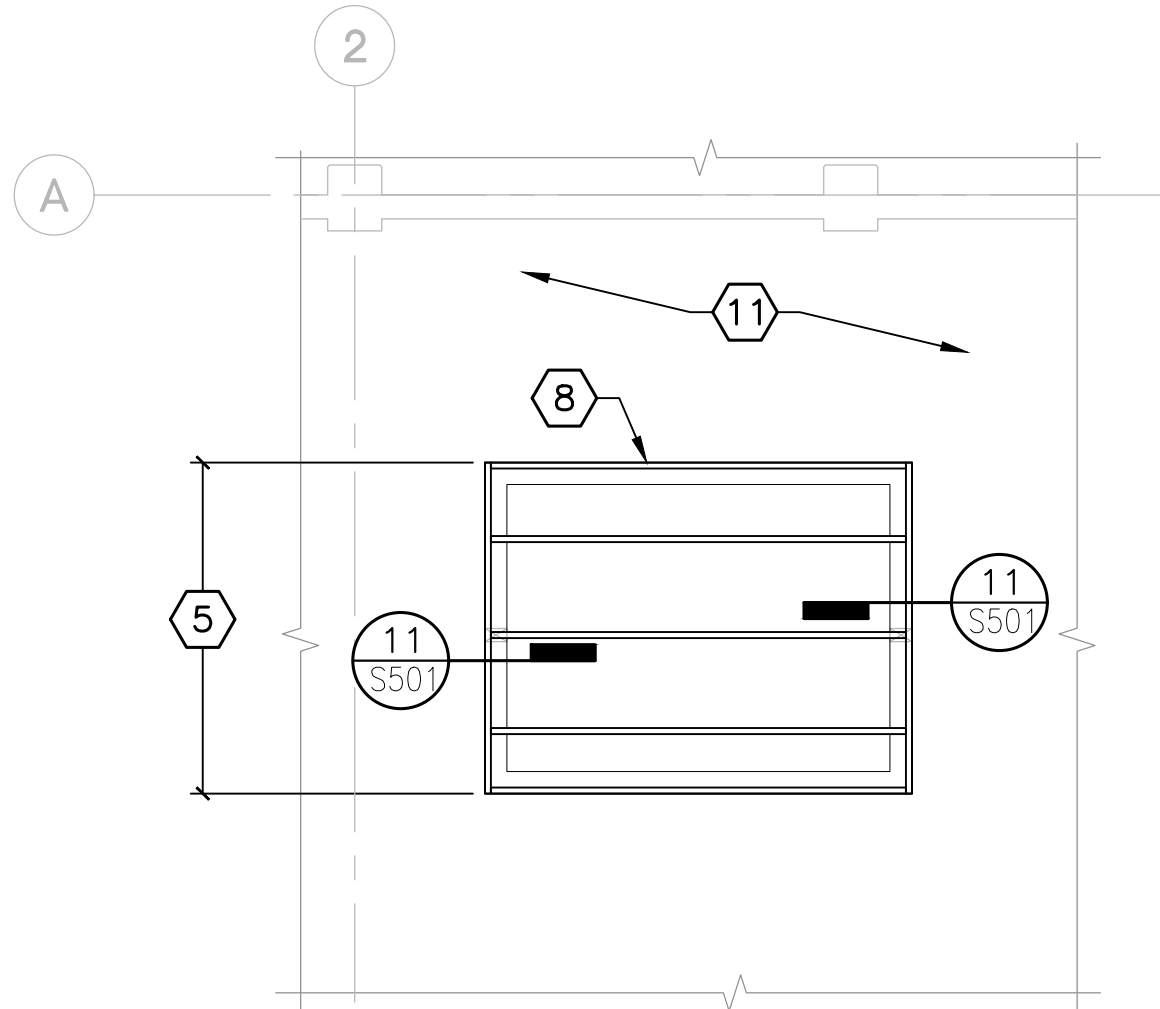
PLAN NORTH
6
ROOF FRAMING PLAN AT
EXISTING ROOF LEVEL FOR NEW ELEVATOR SHAFT
1/4" = 1'-0"



PLAN NORTH
4
SECOND FLOOR FRAMING PLAN
AT NEW ELEVATOR SHAFT/STAIR OPENING
1/4" = 1'-0"



PLAN NORTH
2
FOUNDATION PLAN AT NEW ELEVATOR PIT
1/4" = 1'-0"



PLAN NORTH
7
OVERRUN PENTHOUSE ROOF FRAMING PLAN
1/4" = 1'-0"

DEMOLITION KEYED NOTES:

- D1 SAWCUT AND REMOVE (E) CONCRETE SLAB TO CONSTRUCT NEW ELEVATOR PIT
- D2 CUT AND/OR REMOVE (E) 2x10 FLOOR OR (E) 2x12 ROOF JOISTS, SHORE AS REQUIRED FOR INSTALLATION OF NEW ELEVATOR SHAFT AND WALLS
- D3 REMOVE (E) WOOD BLOCKING BETWEEN FLOOR JOISTS AS REQUIRED FOR INSTALLATION OF NEW ELEVATOR SHAFT
- D4 REMOVE (E) 4x18 WOOD FRAMING ALONG EXISTING STAIR OPENING FOR INSTALLATION OF NEW STAIR/ELEVATOR SHAFT OPENING LOCATIONS
- D5 REMOVE (E) FLOOR AND/OR ROOF SHEATHING
- D6 (E) STRUCTURE (2x10 FLOOR JOISTS) TO REMAIN
- D7 (E) STRUCTURE (2x12 ROOF JOISTS) TO REMAIN
- D8 CUT (E) FLOOR JOISTS (SHORE AS REQUIRED) FOR INSTALLATION OF NEW BEAM ALONG NEW STAIR OPENING LOCATION
- D9 (E) CONCRETE SLAB-ON-GRADE TO REMAIN

KEYED NOTES:

- 1 (N) SLAB-ON-GRADE INFILL OVER VAPOR RETARDER, DOWEL INTO (E) ON (2) SIDES, SEE DETAIL 5 & 6/S501
- 2 6" REINFORCED CONCRETE PIT WALLS, ALL SIDES. SEE DETAIL 1/S501
- 3 W8X21 HOIST BEAM ABOVE, BRACE TOP OF BEAM AT MID POINT TO ADJACENT WALLS WITH 4"x4"x3/16" ANGLE, REMOVE BRACE AFTER INSTALL
- 4 4X6 WOOD POST RAIL/HOIST BEAM SUPPORT, COORDINATE EXACT LOCATION W/ APPROVED ELEVATOR SHOP DRAWINGS, SEE DETAIL 3/S501
- 5 2x12 ROOF JOIST AT 24" O.C., MAXIMUM
- 6 2x10 FLOOR JOISTS AT 16" O.C., MAXIMUM
- 7 PROVIDE FLOOR AND/OR ROOF BLOCKING BETWEEN NEW/EXISTING FRAMING. PROVIDE H2A STRAPPING AT BOTH ENDS AT OPENING LOCATIONS
- 8 2x12 RIM JOIST AROUND PERIMETER OF ELEVATOR SHAFT ROOF OVERRUN
- 9 CONNECT EACH END OF NEW 3 1/2" PSL BEAM TO EXISTING BEAM w/ HU416 FACE MOUNT HANGER
- 10 (N) 2x10 FRAMING AT 24" O.C., MAX. OVER STAIR EXIT WALLS
- 11 (E) ROOF SYSTEM BELOW

GENERAL NOTES:

- SEQUENCE WORK AND/OR SHORE (E) FLOOR, ROOF AND CEILING FRAMING SYSTEMS TO MAINTAIN SUPPORT.
- PROVIDE NEW 2X FRAMING, JOIST HANGERS AND FASTENING SYSTEMS FOR FLOOR IN-FILL AT NEW SHAFTS.

LEGEND:

	MATERIAL TO BE REMOVED/DEMOLISHED.
FB-1	FLOOR BEAM: (2) NEW 2x10
FB-2	FLOOR BEAM: (2) NEW 2x10
FB-3	FLOOR BEAM: (1) NEW 3 1/2" x 16" PSL
FB-4	FLOOR BEAM: (1) EXISTING 8x18
RB-1	ROOF BEAM: (3) NEW 2x12
RB-2	ROOF BEAM: (1) NEW 5 1/4" x 11 7/8" PSL

Revisions:

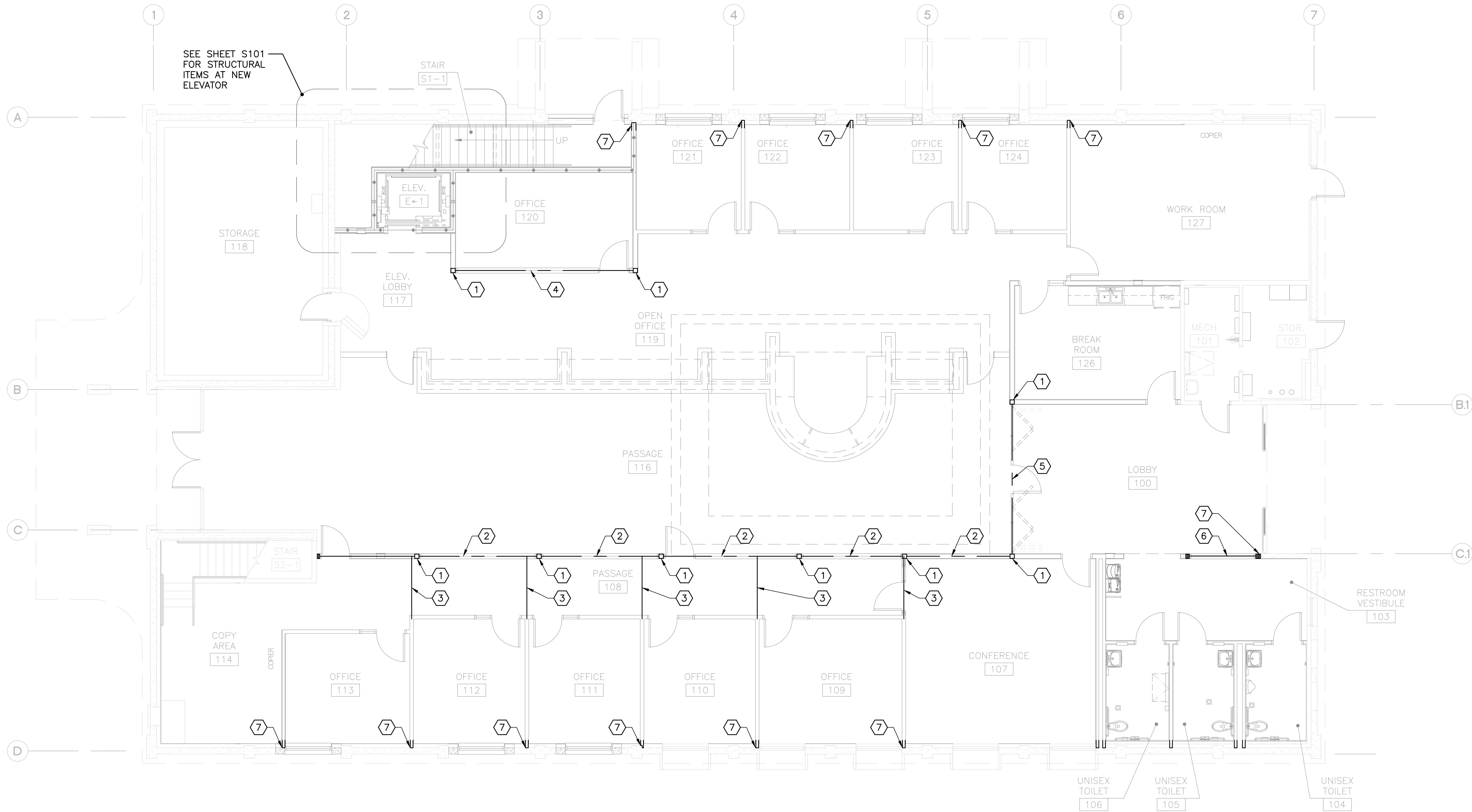
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

FOUNDATION AND
FRAMING PLANS

Sheet Number:

S101



GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
2. REPAIR AND RE-FINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION, NEW CONSTRUCTION AND/OR DETERIORATION, (MATCH (E), U.N.O.).
3. SEE SHEET G001 FOR TYPICAL LEGEND ITEMS SHOWN ON PLANS.

KEYED NOTES:

- 1 6x6 WOOD POSTS, CONNECT TO BOTTOM PLATE PER DETAIL 6/A512A
- 2 3 1/2" x 11 7/8" PSL HEADER
- 3 BRACE HEADER ABOVE WALL ALONG C.1 TO TOP OF (N) OFFICE WALLS WHERE PERPENDICULAR RETURN WALLS OCCUR, SEE DETAIL 6/S502, TYPICAL
- 4 5 1/4" x 14" PSL HEADER
- 5 6x12 HEADER, PROVIDE HUC612 HANGER AT BEAM ENDS, SEE DETAIL 2/S502
- 6 (N) HEADER, SEE TYPICAL DETAIL 6/A512A
- 7 SEE DETAIL 1/S502 FOR (N) WALL ATTACHMENT TO (E) CONCRETE WALL

PLAN
NORTH



1

STRUCTURAL FIRST FLOOR PLAN

3/16" = 1'-0"



Revisions:

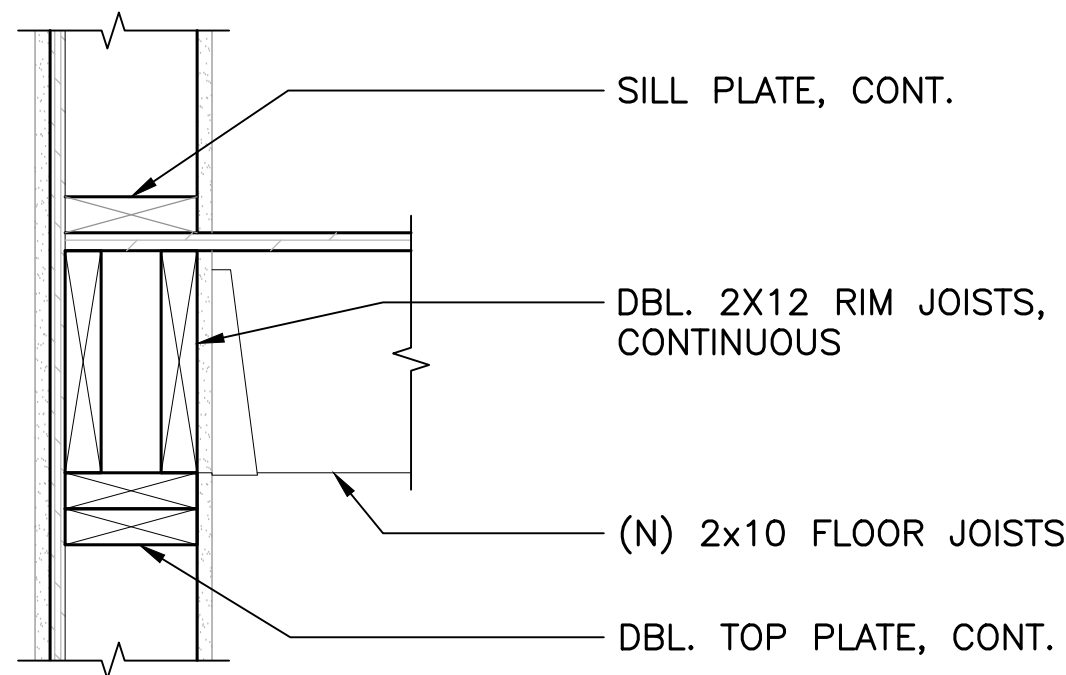
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

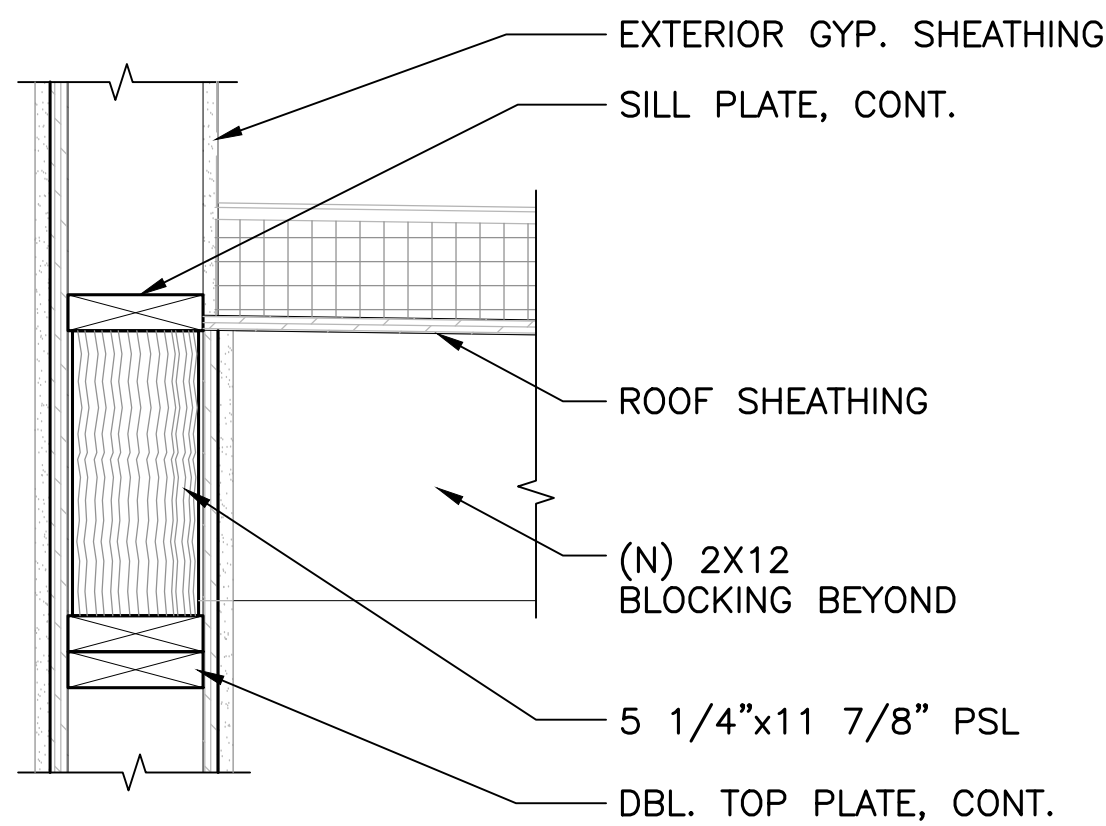
**STRUCTURAL FIRST
FLOOR PLAN**

Sheet Number:

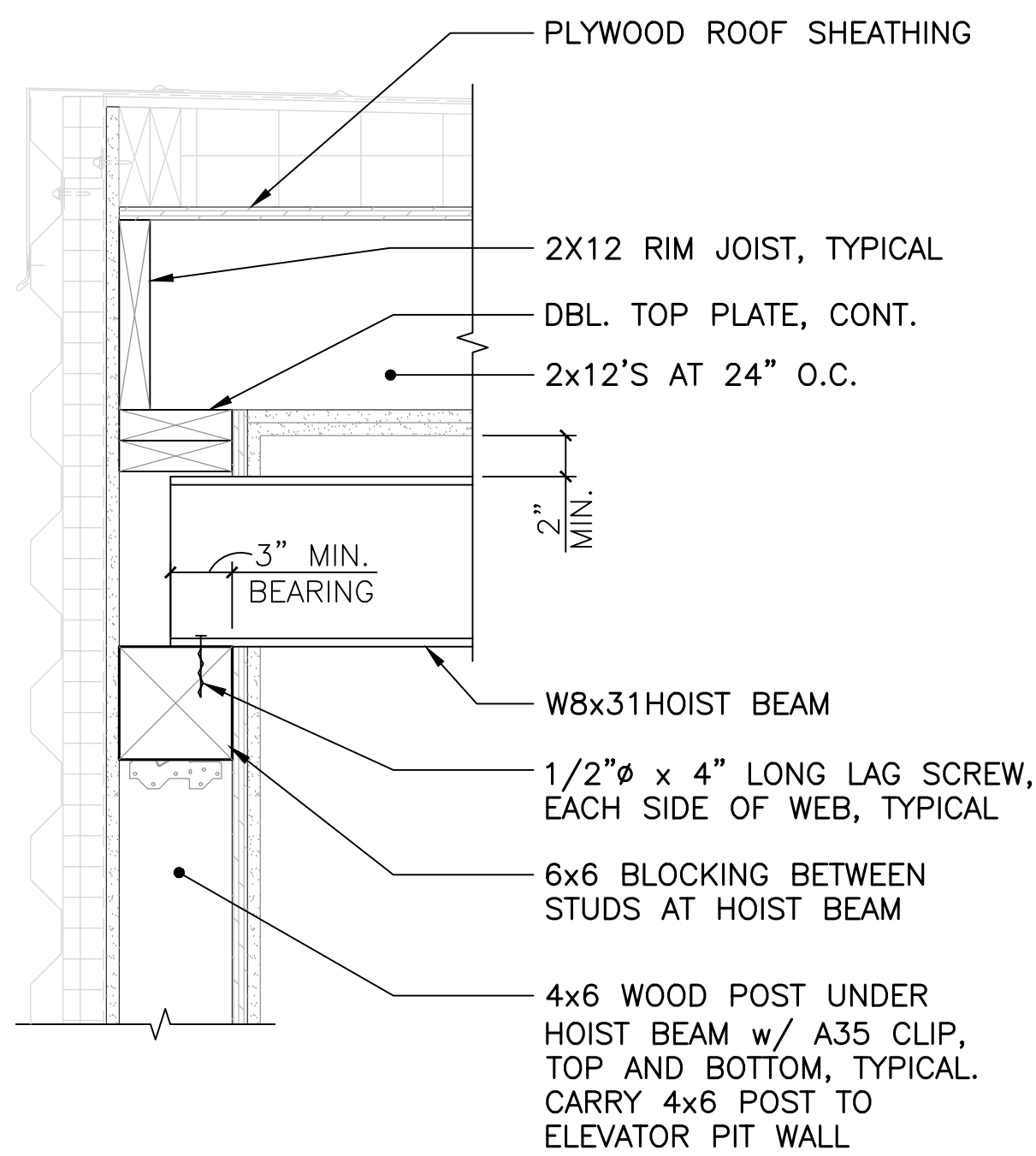
S102



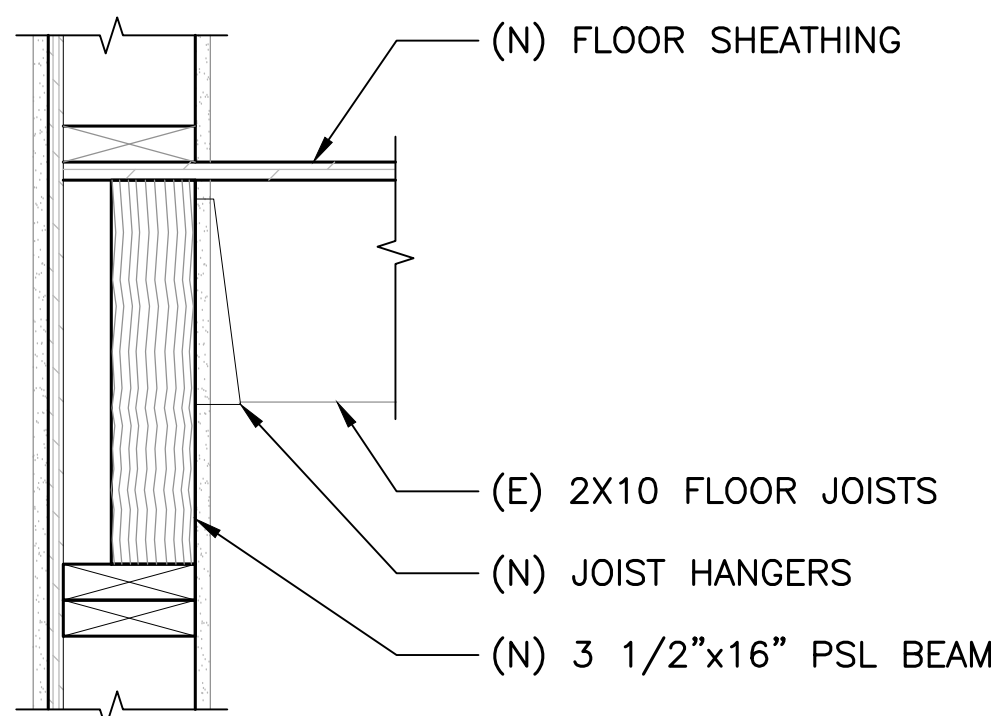
9 FRAMING DETAIL AT FLOOR
1 1/2" = 1'-0"



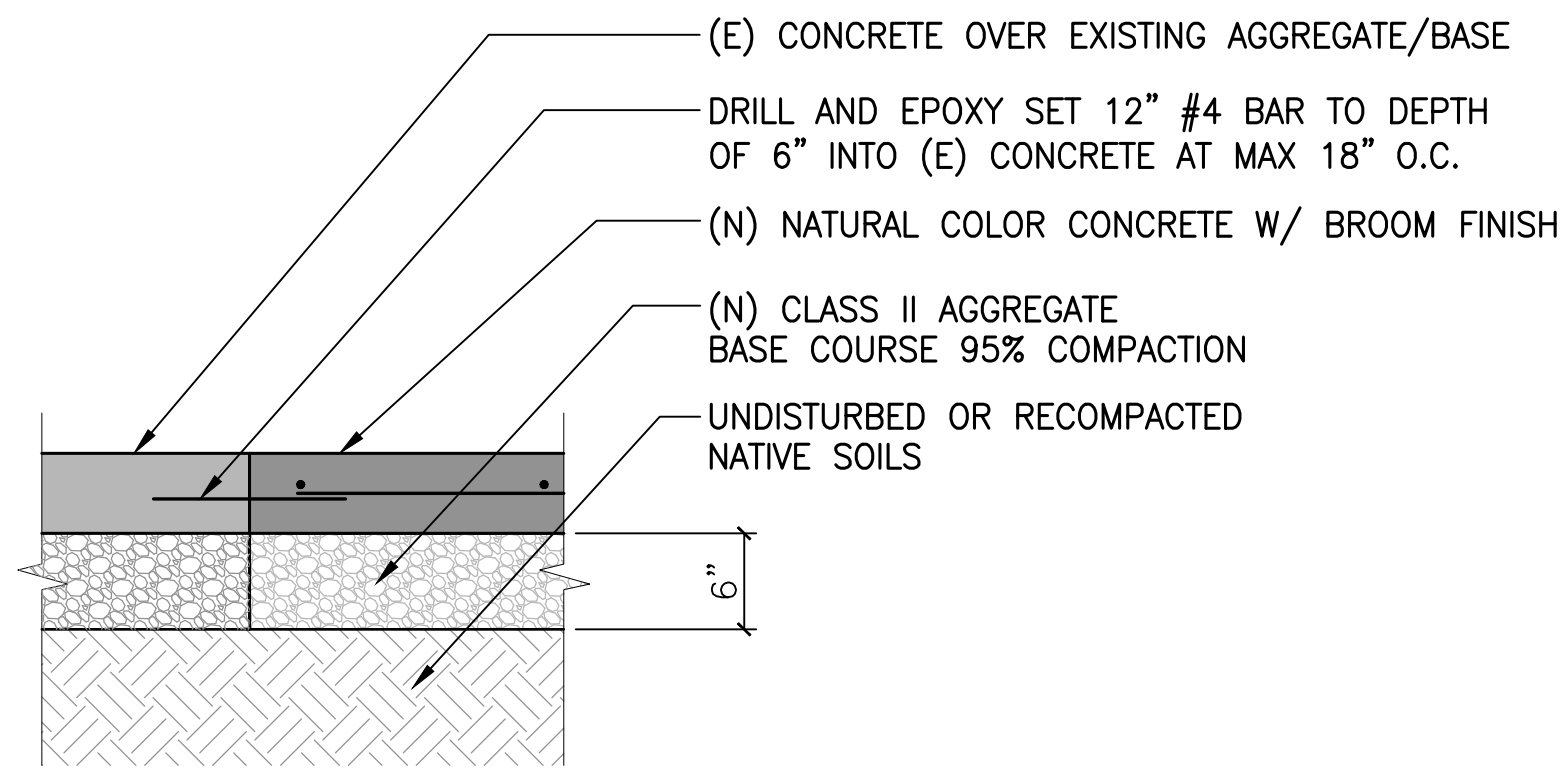
10 FRAMING DETAIL AT (E) ROOF
1 1/2" = 1'-0"



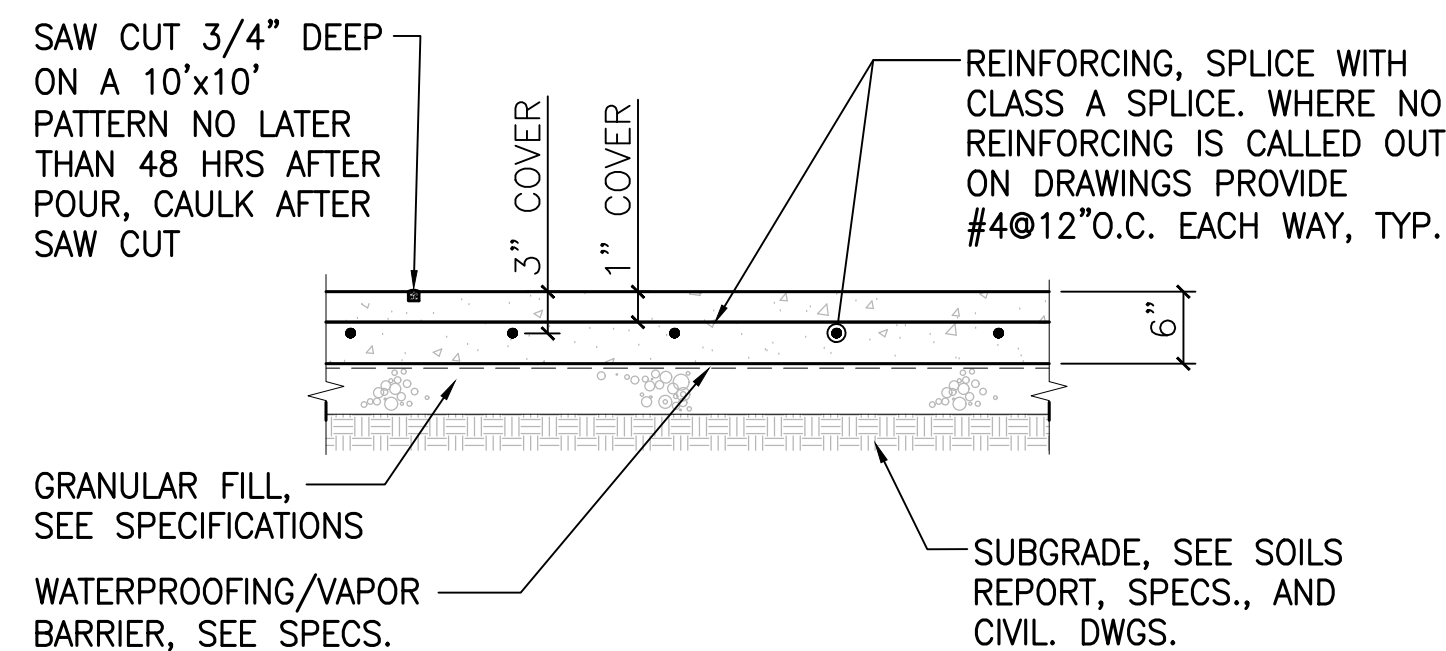
11 HOIST BEAM SUPPORT DETAIL
1 1/2" = 1'-0"



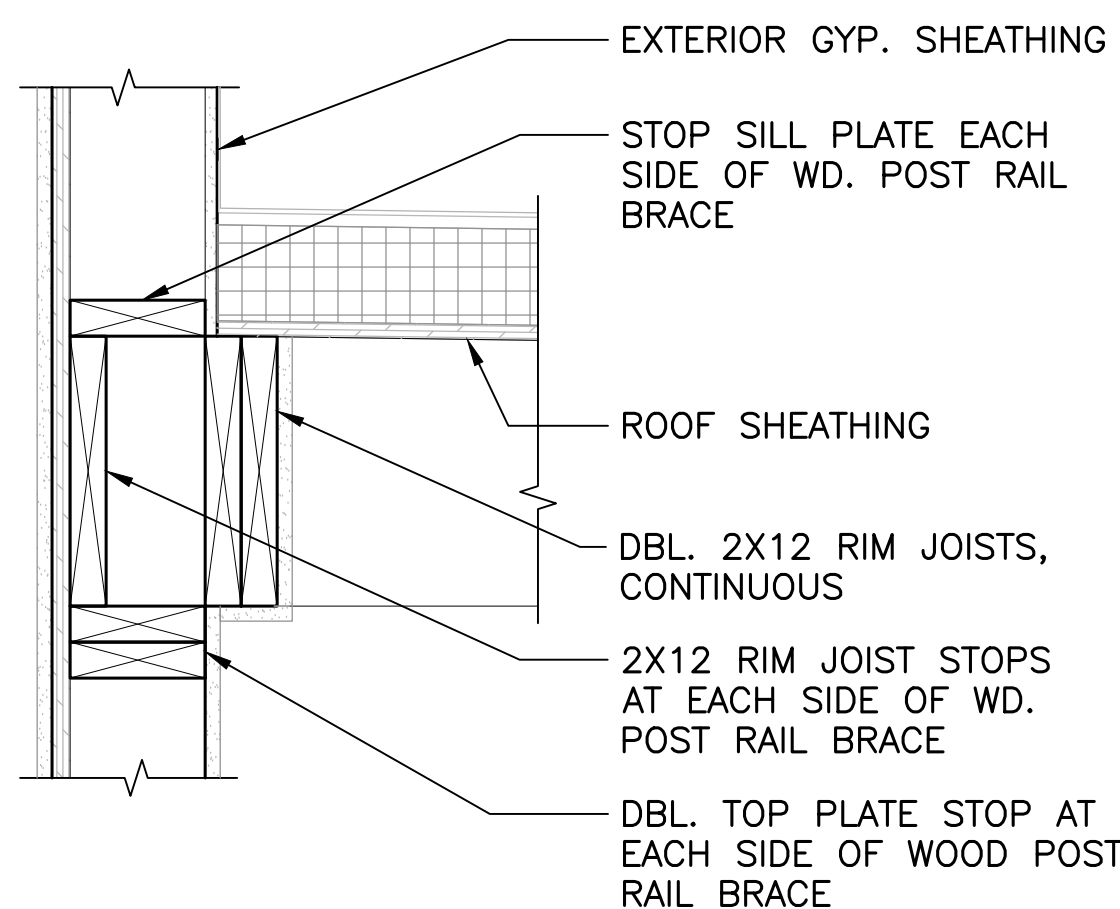
12 FRAMING DETAIL AT FLOOR
1 1/2" = 1'-0"



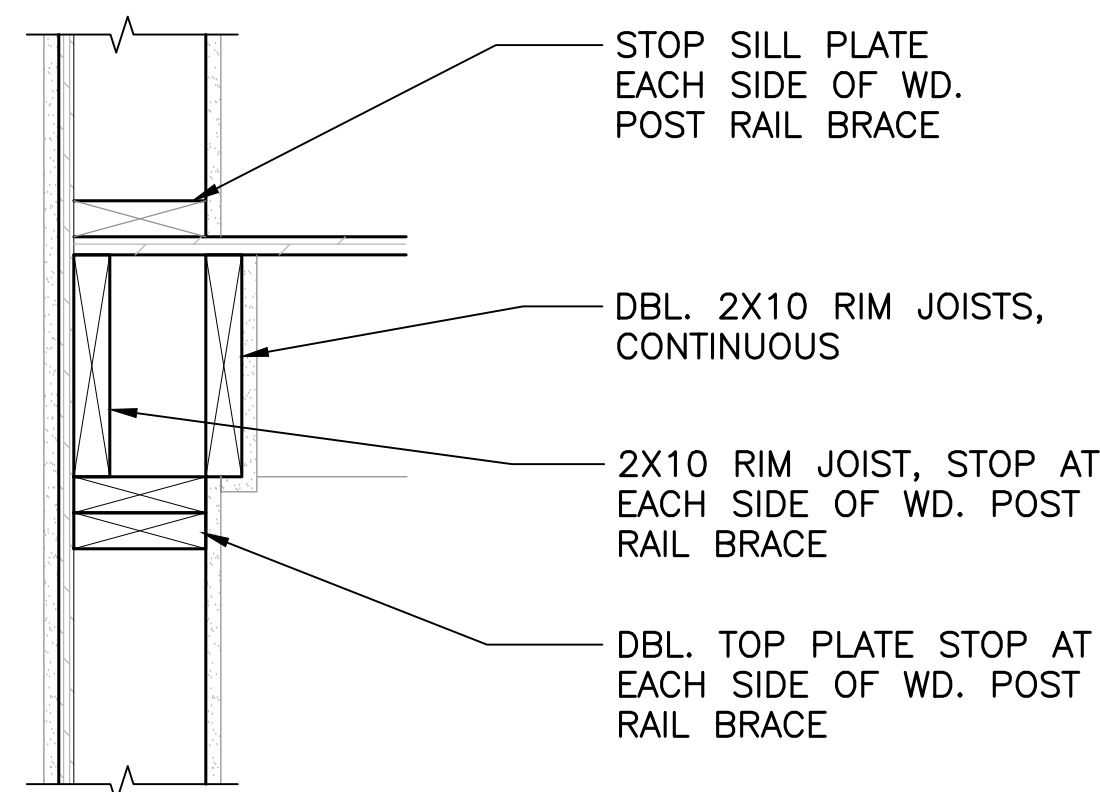
5 TYPICAL (N) TO (E) CONCRETE SLAB
NOT TO SCALE



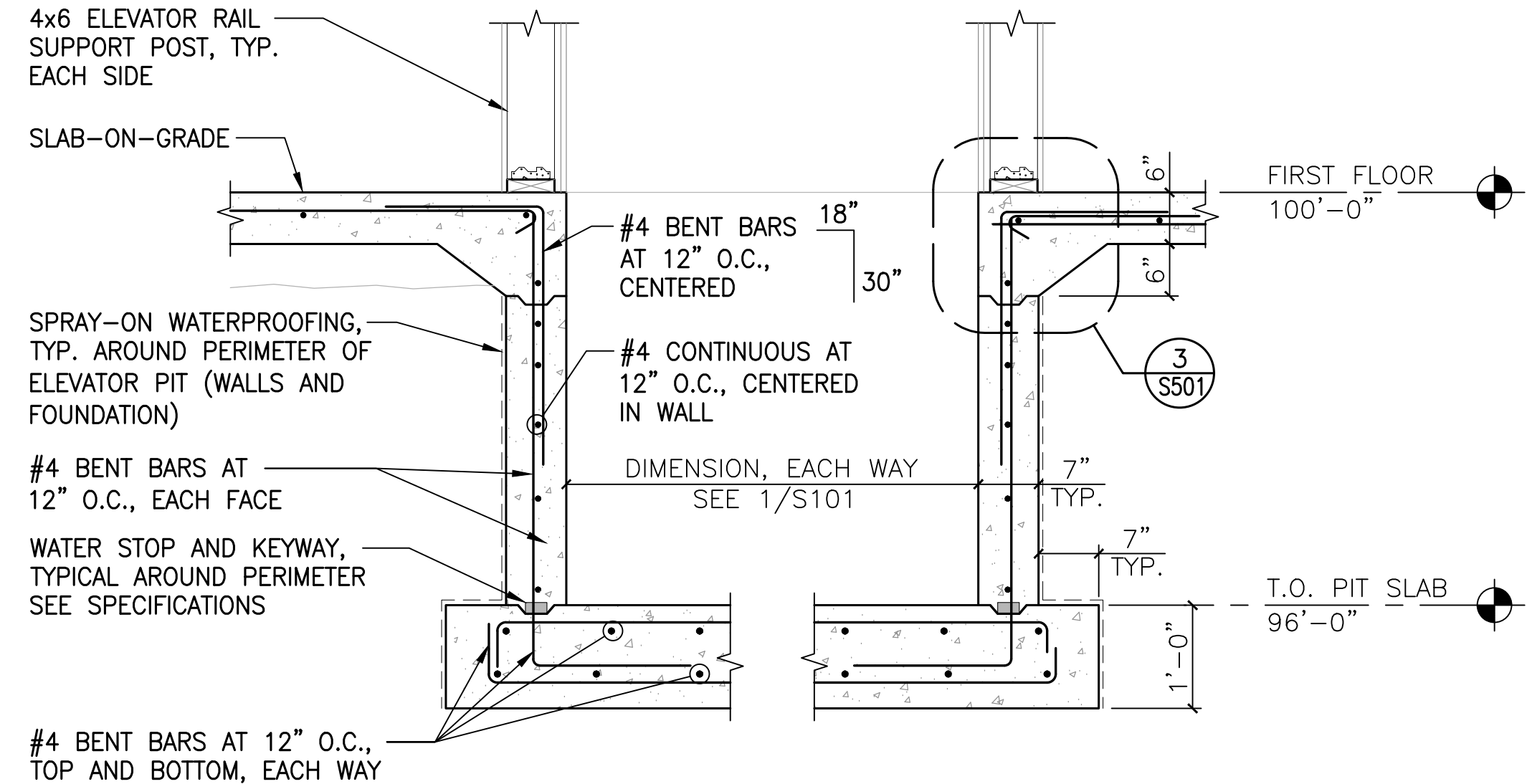
6 TYPICAL SLAB-ON-GRADE
3/4" = 1'-0"



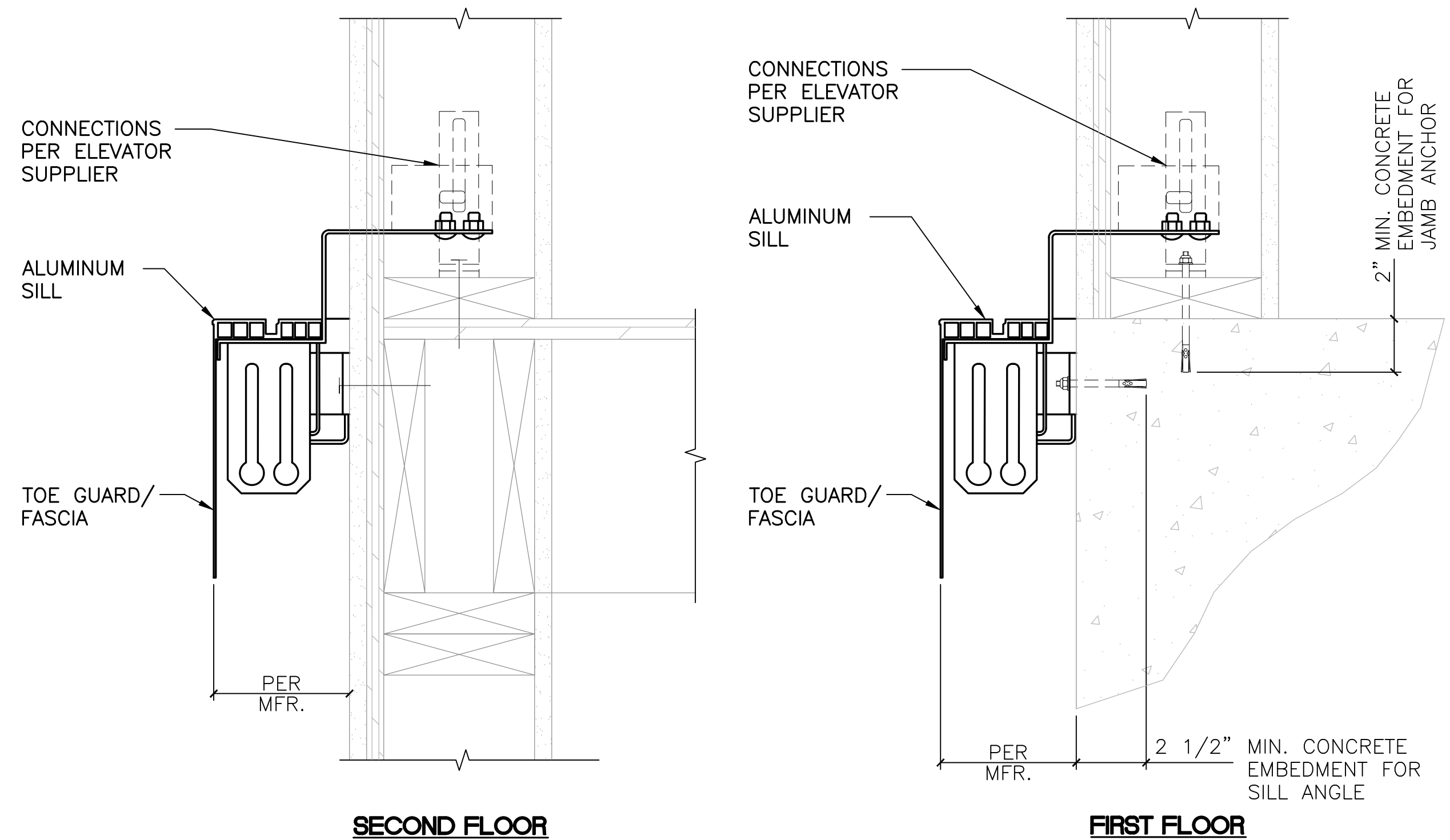
7 FRAMING DETAIL AT (E) ROOF
1 1/2" = 1'-0"



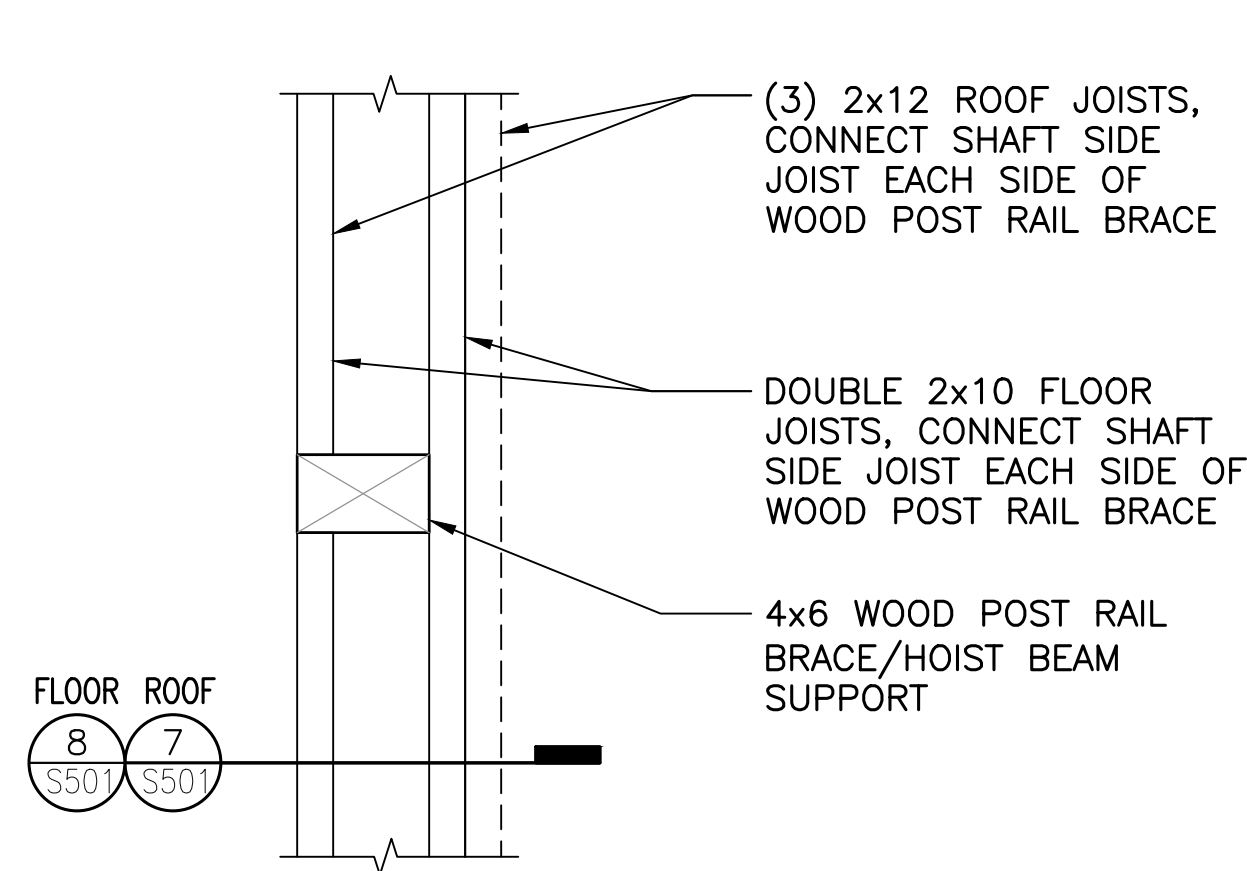
8 FRAMING DETAIL AT FLOOR
1 1/2" = 1'-0"



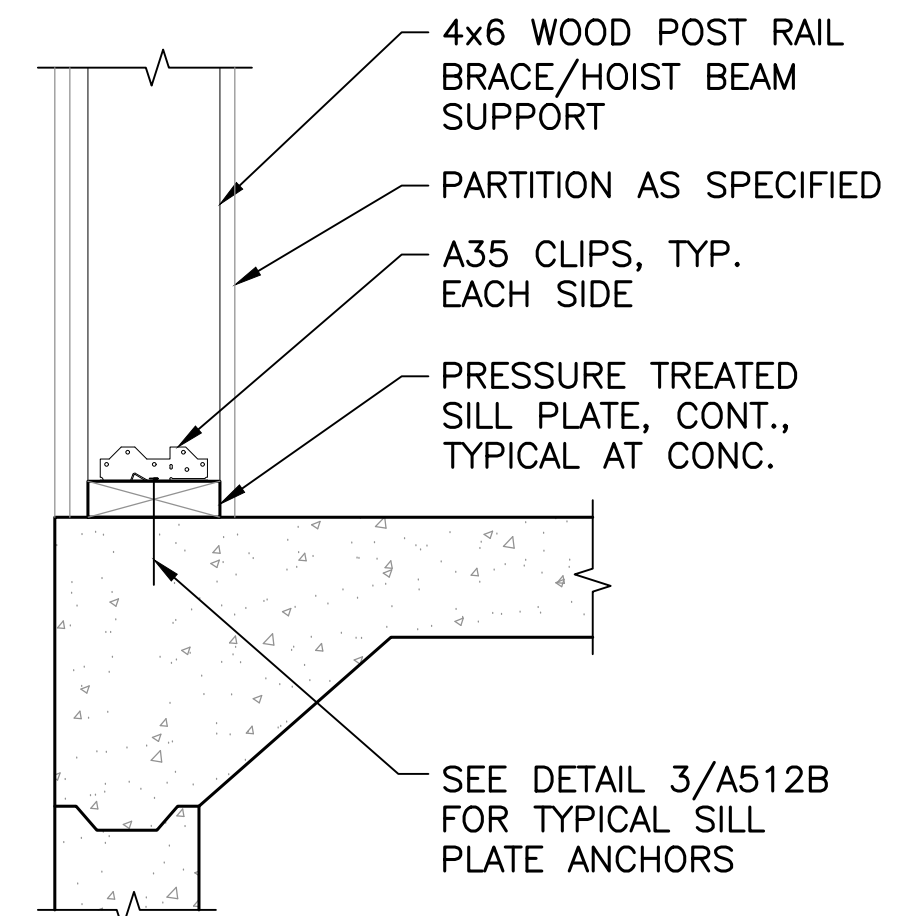
1 ELEVATOR PIT SECTION
3/4" = 1'-0"



2 THRESHOLD JAMB ANCHOR DETAILS
3" = 1'-0"



4 FRAMING/RAIL BRACE - PLAN VIEW
1 1/2" = 1'-0"



3 ELEVATOR RAIL BRACE DETAIL
1 1/2" = 1'-0"

DESIGN CRITERIA — FOR NEW CONSTRUCTION ONLY

1. DEAD LOADS (DL)

STRUCTURE
EQUIPMENT

AS CALCULATED
ACTUAL
2. LIVE LOADS (LL)

ROOF
STAIRS AND EXIT WAYS

20 PSF (REDUCIBLE)
100 PSF (IRREDUCIBLE)
3. WIND LOADS

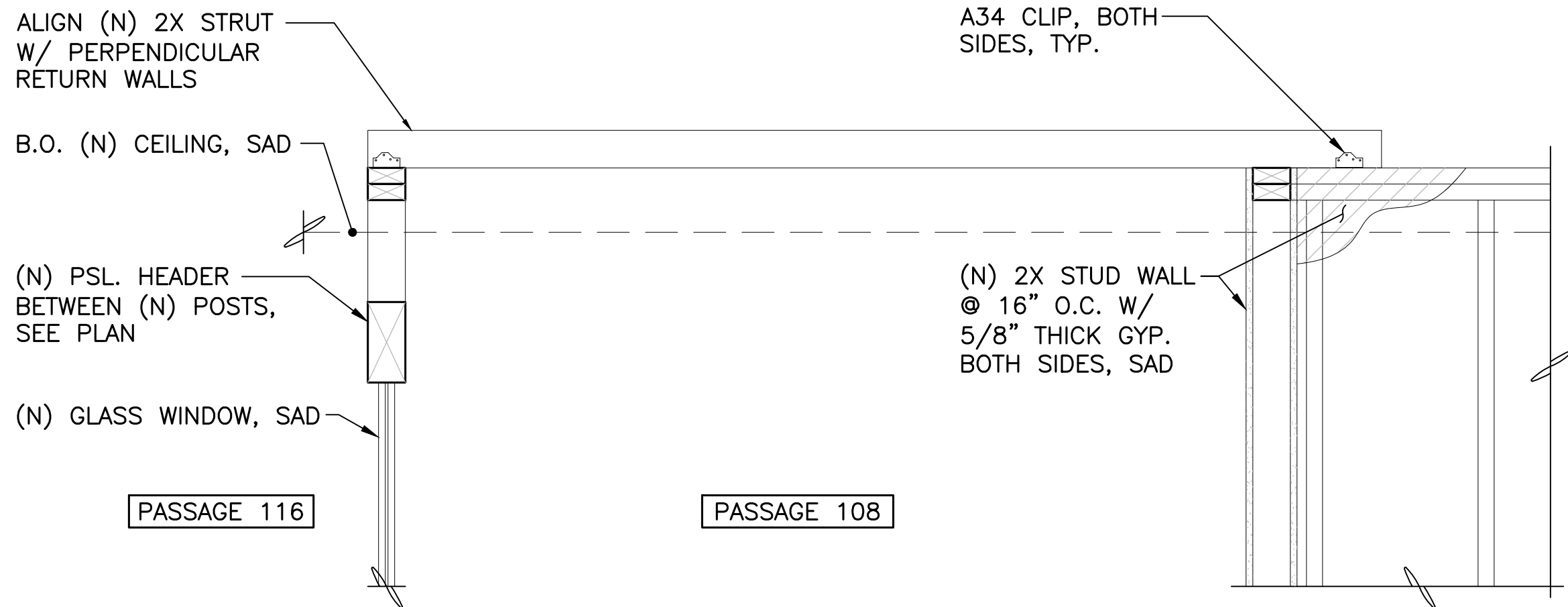
PS = LAMBDA KZT I PS30 (MWFRSS)
PNET = LAMBDA KZT I PNET30 (COMPONENTS AND CLADDING)

OCCUPANCY CATEGORY III
IMPORTANCE FACTOR, I 1.15
BASIC WIND SPEED 87 MPH
EXPOSURE C
4. SEISMIC

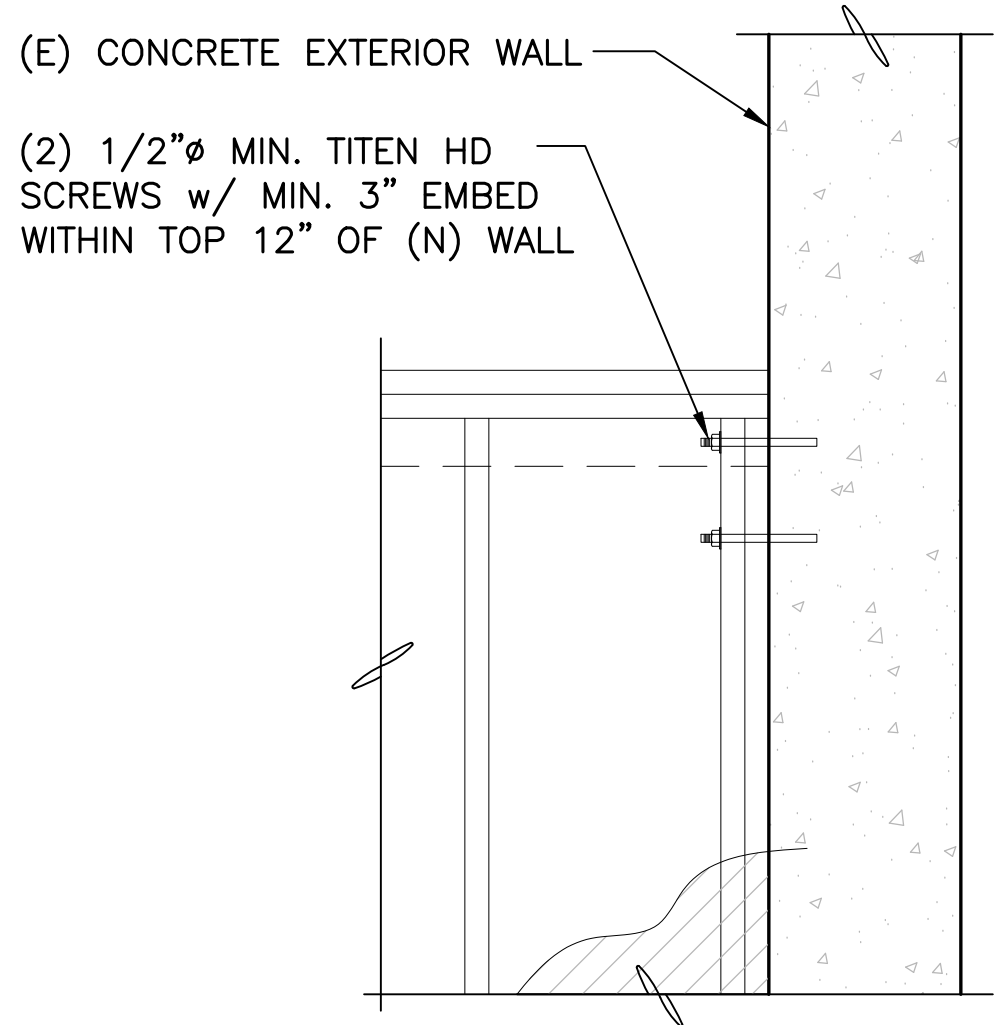
V = SDS / (R / I) W > = 0.01 W
V < = SD1 / (T (R / I) W
V > = (0.5 S1 / (R / I) W - SDC E OR F ONLY WHEN S1 > = 0.6G
V = 0.315 W (STRENGTH) = 0.450 W (ALLOWABLE STRESS)
Ss = 1.942 S1 = 0.743 FA = 0.90 FV = 0.8
Sds = 1.942 SD1 = 0.397 I = 1.00 R = 3.0

SEISMIC NON-STRUCTURAL COMPONENT
FP = 0.4 X ap A Sds X W / (Rp / I) X (1 + 2 X z/h)
ap = 1.0 Rp = 2.5 (CEILINGS)
ap = 1.0 Rp = 2.5 (SUSPENDED ACCORDION DOOR)

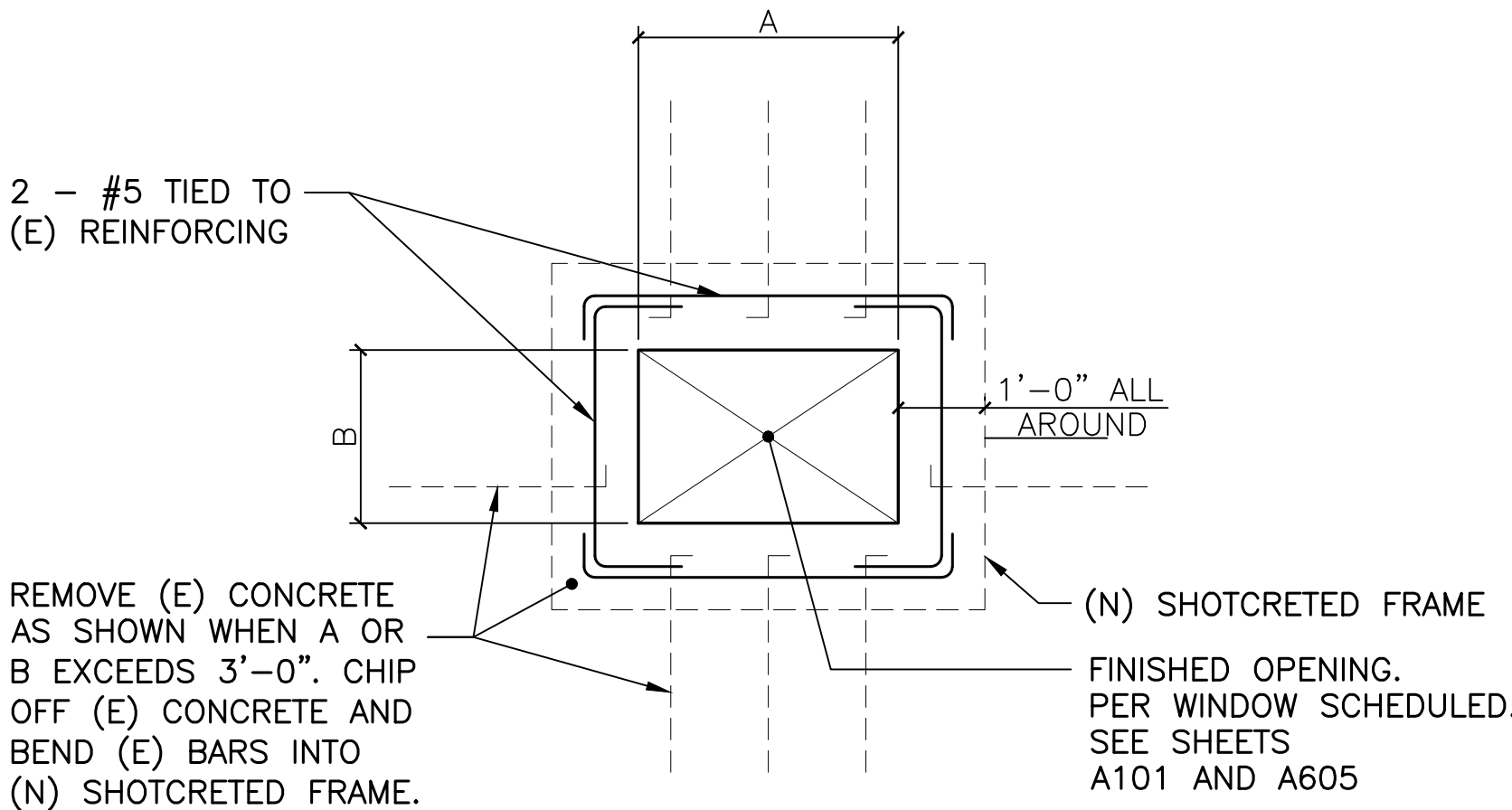
DESIGN CRITERIA



6 PARTITION BRACING SECTION
NOT TO SCALE

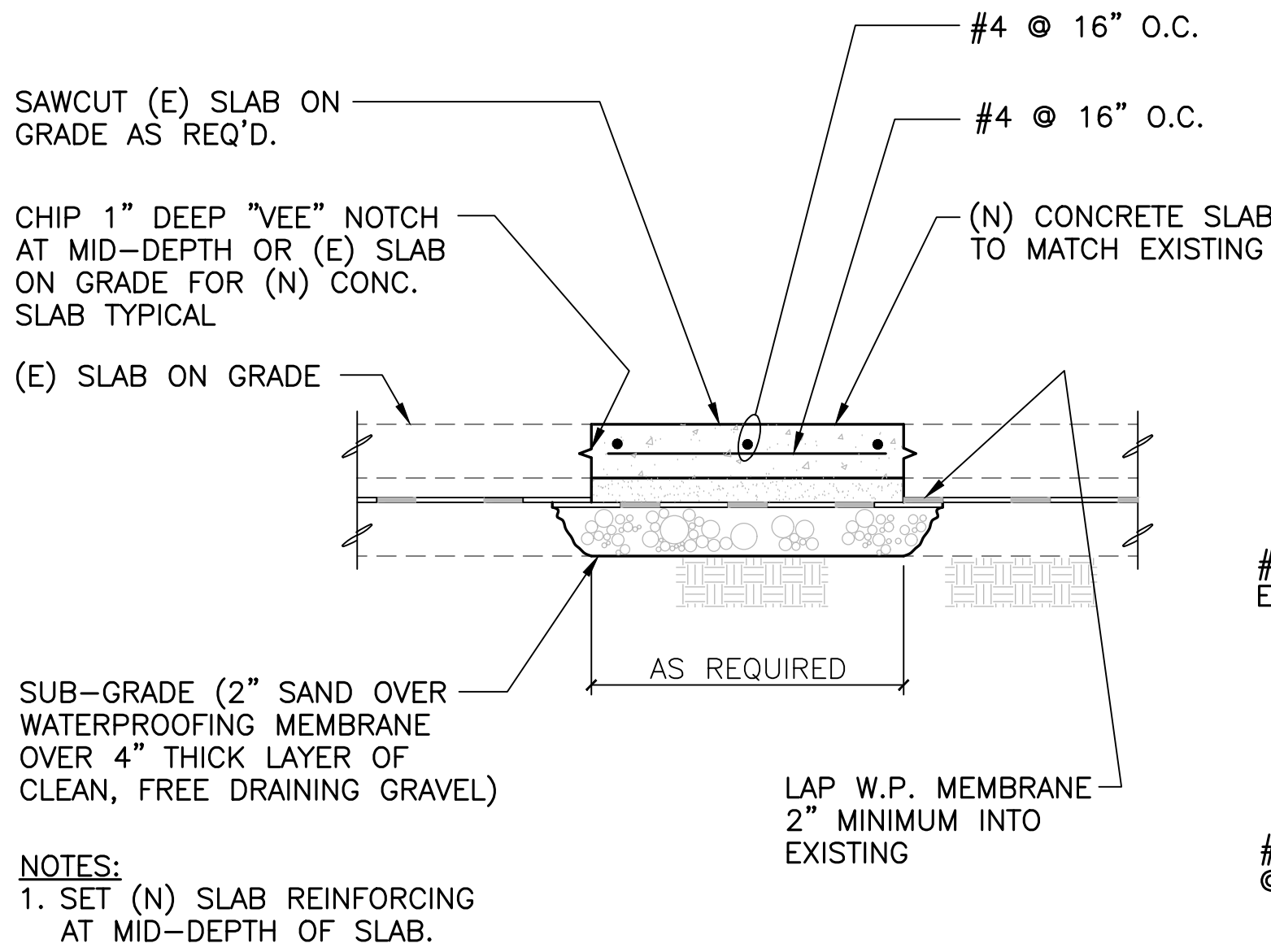


1 (N) WALL TO (E) CONCRETE WALL DETAIL
NOT TO SCALE

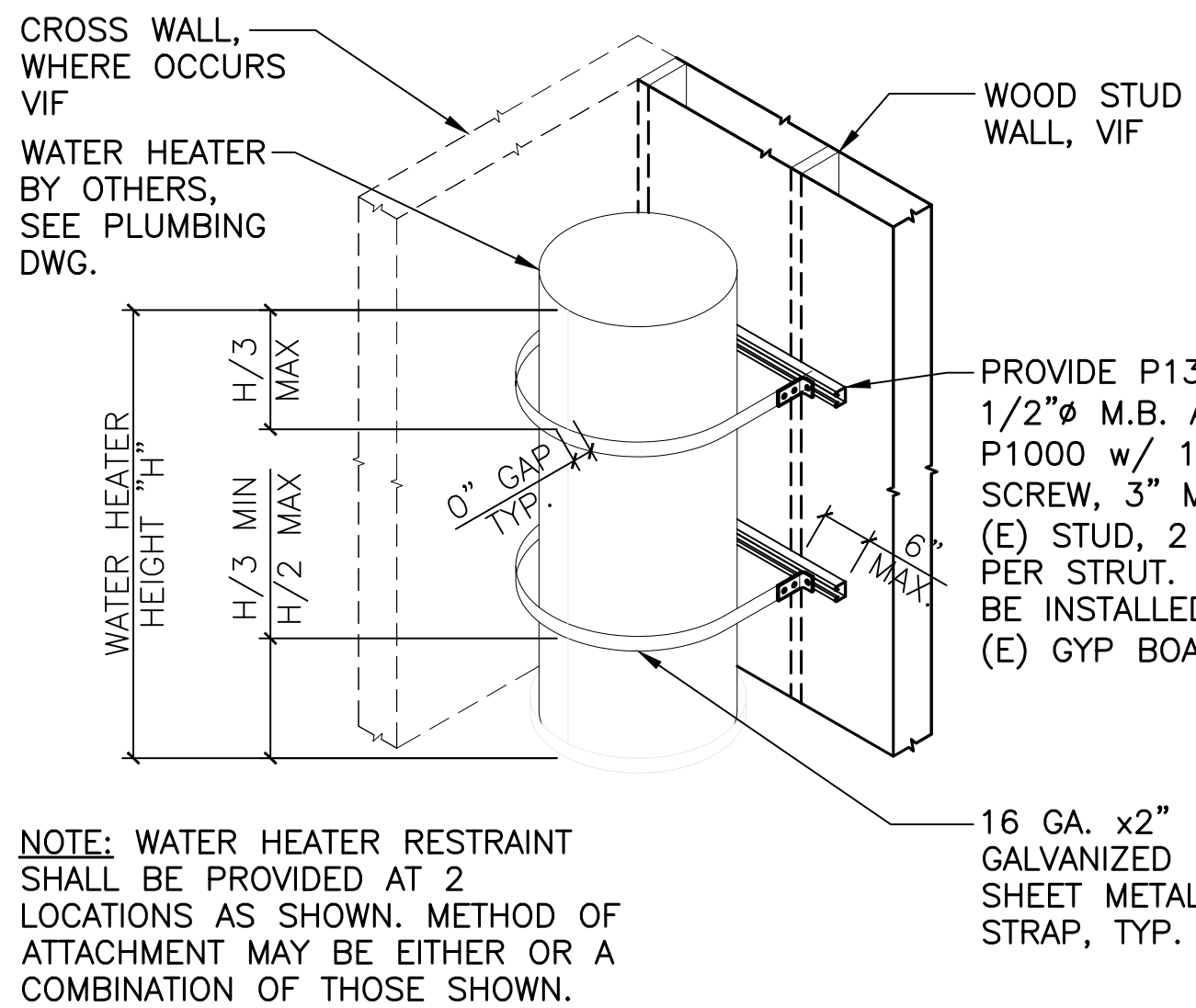


NOTE:
1. USE 2-#5'S FOR WALLS 10" AND THICKER AND 1-#5 FOR WALLS 8" AND LESS.
2. CONTRACTOR TO SCAN EXISTING CONCRETE FOR EXISTING VERT. & HORIZ. BARS PRIOR TO INSTALLATION OF NEW DOWELS.

7 (N) OPENING IN (E) REINF. CONCRETE WALL
NOT TO SCALE

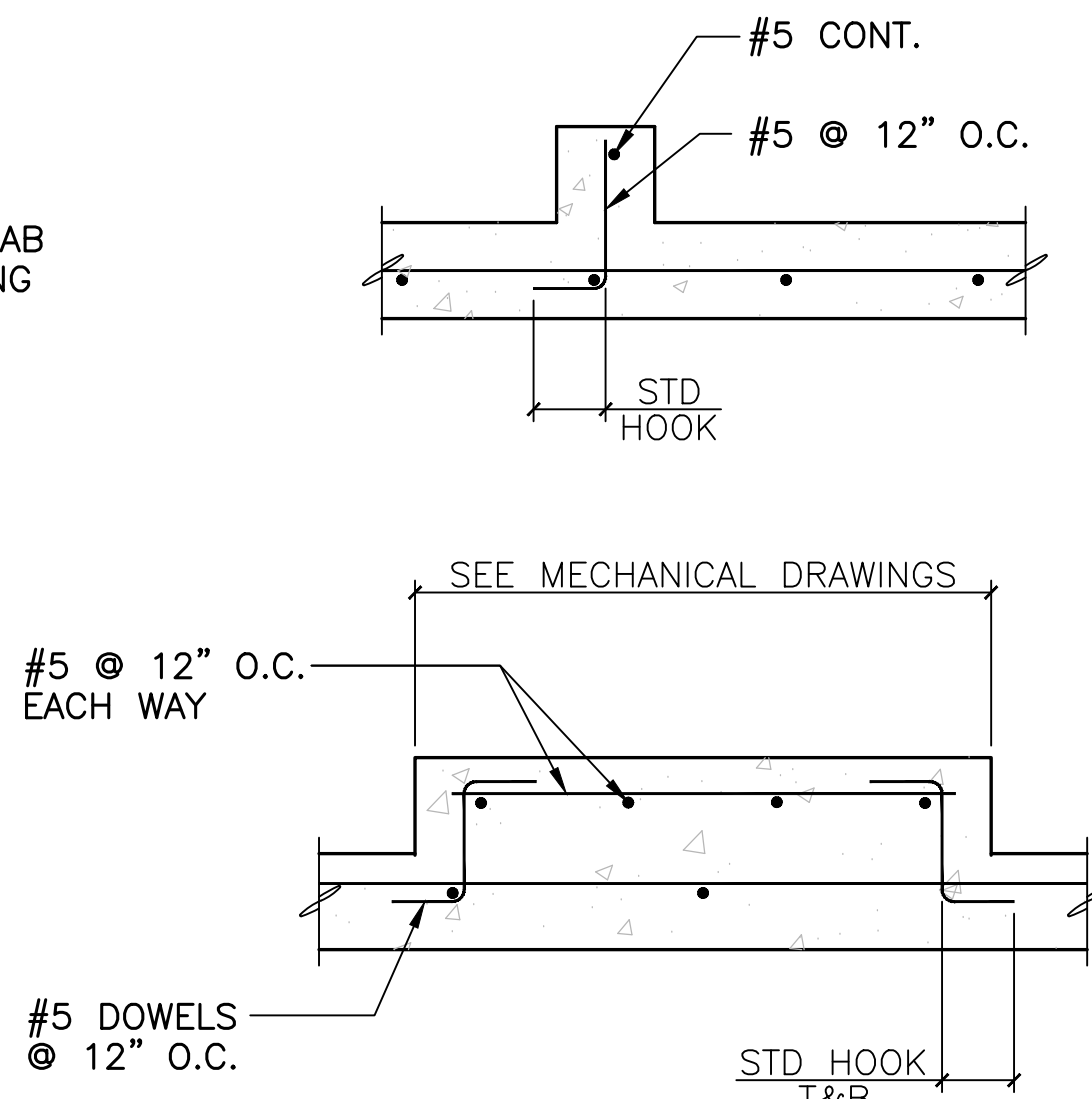


8 SAWCUT AND REPAIR OF (E) SLAB ON GRADE
NOT TO SCALE

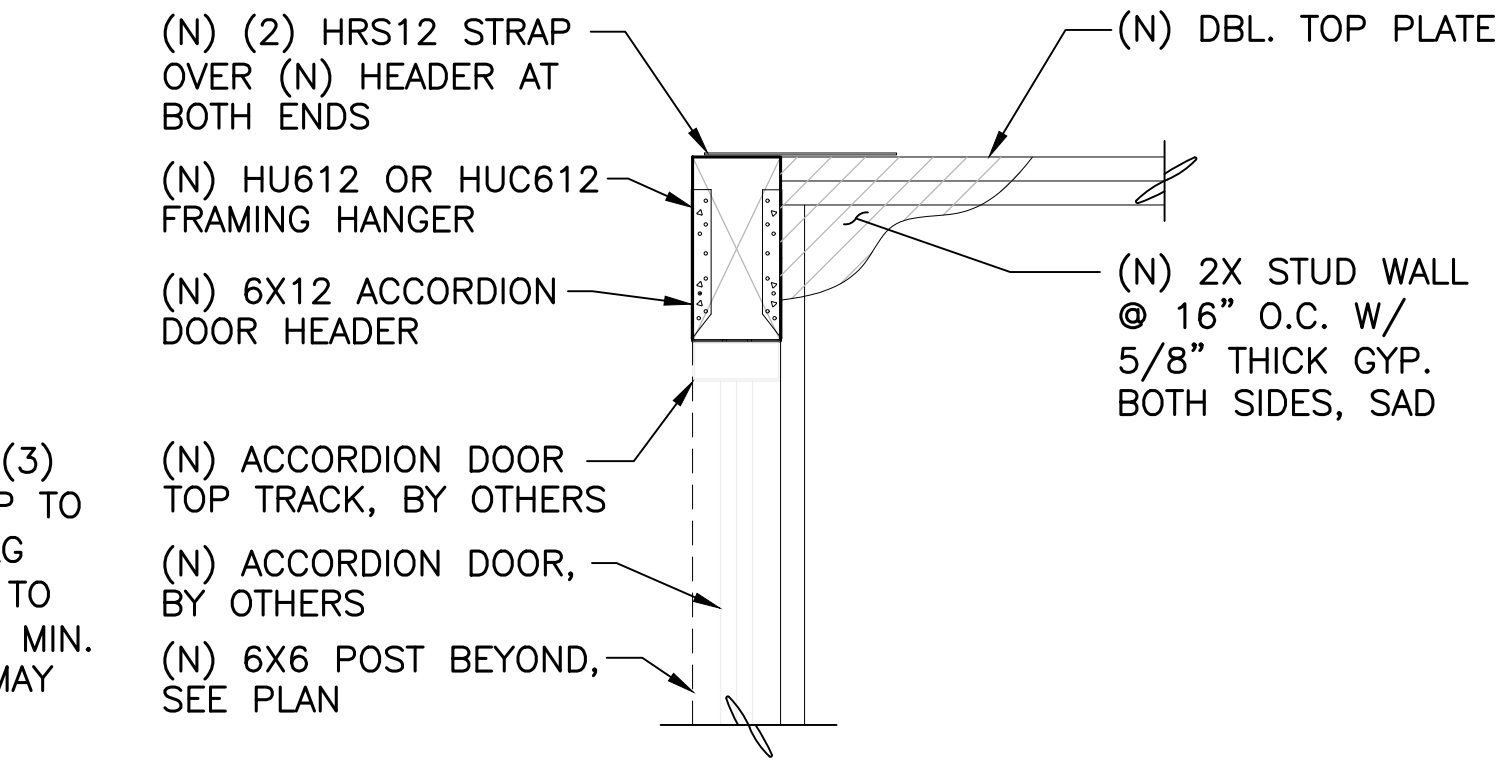


NOTE: WATER HEATER RESTRAINT SHALL BE PROVIDED AT 2 LOCATIONS AS SHOWN. METHOD OF ATTACHMENT MAY BE EITHER OR A COMBINATION OF THOSE SHOWN.

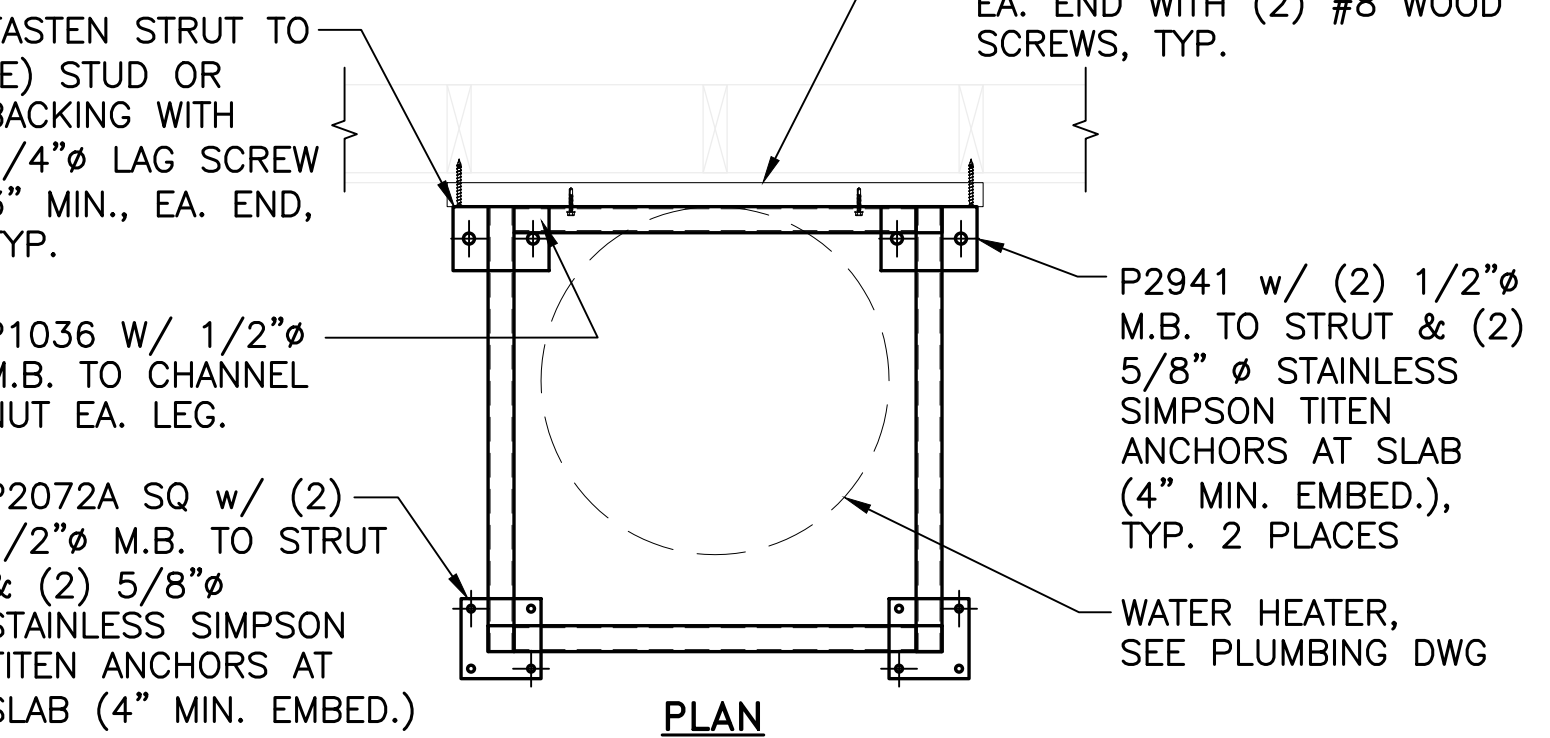
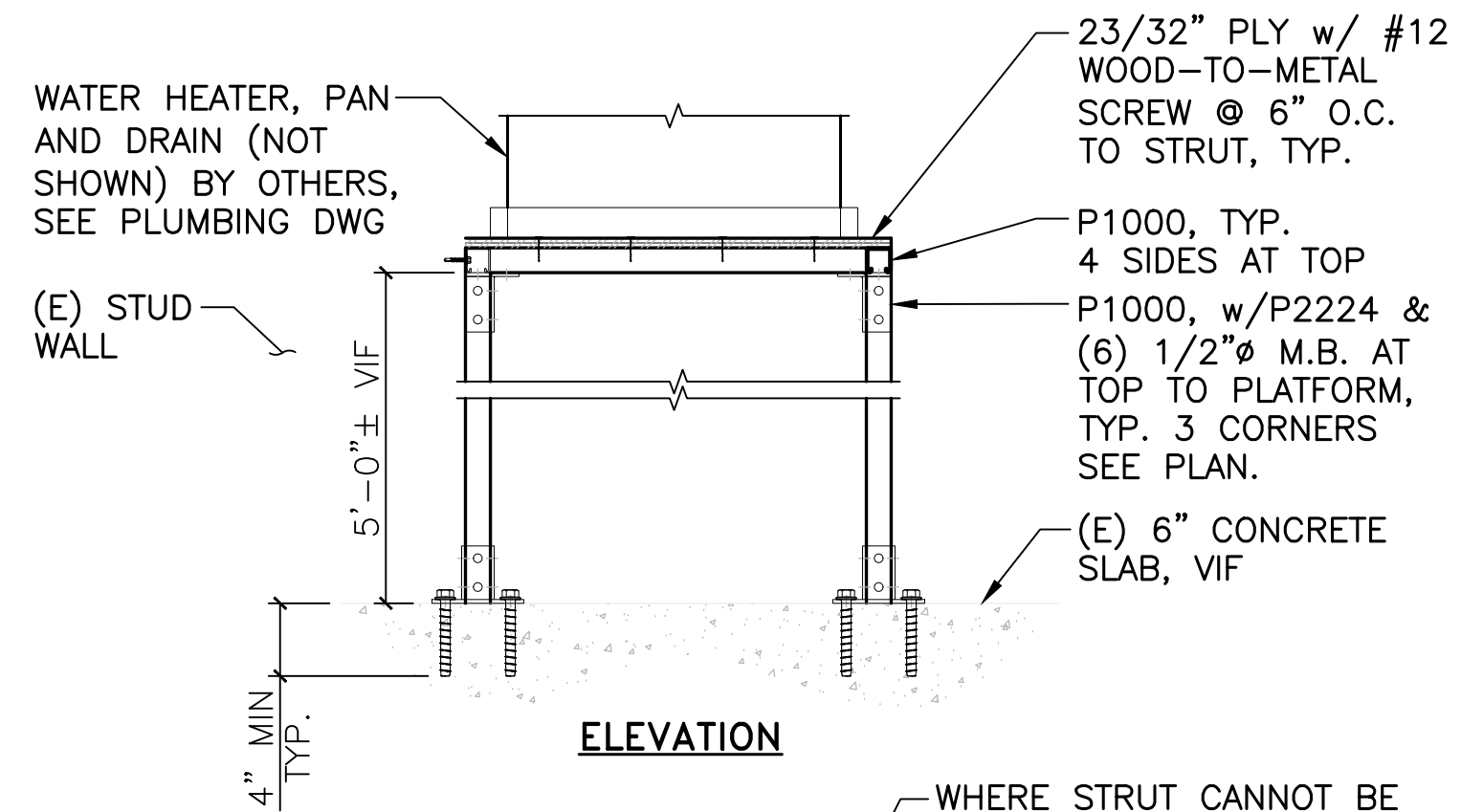
4 WATER HEATER CONNECTION AT (E) WALL
NOT TO SCALE



5 CURB AND MECHANICAL PAD, TYPICAL
NOT TO SCALE



2 (N) FOLDING WALL PANEL HEADER
NOT TO SCALE



3 WATER HEATER SUPPORT STAND
NOT TO SCALE

Revisions:

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APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

DETAILS

Sheet Number:

S502

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3-8d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	EACH END, TOENAIL
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2-8d COMMON; OR 2-3"x0.131" NAILS	EACH END, TOENAIL
FLAT BLOCKING TO TRUSS AND WEB FILLER	2-16d COMMON; OR 3-3"x0.131" NAILS	END NAIL
2. CEILING JOISTS TO TOP PLATE	3-8d COMMON; OR 3-10d BOX; OR 3"x0.131" NAILS	EACH JOIST, TOENAIL
3. CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITION (NO THRUST)	3-16d COMMON; OR 4-10d BOX; OR 4-3"x0.131" NAILS	FACE NAIL
4. CEILING JOIST TO PARALLEL RAFTER (HEEL JOINT)	SEE DETAILS	SEE DETAILS
5. COLLAR TIE TO RAFTER	3-10d COMMON; OR 4-10d BOX; OR 4-3"x0.131" NAILS	FACE NAIL
6. RAFTER OR ROOF TRUSS TO TOP PLATE	3-10d COMMON; OR 3-16d BOX; OR 4-10d BOX; OR 4-3"x0.131" NAILS	TOENAIL ³
7. ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2-INCH RIDGE BEAM	2-16d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	END NAIL
	3-10d COMMON; OR 3-16d BOX; OR 4-10d BOX; OR 4-3"x0.131" NAILS	TOENAIL
WALL		
8. STUD TO STUD (NOT AT SHEAR WALLS/BRACED WALL PANELS)	16d COMMON	24" o.c. FACE NAIL
	10d BOX; OR 3"x0.131" NAIL	16" o.c. FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT SHEAR WALLS/BRACED WALL PANELS)	16d COMMON	16" o.c. FACE NAIL
	16d BOX; OR 3"x0.131" NAIL	12" o.c. FACE NAIL
10. BUILT-UP HEADER (2" TO 2" HEADER)	16d COMMON	16" o.c. EACH EDGE FACE NAIL
	16d BOX	12" o.c. EACH EDGE FACE NAIL
11. CONTINUOUS HEADER TO STUD	4-8d COMMON; OR 4-10d BOX	TOENAIL
12. TOP PLATE TO TOP PLATE	16d COMMON	16" o.c. FACE NAIL
	10d BOX; OR 3"x0.131" NAIL	12" o.c. FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	8-16d COMMON; OR 12-10d BOX; OR 12-3"x0.131" NAIL	EACH SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPlice LENGTH EACH SIDE OF END JOINT)
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT SHEAR WALLS/BRACED WALL PANELS)	16d COMMON	16" o.c. FACE NAIL
	16d BOX; OR 3"x0.131" NAIL	12" o.c. FACE NAIL
15. BOTTOM PLATE TO JOIST, BAND JOIST, BAND JOIST OR BLOCKING AT SHEAR WALLS/BRACED WALL PANELS	2-16d COMMON; OR 3-16d BOX; OR 4-3"x0.131" NAILS	16" o.c. FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	4-8d COMMON; OR 4-10d BOX; OR 4-3"x0.131" NAILS	TOE NAIL
	2-16d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	END NAIL
17. TOP OR BOTTOM PLATE TO STUD	2-16d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	FACE NAIL
18. TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	2-16d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	FACE NAIL
19. 1" BRACE TO EACH STUD AND PLATE	2-8d COMMON; OR 2-10d BOX; OR 2-3"x0.131" NAILS	FACE NAIL
20. 1"x6" SHEATHING TO EACH BEARING	2-8d COMMON; OR 2-10d BOX	FACE NAIL
21. 1"x8" AND WIDER SHEATHING TO EACH BEARING	3-8d COMMON; OR 3-10d BOX	FACE NAIL
FLOOR		
22. JOIST TO SILL, TOP PLATE, OR GIRDER	3-8d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	TOENAIL
23. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d COMMON; OR 10d BOX; OR 3"x0.131" NAILS	6" o.c., TOENAIL
24. 1"x6" SUBFLOOR OR LESS TO EACH JOIST	2-8d COMMON; OR 2-10d BOX	FACE NAIL
25. 2" SUBFLOOR TO JOIST OR GIRDER	2-16d COMMON	FACE NAIL
26. 2" PLANK (PLANK & BEAM - FLOOR & ROOF)	2-16d COMMON	EACH BEARING, FACE NAIL
27. BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON	32" o.c., FACE NAIL AT TOP & BOT STAGGERED ON OPP SIDES
	10d BOX; OR 3"x0.131" NAILS	24" o.c., FACE NAIL AT TOP & BOT STAGGERED ON OPP SIDES
	AND: 2-20d COMMON; OR 3-10d BOX; OR 3-3"x0.131" NAILS	ENDS AND AT EACH SPlice, FACE NAIL
28. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-16d COMMON; OR 4-10d BOX; OR 4-0.131" NAILS	EACH JOIST OR RAFTER, FACE NAIL
29. JOIST TO BAND JOIST OR RIM JOIST	3-16d COMMON; OR 4-10d BOX; OR 4-0.131" NAILS	END NAIL
30. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2-8d COMMON; OR 2-10d BOX; OR 2-3"x0.131" NAILS	EACH END, TOENAIL

9

NAILING SCHEDULE

REF: CBC TABLE 2304.10.1

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	
WOOD STRUCTURAL PANELS (WSP), SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING ¹			
PANEL THICKNESS		EDGES (INCHES)	INTERMEDIATE SUPPORTS (INCHES)
31. 3/8" - 1/2"	6d COMMON OR DEFORMED (SUBFLOOR AND WALL)	6	12
	8d BOX OR DEFORMED (ROOF)	6	12
	2½"x0.113" NAIL (SUBFLOOR AND WALL)	6	12
	2½"x0.113" NAIL (ROOF)	4	8
32. 19/32" - 3/4"	8d COMMON; OR 6d DEFORMED	6	12
	2½"x0.113" NAIL	4	8
33. 7/8" - 1 1/4"	10d COMMON; OR 8d DEFORMED	6	12
OTHER EXTERIOR WALL SHEATHING			
34. 1/2" FIBERBOARD SHEATHING ²	1½" GALVANIZED ROOFING NAIL	3	6
35. 25/32" FIBERBOARD SHEATHING ²	1½" GALVANIZED ROOFING NAIL	3	6
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
36. 3/4" OR LESS	8d COMMON; OR 6d DEFORMED	6	12
37. 7/8" - 1"	8d COMMON; OR 8d DEFORMED	6	12
38. 1 1/8" - 1 1/4"	10d COMMON; OR 8d DEFORMED	6	12
PANEL SIDING TO FRAMING			
39. 1/2" OR LESS	6d CORROSION-RESISTANT SIDING; OR 6d CORROSION RESISTANT CASING	6	12
40. 5/8"	8d CORROSION-RESISTANT SIDING; OR 8d CORROSION RESISTANT CASING	6	12
INTERIOR PANELING			
41. 1/4"	4d CASING; OR 4d FINISH	6	12
42. 3/8"	6d CASING; OR 6d FINISH (PANEL SUPPORTS AT 24")	6	12

NOTE:

1. NAILS SPACED AT 6" o.c. AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, SEE PLANS AND DETAILS THIS SET. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
2. SPACING SHALL BE 6" o.c. ON THE EDGE AND 12" o.c. AT INTERMEDIATE SUPPORTS FOR NON-STRUCTURAL APPLICATIONS. PANEL SUPPORTS AT 16" o.c. (20" o.c. IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE NOTED).
3. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.
4. TABLE SHOWS MINIMUM NAILING UNLESS OTHERWISE NOTED IN PLANS OR DETAILS.

7

DEFORMED BAR OR THREADED ROD DOWELS IN (E) CONCRETE

TR

Tuan & Robinson
Structural Engineers, Inc.
244 Spear Street, Suite 911
San Francisco, California 94105
TEL 415 957 2480 FAX 415 957 2483

THREADED ROD IN (E) CONCRETE
UKIAH BANK OF AMERICA
501 SOUTH STATE STREET
UKIAH, CA 95482

DATE: 04/10/25
SK-7
SHEET NUMBER

TR

Tuan & Robinson
Structural Engineers, Inc.
244 Spear Street, Suite 911
San Francisco, California 94105
TEL 415 957 2480 FAX 415 957 2483

WIRE CONNECTED TO WOOD FRAMING
UKIAH BANK OF AMERICA
501 SOUTH STATE STREET
UKIAH, CA 95482

DATE: 04/10/25
SK-8
SHEET NUMBER

5

TYPICAL BAR BENDING DETAILS

TR

Tuan & Robinson
Structural Engineers, Inc.
244 Spear Street, Suite 911
San Francisco, California 94105
TEL 415 957 2480 FAX 415 957 2483

TYPICAL BAR BENDING DETAILS
UKIAH BANK OF AMERICA
501 SOUTH STATE STREET
UKIAH, CA 95482

DATE: 04/10/25
SK-5
SHEET NUMBER

TR

Tuan & Robinson
Structural Engineers, Inc.
244 Spear Street, Suite 911
San Francisco, California 94105
TEL 415 957 2480 FAX 415 957 2483

LAP SPICE DETAIL AND SCHEDULE
UKIAH BANK OF AMERICA
501 SOUTH STATE STREET
UKIAH, CA 95482

DATE: 04/10/25
SK-6
SHEET NUMBER

ENGINEERS
ARCHITECTS

KPA

THE KPA GROUP
1840 Fourth Street, 2nd Floor
Livermore, CALIFORNIA 94550
TEL 925.223.8217 www.thekpagroup.com
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PHARIS

ENGINEERING PLLC

LICENSED ARCHITECT
PAUL W. POWERS
C-29713
EXPIRATION DATE 3/31/2027
STATE OF CALIFORNIA

CITY OF UKIAH
BANK OF AMERICA
ADA BARRIER REMOVAL
501 South State St. Ukiah, CA 95482

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

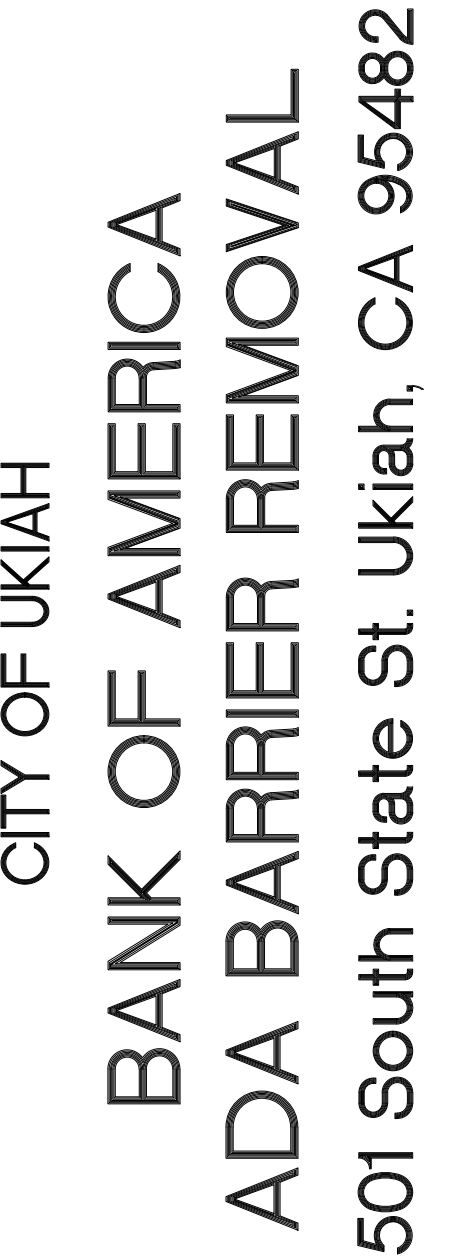
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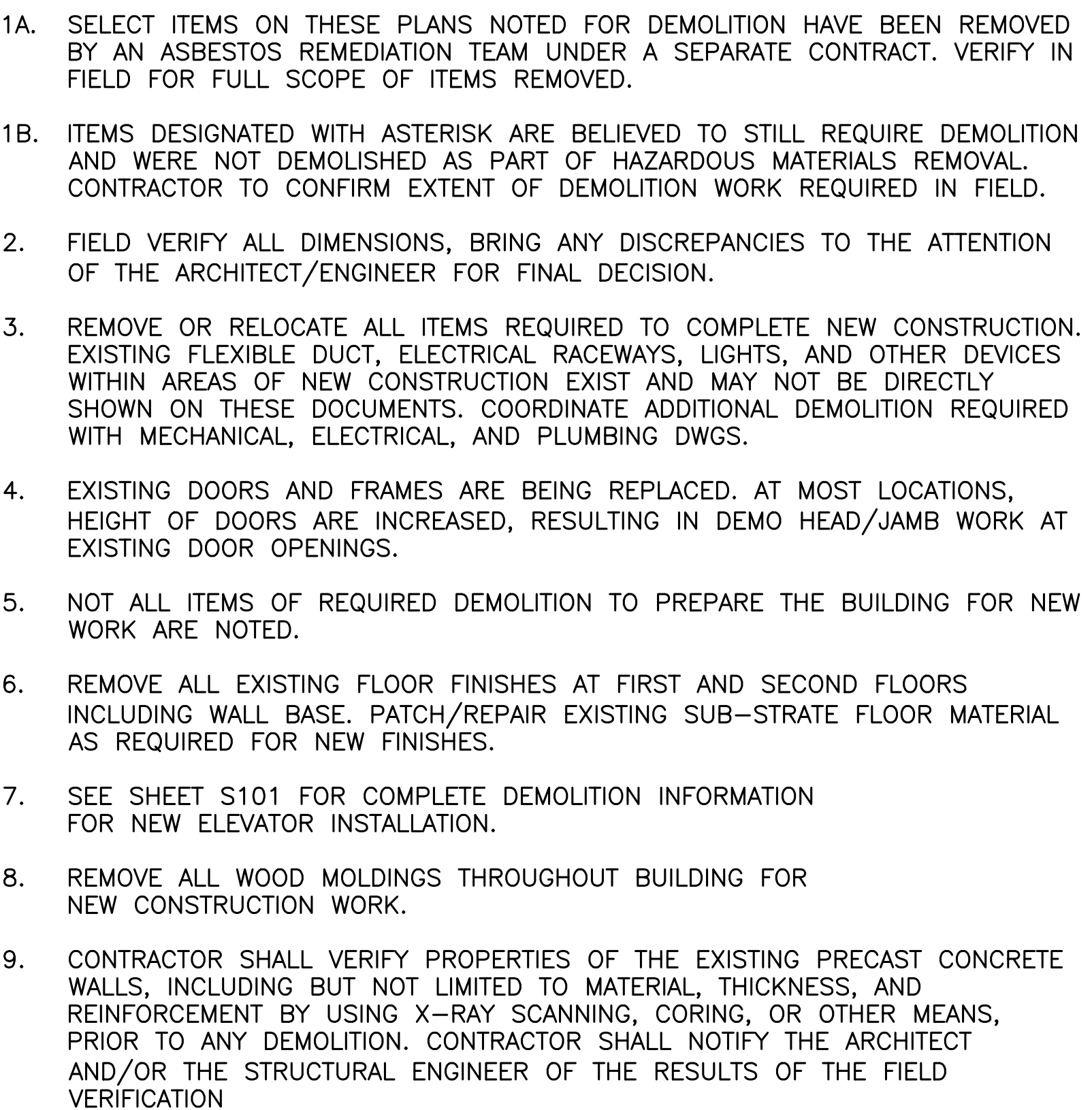
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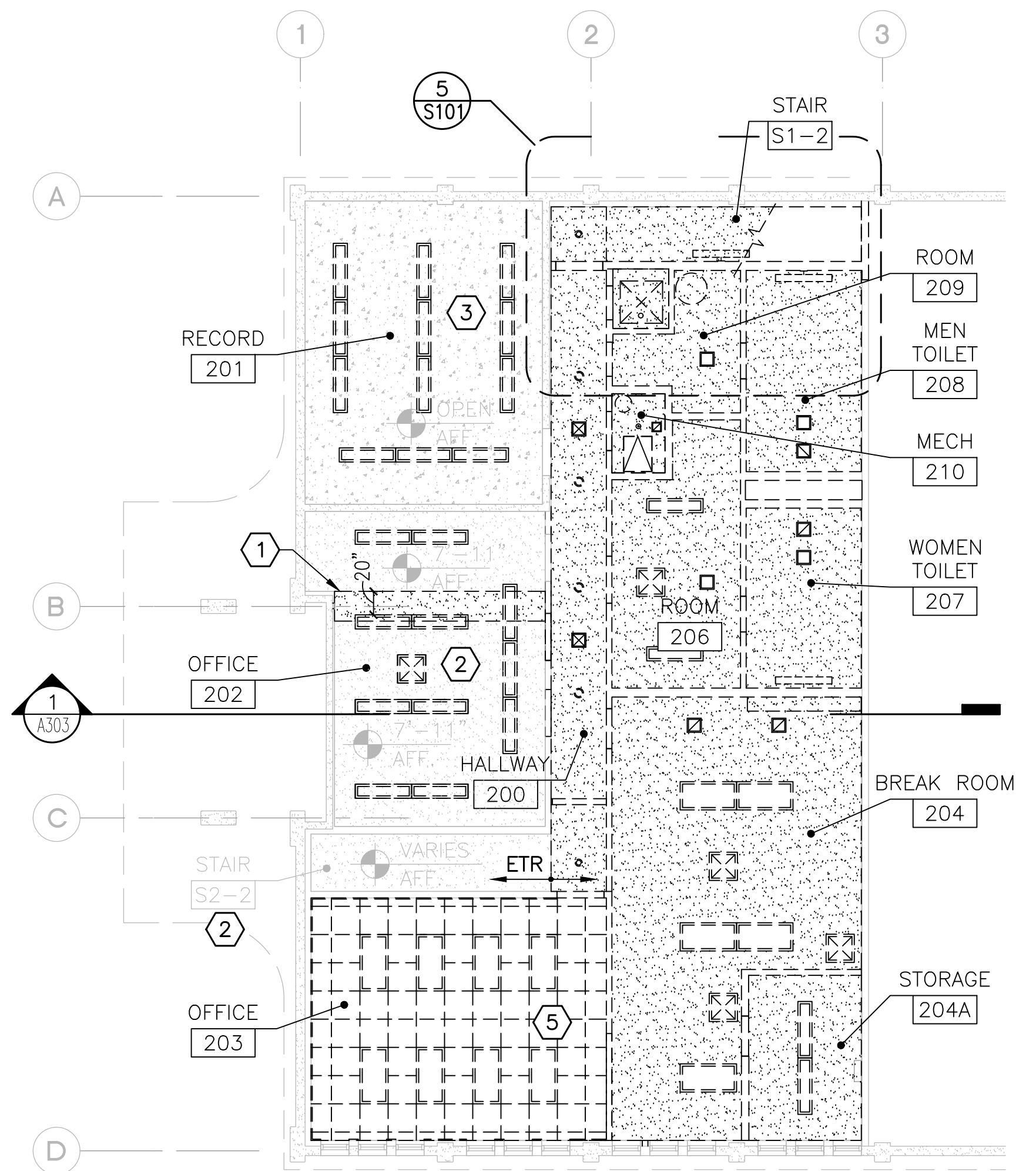
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Page 205 of 1257

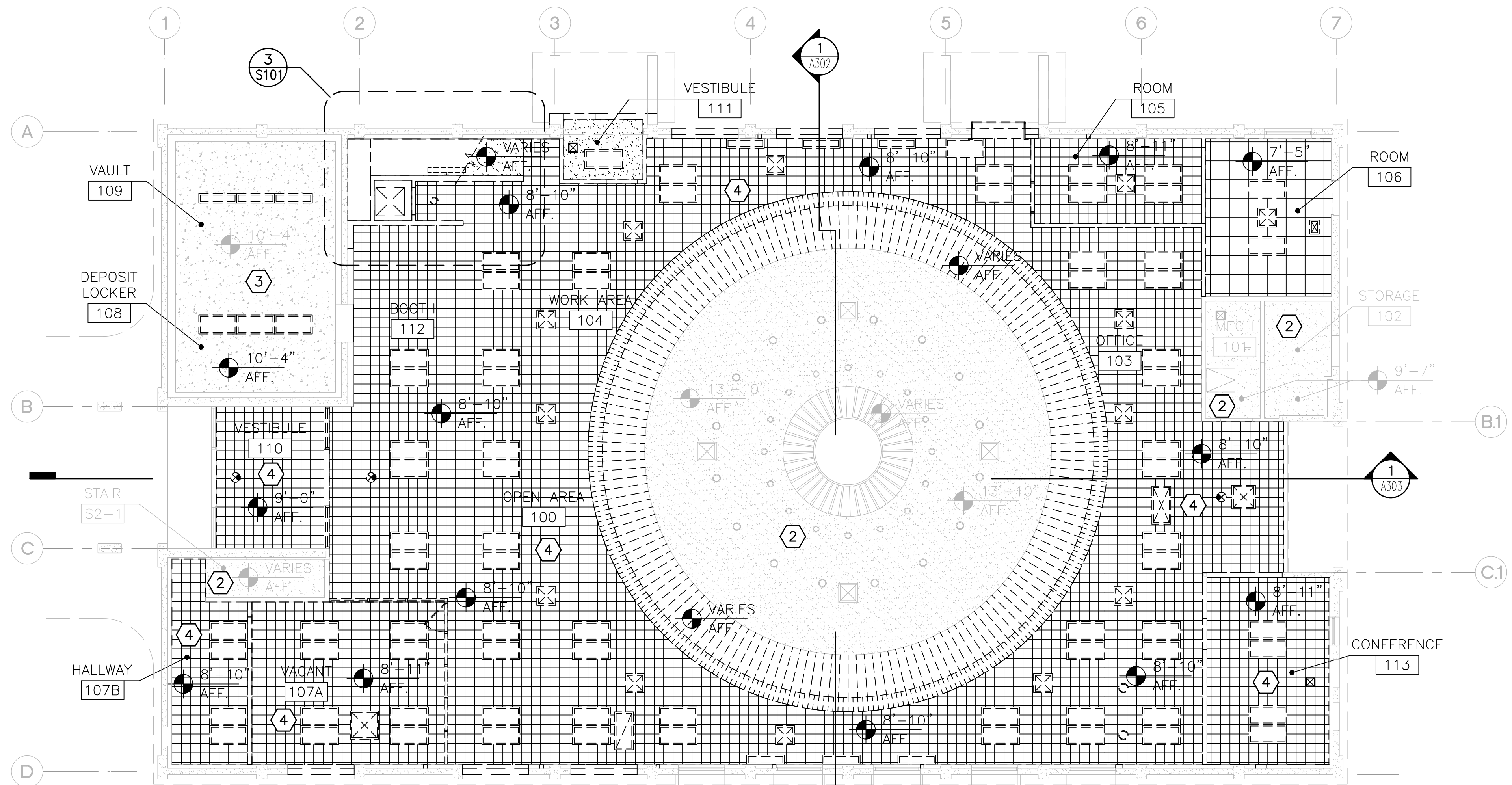


AD101





PLAN NORTH
2
SECOND FLOOR
DEMOLITION REFLECTED CEILING PLAN
1/8" = 1'-0"



PLAN NORTH
1
FIRST FLOOR
DEMOLITION REFLECTED CEILING PLAN
1/8" = 1'-0"

KEYED NOTES:

- 1 DEMOLISH EXISTING GYPSUM BOARD (GWB) CEILING AS REQUIRED TO PERFORM FULL SCOPE OF WORK. MINIMIZE GWB DISTURBANCE
- 2 EXISTING GYPSUM CEILING TO REMAIN
- 3 PREP EXISTING CONCRETE CEILING TO RECEIVE NEW PAINT
- 4 DEMOLISH EXISTING 1x1 CEILING TILES OVER EXISTING GYP. BD. SUBSTRATE OVER WOOD FRAMING
- 5 DEMOLISH EXISTING SUSPENDED CEILING ALONG WITH EXISTING GYP. BD. OVER WOOD FRAMING ABOVE SUSPENDED CEILING

LEGEND:

	(E) GYPSUM BOARD AND WOOD SUPPORT FRAMING TO REMAIN
	REMOVE AND DISPOSE OF (E) SUSPENDED CEILING SYSTEM
	REMOVE AND DISPOSE OF (E) CEILING TILE AND WOOD SUPPORT FRAMING
	REMOVE AND DISPOSE OF (E) PLASTER/GYPSUM BOARD AND WOOD SUPPORT FRAMING
	REMOVE AND DISPOSE OF (E) CEILING LIGHT
	REMOVE AND DISPOSE OF (E) CEILING LIGHT
	REMOVE AND DISPOSE OF (E) CEILING LIGHT
	REMOVE AND DISPOSE OF (E) CAN LIGHT
	REMOVE AND DISPOSE OF (E) HVAC COMPONENT
	REMOVE AND DISPOSE OF (E) HVAC COMPONENT
	REMOVE AND DISPOSE OF (E) HVAC COMPONENT
	REMOVE AND DISPOSE OF (E) WIRELESS ACCESS POINT
	REMOVE AND DISPOSE OF (E) EXIT SIGN
EXTR	EXISTING TO REMAIN

GENERAL NOTES:

1. SELECT ITEMS ON THESE PLANS NOTED FOR DEMOLITION HAVE BEEN REMOVED BY AN ASBESTOS REMEDIATION TEAM UNDER A SEPARATE CONTRACT. VERIFY IN FIELD FOR FULL SCOPE OF ITEMS REMOVED.
2. COORDINATE DEMOLITION OF MECHANICAL, ELECTRICAL, AND FIRE PROTECTION SYSTEMS WITH MEP DRAWINGS. REMOVE AND DISPOSE OF OR EXTEND/RELOCATE (E) SYSTEMS AS REQUIRED FOR NEW CONSTRUCTION.
3. EXISTING 2x WOOD FRAMED AND SHEATHED CEILING SYSTEM IS SUSPENDED FROM ROOF FRAMING, EXISTING PARTITIONS AND EXTERIOR WALLS.
4. EXISTING CEILING AREA BELOW 2ND FLOOR IS SHOWN TO BE DEMOLISHED.
5. EXISTING SUSPENDED CEILING AND PLASTER/GYPSUM BOARD OVER 2x WOOD FRAMING ABOVE SUSPENDED CEILING SHALL BE REMOVED IN ROOM 203.
6. SEE SHEET AD101 FOR ALL OTHER DEMOLITION ITEMS NOT NOTED.
7. SEE SHEET S101 FOR COMPLETE DEMOLITION INFORMATION FOR NEW ELEVATOR INSTALLATION.
8. EXISTING FINISHED CEILINGS ARE SUPPORTED BY EXISTING 2X WOOD FRAMING. EXISTING CEILING FINISHES SHALL BE REMOVED IN AREAS OF WORK AND AS SHOWN.

Revisions:

Client Project Number: 000
APN Number: 000-000-000
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Sheet Title:
FIRST AND SECOND
FLOOR DEMOLITION
REFLECTED CEILING
PLANS

Sheet Number:

AD111

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ADA BARRIER REMOVAL**
501 South State St. Ukiah, CA 95482

Revisions:

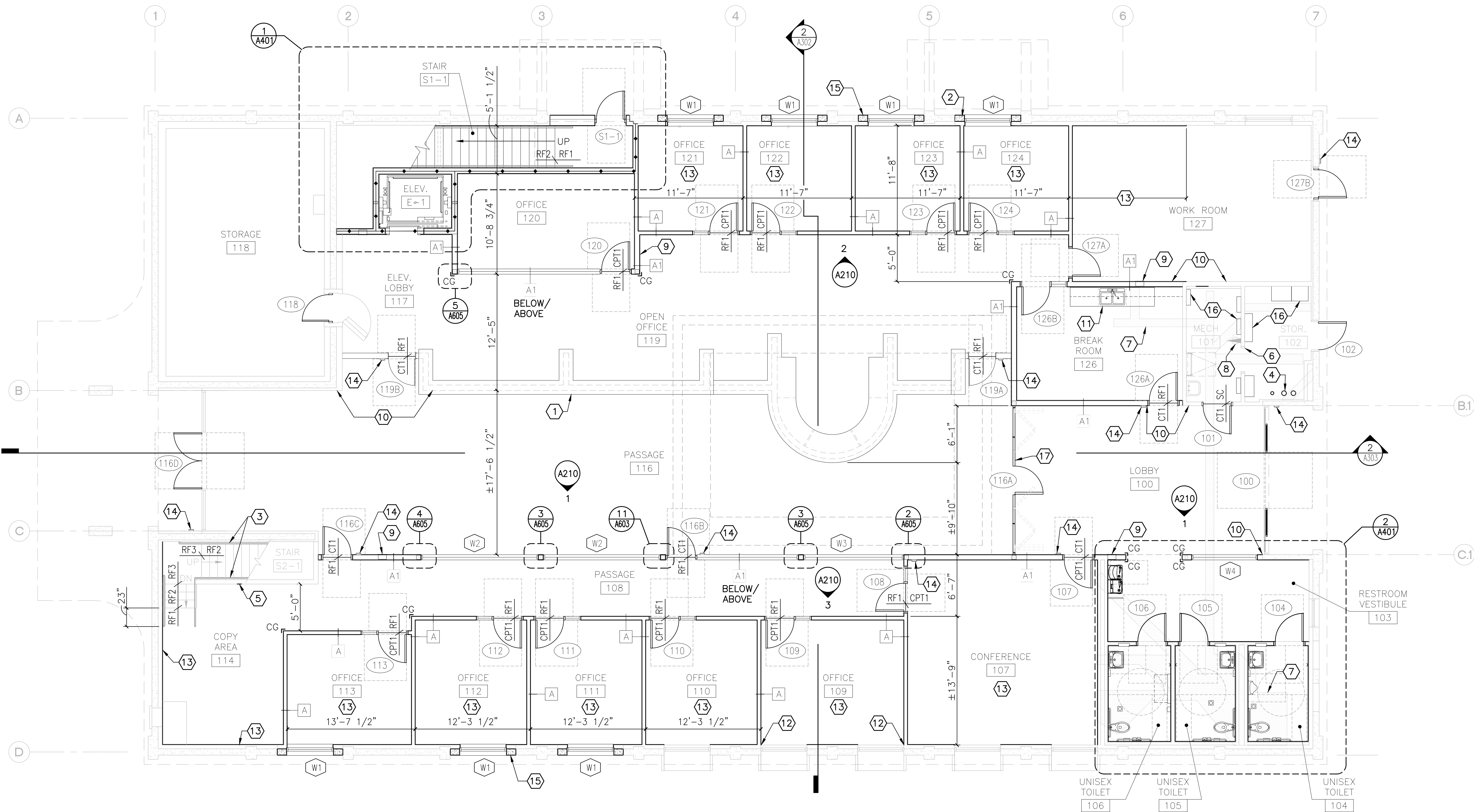
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

FIRST FLOOR PLAN

Sheet Number:

A101



GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
2. REPAIR AND RE-FINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION, NEW CONSTRUCTION AND/OR DETERIORATION, (MATCH (E), U.N.O.).
3. SEE SHEET G001 FOR TYPICAL LEGEND ITEMS SHOWN ON PLANS.
4. NEW DOORS AND/OR FRAMES AND HARDWARE, PER DOOR CALLOUT TAG, (##), SEE DOOR SCHEDULE A602.
5. NEW WALL TYPE PER WALL TAG —XX, SEE PARTITION TYPES ON SHEET A511.
6. FLOOR FINISH DESIGNATION:
FLOOR FINISH DIVIDER AT DOOR THRESHOLD XXX-XXX
7. NEW WINDOW TAG CALLOUT TAG (XX), SEE SHEET A605.
8. PROVIDE FIRESTOPS AS REQUIRED PER CBC, SEE SPECIFICATION SECTION 07 84 00 - FIRESTOPPING SYSTEMS.
9. CG 48" H. CORNER GUARD, U.N.O. ON DETAILS

KEYED NOTES:

- (1) (N) MILLWORK COUNTER @ 30"/42" A.F.F., SEE ENLARGED PLAN DETAIL 1/A514
- (2) INFILL AT (E) SERVICE WINDOW, SEE DETAIL 8/A501
- (3) (N) 1 1/4 STD. PIPE HANDRAIL, PAINTED, SEE TYPICAL DETAILS ON SHEET A301, INSTALL BLOCKING IN (E) WALLS AS REQUIRED FOR NEW RAILING SUPPORT
- (4) (N) FIRE RISER/ALARM
- (5) PATCH WALL TO MATCH EXISTING ADJACENT WALL WHERE (E) WALL HAS BEEN DEMOLISHED
- (6) CLEAN, PREP, FILL, SAND AND PAINT (E) FRAME
- (7) NEW SLAB INFILL, SEE DETAIL 8/S502. COORDINATE INFILL WITH DEMOLITION OF FLOORING PER AD101
- (8) EXISTING WALL MOUNTED FIRE EXTINGUISHER TO REMAIN. OWNER TO VERIFY EXTINGUISHER IS IN GOOD WORKING CONDITION
- (9) NEW FIRE EXTINGUISHER CABINET. OWNER TO PROVIDE EXTINGUISHER
- (10) ALIGN FACE OF NEW WALL WITH FACE OF EXISTING
- (11) (N) COUNTER AND CABINET, SEE PLAN DETAIL 3/A515
- (12) ALIGN FACE OF GYP BD. WITH FACE OF (E) WINDOW JAMB FACE
- (13) PROVIDE NEW LAYER OF 5/8" GYP. BD. OVER (E) FINISHES ALONG EXTERIOR WALL
- (14) NEW CARD READER LOCATED ON WALL, — LOCATIONS AS SHOWN ON PLAN. OPERABLE HEIGHT OF CARD READER TO BE A MAX. OF 40" A.F.F., SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION
- (15) PAINT CONCRETE SURROUNDING WINDOW OPENINGS PT-8, TYPICAL AT ALL NEW WINDOW OPENINGS IN (E) CONCRETE WALLS
- (16) NEW ELECTRICAL PANEL AND/OR EQUIPMENT, COORDINATE WITH ELECTRICAL DRAWINGS
- (17) FOLDING GLASS PARTITION w/ ACTIVE DOOR LEAF

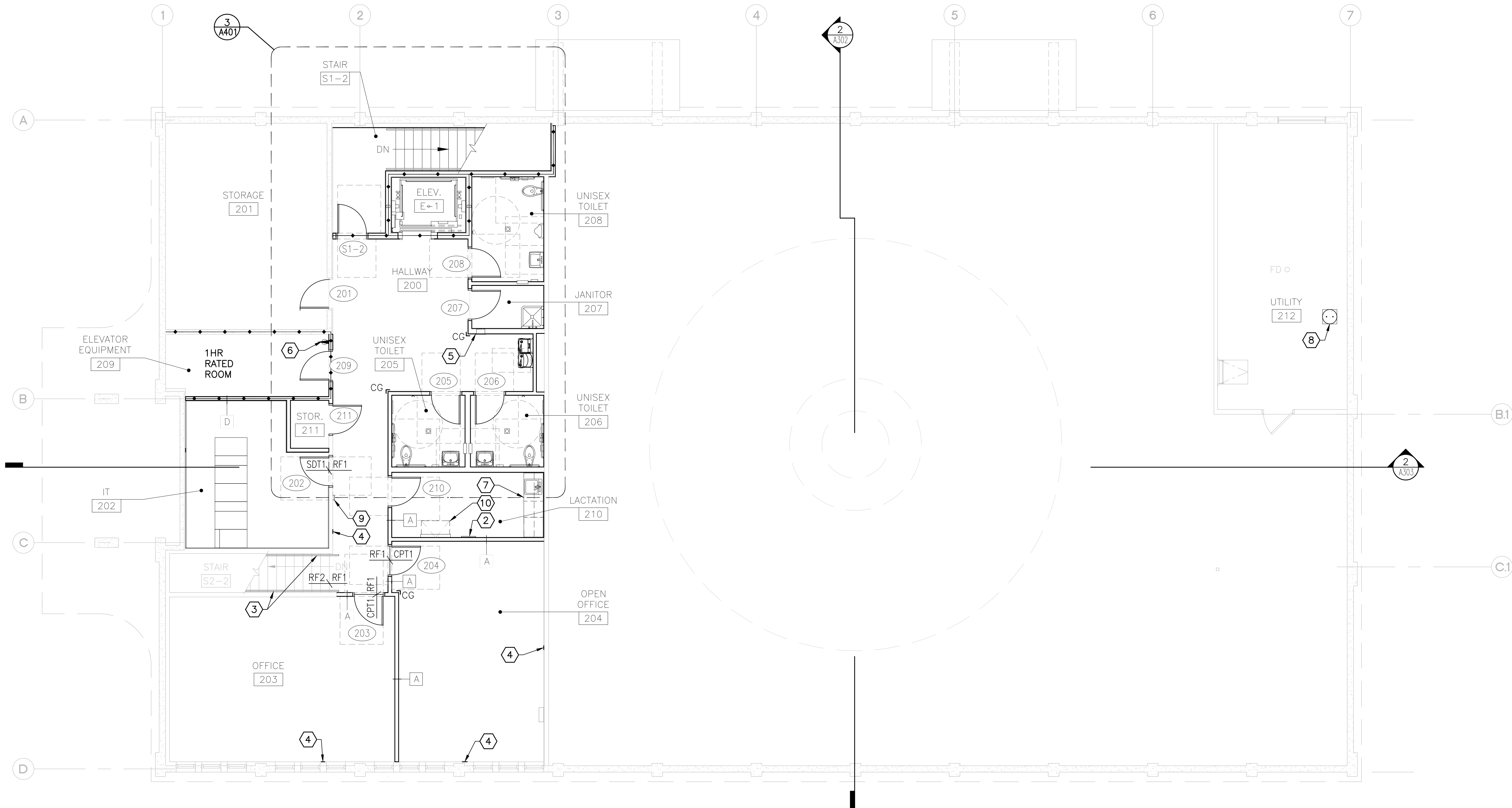
PLAN
NORTH



1 FIRST FLOOR PLAN

3/16" = 1'-0"





GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
2. REPAIR AND RE-FINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION, NEW CONSTRUCTION AND/OR DETERIORATION, (MATCH (E), U.N.O.).
3. SEE SHEET G001 FOR TYPICAL LEGEND ITEMS SHOWN ON PLANS.
4. NEW DOORS AND/OR FRAMES AND HARDWARE, PER DOOR CALLOUT TAG, **##**, SEE DOOR SCHEDULE A602.
5. NEW WALL TYPE PER WALL TAG **A**, SEE PARTITION TYPES ON SHEET A511.
6. FLOOR FINISH DESIGNATION:
FLOOR FINISH DIVIDER AT DOOR THRESHOLD **XXX XXX**
8. PROVIDE FIRESTOPS AS REQUIRED PER CBC, SEE SPECIFICATION SECTION 07 84 00 - FIRESTOPPING SYSTEMS
9. **CG** 48" H. CORNER GUARD, U.N.O. ON DETAILS

KEYED NOTES:

- 1 (N) DOOR AND DOOR HARDWARE, SEE DOOR SCHEDULE SHEET A602
- 2 (N) DOOR, FRAME, AND DOOR HARDWARE, SEE DOOR SCHEDULE SHEET A602
- 3 (N) 1 1/4 STD. PIPE HANDRAIL, PAINTED, SEE TYPICAL DETAILS ON SHEET A301, INSTALL BLOCKING IN (E) WALLS AS REQUIRED FOR NEW RAILING SUPPORT
- 4 PATCH WALL TO MATCH EXISTING ADJACENT WALL WHERE (E) WALL HAS BEEN DEMOLISHED
- 5 NEW FIRE EXTINGUISHER CABINET. OWNER TO PROVIDE EXTINGUISHER
- 6 (N) WALL MOUNTED FIRE EXTINGUISHER AND WALL BRACKET
- 7 (N) COUNTER AND CABINET, SEE PLAN DETAIL 1/A515
- 8 (N) WATER HEATER AND STAND, SEE MEP DRAWINGS. SEE STRUCTURAL DRAWINGS FOR SEISMIC SUPPORT
- 9 NEW CARD READER LOCATED ON WALL, **≡** LOCATIONS AS SHOWN ON PLAN. OPERABLE HEIGHT OF CARD READER TO BE A MAX. OF 40" A.F.F., SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION
- 10 BABY CHANGING STATION (BCS), SEE MOUNTING HEIGHTS 9/A402



Revisions:

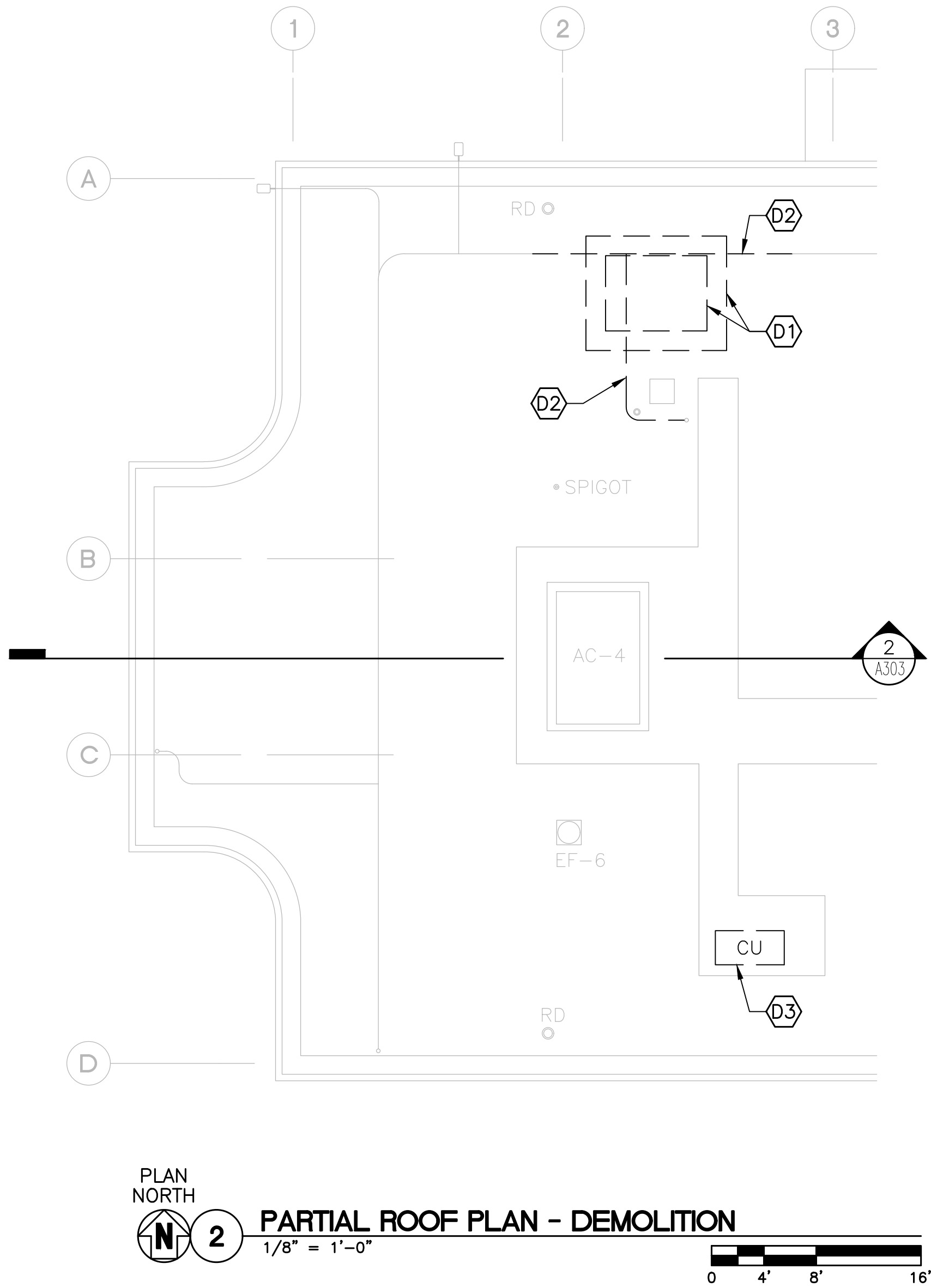
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APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SECOND FLOOR PLAN

Sheet Number:

A102

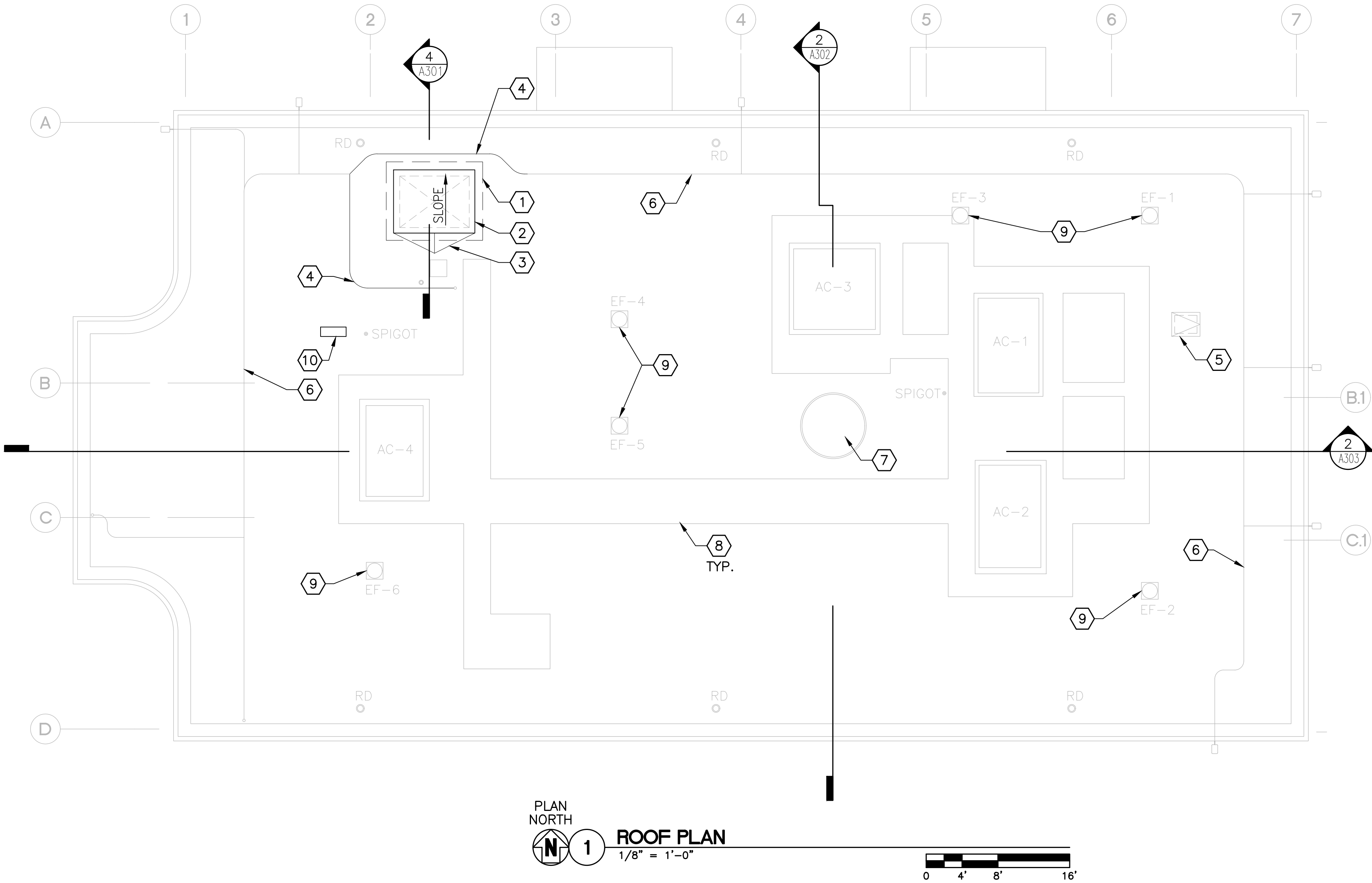


GENERAL NOTES:

- EXISTING BUILDING ROOFING SYSTEM IS IN VERY GOOD CONDITION.
- ACCESS TO ROOF IS AVAILABLE VIA ROOF HATCH.
- EXISTING MECHANICAL, ELECTRICAL AND EXHAUST FANS SHALL REMIAN.
- PROVIDE NEW CURBS, DEMOLITION, FLASHING AND ROOF PATCHING FOR NEW VENTS AND EXHAUST FANS.
- PROTECT EXISTING ROOF SURFACES FROM DAMAGE. USE WALKWAY PADS AND PROVIDE ADDITIONAL PROTECTION TO PROTECT EXISTING ROOFING SYSTEM.
- COORDINATE WITH PLUMBING/MECHANICAL DRAWINGS FOR A SERIES OF PIPES PENETRATING THROUGH THE ROOF.

LEGEND:

- RD - (E) ROOF DRAIN
- AC - (E) AIR CONDITIONER
- EF - (E) EXHAUST FAN
- CU - (E) CONDENSING UNIT



DEMOILION KEYED NOTES:

- D1 CUT OPENING IN EXISTING ROOF AND REMOVE PORTION OF EXISTING ROOF FRAMING, ROOF MEMBRANE/INSULATION AND ROOF SHEATHING AROUND NEW OPENING AS REQUIRED FOR ELEVATION OVERRUN. SEE DETAIL 5/S101
- D2 REMOVE EXISTING RACEWAY AS REQUIRED FOR INSTALLATION OF NEW ELEVATOR
- D3 REMOVE EXISTING CONDENSER UNIT AND PIPING

NEW WORK KEYED NOTES:

- 1 PATCH EXISTING ROOF AT ELEVATOR OVER RUN - SEE SECTION 4/A301
- 2 INSTALL NEW ELEVATOR OVERRUN PENTHOUSE ABOVE ELEVATOR, SLOPE ROOFING INSULATION 1/4" PER 12" FOR POSITIVE DRAINAGE. SEE 4/A301
- 3 TAPERED RIGID INSULATION ROOF SADDLE
- 4 RELOCATE EXISTING ELECTRICAL RACEWAY AS SHOWN
- 5 EXISTING ROOF HATCH ACCESS
- 6 EXISTING ELECTRICAL RACEWAY, TYPICAL
- 7 EXISTING SKYLIGHT
- 8 EXISTING ROOF WALKWAY MAT TO REMAIN.
- 9 EXISTING EXHAUST FAN PENETRATION TO REMAIN
- 10 DUCTLESS CONDENSER UNIT, SEE M103

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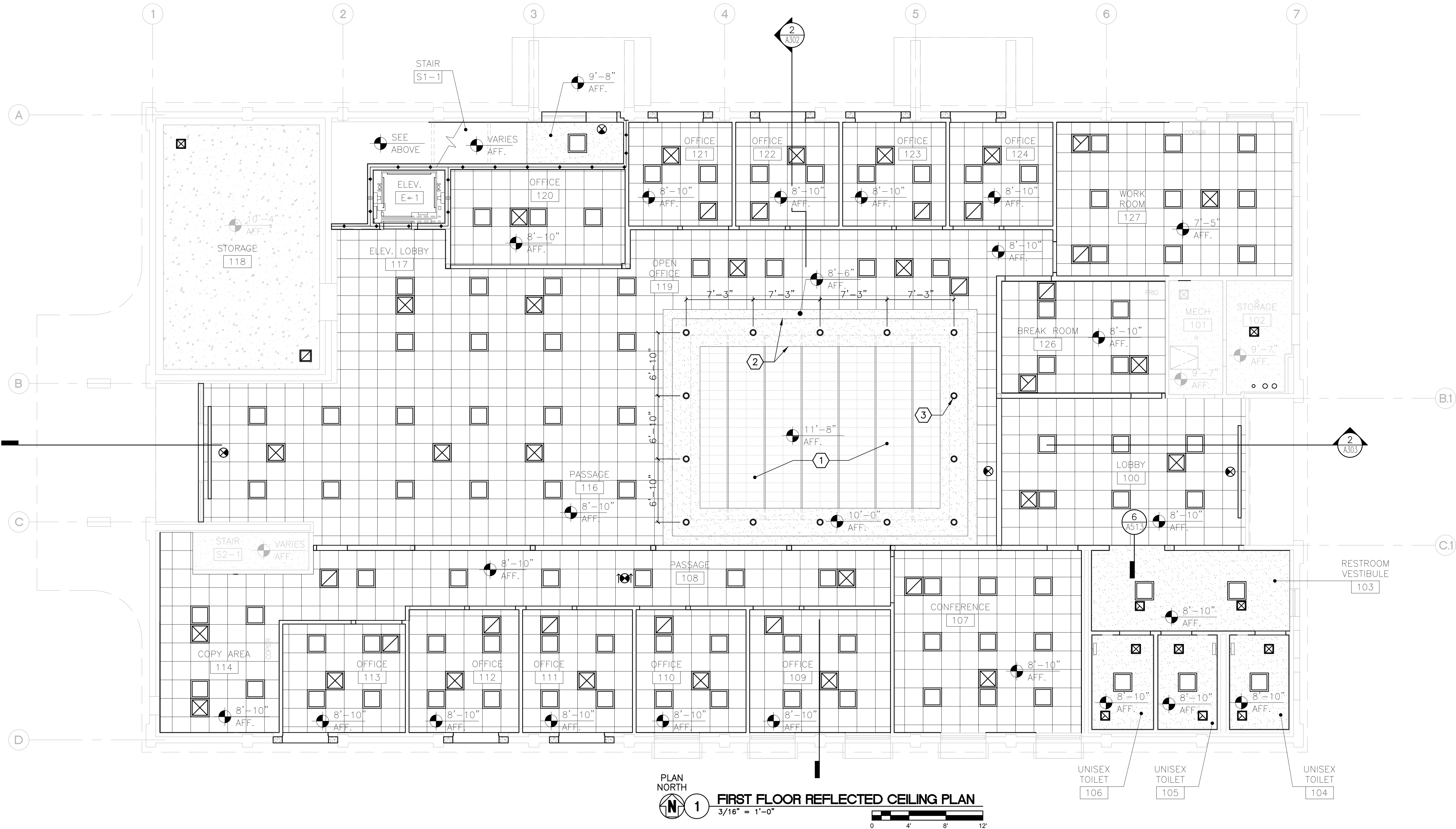
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APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

FIRST FLOOR
REFLECTED CEILING
PLAN

Sheet Number:

A111



GENERAL NOTES:

- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REPAIR AND RE-FINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION, NEW CONSTRUCTION AND/OR DETERIORATION, (MATCH (E), U.N.O.).
- SEE SHEET G001 FOR TYPICAL LEGEND ITEMS SHOWN ON PLANS.
- SEE ALL MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR COORDINATION. BRING DISCREPANCIES TO ATTN. OF ARCH/ ENGINEER FOR FINAL DESIGN.
- CENTER ALL CEILING GRIDS IN ROOM U.O.N.
- CENTER ALL CEILING ELEMENTS (SUCH AS LIGHTS, EXHAUST REGISTERS, OCCUPANCY SENSORS, SMOKE DETECTORS, ETC.) IN CEILING TILES U.O.N.

LEGEND:

- 2'x2' ACT AS SCHEDULED
- GYPSUM BOARD CEILING OVER NEW WOOD FRAMING
- NEW CEILING LIGHT
- NEW HVAC EXHAUST
- NEW HVAC SUPPLY DIFFUSER
- NEW HVAC RETURN DIFFUSER
- NEW RECESSED CAN LIGHT
- EXIT SIGN
- NEW HVAC SLOT DIFFUSER

KEYED NOTES:

- (7) TRANSLUCENT PANELS (4'x20'), SEE DETAIL 9/A513
- GYPSUM BOARD SOFFITS OVER WOOD FRAMING, SEE BUILDING SECTIONS ON SHEETS A302 AND A303 FOR DIMENSION LOCATION RELATIVE TO EXISTING SKYLIGHT ABOVE, , TYPICAL ALL SIDES
- RECESSED LIGHTS CENTERED IN SOFFIT, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION

Revisions:

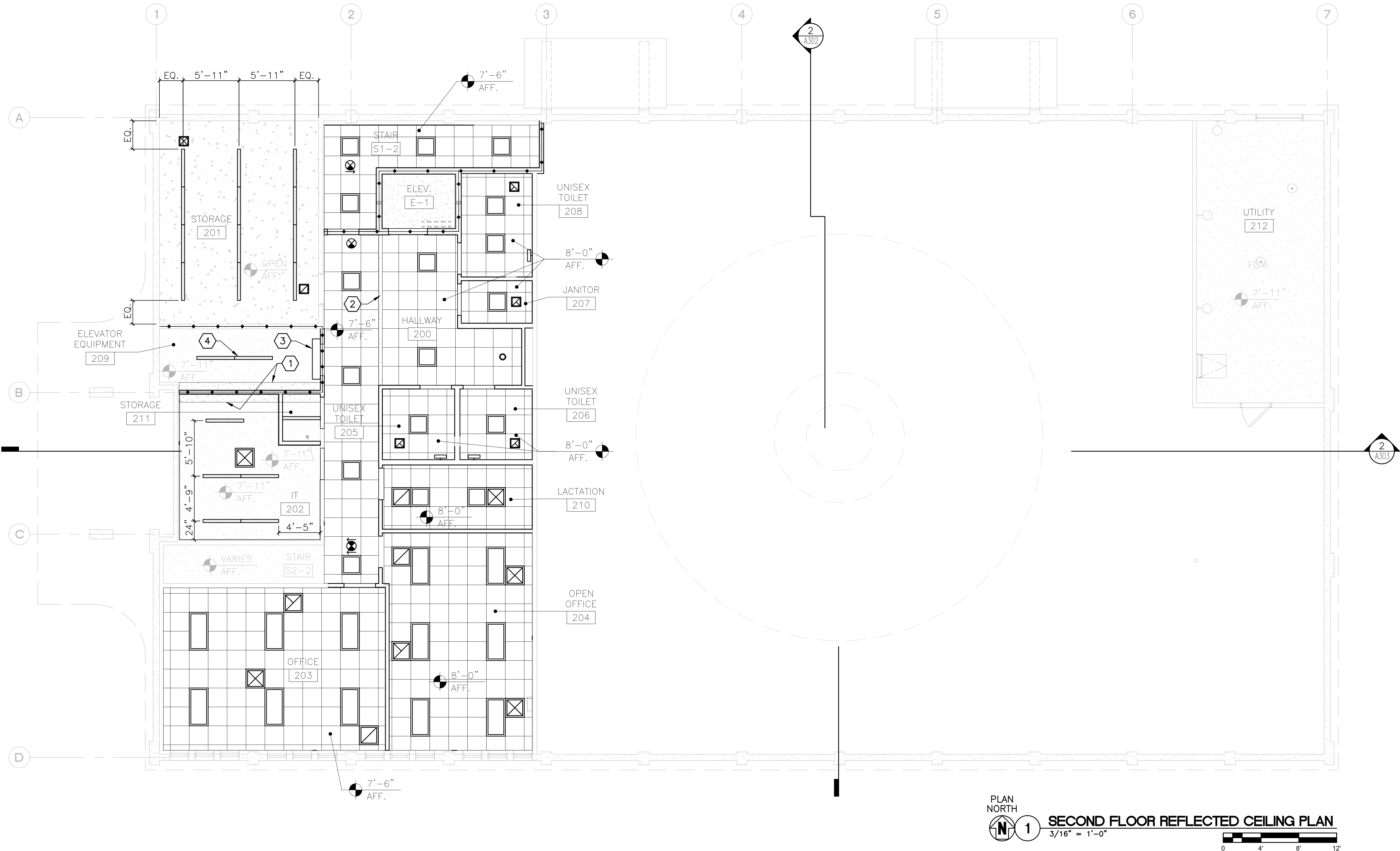
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SECOND FLOOR
REFLECTED CEILING
PLAN

Sheet Number:

A112



GENERAL NOTES:

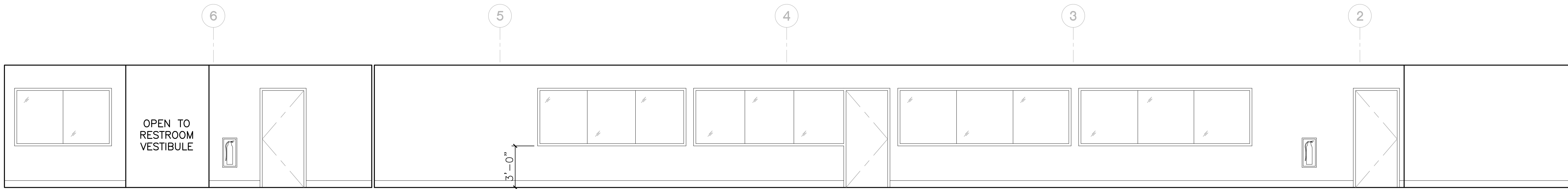
1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
2. REPAIR AND RE-FINISH ANY EXISTING WALLS AND/OR SURFACES DISTURBED BY DEMOLITION, NEW CONSTRUCTION AND/OR DETERIORATION, (MATCH (E), U.N.O.).
3. SEE SHEET G001 FOR TYPICAL LEGEND ITEMS SHOWN ON PLANS.
4. SEE ALL MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR COORDINATION. BRING DISCREPANCIES TO ATTN. OF ARCH/ ENGINEER FOR FINAL DESIGN.
5. CENTER ALL CEILING GRIDS IN ROOM U.O.N.
6. CENTER ALL CEILING ELEMENTS (SUCH AS LIGHTS, EXHAUST REGISTERS, OCCUPANCY SENSORS, SMOKE DETECTORS, ETC.) IN CEILING TILES U.O.N.

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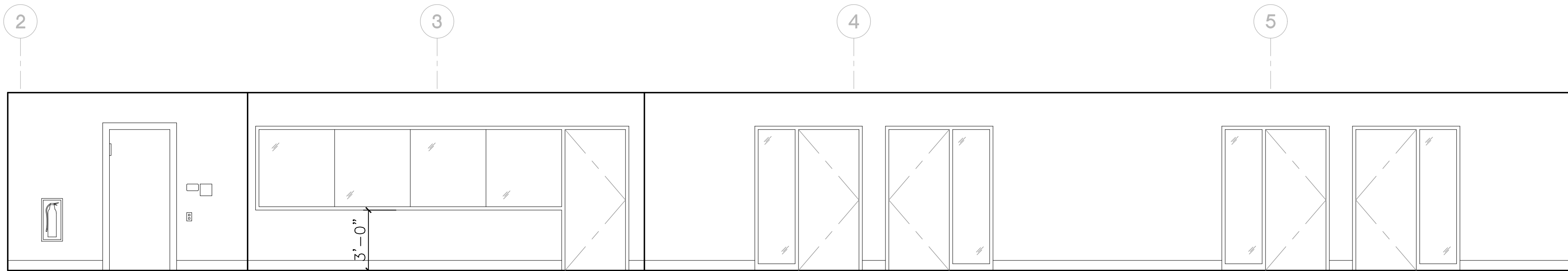
- | | |
|--|---|
| | ACT |
| | GYPSUM BOARD CEILING OVER NEW/EXISTING WOOD FRAMING |
| | NEW CEILING LIGHT |
| | NEW LED SURFACE MOUNT LIGHT |
| | NEW HVAC EXHAUST |
| | NEW HVAC SUPPLY DIFFUSER |
| | NEW HVAC RETURN DIFFUSER |
| | NEW CAN LIGHT |
| | EXIT SIGN |

KEYED NOTES:

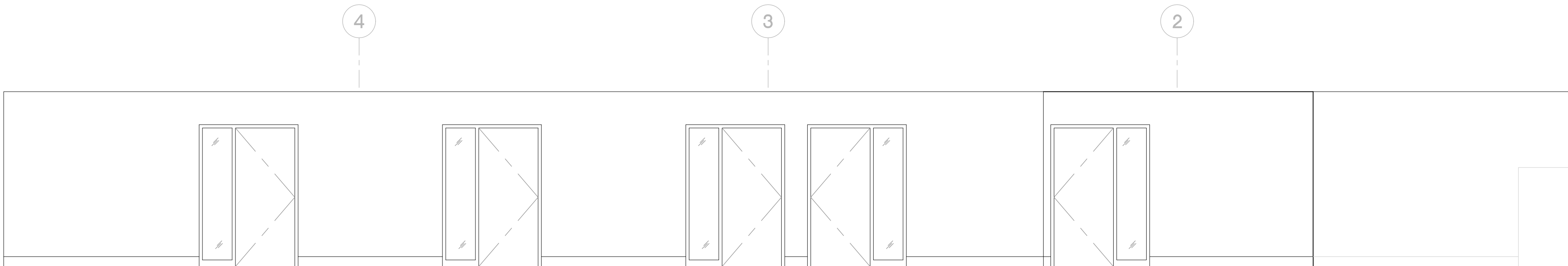
- 1 PATCH CEILING TO MATCH EXISTING AFTER INSTALLATION OF NEW RATED WALL
- 2 NEW GYPSUM BOARD BULKHEAD (7'-5" AFF) AT CEILING HEIGHT TRANSITION, SEE DETAIL 9/A513
- 3 WALL MOUNTED MINI-SPLIT SYSTEM, COORDINATE w/ HVAC DRAWINGS
- 4 SURFACE MOUNTED LIGHT CENTERED IN ROOM



1 SOUTH WALL - PASSAGE 116
1/4" = 1'-0"



2 NORTH WALL - OPEN OFFICE 119
1/4" = 1'-0"



3 SOUTH WALL - PASSAGE 108
1/4" = 1'-0"

Revisions:

Client Project Number: 000
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KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

INTERIOR ELEVATIONS

Sheet Number:

A210



Revisions:

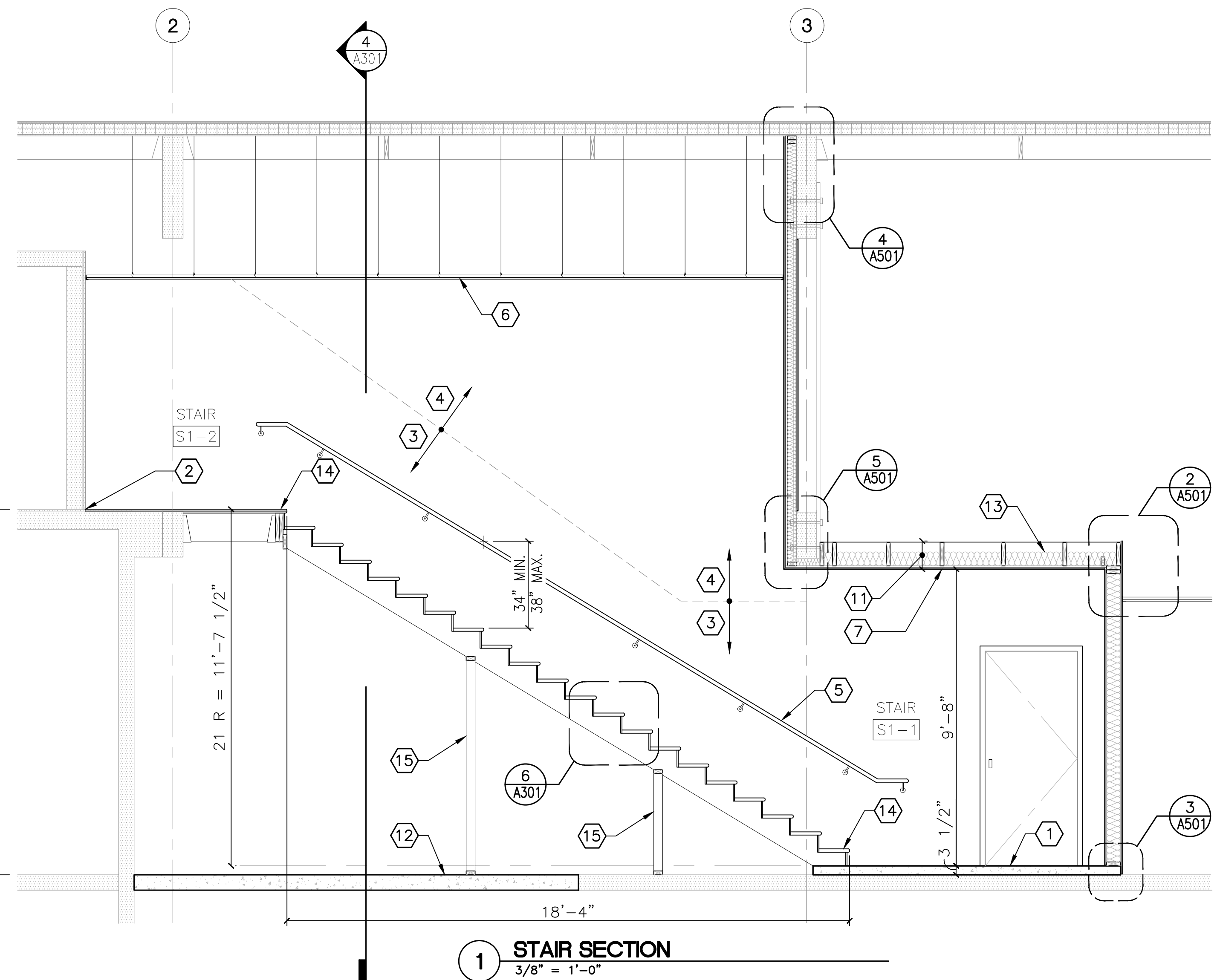
Parent Project Number: 000
 PN Number: 000-000-000
 PA Project Number: 761.00
 Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SECTIONS AND DETAILS

Sheet Number:

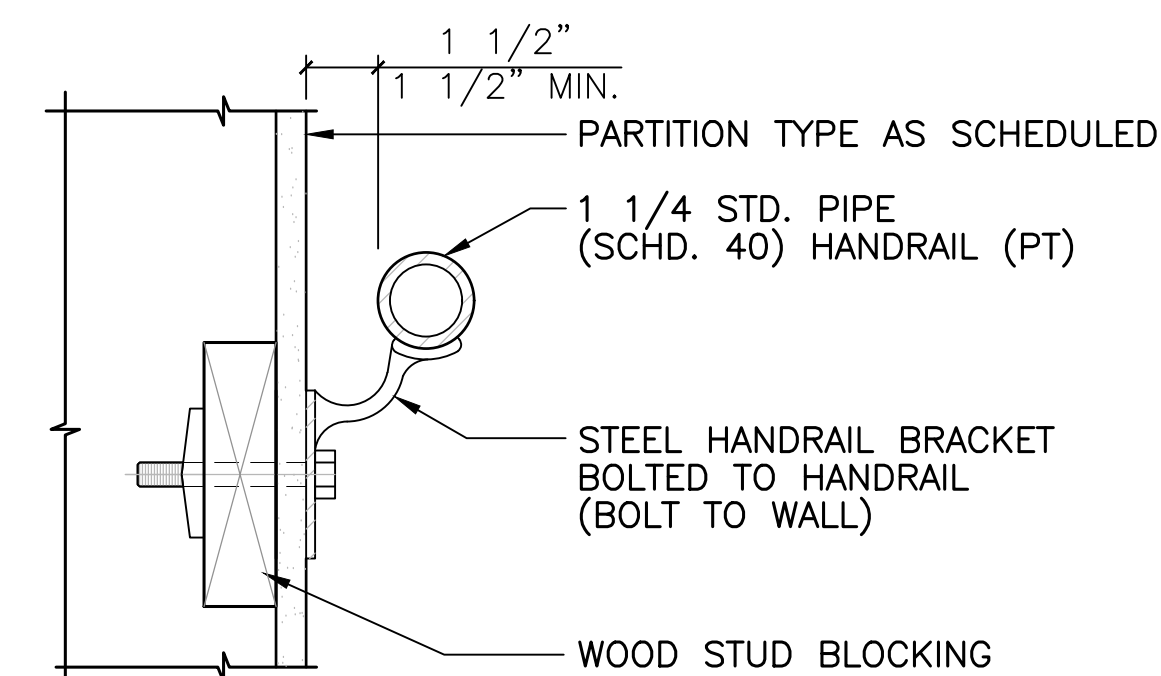
A301



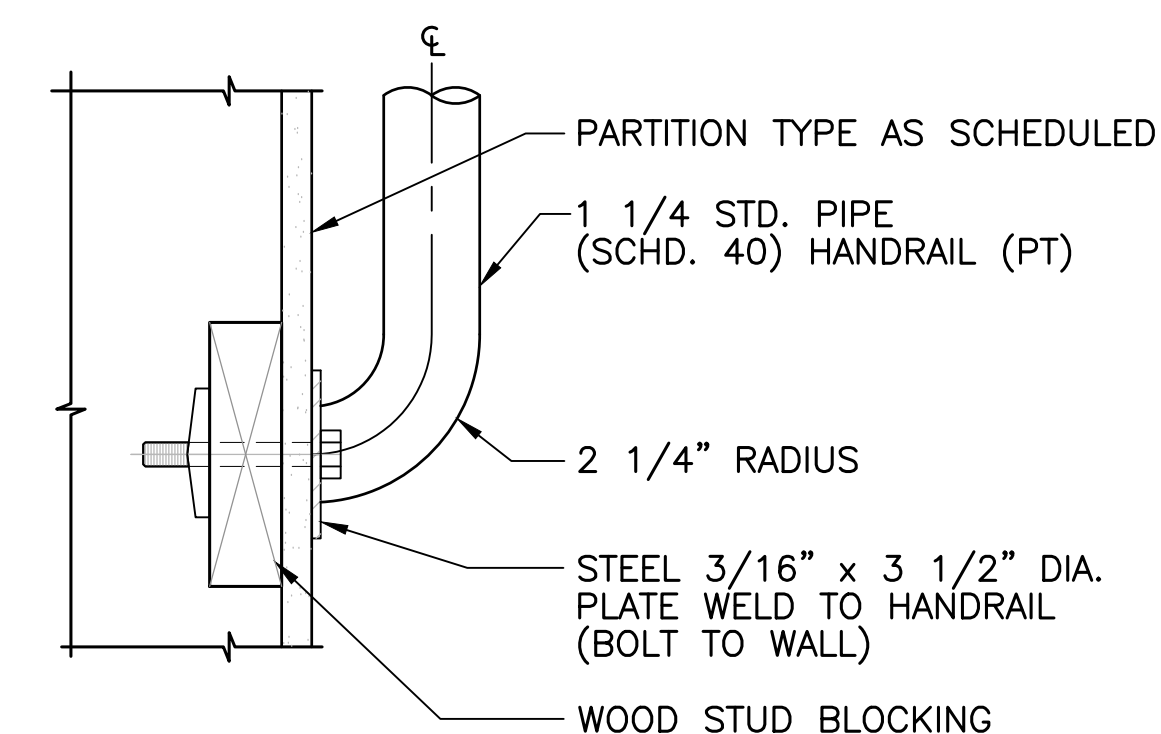
1 STAIR SECTION
3/8" = 1'-0"

1. STAIR TREAD AND RISER DIMENSIONS SHALL NOT DEVIATE FROM ONE ANOTHER ALONG AN ENTIRE RUN OF STAIRS.

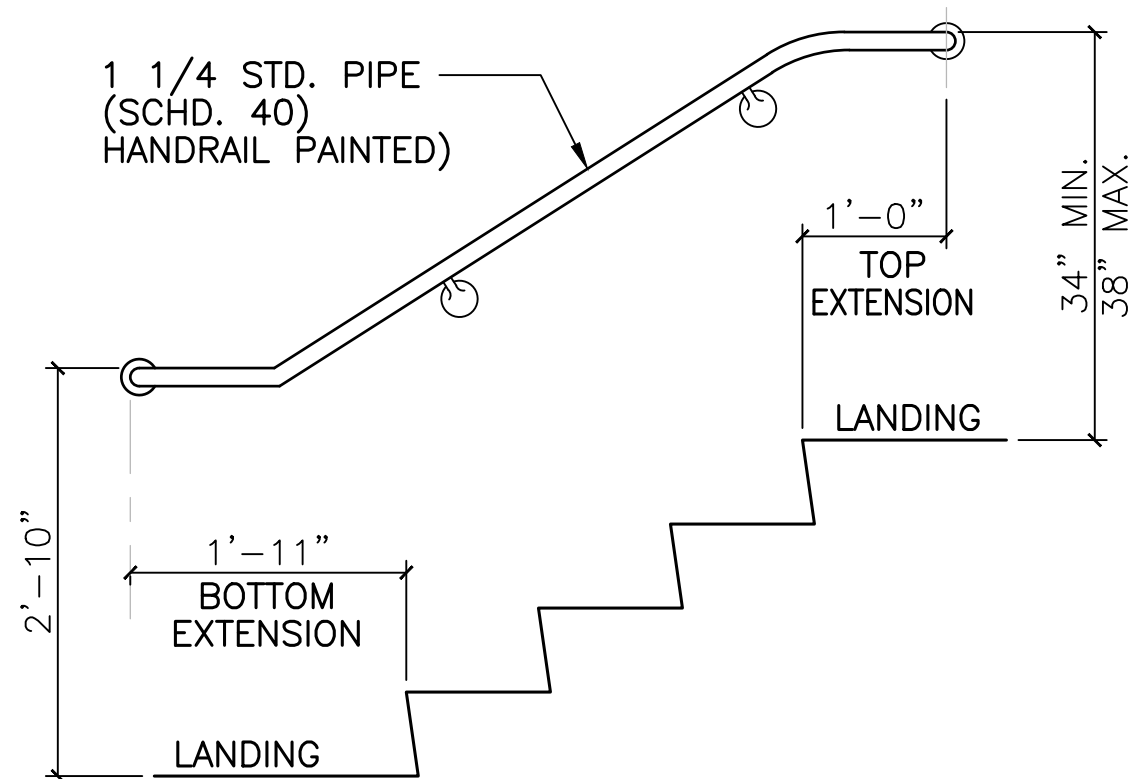
- (1) (N) CONCRETE LANDING OVER (E) FLOOR SLAB. (N) LANDING HEIGHT SHALL BE NO GREATER THAN A 1/4" ABOVE EXTERIOR PAVING
- (2) (N) FLOOR SHEATHING OVER (E) CONCRETE FLOOR AND (N) FLOOR FRAMING
- (3) PROVIDE (1) LAYER OF 5/8" TYPE "X" GYP. BD. OVER (E) FACE OF WALL
- (4) PROVIDE (1) LAYER OF 5/8" TYPE "X" GYP. BD. OVER (N) 2x WOOD STUD FRAMING AT 16" O.C. ABOVE, ALIGN w/ (N) FACE OF WALL BELOW
- (5) 1 1/4 STD. PIPE HANDRAIL. HANDRAIL SUPPORTS TO BE ANCHORED INTO WALL, MAX. 4'-0" O.C., SEE DETAILS 2, 3, 7/A301
- (6) SUSPENDED CEILING AS SCHEDULED, SEE REFLECTED CEILING PLANS
- (7) 5/8" GYP. BD. OVER 2x WOOD FRAMING, SEE REFLECTED CEILING PLANS
- (8) PAINTED STEEL PIT LADDER, SEE DETAIL 5/A301
- (9) WATERPROOF ENTIRE EXTERIOR PERIMETER OF ELEVATOR FOUNDATION WALLS, UNDER MAT SLAB, AND UNDER SLAB-ON-GRADE
- (10) SEE STRUCTURAL KEYED NOTE "3" ON SHEET S101 FOR ELEVATOR HOIST BEAM
- (11) 1 HOUR RATED CEILING ASSEMBLY, SEE DETAIL 1/A511
- (12) NEW SLAB INFILL OVER VAPOR RETARDER, SEE STRUCTURAL KEYED NOTE "1" ON SHEET S101
- (13) 6" BATT INSULATION
- (14) CONTRASTING STRIPE, 2" WIDE MIN. x 4" WIDE MAX. AT UPPER APPROACH AND LOWER TREAD, STRIPE TO MEET STANDARDS SET IN CBC 11B-504.4.1
- (15) 2x4 WOOD STUDS AT 16" O.C. BEARING WALL AT 3RD POINTS ALONG STAIR STRINGER,
- (16) EXISTING VAULT DOOR AND FRAME BEYOND



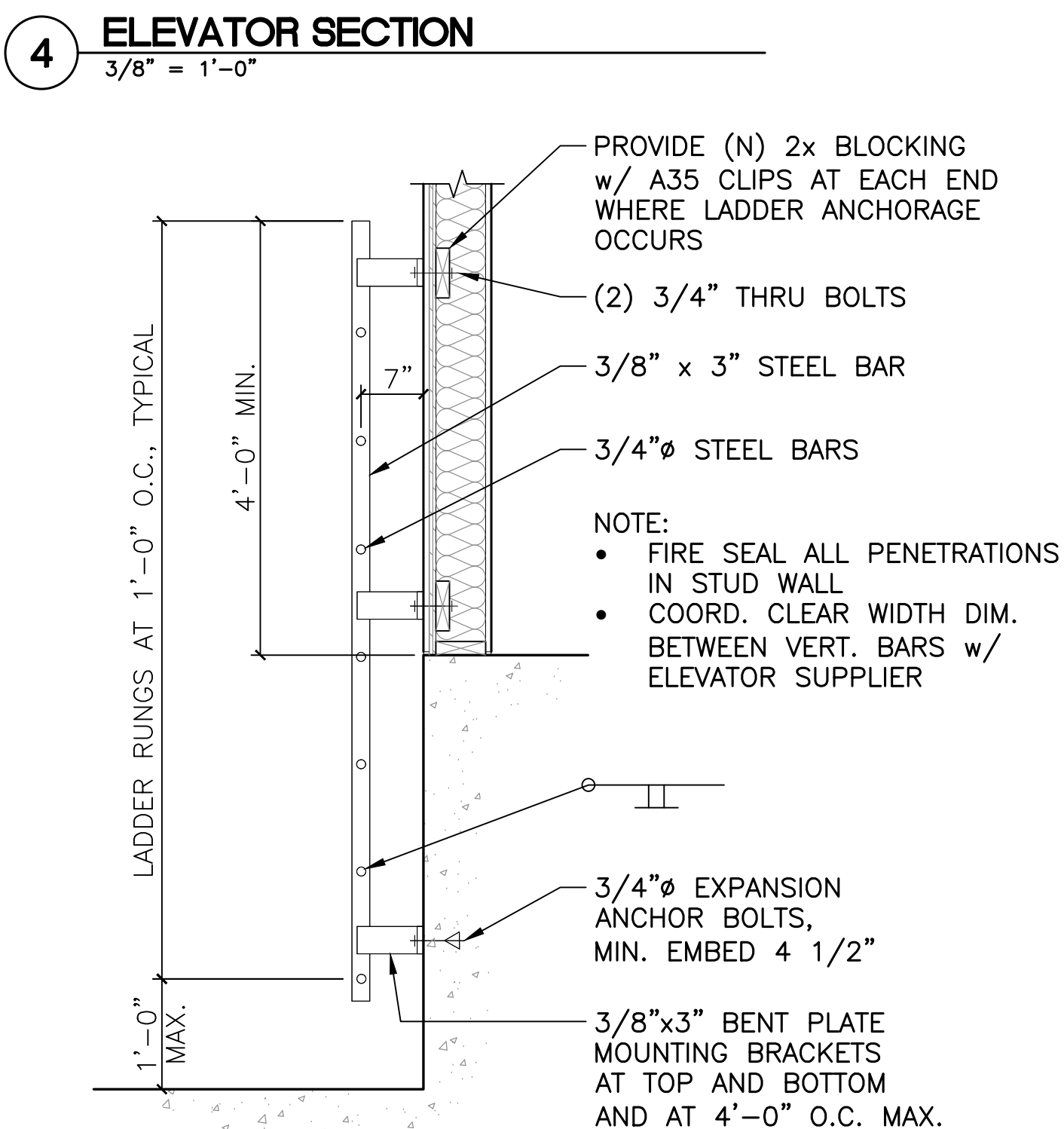
2 STAIR HANDRAIL AT WALL - TYPICAL SECTION
3" = 1'-0"



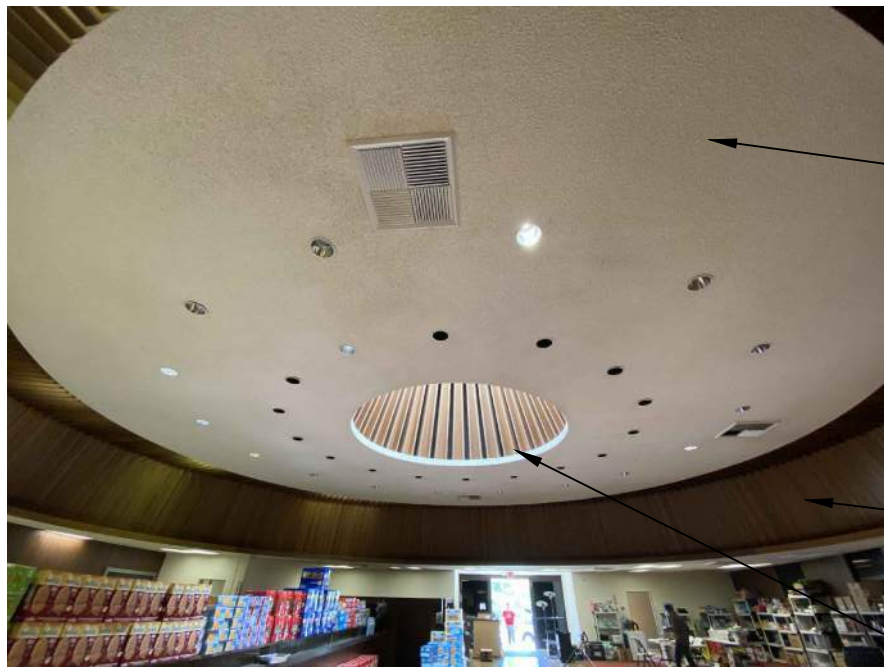
3 STAIR HANDRAIL RETURN - TYPICAL PLAN
3" = 1'-0"



7 TYPICAL HANDRAIL EXTENSIONS



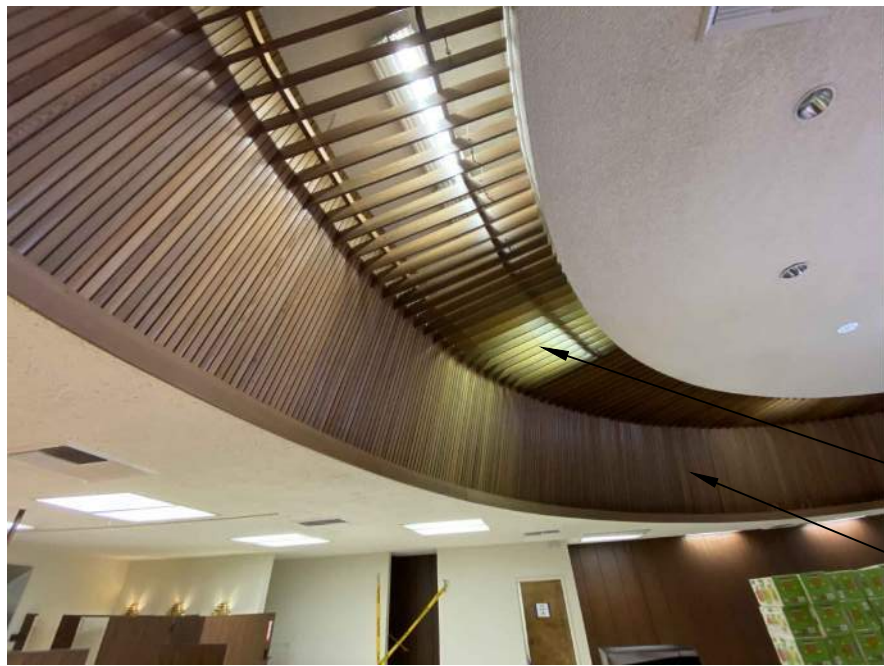
5 PIT LADDER SECTION AT ELEVATOR
3/4" = 1'-0"



3 EXISTING PHOTO



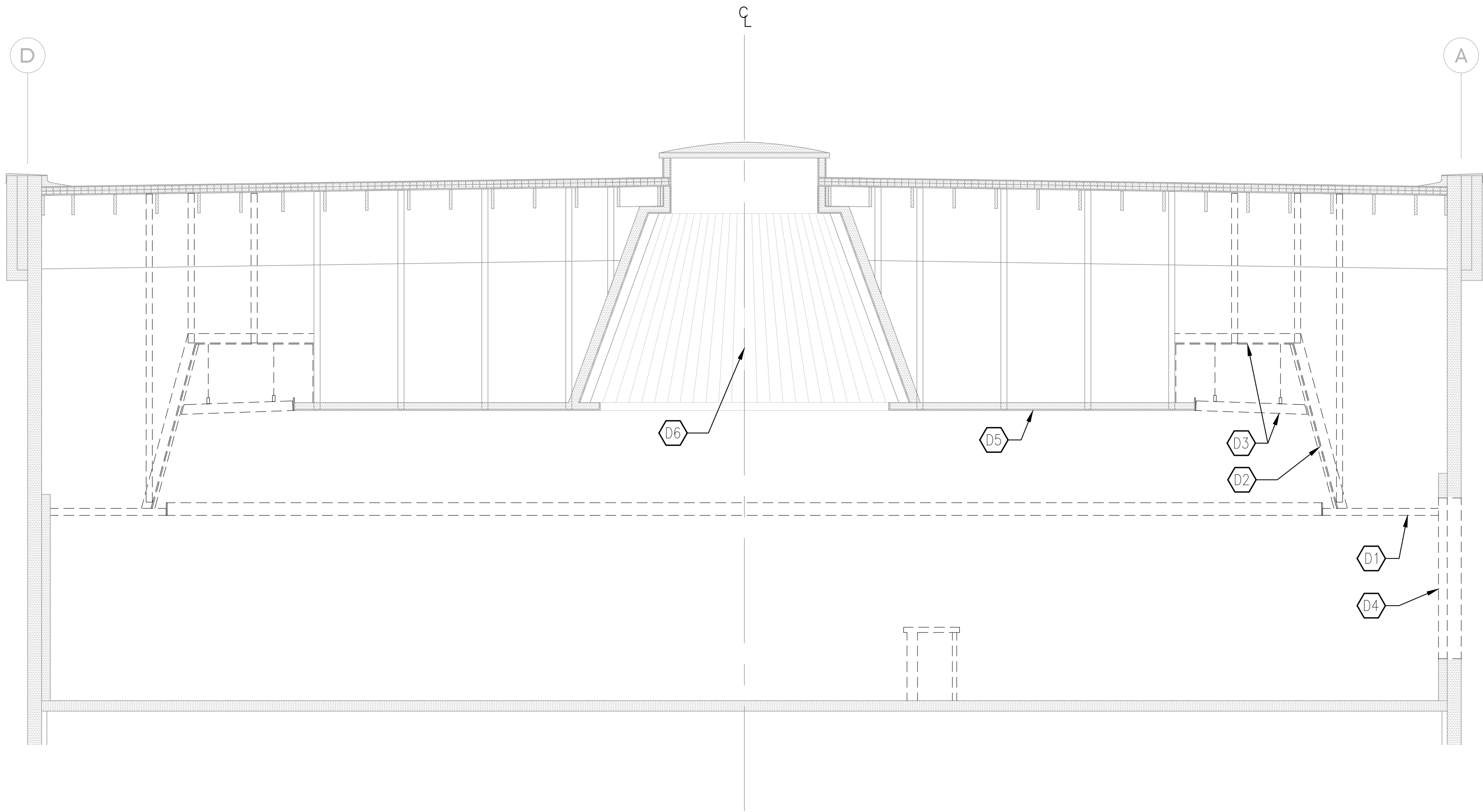
4 EXISTING PHOTO



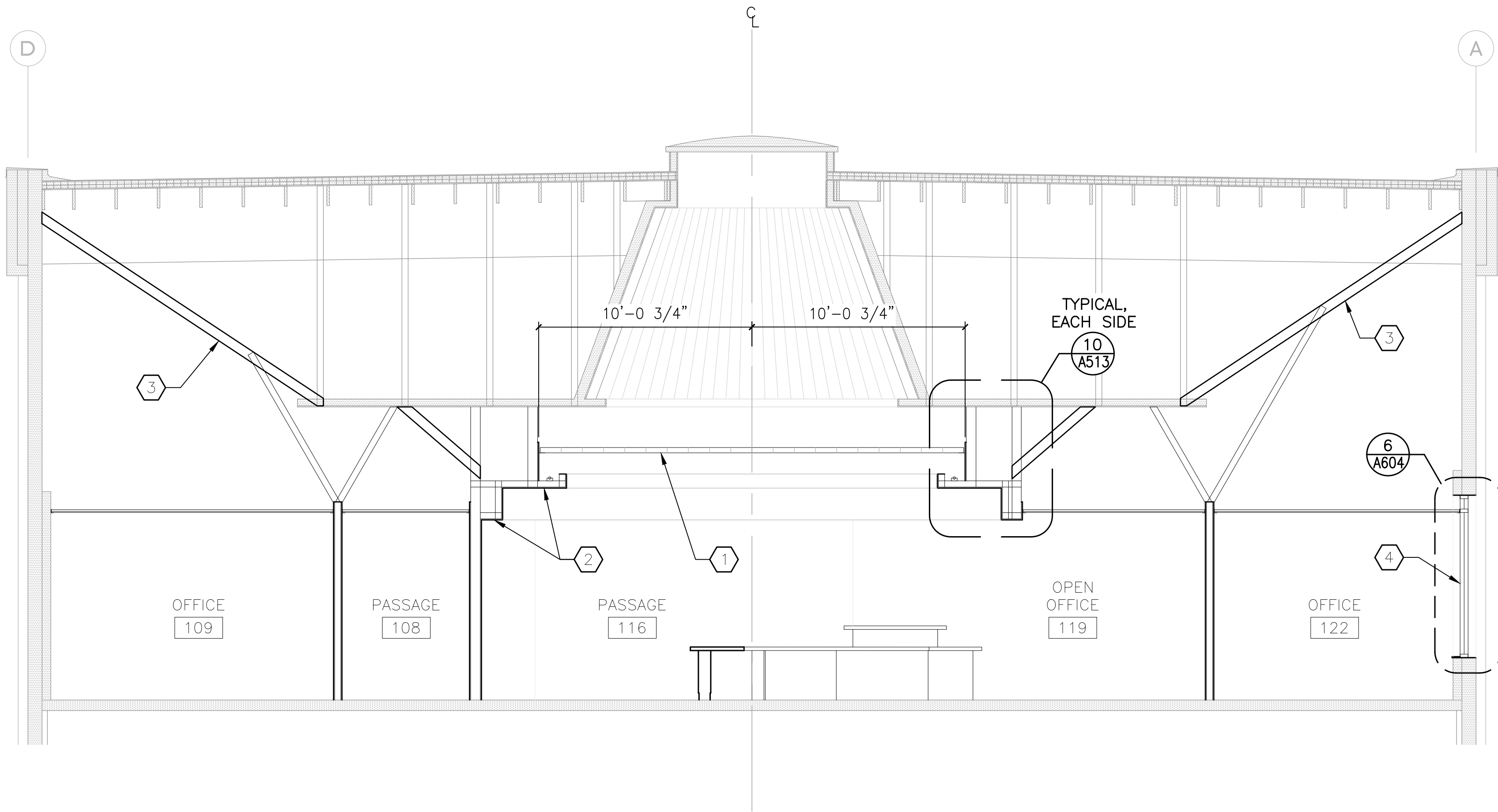
5 EXISTING PHOTO



6 EXISTING PHOTO



1 DEMOLITION BUILDING SECTION - NORTH/SOUTH
1/4" = 1'-0"



2 BUILDING SECTION - NORTH/SOUTH
1/4" = 1'-0"

GENERAL NOTES:

1. FIELD VERIFY ALL EXISTING CONDITIONS, ADDRESS ALL CONCERNS TO AOR PRIOR TO DEMOLITION.
2. SEE STRUCTURAL AND MEP DRAWINGS FOR ADDITIONAL DEMOLITION ITEMS NOT SHOWN.
3. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DEMOLITION/NEW WORK ITEMS NOT NOTED

KEYED NOTES - DEMOLITION

- D1- DEMOLISH EXISTING CEILING AND SUPPORT FRAMING
- D2- DEMOLISH EXISTING DECORATIVE WOOD SLATS AND BACKER WALL, SUPPORT FRAMING, SEE PHOTO 5/A302
- D3- DEMOLISH EXISTING DECORATIVE WOOD SLATS, SOFFIT, LIGHTS AND SUPPORT FRAMING, SEE PHOTO 6/A302
- D4- NEW OPENING IN EXISTING WALL, SEE AD101 FOR ADDITIONAL INFORMATION
- D5- EXISTING CEILING TO REMAIN, SEE PHOTO 3/A302
- D6- EXISTING SKYLIGHT ENCLOSURE TO REMAIN, SEE PHOTO 4/A302

KEYED NOTES - NEW WORK

- 1- TRANSLUCENT CEILING PANELS
- 2- GYPSUM BOARD SOFFITS OVER WOOD FRAMING
- 3- PROVIDE 2x DIAGONAL BRACING w/ A34 CLIPS @ 24" O.C. UP TO (E) JOISTS OR TO CONCRETE WALL, PROVIDE ADDITIONAL BLOCKING AS REQUIRED, TYPICAL AROUND PERIMETER OF EXISTING CEILING
- 4- NEW WINDOW UNIT, TYPICAL. SEE A101 FOR ALL LOCATIONS

Revisions:

Client Project Number: 000
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Sheet Title:

BUILDING SECTION

Sheet Number:

A302

KEYED NOTES - NEW WORK

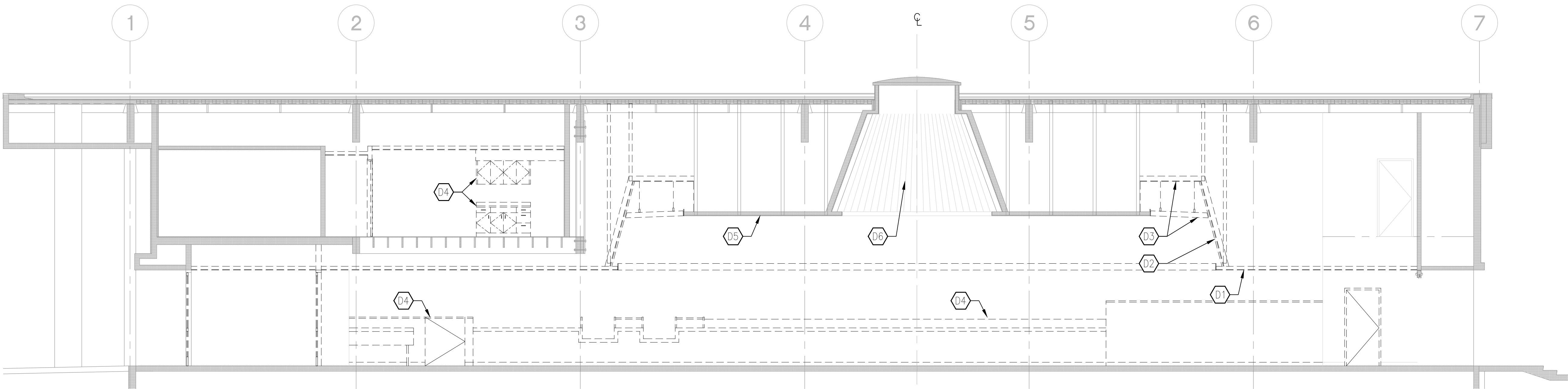
- 1- TRANSLUCENT CEILING PANELS
- 2- GYPSUM BOARD SOFFITS OVER WOOD FRAMING
- 3- PROVIDE 2x DIAGONAL BRACING w/ A34 CLIPS @ 24" O.C. UP TO (E) JOISTS OR TO CONCRETE WALL, PROVIDE ADDITIONAL BLOCKING AS REQUIRED, TYPICAL AROUND PERIMETER OF EXISTING CEILING

KEYED NOTES - DEMOLITION

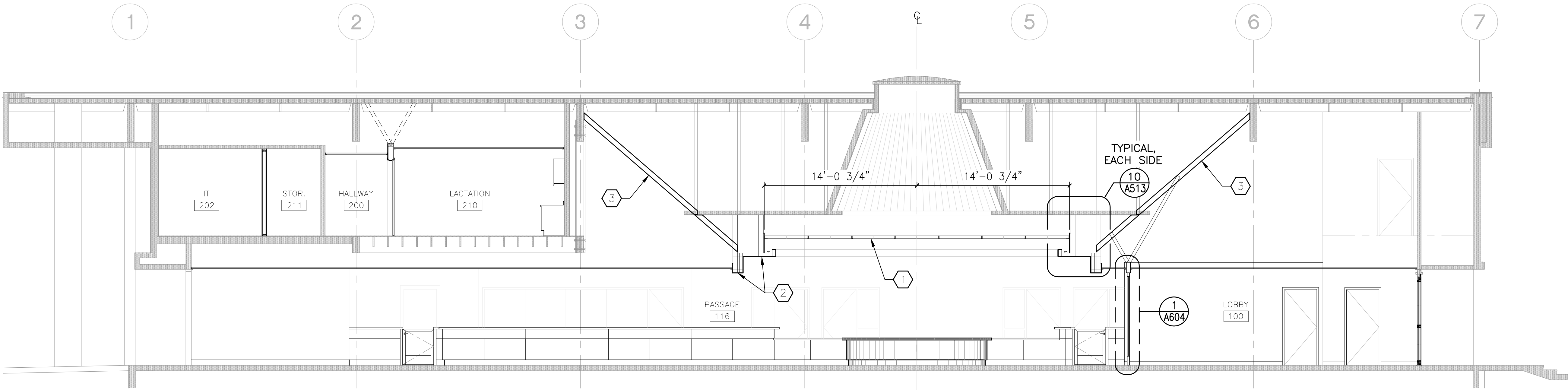
- D1- DEMOLISH EXISTING CEILING AND SUPPORT FRAMING
- D2- DEMOLISH EXISTING DECORATIVE WOOD SLATS AND BACKER WALL, SUPPORT FRAMING, SEE PHOTO 5/A302
- D3- DEMOLISH EXISTING DECORATIVE WOOD SLATS, SOFFIT, LIGHTS AND SUPPORT FRAMING, SEE PHOTO 6/A302
- D4- EXISTING CASEWORK TO BE DEMOLISHED. SEE DEMOLITION PLANS FOR MORE INFORMATION
- D5- EXISTING CEILING TO REMAIN, SEE PHOTO 3/A302
- D6- EXISTING SKYLIGHT ENCLOSURE TO REMAIN, SEE PHOTO 4/A302

GENERAL NOTES:

- 1. FIELD VERIFY ALL EXISTING CONDITIONS, ADDRESS ALL CONCERNS TO AOR PRIOR TO DEMOLITION.
- 2. SEE STRUCTURAL AND MEP DRAWINGS FOR ADDITIONAL DEMOLITION ITEMS NOT SHOWN.
- 3. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DEMOLITION/NEW WORK ITEMS NOT NOTED



1 DEMOLITION BUILDING SECTION - EAST/WEST
3/16" = 1'-0"



2 BUILDING SECTION - EAST/WEST
3/16" = 1'-0"

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BUILDING SECTION

Sheet Number:

A303

Revisions:

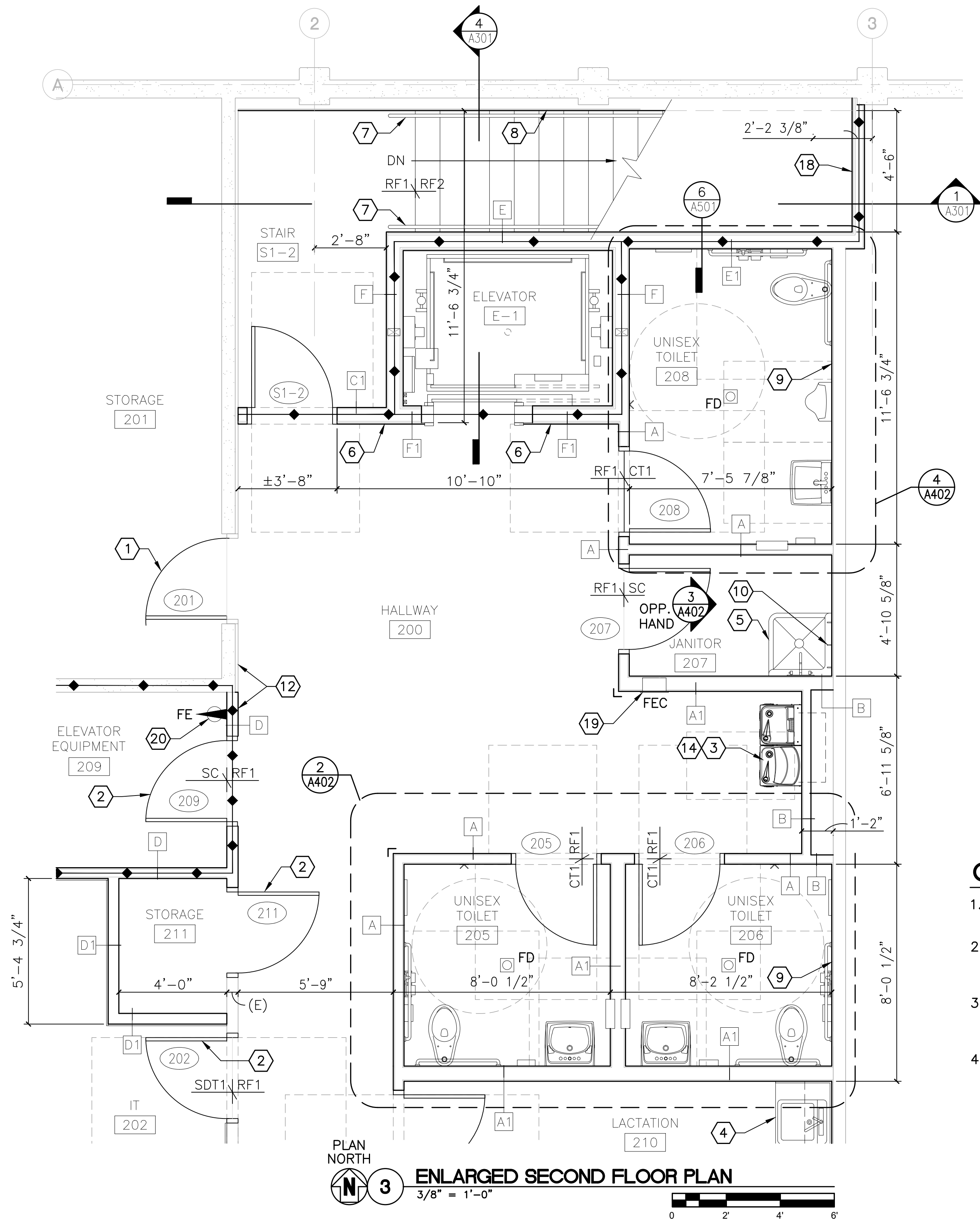
Client Project Number: 000
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Sheet Title:

ENLARGED FLOOR
PLANS

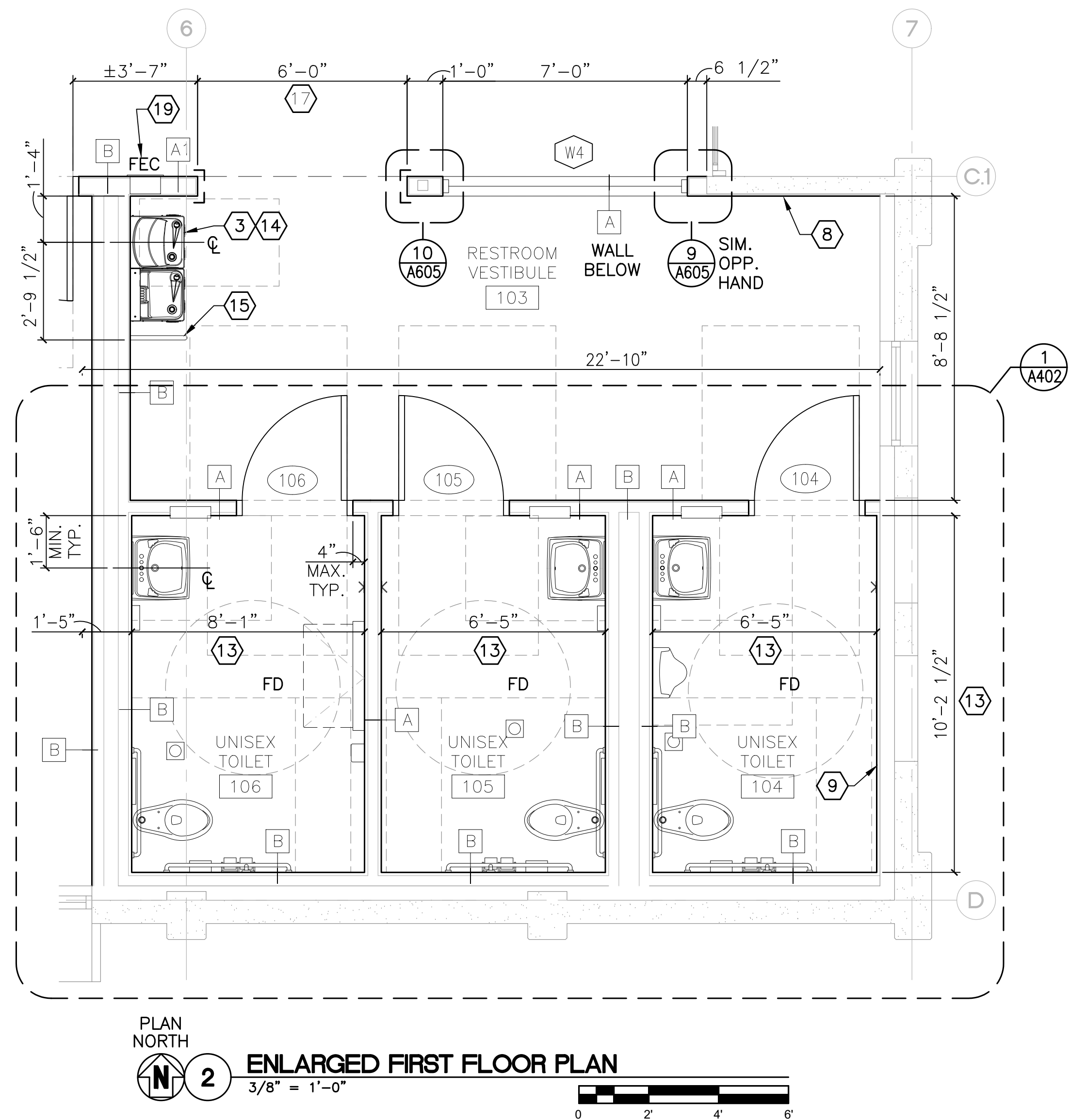
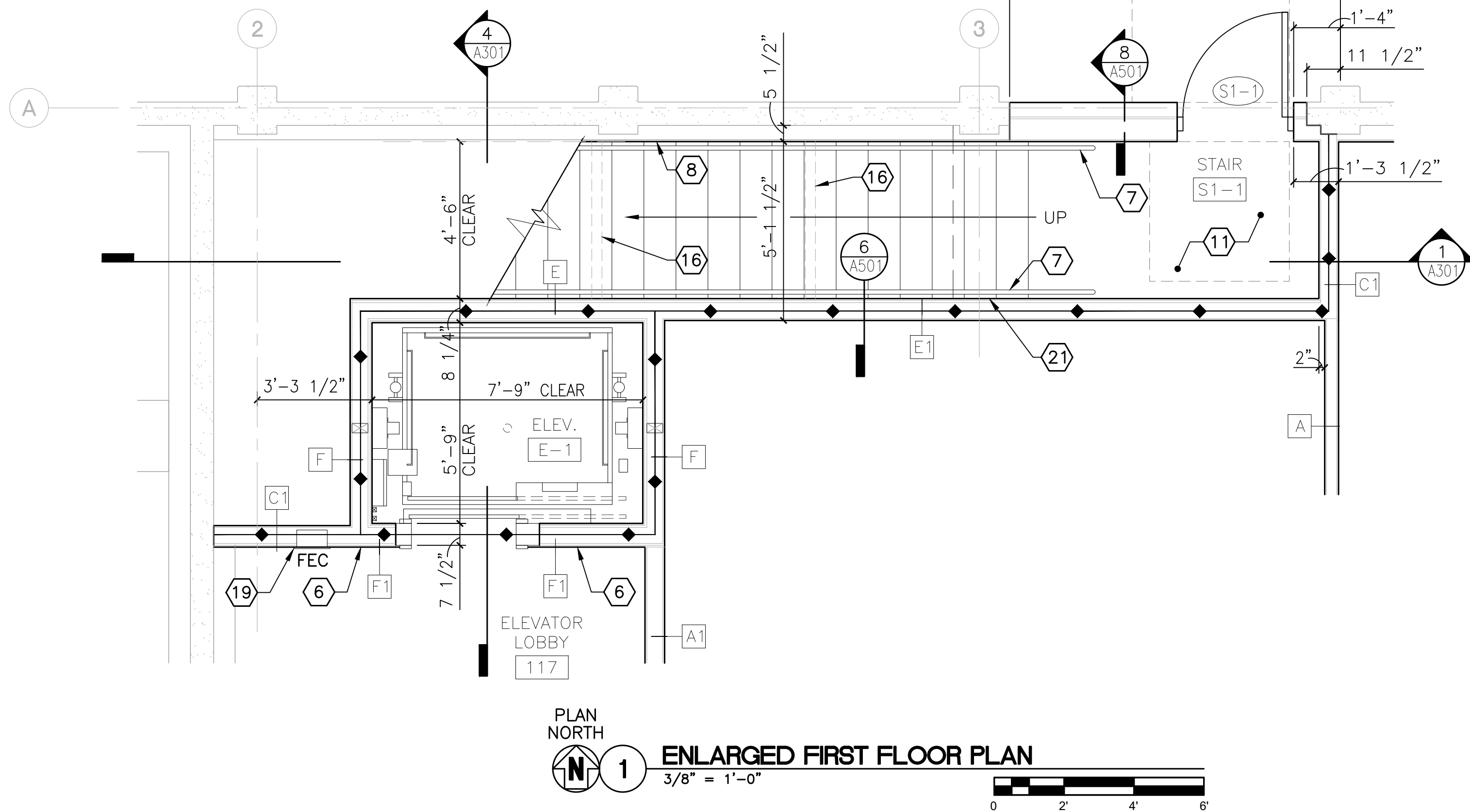
Sheet Number:

A401



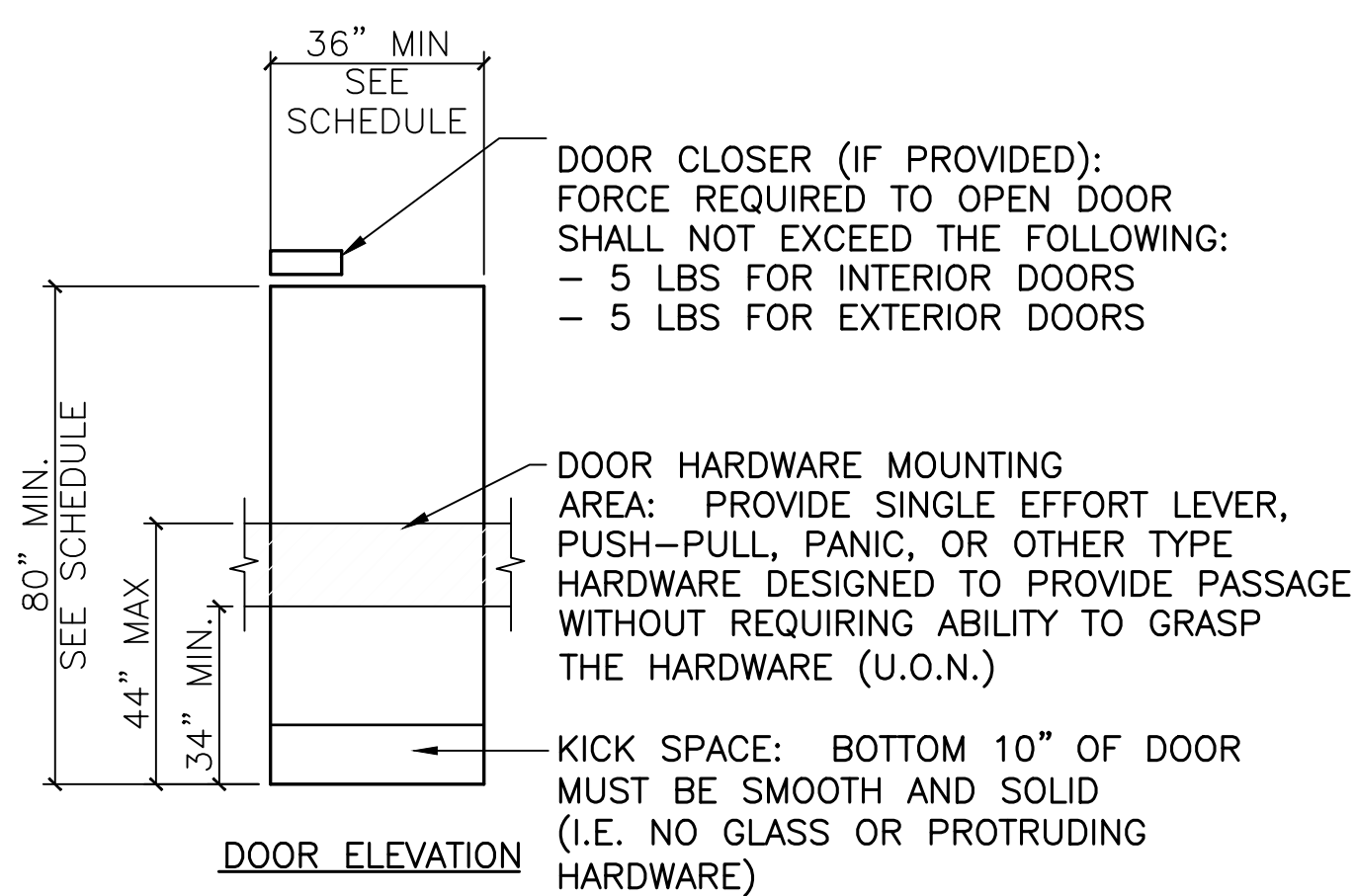
GENERAL NOTES:

1. FOR TOILET ROOM FIXTURE AND ACCESSORY PLANS, SEE SHEET A402.
2. FLOOR FINISH DESIGNATION: FLOOR FINISH DIVIDER AT DOOR THRESHOLD XXX XXX
3. NEW WALL TYPE PER WALL TAG SEE PARTITION TYPES ON SHEET A511.
4. SEE FLOOR PLAN A101 FOR FLOOR SLAB INFILL AT NEW UNDERGROUND PIPING.

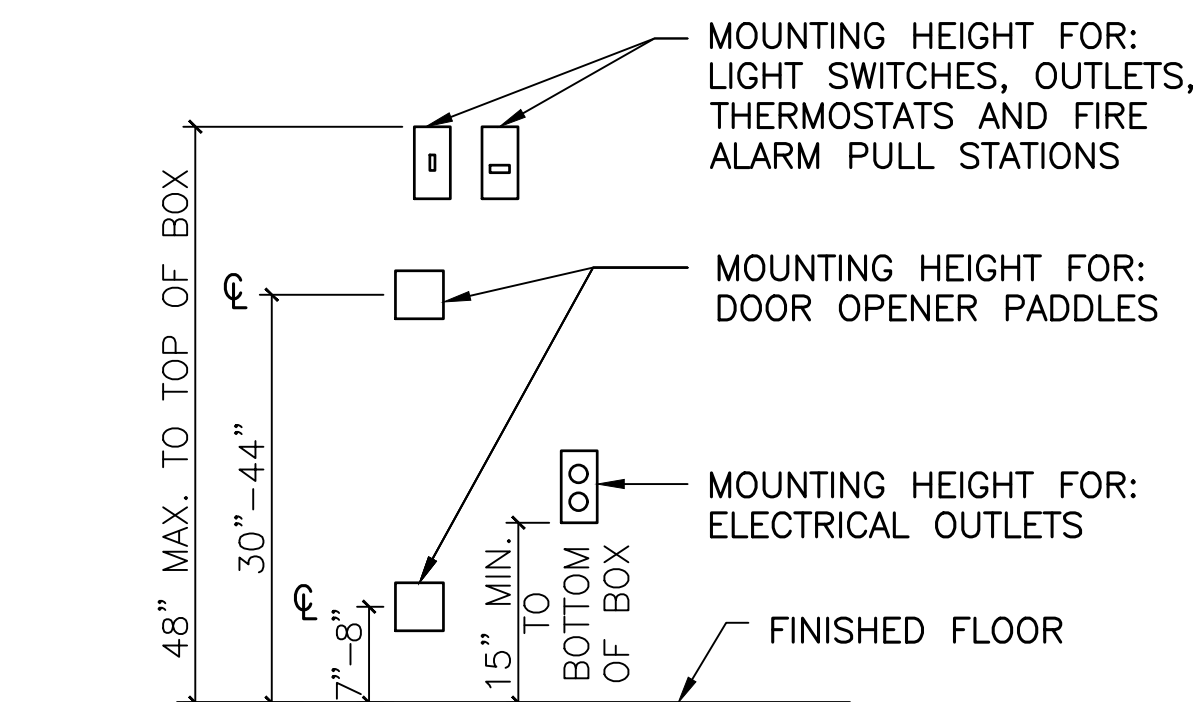


KEYED NOTES:

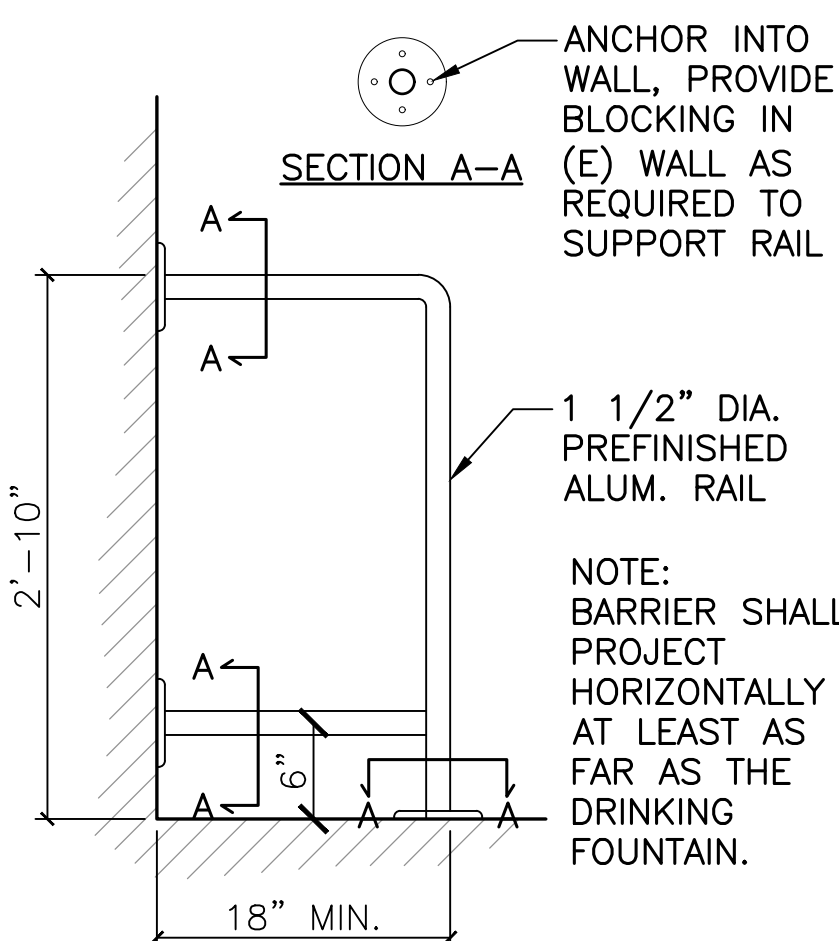
- 1 (N) DOOR AND DOOR HARDWARE, SEE DOOR SCHEDULE SHEET A602
- 2 (N) DOOR, FRAME, AND DOOR HARDWARE, SEE DOOR SCHEDULE SHEET A602
- 3 (N) HI-LO DRINKING FOUNTAIN ADA DRINKING FOUNTAIN, SEE PLUMBING DRAWINGS
- 4 (N) ADA COUNTER AND CABINET, SEE DETAIL 1/A515
- 5 (N) FLOOR SINK, SEE PLUMBING DRAWINGS
- 6 PROVIDE (1) ADDITIONAL LAYER OF 5/8" TYPE "X" GYP. BD. OVER FACE OF WALL AFTER INSTALLATION OF ELEVATOR DOOR IS COMPLETE
- 7 (N) 1 1/4 STD. PIPE HANDRAIL, PAINTED, SEE DETAILS ON SHEET A301
- 8 PROVIDE (1) LAYER OF 5/8" TYPE "X" GYP. BD. OVER (E) GYP. BD. WALL
- 9 PROVIDE (1) LAYER OF 5/8" CEMENT BACKER BD. OVER (E) WOOD STUDS AND/OR (E) GYP. BD.
- 10 PROVIDE MOP STRIP (MS) ALONG BACK WALL. SEE DETAIL 3/A402
- 11 (N) CONCRETE LANDING OVER (E) FLOOR SLAB. (N) LANDING HEIGHT SHALL BE NO GREATER THAN 1/4" ABOVE EXTERIOR PAVING. FLOOR FINISH TO BE RF-1 PER ROOM FINISH SCHEDULE ON SHEET A601.
- 12 ALIGN FACE OF (N) WALL w/ FACE OF (E) WALL
- 13 DIMENSION FROM FACE TO FACE OF FINISHED TILE
- 14 HI-LO DRINKING FOUNTAIN, SEE PLUMBING DWGS.
- 15 PROVIDE 1 1/2" DIA. PROTECTIVE RAILS, FLOOR AND WALL MOUNTED, EACH SIDE OF EXISTING DRINKING FOUNTAIN, ALIGN END OF RAILS, SEE DETAIL 8/A402
- 16 2x4 WOOD STUDS AT 16" O.C. BEARING WALL AT 3RD POINTS ALONG STAIR STRINGER, SEE SECTION 1/A301
- 17 GYPSUM BOARD CASSED OPENING
- 18 SEE DETAILS 4 AND 5/A501 FOR WALL CONSTRUCTION
- 19 NEW FIRE EXTINGUISHER CABINET. OWNER TO PROVIDE EXTINGUISHER
- 20 NEW WALL HUNG BRACKET FOR FIRE EXTINGUISHER.
- 21 2X12 WOOD STAIR STRINGERS AT 16" O.C.



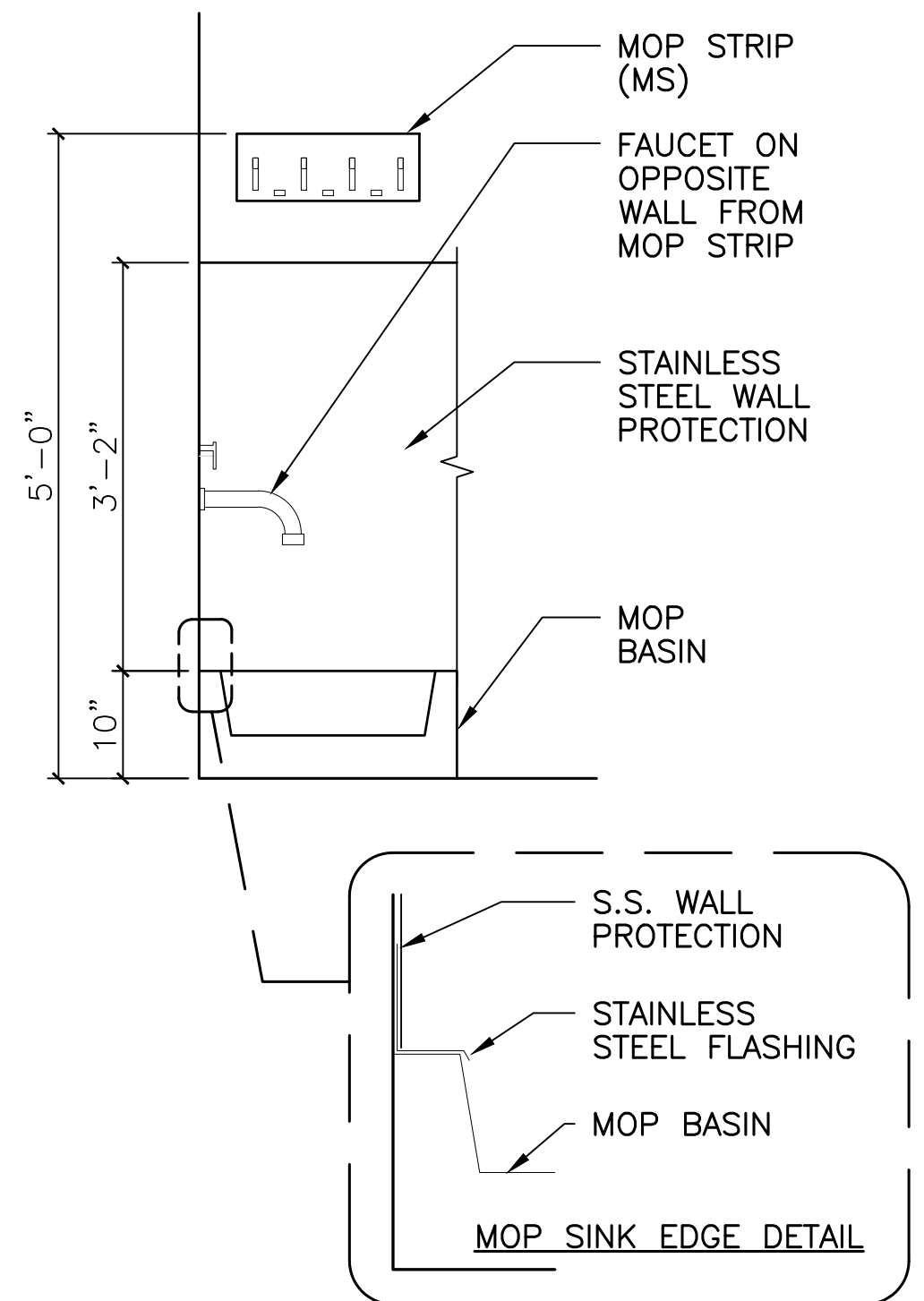
6 DOOR/HARDWARE ACCESSIBILITY REQUIREMENTS - TYPICAL



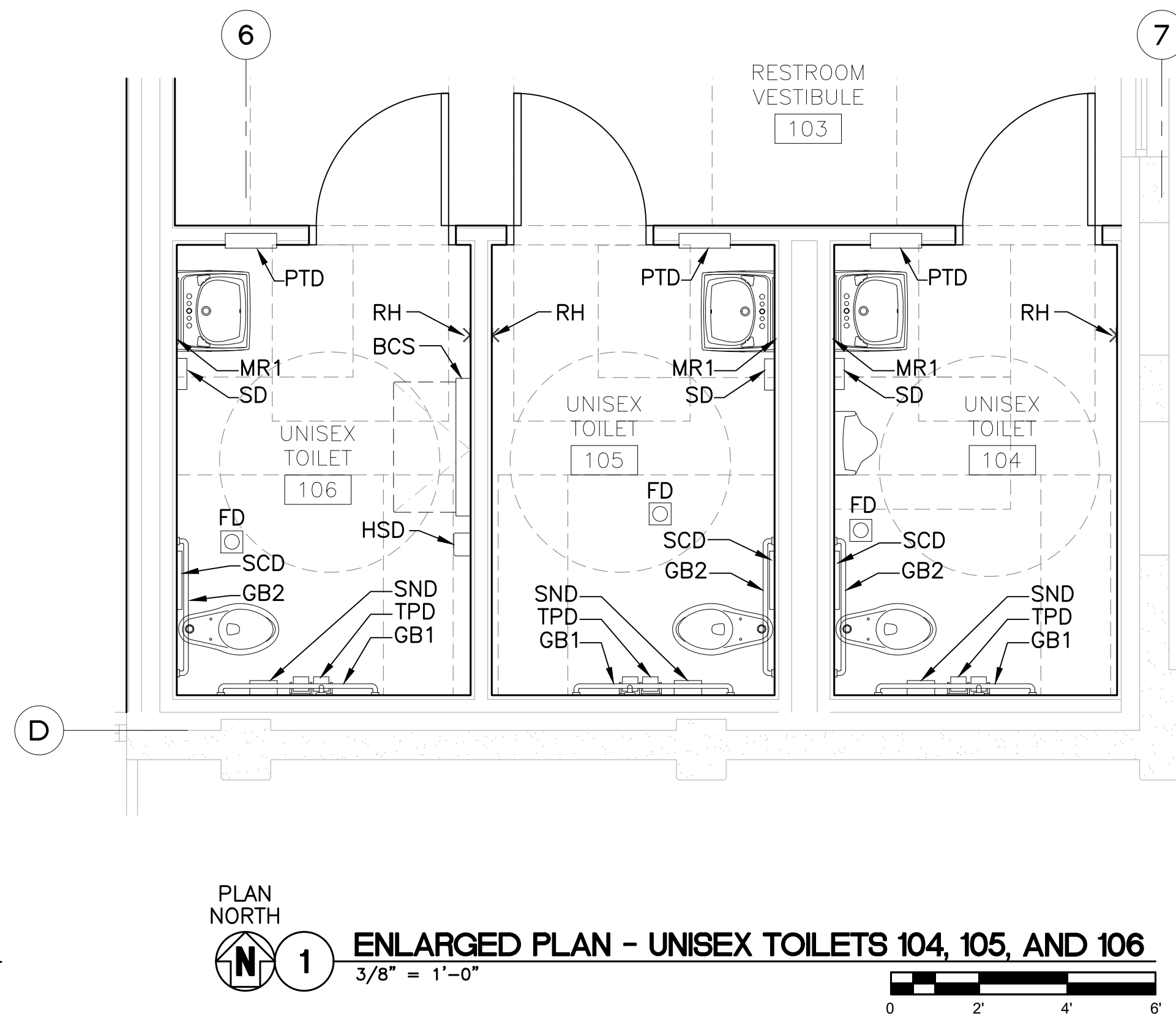
7 MOUNTING HEIGHTS FOR ELECTRICAL ITEMS - TYPICAL
NO SCALE



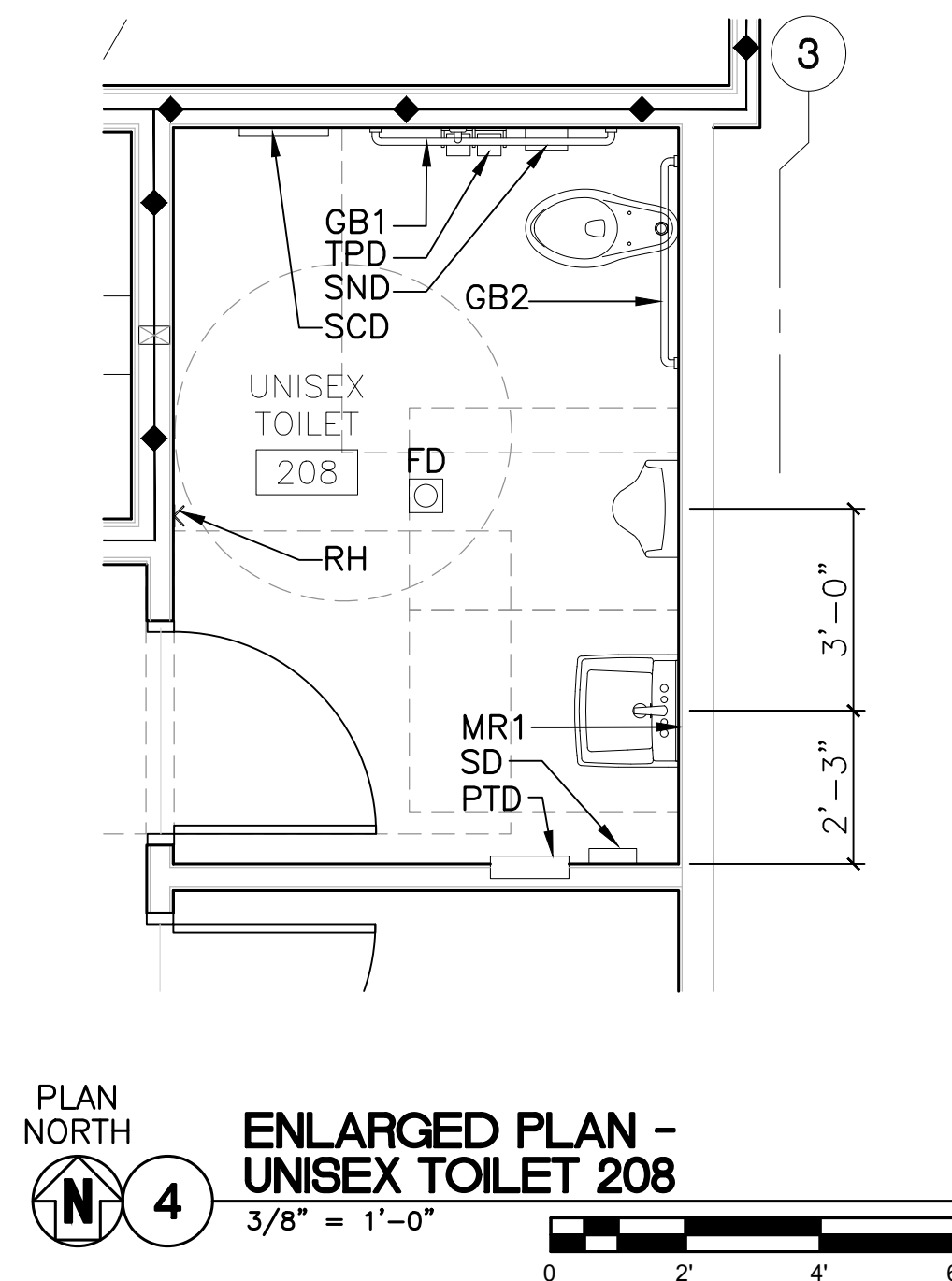
8 PROTECTIVE RAIL
1"=1'-0"



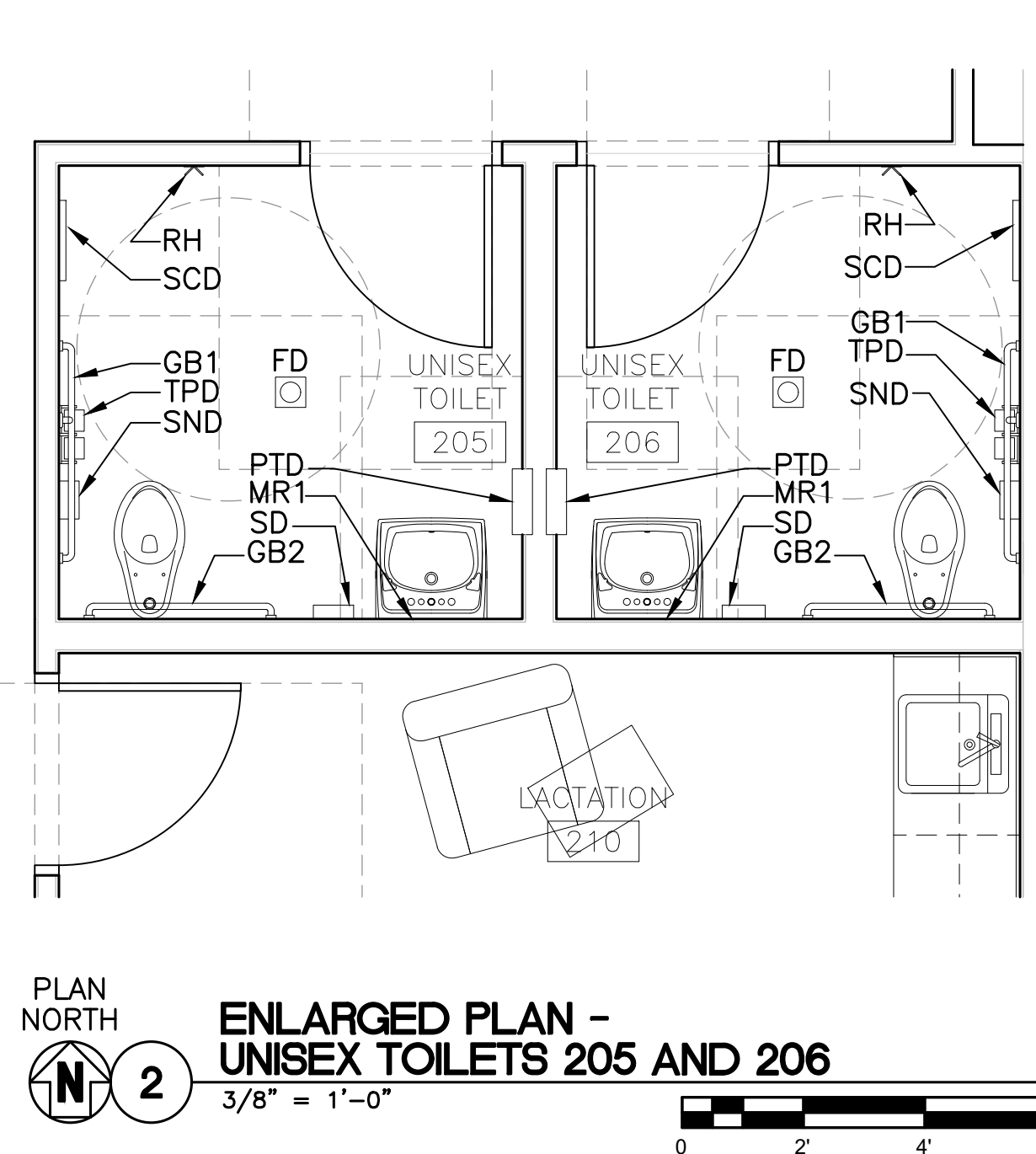
3 MOP SINK TYPICAL DETAIL
3/4" = 1'-0"



1 ENLARGED PLAN - UNISEX TOILETS 104, 105, AND 106
3/8" = 1'-0"



4 ENLARGED PLAN - UNISEX TOILET 208
3/8" = 1'-0"



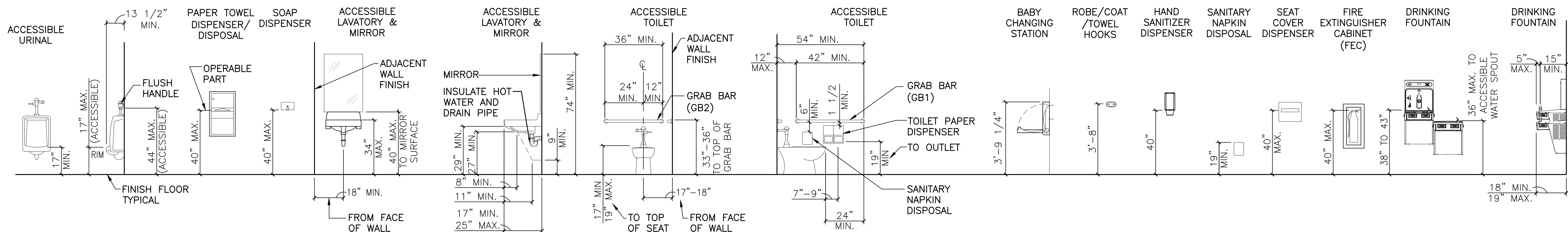
2 ENLARGED PLAN - UNISEX TOILETS 205 AND 206
3/8" = 1'-0"

GENERAL NOTES:

1. THE HIGHEST OPERABLE PART ON ALL DISPENSERS SHALL BE NO MORE THAN 40" ABOVE FINISHED FLOOR.
2. LEVER/PUSH TYPE LAVATORY CONTROLS WITH SELF CLOSING VALVES (MIN. 10 SECOND OPEN FLOW), 5 LB. MAX. OPERATING FORCE PER CBC 11B-309.
3. INSULATE HOT WATER DRAIN PIPE UNDER SINKS. SEE SPECIFICATIONS FOR PLUMBING FIXTURES.
4. THE FORCE FOR PUSHING OR PULLING OPEN A DOOR OR GATE TO MEET CBC 11B-404.2.9
5. CLEARANCES AT DOORS, DOORWAYS AND GATES TO MEET CBC 11B-404
6. BACKING PLATES: PROVIDE STEEL PLATE AND/OR WOOD BACKING AS INDICATED OR AS REQUIRED FOR ALL SIGNAGE, RAILINGS, CABINET, TV, SHELVING, GRAB BARS, TOILET PARTITIONS, TOILET ACCESSORIES, AND OTHER ITEMS FASTENED TO PARTITIONS. COORDINATE INSTALLATION OF BACKING WITH OTHER TRADES.
7. FULL HEIGHT TILE IN TOILET ROOM WALLS.
8. SEE DETAIL 9/A402 FOR MOUNTING HEIGHTS AND LOCATION FLOOR FIXTURES.
9. SEE DETAIL 5/A402 FOR GRAB BAR DETAIL.
10. SEE DETAIL 6/A402 FOR DOOR AND HARDWARE ACCESSIBILITY REQUIREMENTS.
11. SEE DETAIL 7/A402 FOR ELECTRICAL MOUNTING HEIGHTS.
12. SEE DETAIL 2/A511 FOR CEILING DETAIL.
13. SEE DETAIL 1/A601 FOR TYPICAL DETAIL AT BASE OF TILED WALL.

LEGEND:

BCS	BABY CHANGING STATION
GB1	GRAB BAR 42" LONG
GB2	GRAB BAR 36" LONG
HSD	HAND SANITIZER DISPENSER
MR1	MIRROR (24" x 36")
MS	MOP STRIP
PTD	PAPER TOWEL DISPENSER/DISPOSAL
RH	ROBE/COAT HOOK
TPD	TOILET PAPER DISPENSER
SD	SOAP DISPENSER (SURFACE MOUNTED)
SCD	RECESSED SEAT COVER DISPENSER
SND	SANITARY NAPKIN DISPOSAL



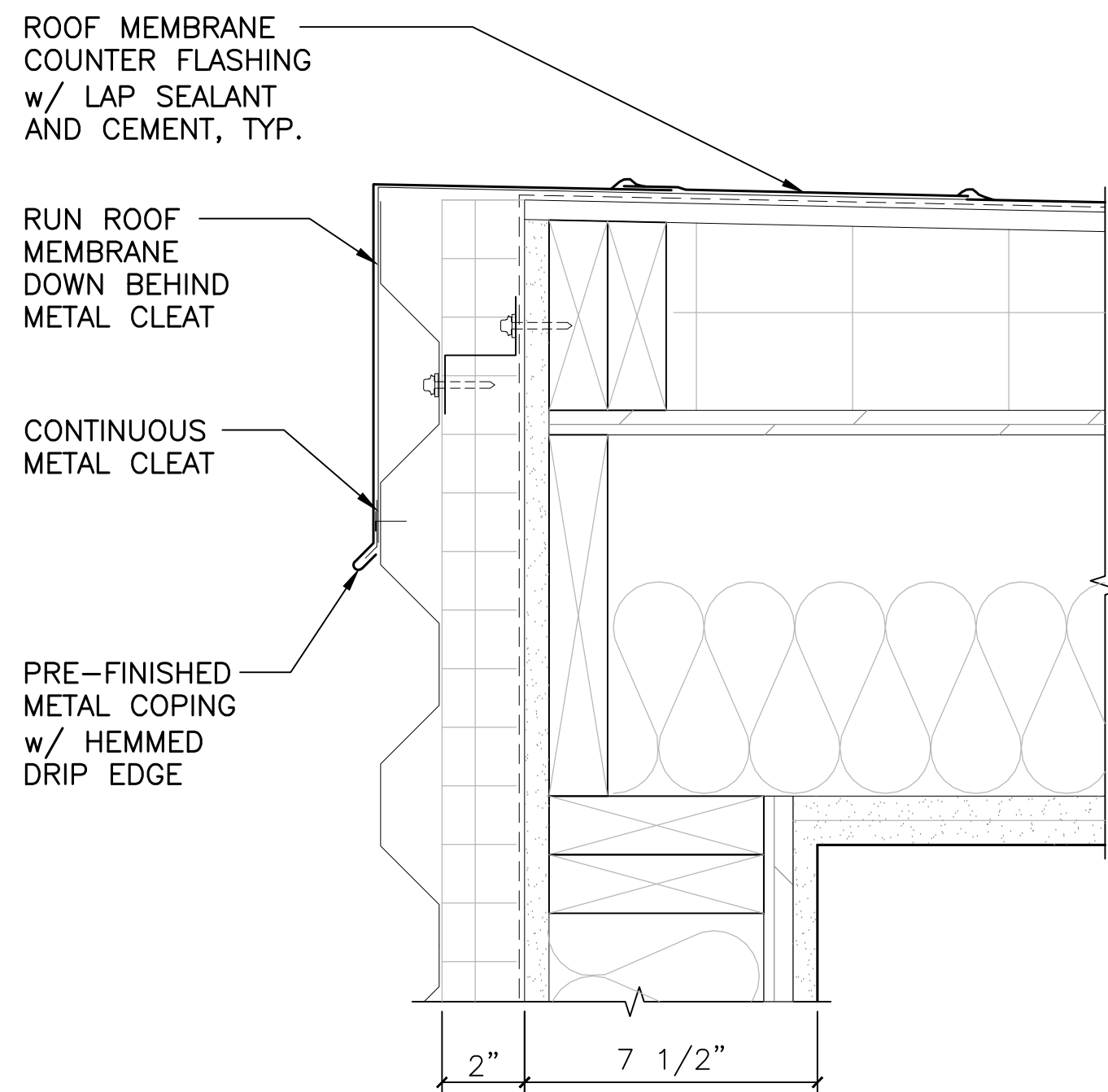
9 TYPICAL ACCESSIBLE MOUNTING HEIGHTS FOR TOILET ROOM PLUMBING FIXTURES AND ACCESSORIES
3/8"=1'-0"

Revisions:

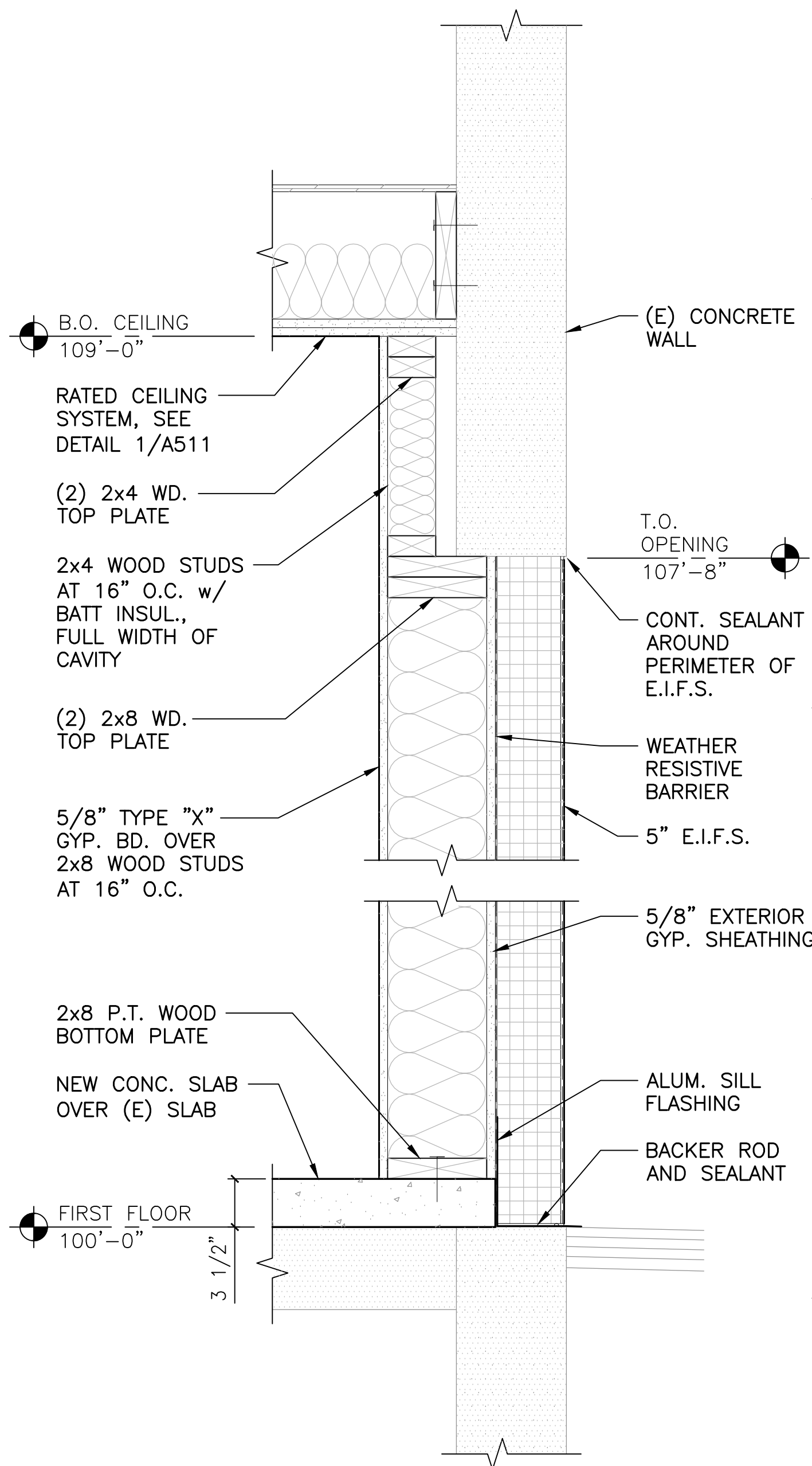
Client Project Number: 000
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Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:
**ENLARGED TOILET
ROOM PLANS AND
TYPICAL MOUNTING
HEIGHTS**

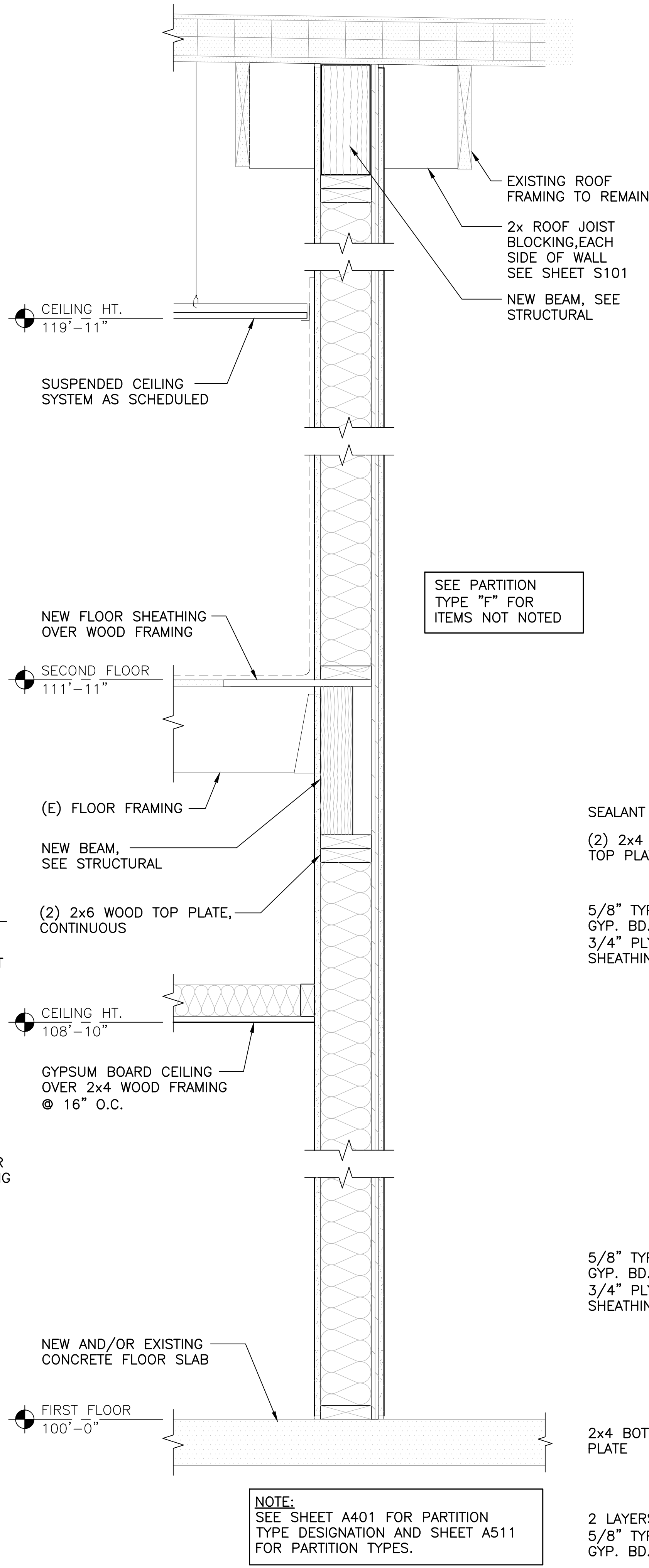
Sheet Number:



7 ROOF EDGE DETAIL
3" = 1'-0"

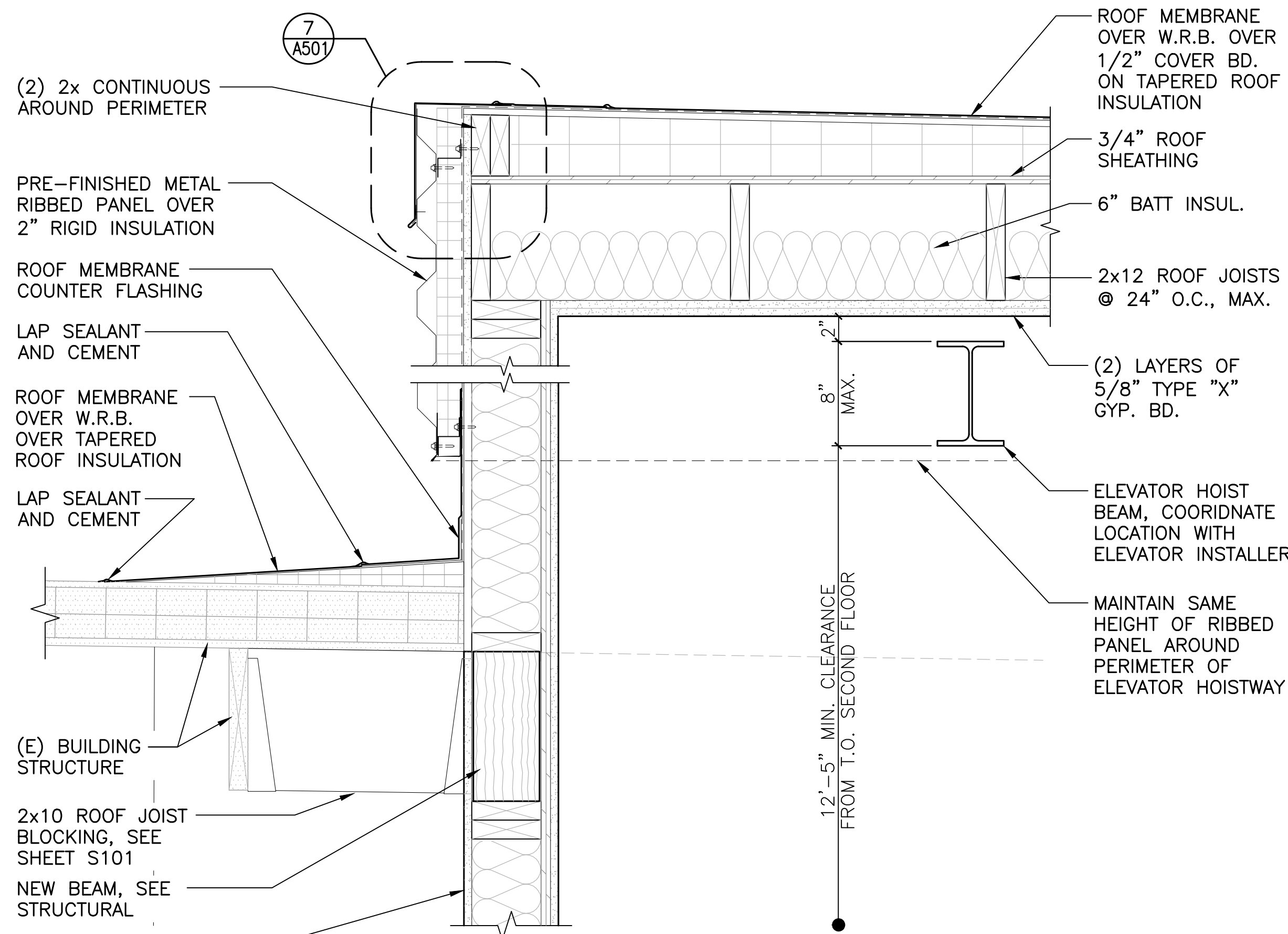


8 WALL INFILL DETAIL • EXTERIOR
1 1/2" = 1'-0"

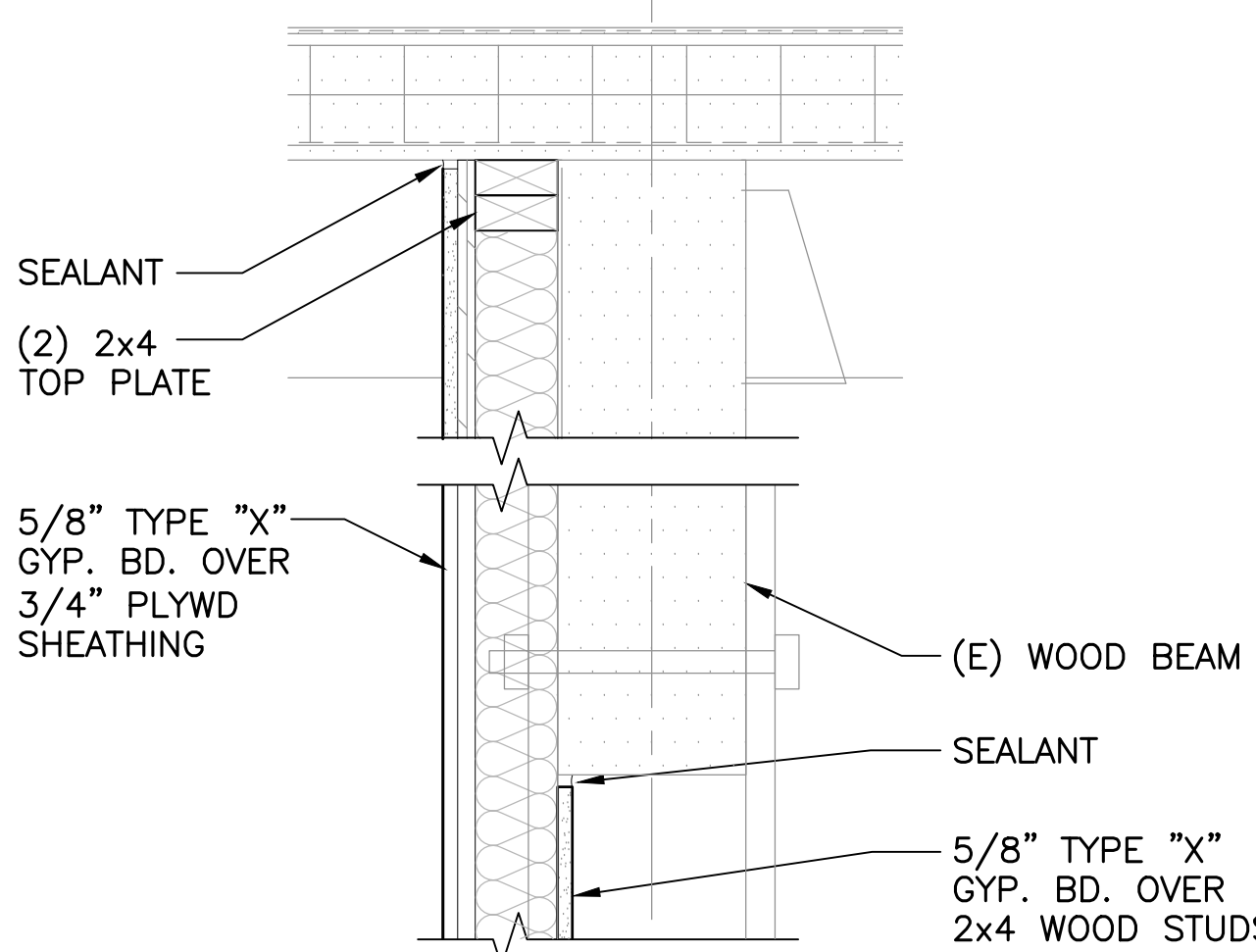


6 WALL SECTION
1 1/2" = 1'-0"

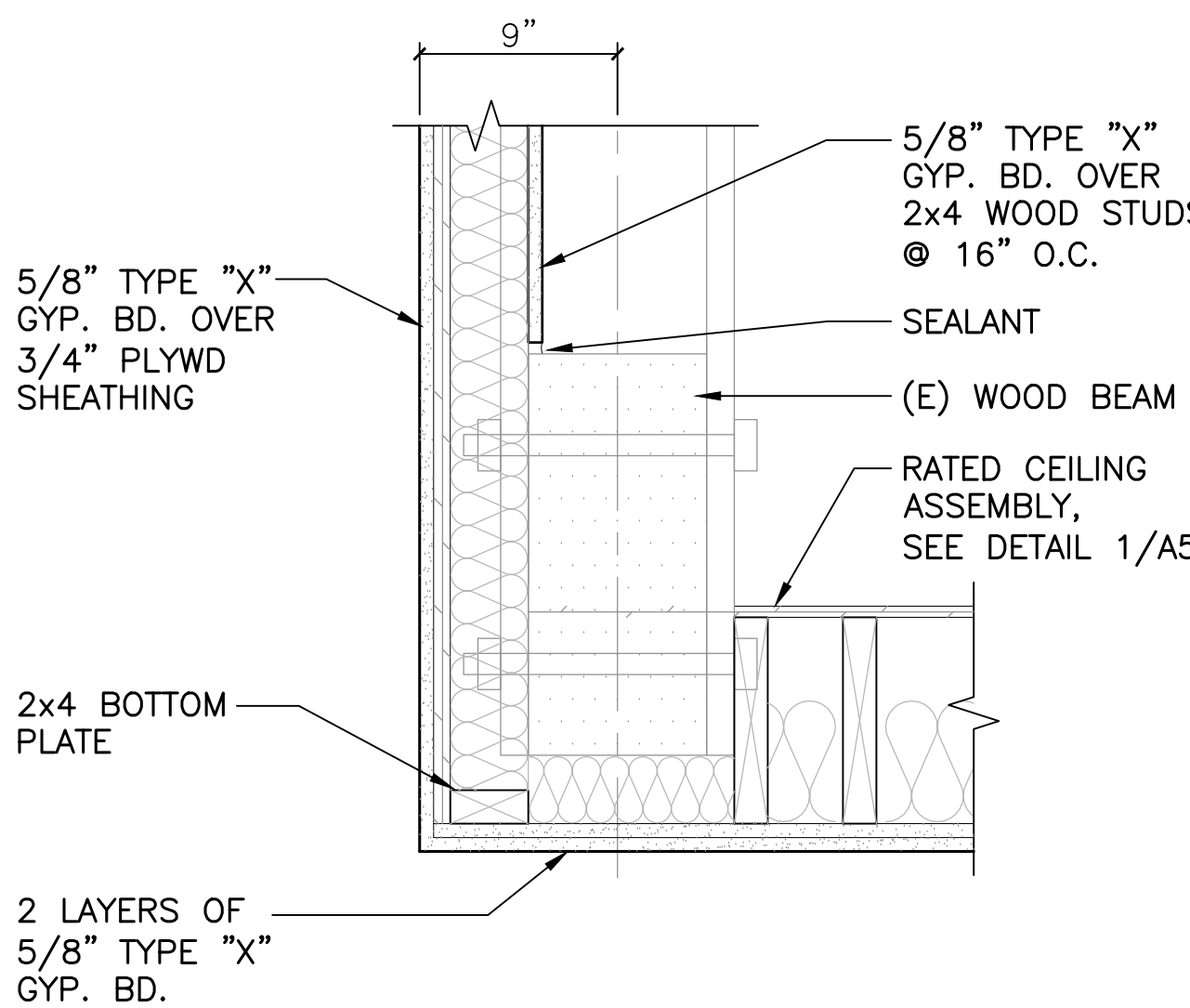
NOTE:
SEE SHEET A401 FOR PARTITION TYPE DESIGNATION AND SHEET A511 FOR PARTITION TYPES.



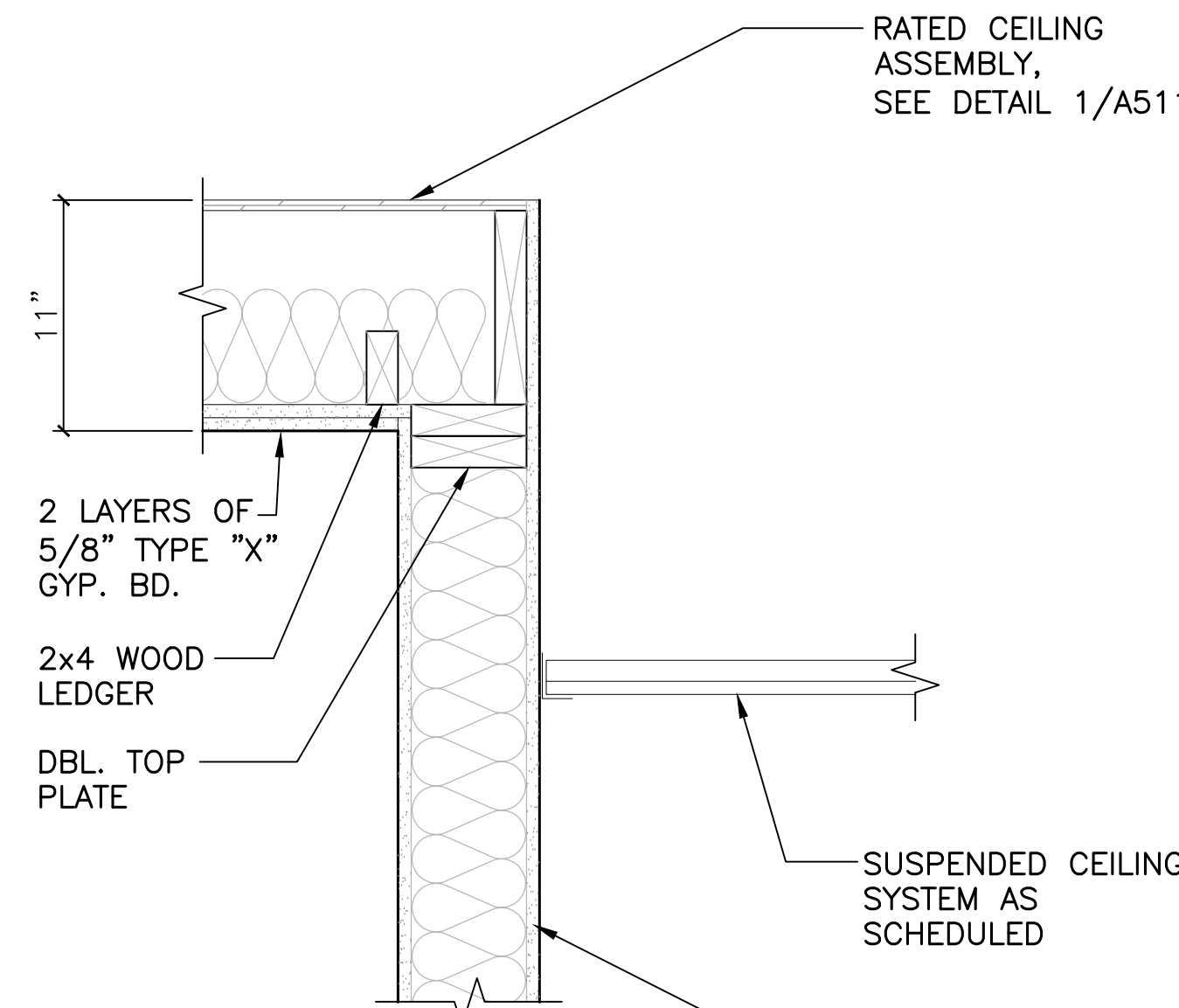
1 ROOF DETAIL AT ELEVATOR SHAFT
1 1/2" = 1'-0"



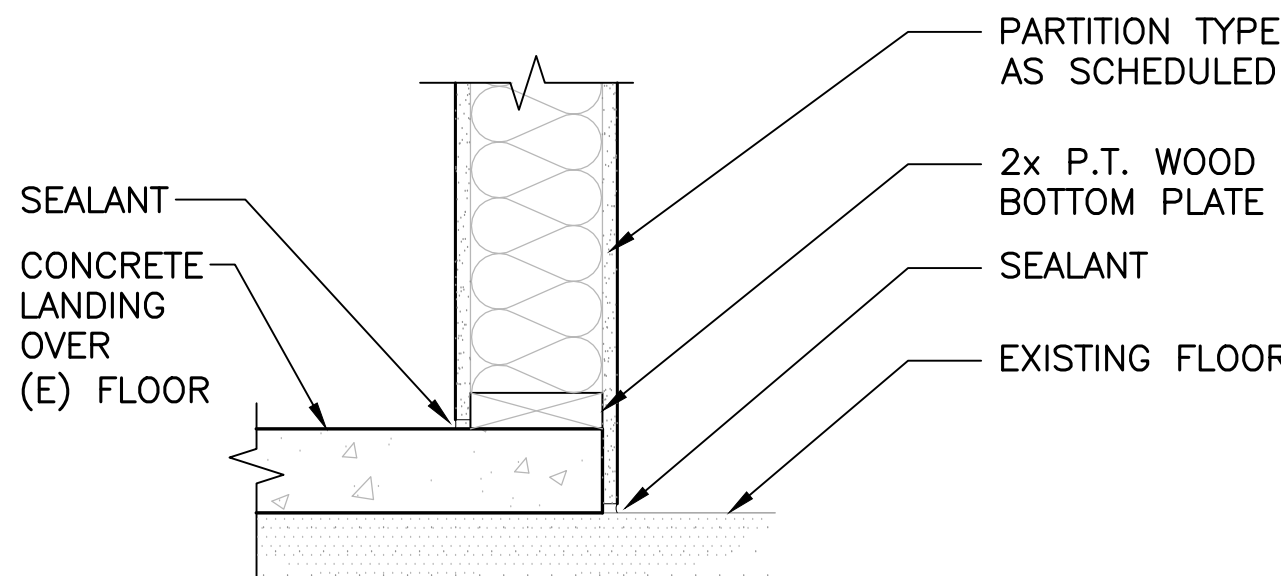
4 WALL DETAIL
1 1/2" = 1'-0"



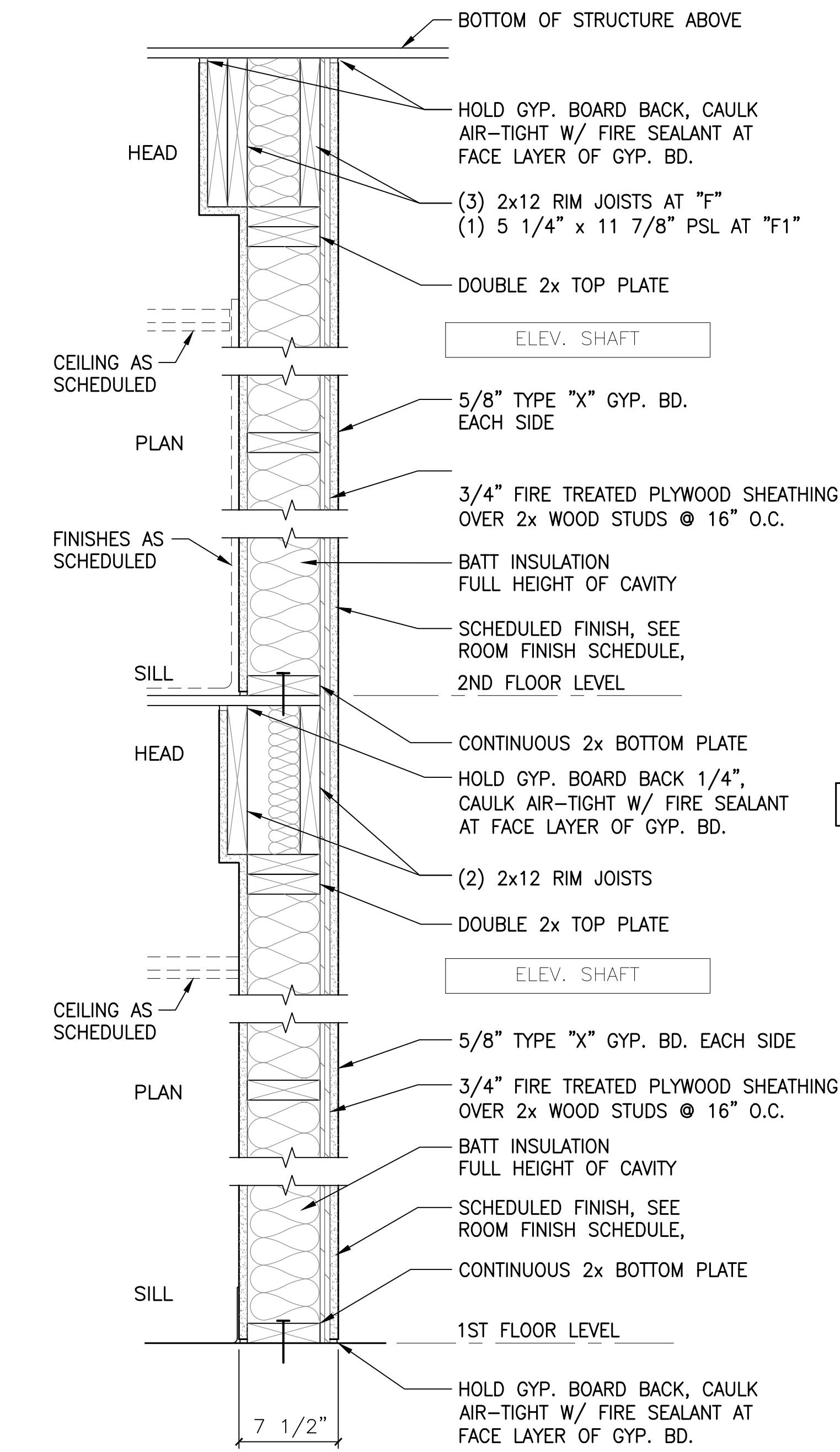
5 WALL/CEILING DETAIL
1 1/2" = 1'-0"



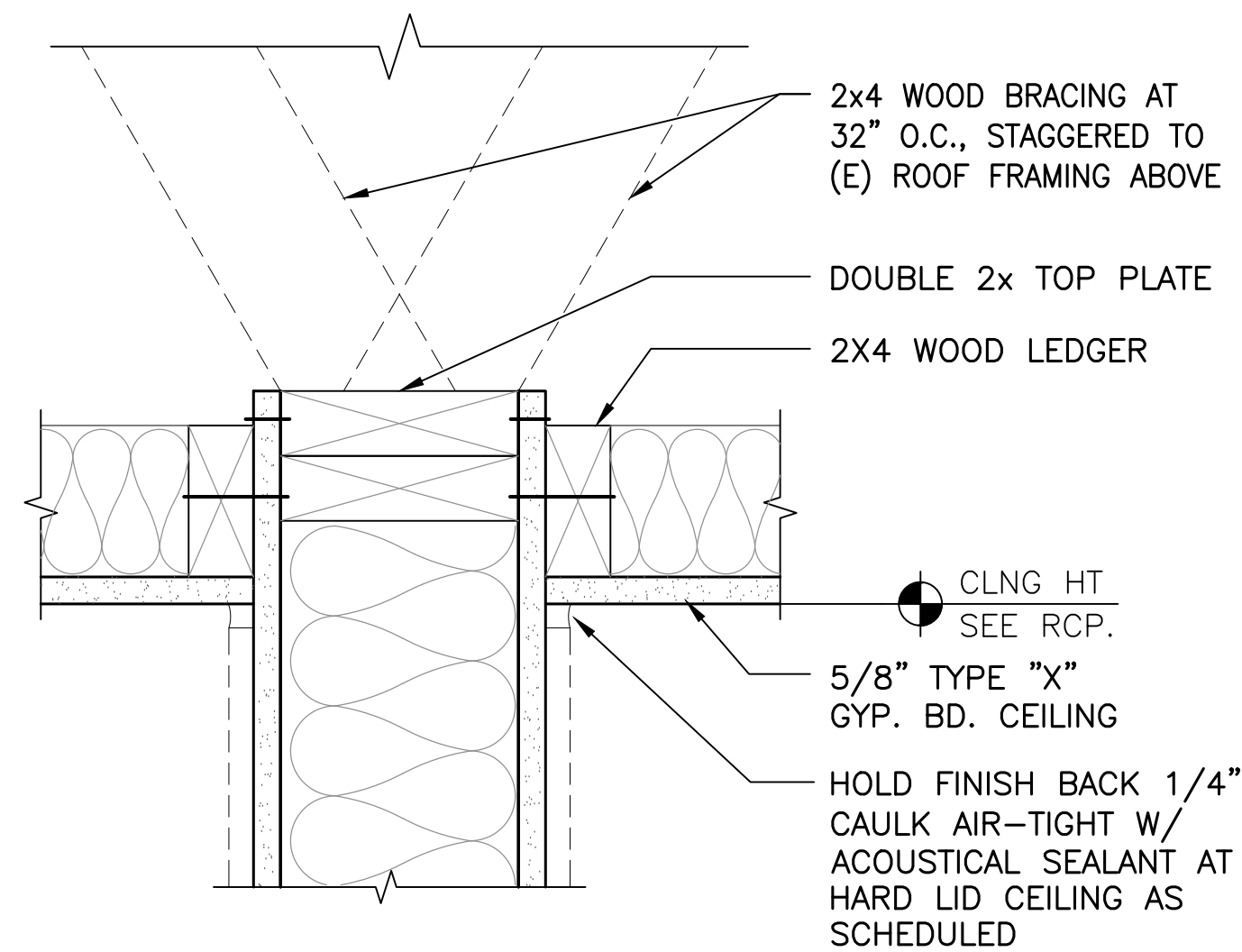
2 WALL/CEILING DETAIL
1 1/2" = 1'-0"



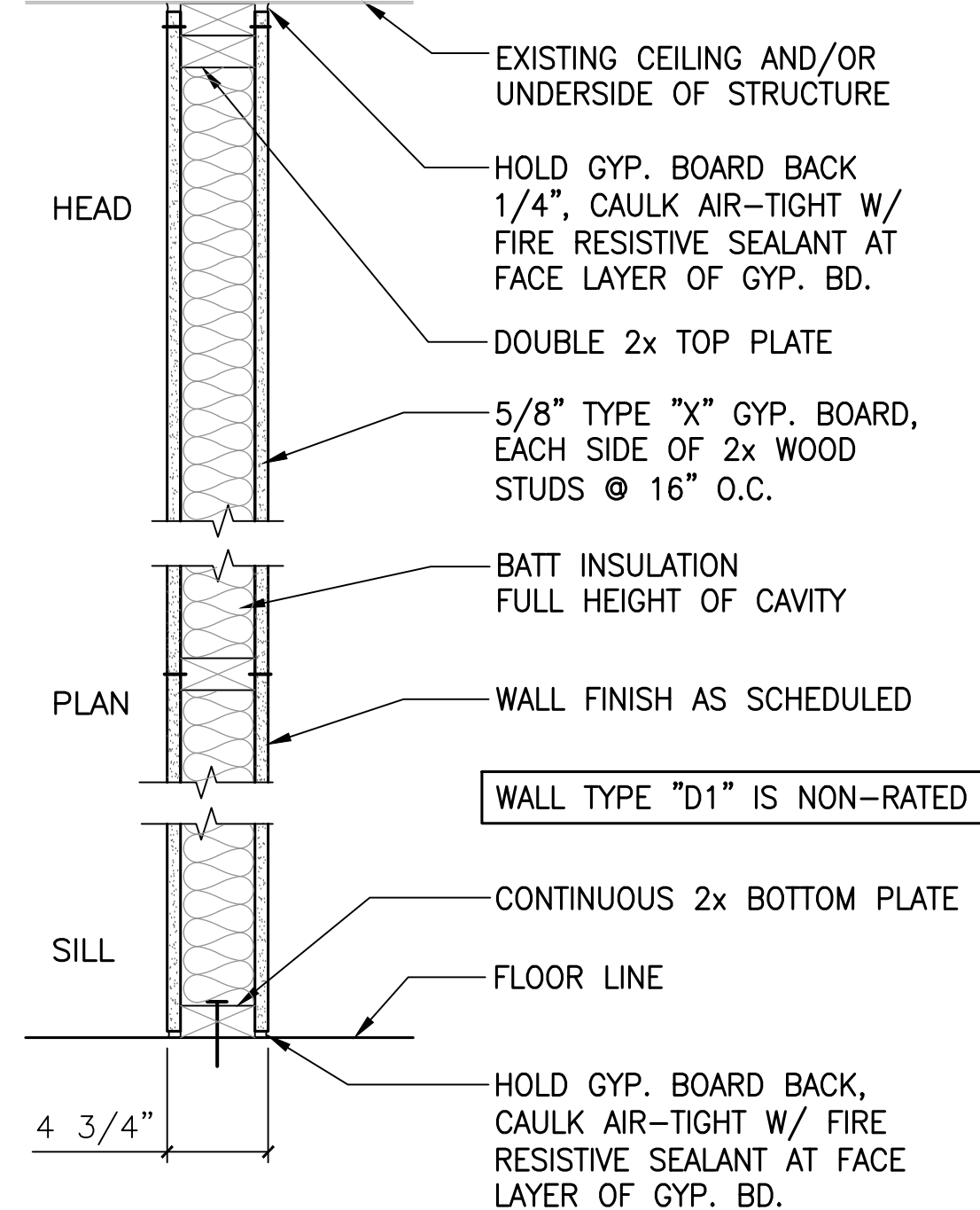
3 WALL BASE DETAIL
1 1/2" = 1'-0"



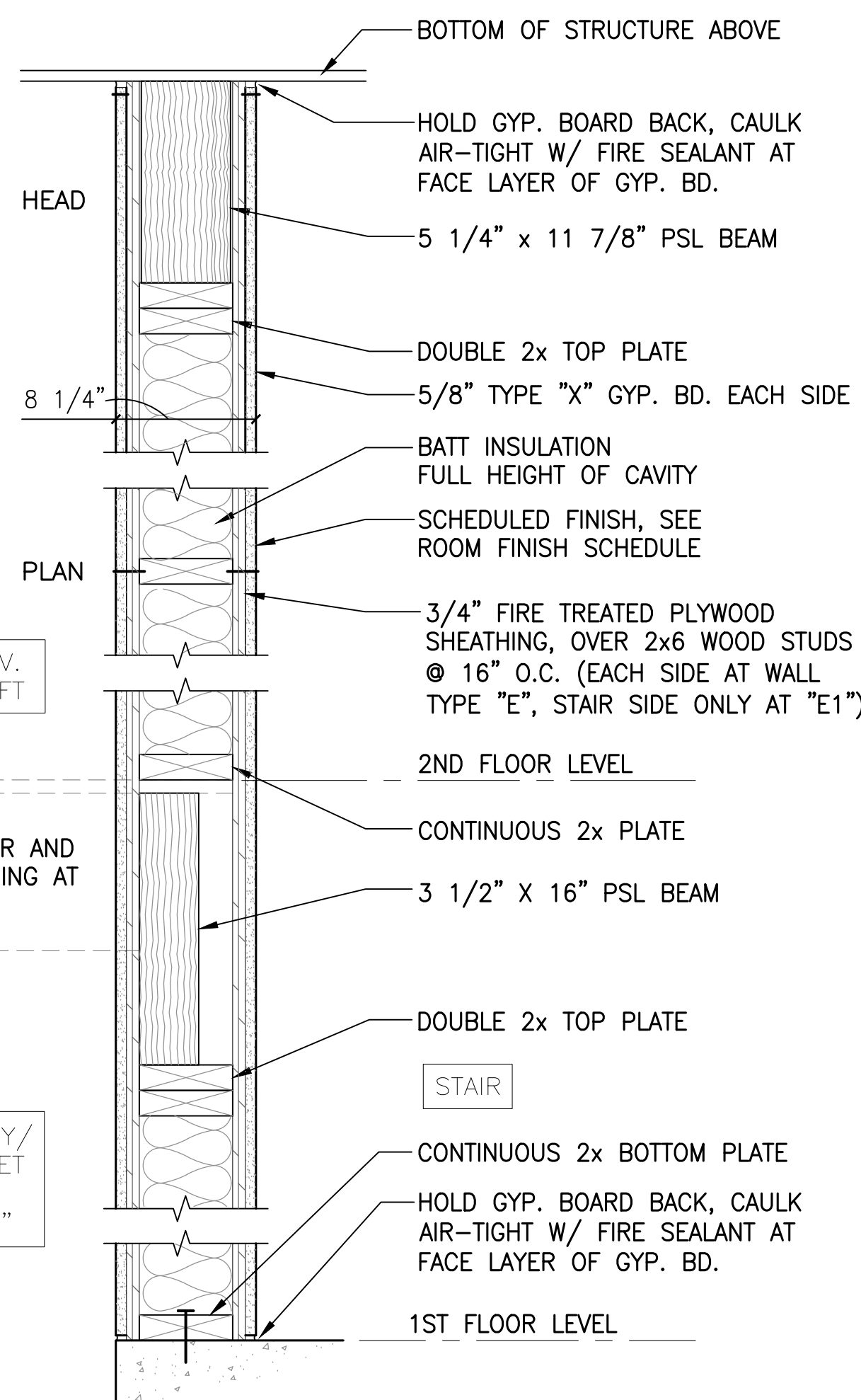
F | FI PARTITION TYPE - 1 HOUR
2x6 STUDS @ PARTITION TYPE "F"



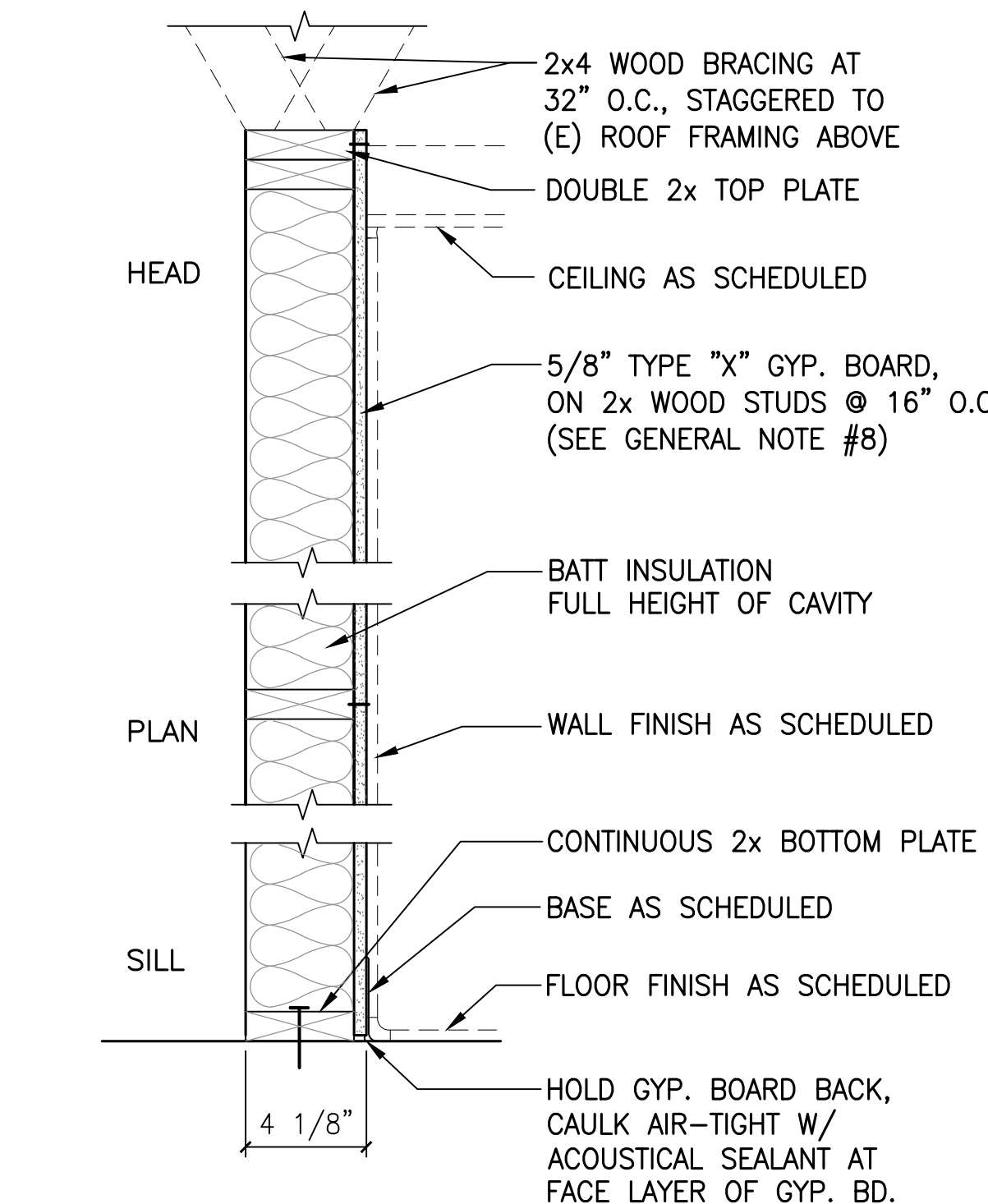
2 TOP OF WALL • HARD LID CEILING
TYPICAL



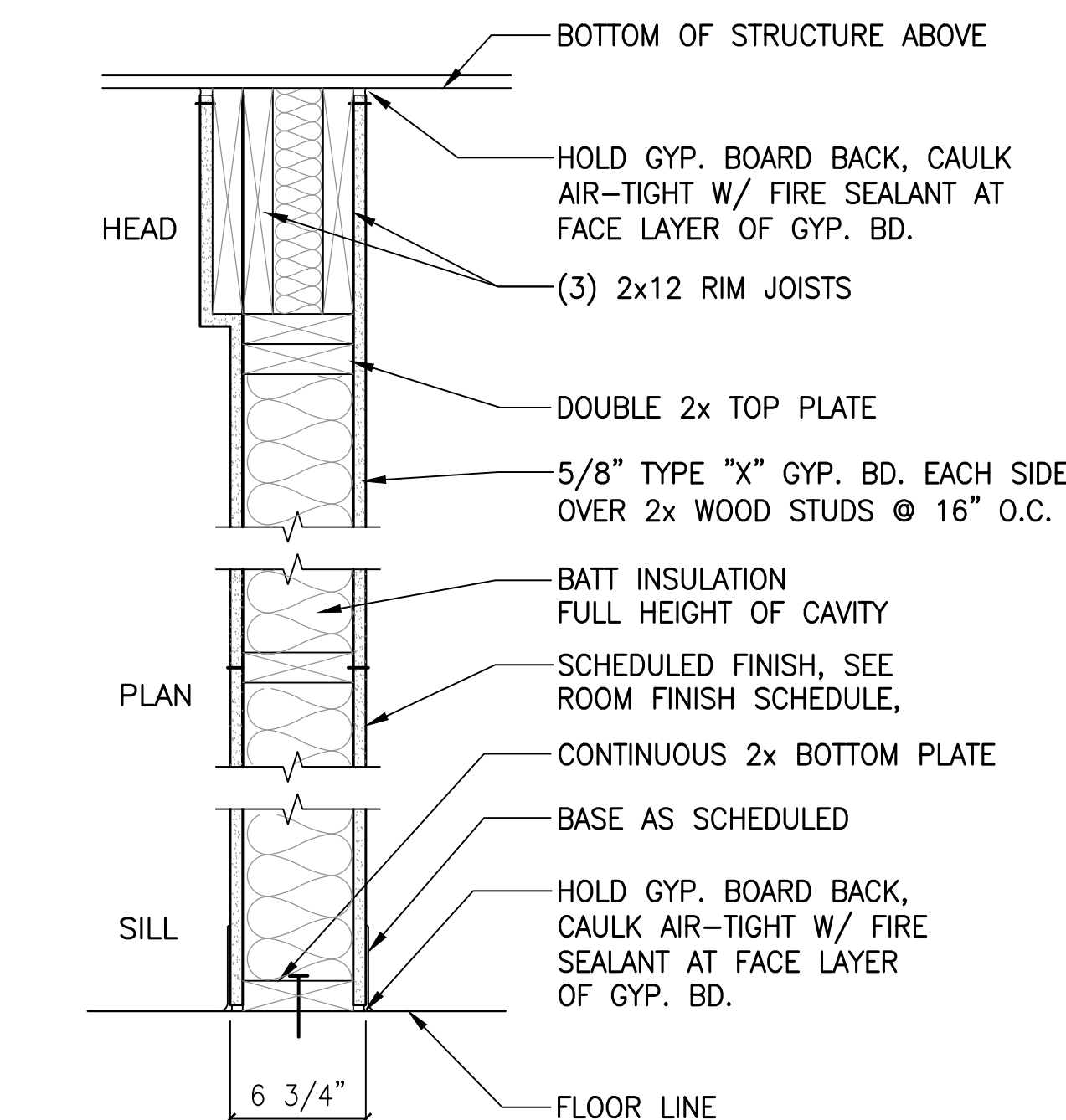
D | D1 PARTITION TYPE - 1 HOUR
UL: #314 2x4 STUDS @ PARTITION TYPES



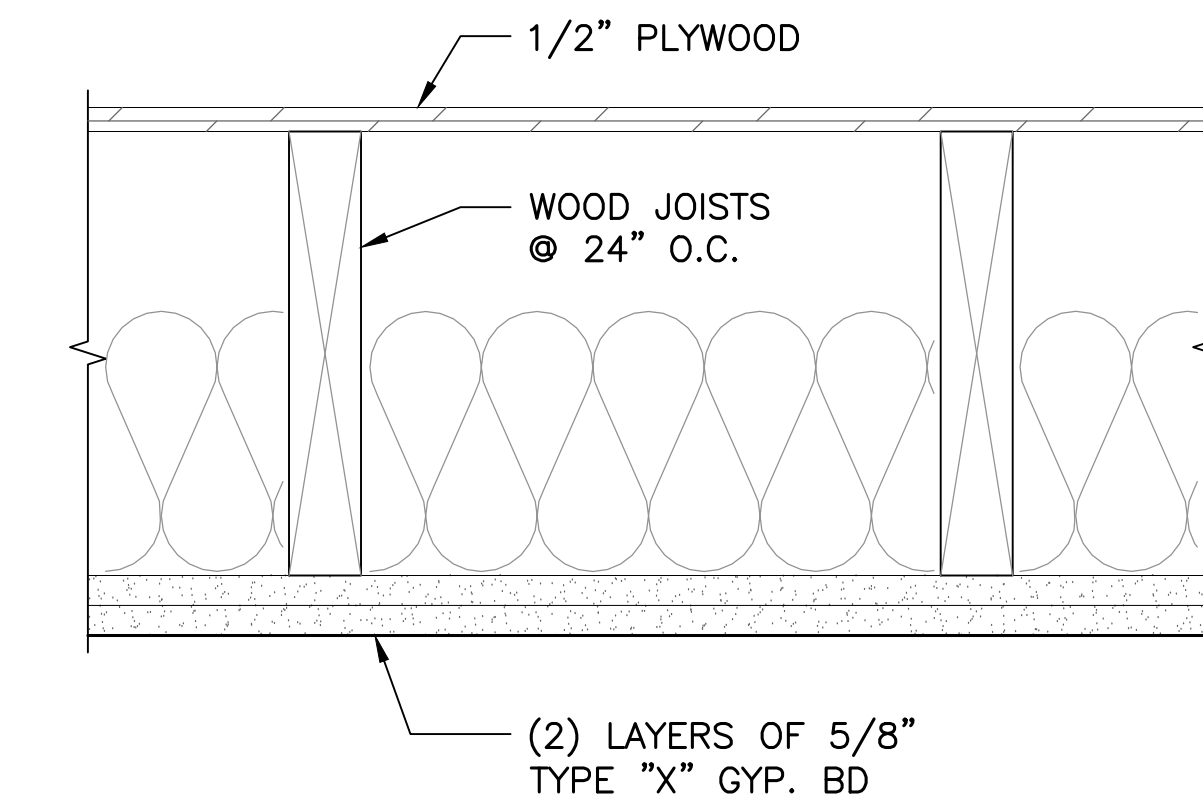
E | E1 PARTITION TYPE - 1 HOUR
2x6 STUDS @ PARTITION TYPE "E"



B PARTITION TYPE (S)
2x4 STUDS @ PARTITION TYPE "B"



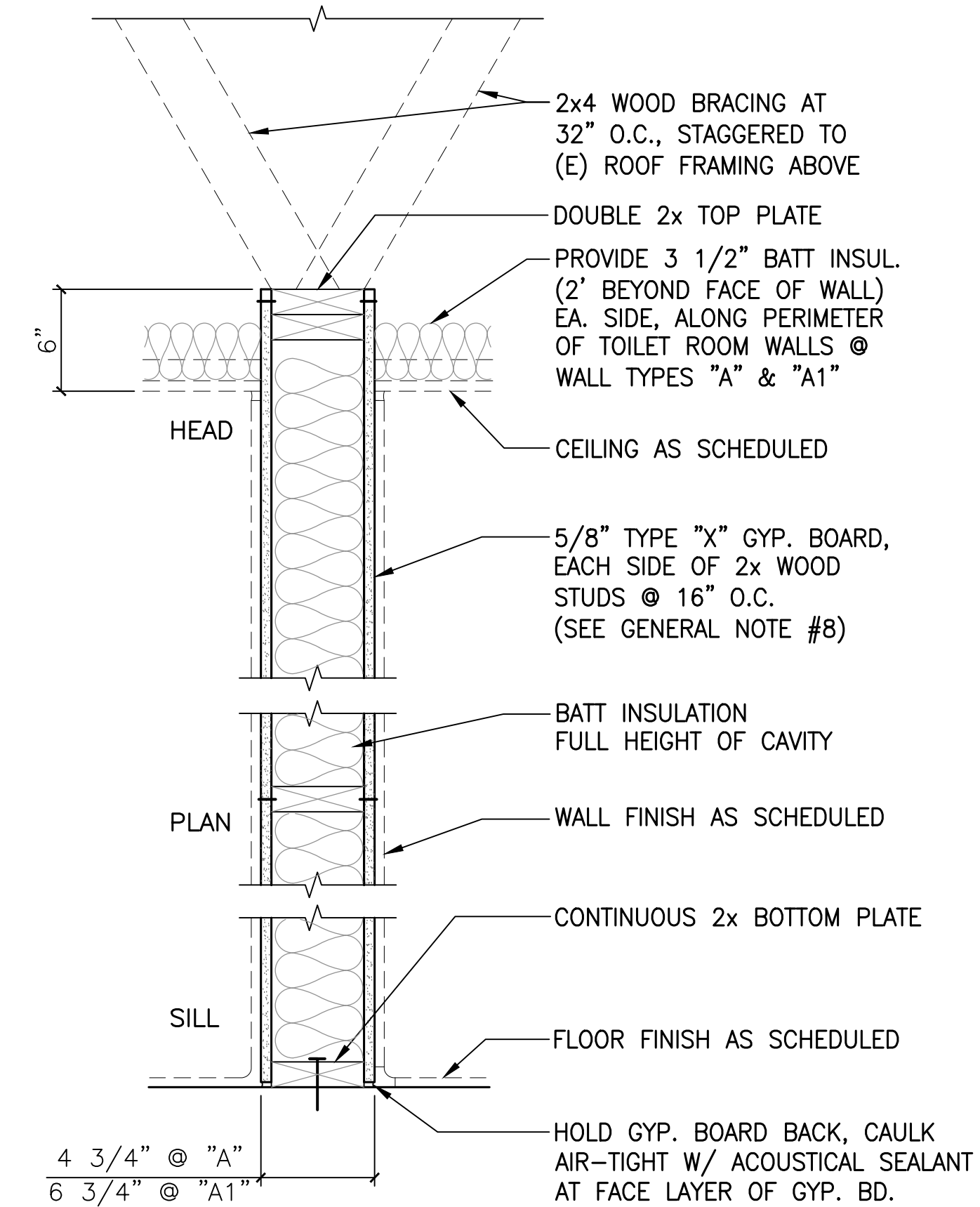
C | C1 PARTITION TYPE - 1 HOUR
UL: #314 2x4 STUDS @ PARTITION TYPE "C"
2x6 STUDS @ PARTITION TYPE "C1"



1 1HR RATED CEILING SYSTEM
GA FC 5406 AND RC 2601

PARTITION TYPE NOTES:

- PARTITION TYPES INDICATE FRAMING REQUIREMENTS AND MATERIALS AT THE TOP AND BOTTOM OF STANDARD WALL TYPES. SEE WALL TYPES FOR STUD SIZES AND MATERIAL ASSEMBLIES.
- ALL INTERIOR PARTITIONS SHALL BE FULL HEIGHT TYPE, (U.N.O.)
- LEVELING: PROVIDE LEVELING NON-SHRINK GROUT UNDER ALL NEW STUD WALLS AS REQUIRED TO MAINTAIN $\pm 1/8"$ PER 10' UNDER WALL. TYPICAL AT ALL LOCATIONS.
- GYPSUM BOARD: ALL GYPSUM BOARD SHALL BE 5/8 INCH TYPE X UNLESS OTHERWISE NOTED. SUBSTITUTE 5/8" TYPE X MOISTURE RESISTANT GYPSUM BOARD IN TOILET ROOMS, TOILET ROOM VESTIBULES, JANITOR CLOSETS, PLUMBING SHAFTS AND ALL OTHER LOCATIONS SUBJECT TO MOISTURE. SUBSTITUTE 5/8" CEMENT BACKER BOARD WHERE TILE SHALL BE APPLIED TO WALLS.
- BACKING PLATES: PROVIDE STEEL PLATE AND/OR STUD BACKING AS INDICATED OR AS REQUIRED FOR ALL SIGNAGE, RAILINGS, CABINET, TV, SHELVING, GRAB BARS, TOILET PARTITIONS, TOILET ACCESSORIES, AND OTHER ITEMS FASTENED TO PARTITIONS. COORDINATE INSTALLATION OF BACKING WITH OTHER TRADES.
- NON FIRE-RATED CONSTRUCTION: ALL NON FIRE-RATED CONSTRUCTION SHALL BE BUILT AS REQUIRED FOR ONE-HOUR FIRE RESISTANCE. EXCEPT THAT RECESSED ITEMS AND PENETRATIONS MAY PASS THROUGH THIS PARTITION UNPROTECTED, PROVIDE SEALANT OR CAULK AROUND PENETRATIONS.
- TAPE AND FLOAT JOINTS (GYPSUM BOARD) ABOVE CEILINGS, TYPICAL.
- DIMENSIONS SHOWN ON PARTITION TYPES ARE BASE MATERIALS, FINISHES THAT CONTAIN THICKNESS ARE NOT SHOWN. SEE ROOM FINISH SCHEDULE SHEET A601 FOR SCHEDULED FINISHES, UNLESS NOTED OTHERWISE (UNO).
- ALL WET LOCATIONS (TOILET ROOMS), APPLY CONTINUOUS FILLET BEAD OF SEALANT VERTICALLY WHERE NEW PARTITION WALL ABUTS EXISTING EXTERIOR WALL.
- PROVIDE PRESSURE TREATED BOTTOM PLATE AT ALL CONCRETE LOCATIONS.



A | A1 PARTITION TYPE (S)
2x4 STUDS @ PARTITION TYPE "A"
2x6 STUDS @ PARTITION TYPE "A1"

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PARTITION TYPES

Sheet Number:

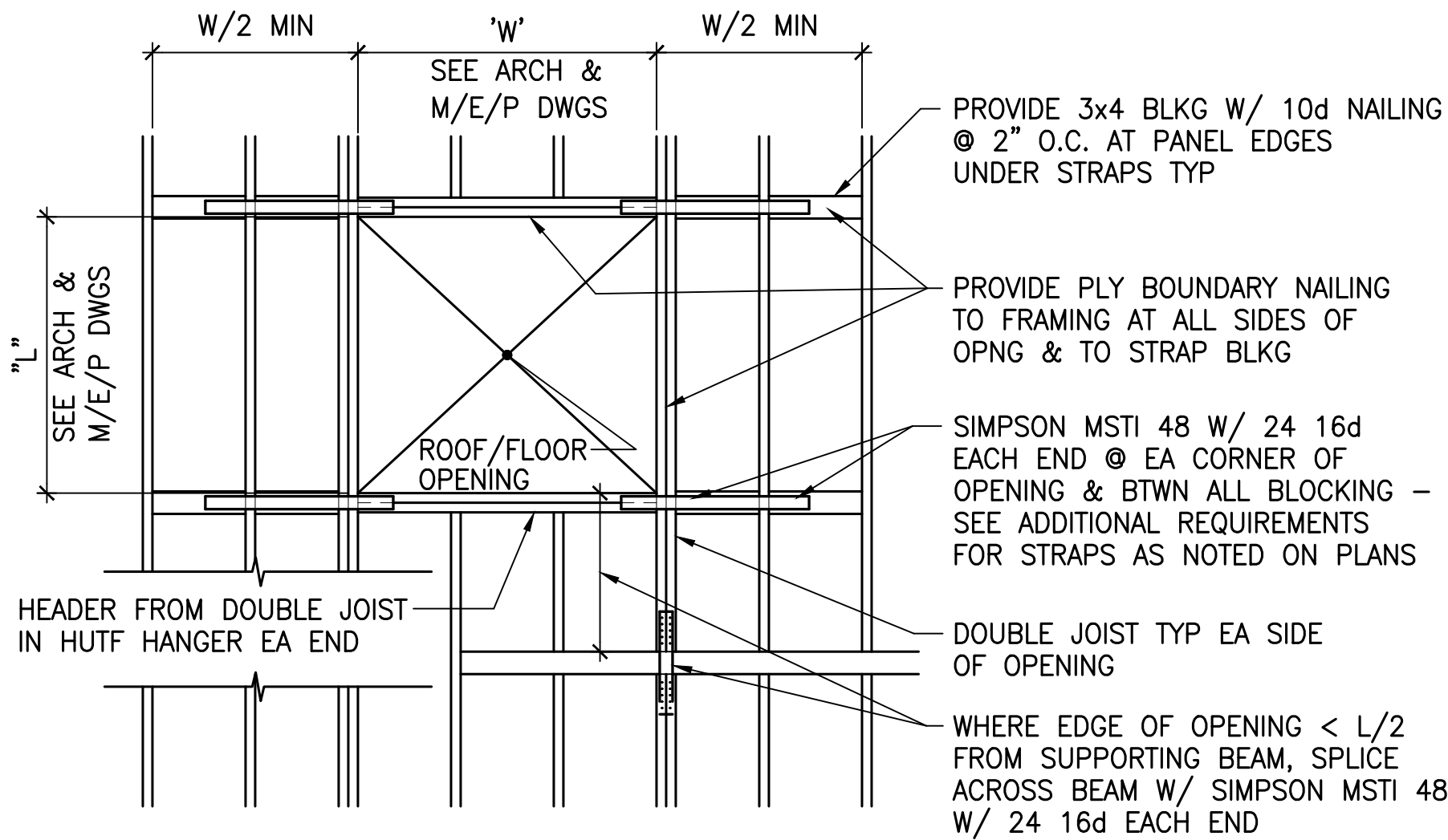
A511

MARK	NOMINAL STRUCT I PLYWD THICKNESS	COMMON NAIL SIZE (1)	NAIL SPACING			REMARKS (SEE NOTES BELOW)
			⊙ DIAPH BOUND.	⊙ CONT. EDGES	OTHER EDGES	
⬢	ROOF: 19/32" FLOOR: 1 1/8"	10d	4"	4"	6"	(2)

NOTES:

- COMMON NAILS ONLY – NO SINKERS ALLOWED. 10d SHALL HAVE 1 1/2" MIN PENETRATION INTO FRAMING & BLOCKING.
- NAILING AT INTERMEDIATE MEMBERS SHALL BE 10" O.C. ⊙ FLOORS, 12" O.C. ⊙ ROOF.
- WHERE NAIL SPACING 3" OR LESS O.C., FRAMING & BLOCKING AT THOSE PANEL EDGES SHALL BE 3x MIN – STAGGER NAILS.
- PLYWOOD SHALL BUTT TIGHT ON 2x FRAMING AND BLOCKING.
- MINIMUM WIDTH OF PLYWOOD 24".

4 ROOF/FLOOR DIAPHRAGM SCHEDULE

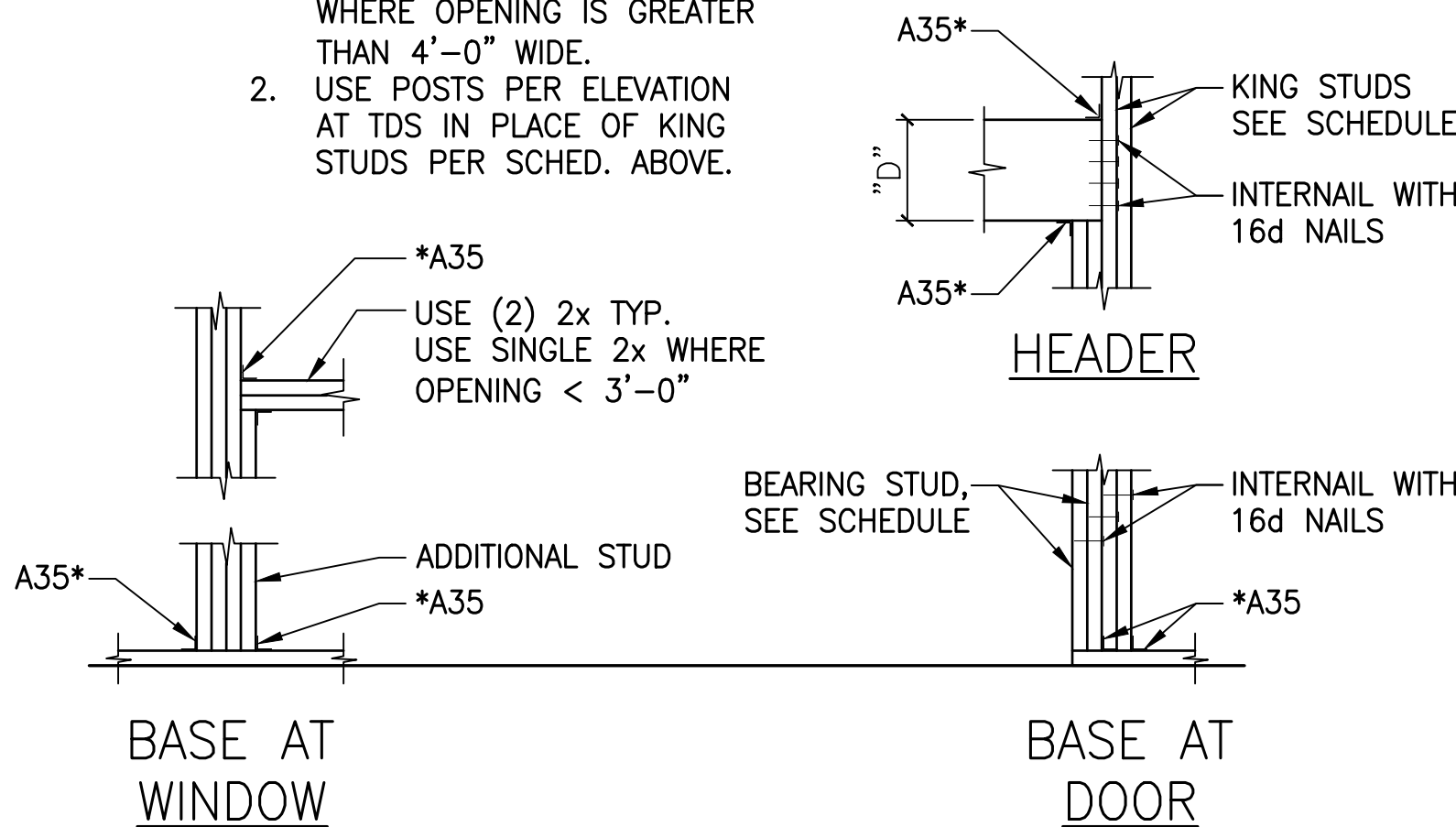


5 TYPICAL FLOOR /ROOF OPENING DETAILS

HEADER SCHEDULE			
OPENING WIDTH	"D"	NO. OF BEARING STUDS REQ.	NO. OF KING STUDS REQ.
<= 5'-0"	7 1/4"	1	2
5'-0" TO 7'-0"	7 1/4"	1	2
7'-0" TO 10'-0"	7 1/4"	1	3
>= 10'-0"	SEE PLAN	SEE PLAN	3

NOTES:

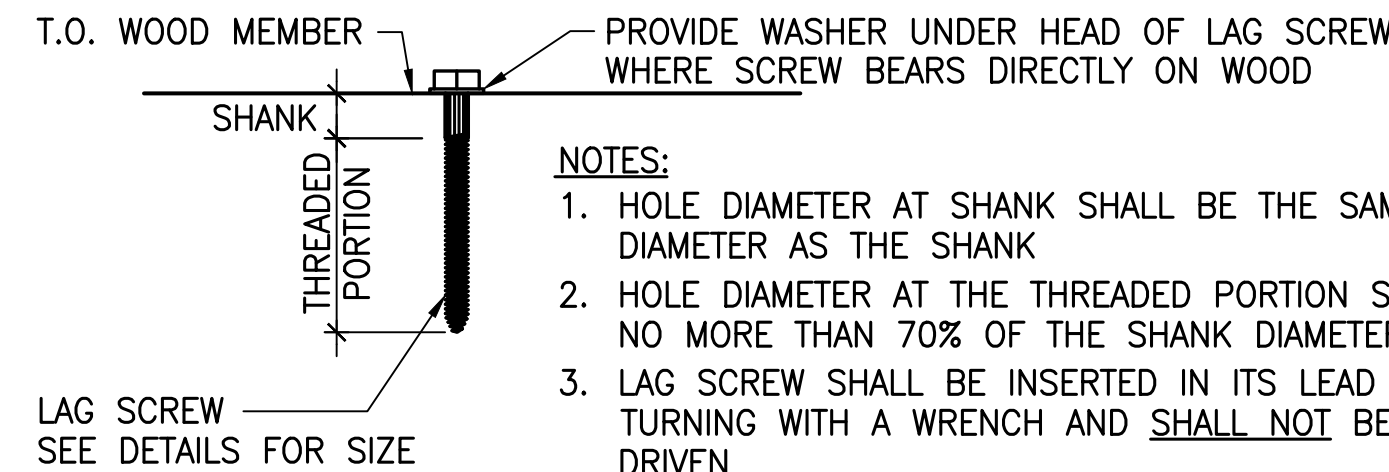
- *PROVIDE A35 CLIP ANGLES WHERE OPENING IS GREATER THAN 4'-0" WIDE.
- USE POSTS PER ELEVATION AT TDS IN PLACE OF KING STUDS PER SCHED. ABOVE.



6 TYPICAL WALL OPENING FRAMING

- ALL WOOD SCREWS SHALL BE ROLLED THREAD WOOD SCREWS WITH LENGTH AS REQUIRED TO PROVIDE MINIMUM PENETRATION OF TEN TIMES THE SCREW DIAMETER INTO THE MAIN MEMBER.

- TYPICAL LAG SCREWS SHALL BE AS NOTED:



NOTES:

- HOLE DIAMETER AT SHANK SHALL BE THE SAME DIAMETER AS THE SHANK
- HOLE DIAMETER AT THE THREADED PORTION SHALL BE NO MORE THAN 70% OF THE SHANK DIAMETER
- LAG SCREW SHALL BE INSERTED IN ITS LEAD HOLE BY TURNING WITH A WRENCH AND SHALL NOT BE HAMMER DRIVEN
- LUBRICANT SHALL BE USED TO EASE INSTALLATION OF SCREW INTO LEAD HOLE
- UNLESS NOTED OTHERWISE LAG SCREW LENGTH SHALL BE AS REQUIRED TO PROVIDE MINIMUM PENETRATION OF EIGHT TIMES THE SCREW DIAMETER INTO THE MAIN MEMBER

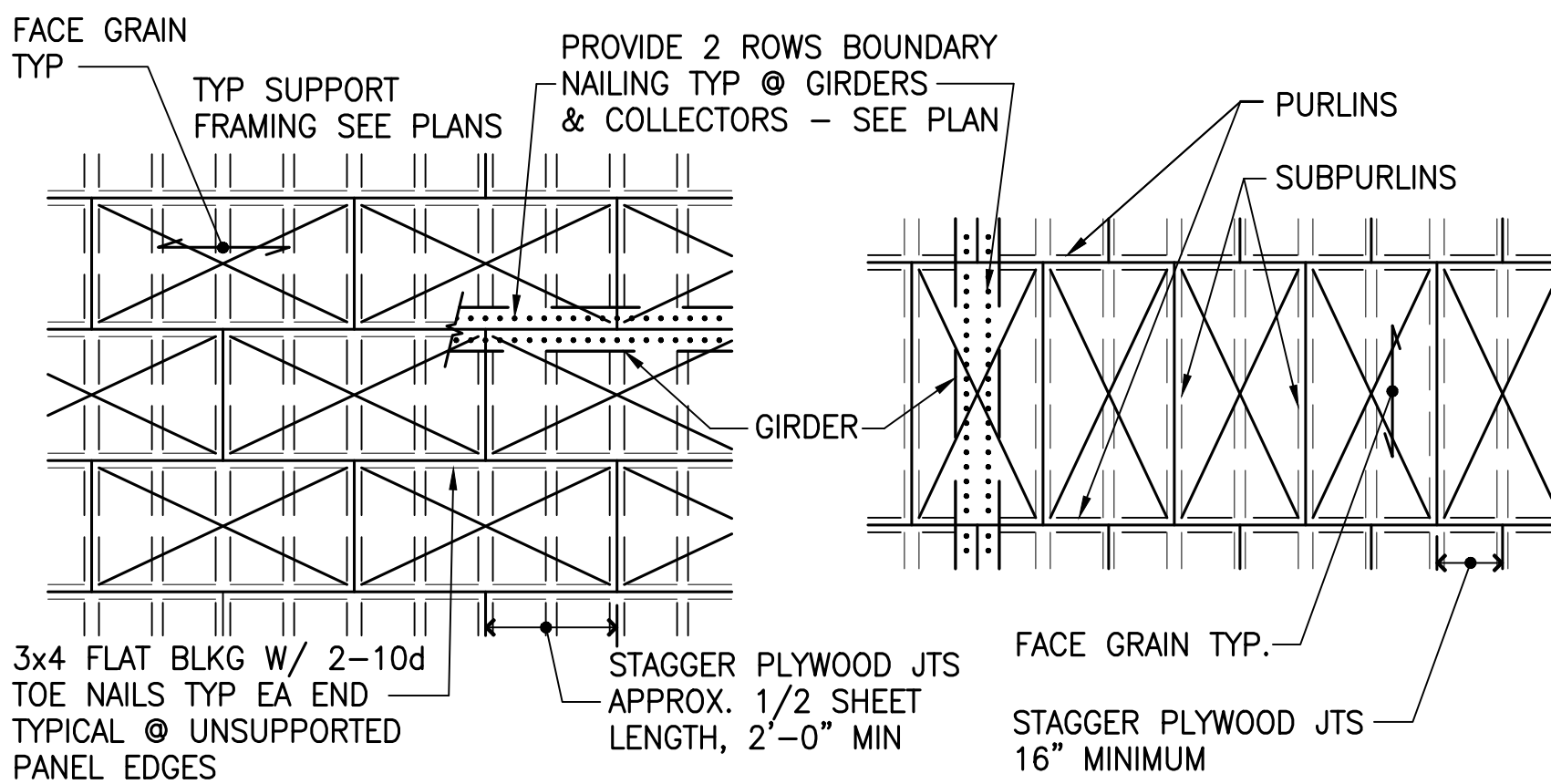
1 TYPICAL FRAMING NOTES - CONTINUED

MARK	PLYWOOD STRUCT I EXTERIOR	NAILING		FNDN SILLS		BLKG	BOTTOM PLATES		REMARKS
		SIZE 1)	SPACING ⊙ PANEL EDGE 2)	SIZE	BOLTING	SIMPSON ANCHOR	SIZE	REQ'D (4) ATTACHMENT	
▽	15/32" ONE SIDE	10d	4"	2x	5/8"⌀ ⊙ 32" O.C.	A35 ⊙ 16" O.C.	2x	2 ROWS 20d ⊙ 8" O.C.	3) 3x STUDS REQ'D.

NOTES:

- COMMON NAILS ONLY – NO SINKERS ALLOWED. 10d SHALL HAVE 1 1/2" MIN PENETRATION.
- NAIL SPACING ⊙ INTERMEDIATE STUDS IS 12" O.C. PROVIDE SOLID BLKG TO MATCH REQ'D STUD THICKNESS AT ALL UNSUPPORTED EDGES OF SHEATHING.
- ALL STUDS SPACED ⊙ 16" O.C. MAX. PROVIDE 3x STUDS WHERE NOTED.
- PREDRILL ⊙ 90% x NAIL DIAMETER AS REQ'D. TO PREVENT WOOD SPLITTING. PREPARE LAG SCREW HOLES PER DETAIL THIS SHEET.
- ANCHOR BOLTS SHALL BE GALVANIZED AND TERMINATED WITH A STANDARD BOLT HEAD OR HOOKED WITH A 90° BEND WITH AN INSIDE DIAMETER EQUAL TO 3 BOLT DIAMETERS PLUS AN EXTENSION OF 1 1/2 BOLT DIAMETERS. THE BOLTS SHALL BE EMBEDDED BELOW TOP OF SLAB.
- WHERE PLY IS APPLIED ON BOTH FACES OF WALL STUDS & NAIL SPACING IS LESS THAN 6" O.C. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT STUDS & NAILS SHALL BE STAGGERED.
- PLYWOOD SHALL BUTT TIGHT ON MIN. 2x FRAMING AND BLOCKING.
- MINIMUM DIMENSION OF PLYWOOD PIECE IS 24".
- WHERE WALL IS ON A CONCRETE CURB, EMBED ALL BOLTS AND HOLDDOWNS IN SLAB BELOW THE CURB.

2 SHEAR WALL SCHEDULE AND NOTES



TYPICAL FLOOR/ROOF SHEATHING

NOTES:

- EDGE DISTANCE OF NAILS IN JOISTS & PLYWOOD SHEETS SHALL NOT BE LESS THAN 3/8" MINIMUM.
- PROVIDE REQ'D. EDGE BLOCKING AS SHOWN ABOVE. THIS BLOCKING IS NOT SHOWN ON FRAMING PLANS.
- SEE SCHEDULE BELOW FOR PLYWOOD THICKNESS AND NAILING REQUIREMENTS.

3 DIAPHRAGM LAYOUT PLANS

- ALL NEW LUMBER SHALL BE AS NOTED BELOW:

- SILLS ON CONCRETE: PRESSURE TREATED DOUGLAS FIR NO. 1 OR BETTER.
- STUDS AND PLATES: DOUGLAS FIR NO. 1 OR BETTER.
- POSTS: DOUGLAS FIR NO. 1 OR BETTER.
- BLOCKING: DOUGLAS FIR NO. 2 OR BETTER.
- JOISTS AND PLANKS: DOUGLAS FIR NO. 1 OR BETTER.
- BEAMS, STRINGERS, AND HEADERS: DOUGLAS FIR NO. 1 OR BETTER.
- NON-LOAD BEARING PARTITIONS, CEILING FRAMING, AND MISCELLANEOUS NON-STRUCTURAL FRAMING: DOUGLAS FIR NO. 2 OR BETTER.

- ALL NEW PLYWOOD SHALL BE STRUCTURAL I WITH EXTERIOR GLUE. MINIMUM THICKNESS SHALL BE 15/32" FOR WALLS, 1 1/8" FOR FLOORS, AND 19/32" FOR ROOFS, U.N.O.
- ALL NEW FRAMING IN CONTACT WITH FOUNDATION OR SLABS TO BE PRESSURE TREATED.
- SOLID BLOCKING SHALL BE 2x UNLESS OTHERWISE NOTED. BLOCKING SHALL BE FULL DEPTH OF MEMBERS, STUDS, JOISTS, ETC. EVEN THOUGH NOT SHOWN ON DRAWINGS. WALLS SHALL BE BLOCKED AS REQUIRED BY PLYWOOD NAILING AND OPENING DETAILS AND ADDITIONALLY WALLS BETWEEN 8 AND 12 FEET HIGH SHALL HAVE 1 ROW OF BLOCKING AT MID-HEIGHT. WALLS OVER 12 FEET HIGH SHALL HAVE A ROW OF BLOCKING AT 1/3 AND AT 2/3 OF HEIGHT. JOISTS SHALL BE BLOCKED AS REQUIRED BY PLYWOOD NAILING DETAILS AND ADDITIONALLY AT 8'-0" SPACING TYPICAL.

SOLID BLOCKING AT 4'-0" MAX. SPACING SHALL BE PROVIDED BETWEEN ALL EXTERIOR AND ALL INTERIOR BEARING WALLS AND FIRST 2 INTERIOR FLOOR OR ROOF JOISTS EXCEPT WHERE JOISTS FRAME INTO WALL.

ALL WALL, ROOF OR FLOOR PLY SHALL BE NAILED TO ALL BLOCKS WITH 4-10d MINIMUM.

- BEAMS, JOISTS AND PURLINS SHALL ONLY BE CUT AS SHOWN ON THE DRAWINGS OR AS APPROVED IN WRITING BY THE ENGINEER-OF-RECORD. WHERE PERMITTED, HOLES THROUGH THE MEMBER SHALL NOT EXCEED 1/6 THE DEPTH OF THE MEMBER IN SIZE AND SHALL BE LOCATED IN THE MIDDLE 1/3 OF THE MEMBER DEPTH. NOTCHES SHALL BE NO GREATER THAN 1/10 OF THE MEMBER DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE MEMBER SPAN. HOLES OR NOTCHES ARE NOT PERMITTED WITHIN 2 TIMES THE MEMBER DEPTH FROM ANY MEMBER SUPPORT. ADJACENT HOLES OR NOTCHES SHALL BE SPACED AT A DISTANCE NOT LESS THAN 1 1/2 X MEMBER DEPTH.
- ALL BOLTS, WASHERS, NUTS, FRAMING CLIPS. NAILING, ETC. IN PRESSURE TREATED SILL PLATES AND FRAMING MEMBERS TO BE HOT-DIP GALVANIZED, TYPICAL.

- UNLESS OTHERWISE NOTES, PROVIDE FOLLOWING NAILING (COMMON WIRE NAILS)

JOISTS OR RAFTERS TO SIDES OF STUDS	
8" JOISTS OR LESS	3-16d
10" & 12" JOISTS	4-16d
JOISTS OR RAFTERS AT ALL BEARINGS	
TOE NAILS, EACH SIDE	2-10d
CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL	3-16d
CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
BLOCKING BETWEEN JOISTS OR RAFTERS-	
TO JOISTS OR RAFTERS- TOE NAILS, EACH SIDE, EACH END	2-10d
TO JOISTS OR RAFTERS BEARINGS- TOE NAILS, EACH SIDE	2-10d
BLOCKING BETWEEN STUDS, EACH END	2-10d TOE NAILS OR 2-16d END NAIL
BRIDGING TO JOIST, TOE NAILS, EACH END	2-8d
SOLE PLATE TO JOIST OR BLOCKING, FACE NAIL	20d AT 16" O.C.
TOP AND BOTTOM PLATE TO STUD, END NAIL	2-16d
STUD TO SOLE PLATE, TOE NAIL	4-8d
DOUBLED STUDS, FACE NAIL	16d AT 24" O.C.
DOUBLE TOP PLATES, FACE NAIL	16d AT 16" O.C.
DOUBLE JOISTS/RAFTERS, FACE NAIL	2-16d AT 12" O.C.
RIBBONS TO STUDS	
1x RIBBONS	2-8d
2x RIBBONS	2-16d
STUD TO CONTINUOUS HEADER, TOE NAIL	4-8d
HEADER TP JAMB STUD/POST, EACH END	4-20d END NAILS OR 3-10d TOEN EA FACE
1x BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
1x8 SHEATHING OR LESS TO EACH BEARING, FACE NAIL	3-8d
WIDER THAN 1x8 SHEATHING TO EACH BEARING, FACE NAIL	3-8d
2x PLANK OR T&G DECKING	2-16d AT EACH BEARING

PLYWOOD NON-STRUCTURAL 2)
SUBFLOOR (/UNDERLAYMENT), ROOF AND WALL SHEATHING TO FRAMING:

1/2" AND LESS	6d	3)
5/8" - 3/4"	8d	3)
7/8" - 1"	8d	3)
1 1/8" - 1 1/4"	10d	3)
PANEL SIDING (NON-STRUCTURAL, TO FRAMING)		
1/2" OR LESS	6d	4)
5/8"	8d	4)

NOTES:

- WHEN POSSIBLE, NAILS DRIVEN PERPENDICULAR TO GRAIN SHALL BE USED INSTEAD OF TOE NAILS.
- NAILS SPACED AT 6" O.C. PANEL EDGES, 10" O.C. ⊙ INTERMEDIATE FLOOR SUPPORTS AND 12" O.C. AT INTERMEDIATE ROOF SUPPORTS.
- USE DEFORMED SHANK NAILS.
- USE HOT-DIP GALVANIZED SIDING OR CASING NAILS.
- ALL NAILS SHALL BE COMMON NAILS CONFORMING TO ASTM F1667 AND SHALL HAVE MINIMUM PENETRATION INTO MAIN MEMBER AS NOTED BELOW.
 - 20d - 1 7/8" PENETRATION
 - 16d - 1 5/8" PENETRATION
 - 12d & 10d - 1 1/2" PENETRATION
 - 8d - 1 3/8" PENETRATIONWHERE MINIMUM PENETRATION CANNOT BE ACHIEVED PROVIDE 1/4"⌀ SIMPSON SDS SCREWS WITH MINIMUM 3" PENETRATION INTO MAIN MEMBER IN LIEU OF NAILS.

1 TYPICAL FRAMING NOTES

Revisions:

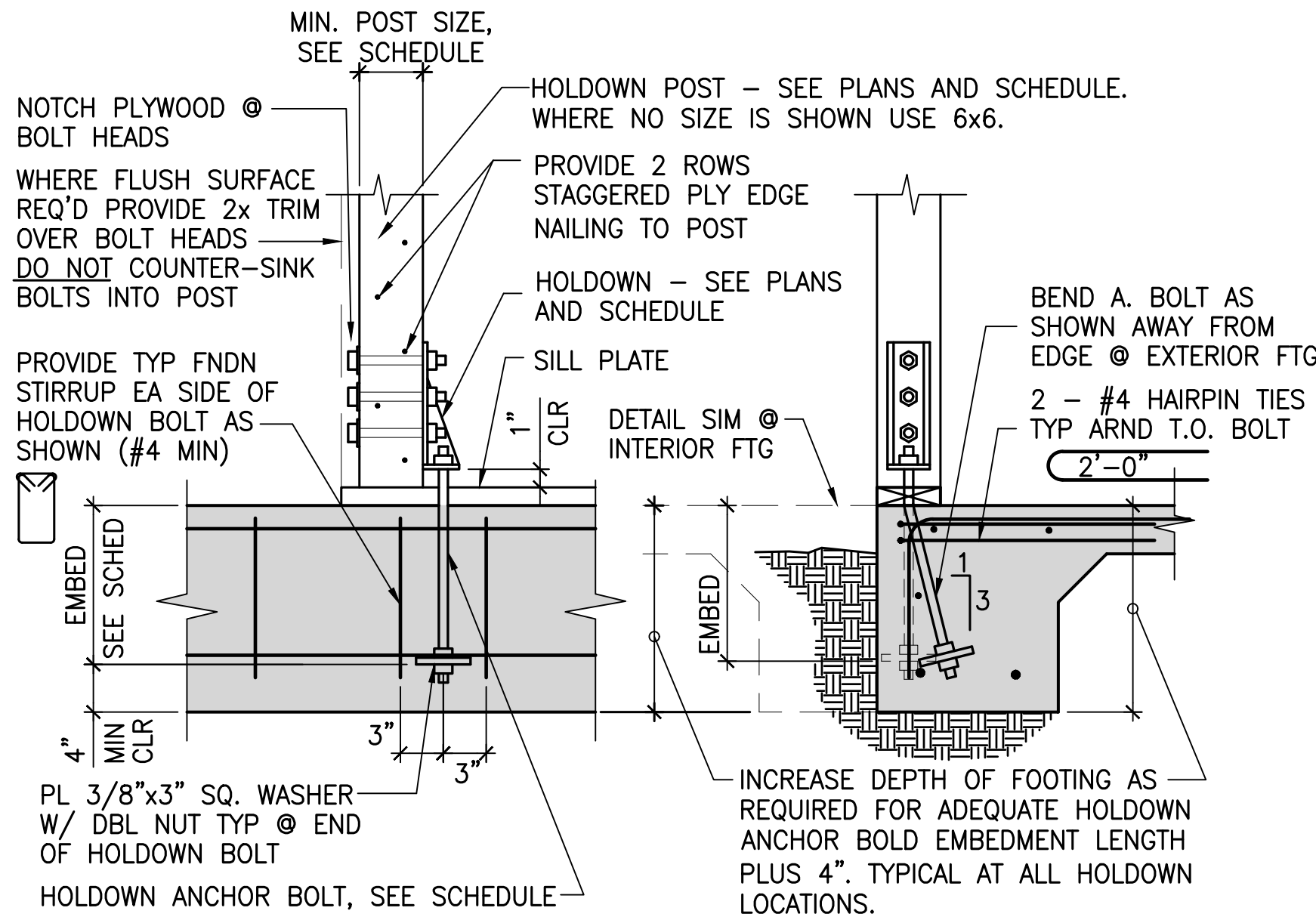
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

TYPICAL WOOD
FRAMING DETAILS

Sheet Number:

A512A

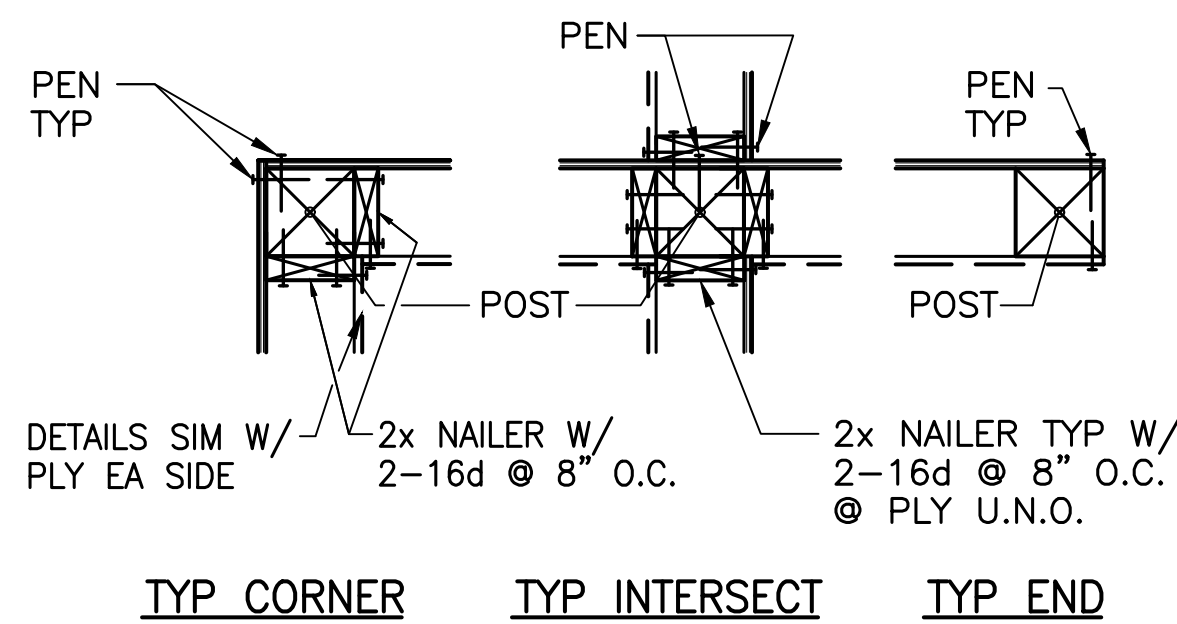


PLAN SYMBOL (1)	FOUNDATION HOLDOWN				FLOOR HOLDOWN		MIN POST SIZE (6)
	HOLDOWN TYPE @ FNDN	HOLDOWN ANCHOR BOLT SIZE	ANCHOR BOLT EMBED DEPTH (4)	CONN TO HOLDOWN POST (2)	HOLDOWN TYPE (5) @ FLOORS	CONN TO HOLDOWN POST (2)	
	HDU5	5/8"Ø	12"	14 SDS 1/4"Ø X 2 1/2" LONG	FTA5	2-3/4"Ø	4x

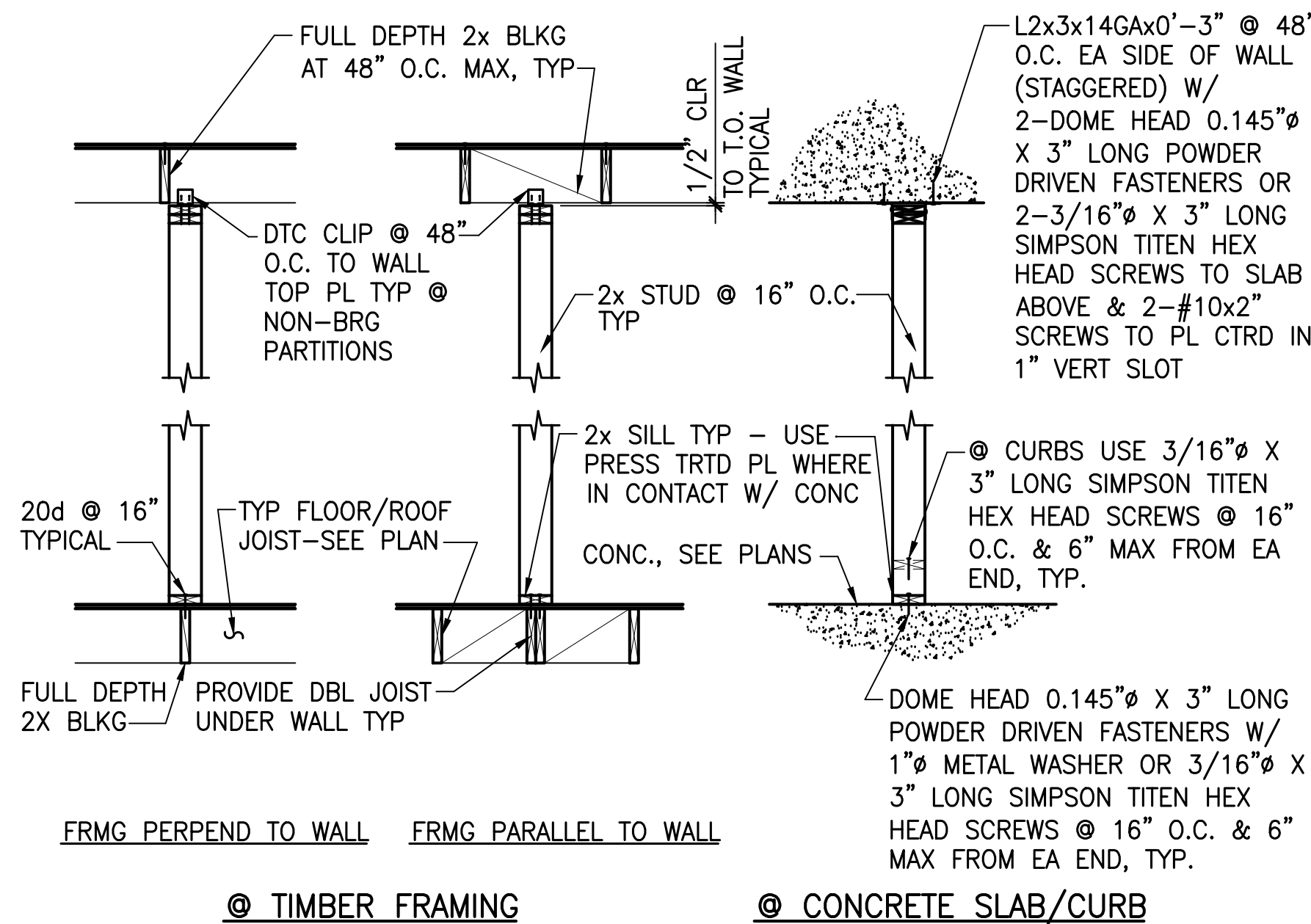
NOTES:

- SEE PLANS FOR LOCATIONS OF HOLDOWNS.
- DO NOT COUNTERSINK HOLDOWN BOLT HEADS INTO POSTS.
- INSTALL ALL HOLDOWNS PER MANUFACTURER'S SPECIFICATIONS.
- BOLTS SHALL BE EMBEDDED BELOW CURBS - DO NOT COUNT CURB HEIGHT FOR EMBEDMENT.
- A PAIR OF HOLDOWNS MAY BE USED IN LIEU OF FTA ANCHORS NOTED. USE SAME SIZE AS NOTED FOR FOUNDATION.
- USE SAME WIDTH POST AS WALL WIDTH - TYPICAL

4 TYPICAL HOLDDOWN DETAIL AND SCHEDULE

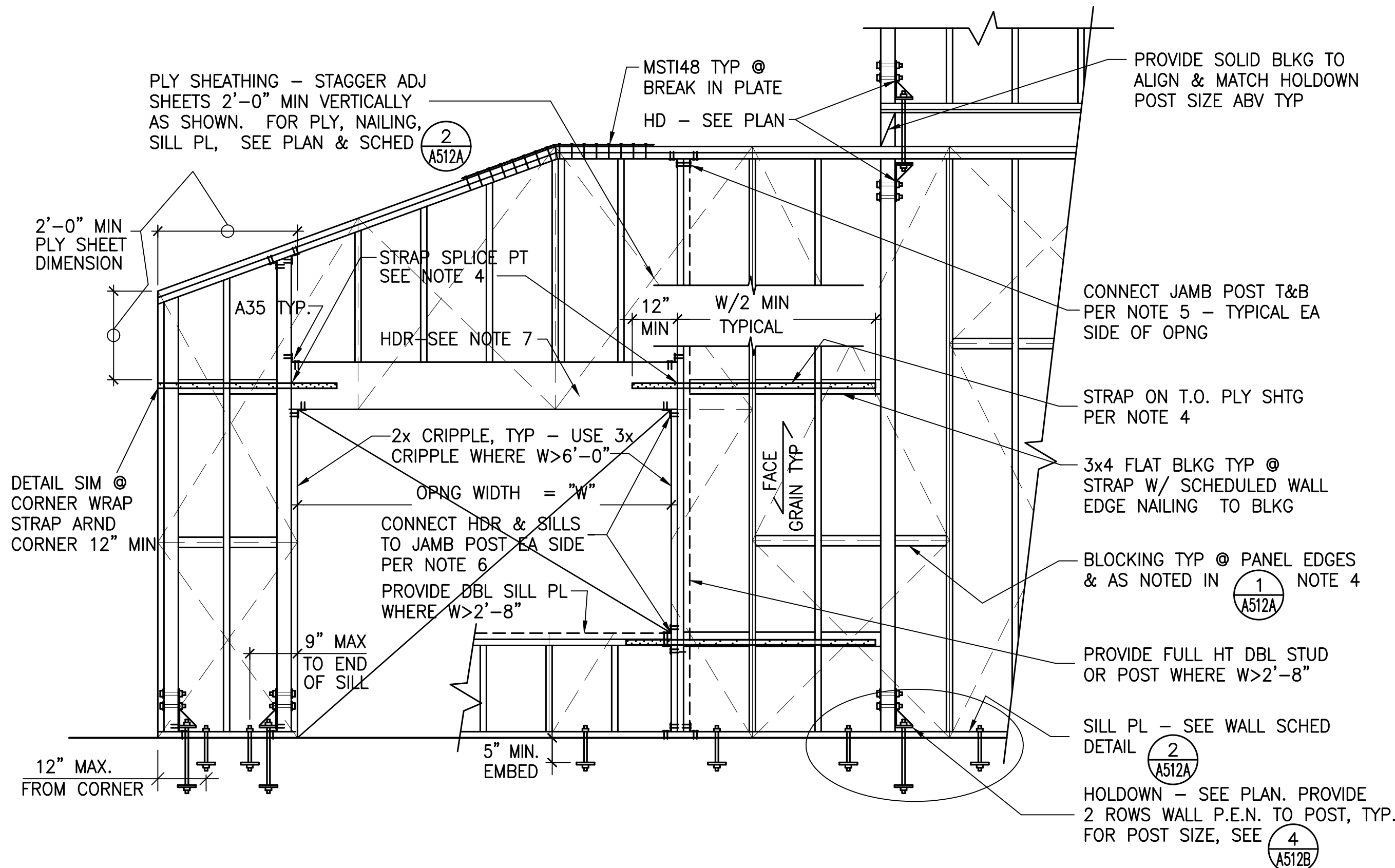


5 TYPICAL WALL INTERSECTIONS

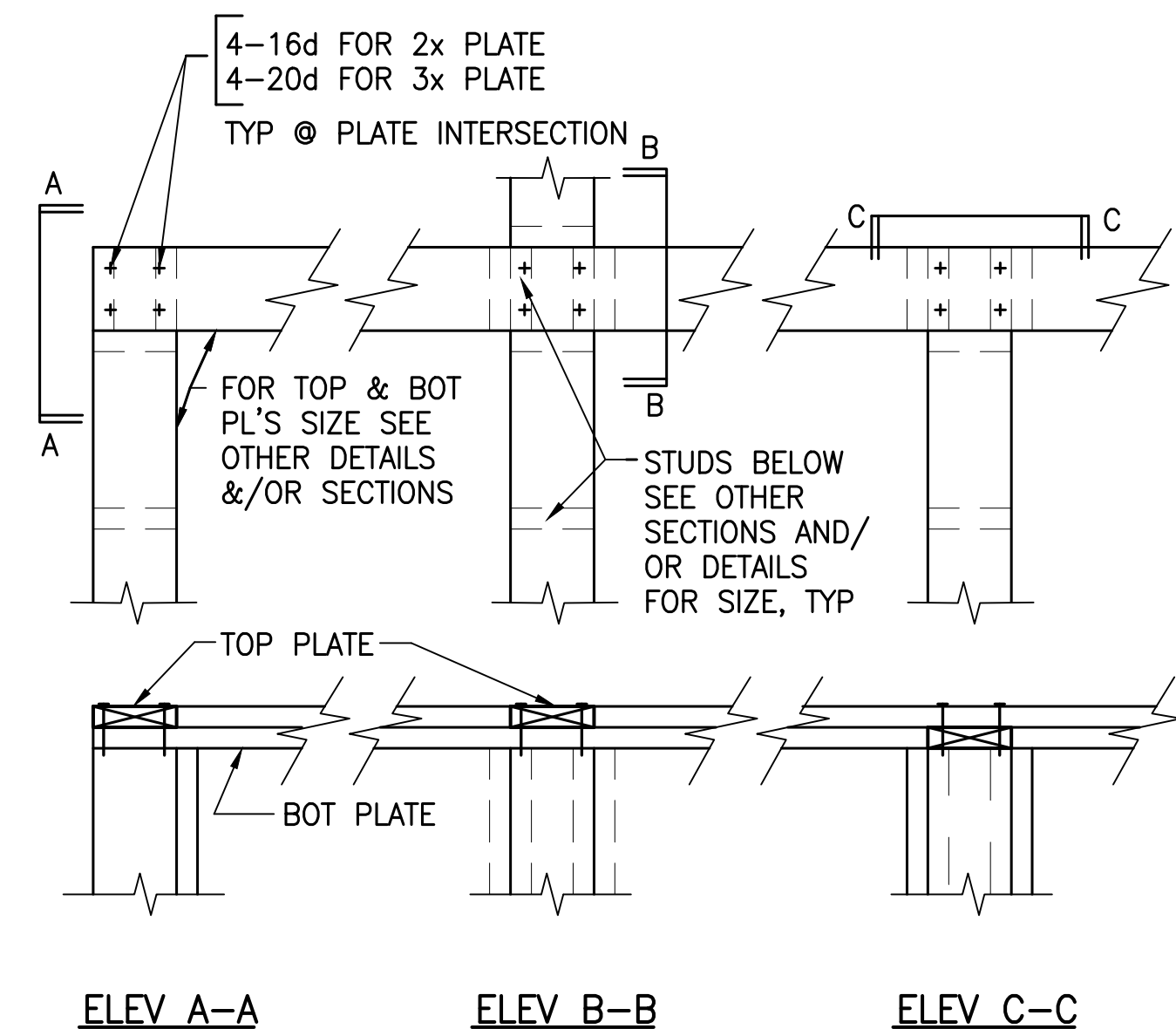


3 TYPICAL DETAIL AT NON-BEARING STUD PARTITIONS

- TYPICAL WALL FRAMING NOTES:
- LOCATE MECH OPENINGS IN NON-SHEAR WALLS WHERE POSSIBLE.
 - MECH OPENINGS IN SHEAR WALLS TO BE LOCATED 1'-6" MIN. FROM HOLD DOWN ANCHOR LOCATIONS.
 - ALL NAILING NOT SHOWN IS PER NAILING SCHEDULE OR AS DETAILED ELSEWHERE.
 - PROVIDE STRAPS @ T&B CORNERS OF ALL WALL OPENINGS PER THE FOLLOWING SCHEDULE:
 - OPNG < 4'-0" WIDE: CS20 STRAP W/ MIN 10-8d EA SIDE OF SPLICE PT
 - OPNG > 4'-0" WIDE: CS16 STRAP W/ MIN 16-8d EA SIDE OF SPLICE PTDISTRIBUTE NAILING EVENLY ALONG BLKG W/ 6-8d MINIMUM TO EA BLOCK FACE. PROVIDE STRAP EA SIDE OF WALL.
 - CONNECT JAMB POSTS T&B AS FOLLOWS:
 - W<4'-0" WIDE: TOEN PER SCHED
 - W<8'-0" WIDE: A23 CLIP T&BSEE DRAWINGS FOR OTHER CONDITIONS
 - CONNECT HDRS & SILLS TO JAMB POSTS EA SIDE AS FOLLOWS:
 - W<4'-0" WIDE: NAIL PER SCHED
 - W<6'-0" WIDE: A35 CLIP 1 SIDE OF POST
 - W<8'-0" WIDE: A35 CLIP EA SIDE OF POSTSEE DRAWINGS FOR OTHER CONDITIONS
 - UNLESS OTHERWISE SHOWN ON PLAN, PROVIDE HEADERS @ T.O. OPNGS AS FOLLOWS:
 - W<4'-0" WIDE: HDR DEPTH = 6" NOM
 - W<6'-0" WIDE: HDR DEPTH = 8" NOM
 - W<8'-0" WIDE: HDR DEPTH = 12" NOMHEADERS TO BE SOLID TIMBERS W/ THICKNESS SAME AS WALL STUDS.



1 TYPICAL SHEAR WALL FRAMING DETAIL (SIM. • NON-BEARING WALLS)



2 TYPICAL INTERSECTION OF TOP PLATES

Revisions:

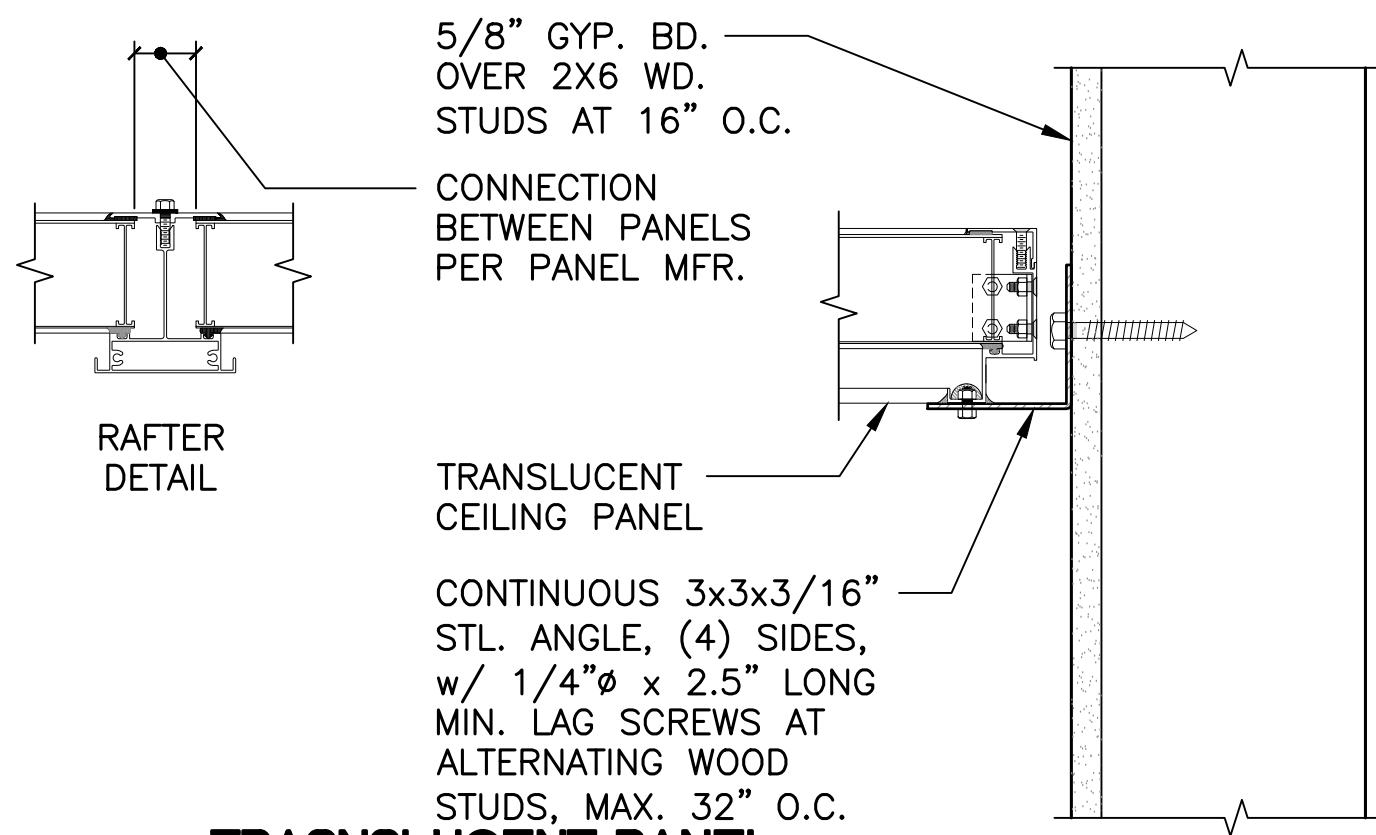
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

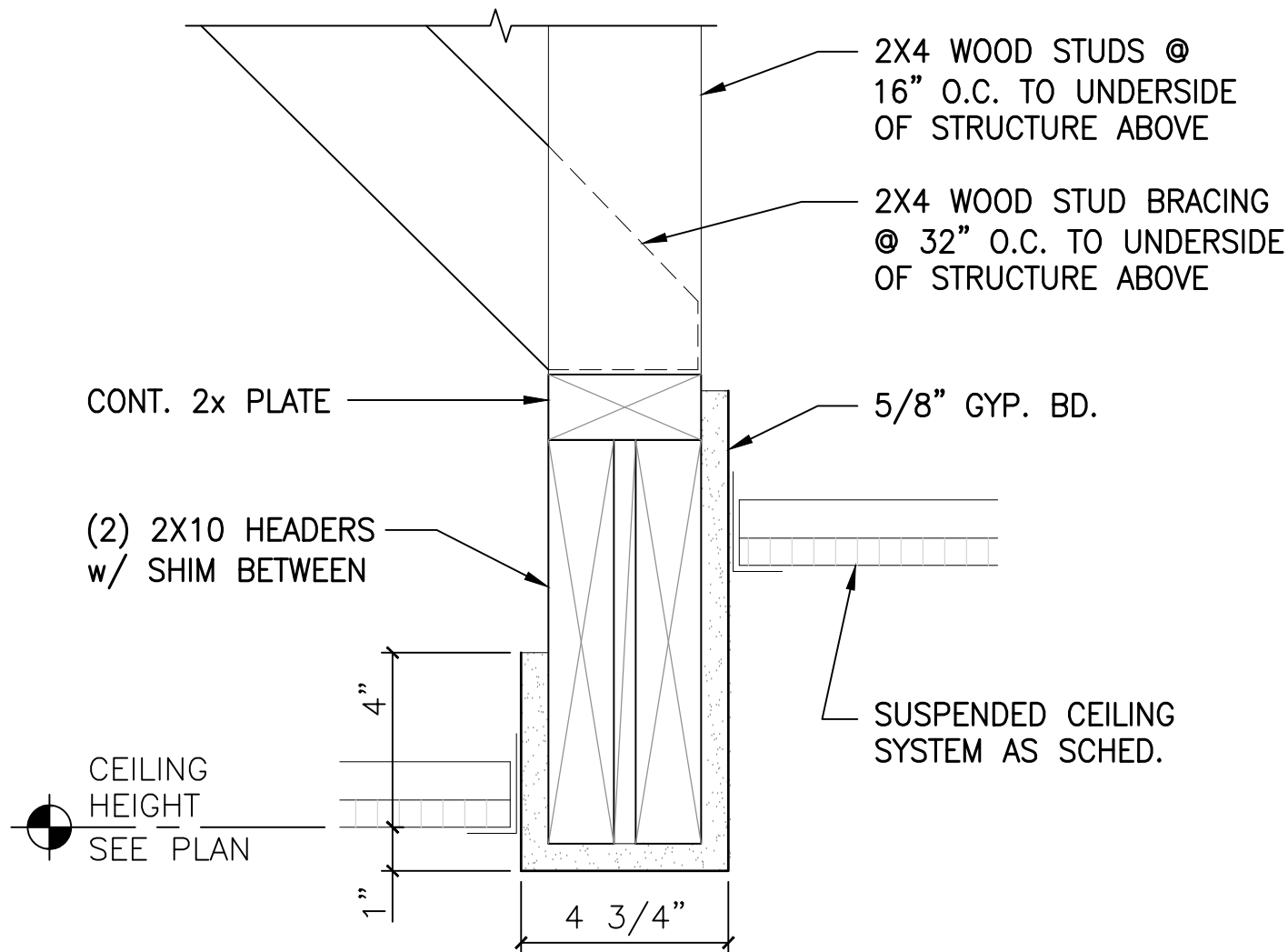
TYPICAL WOOD
FRAMING DETAILS

Sheet Number:

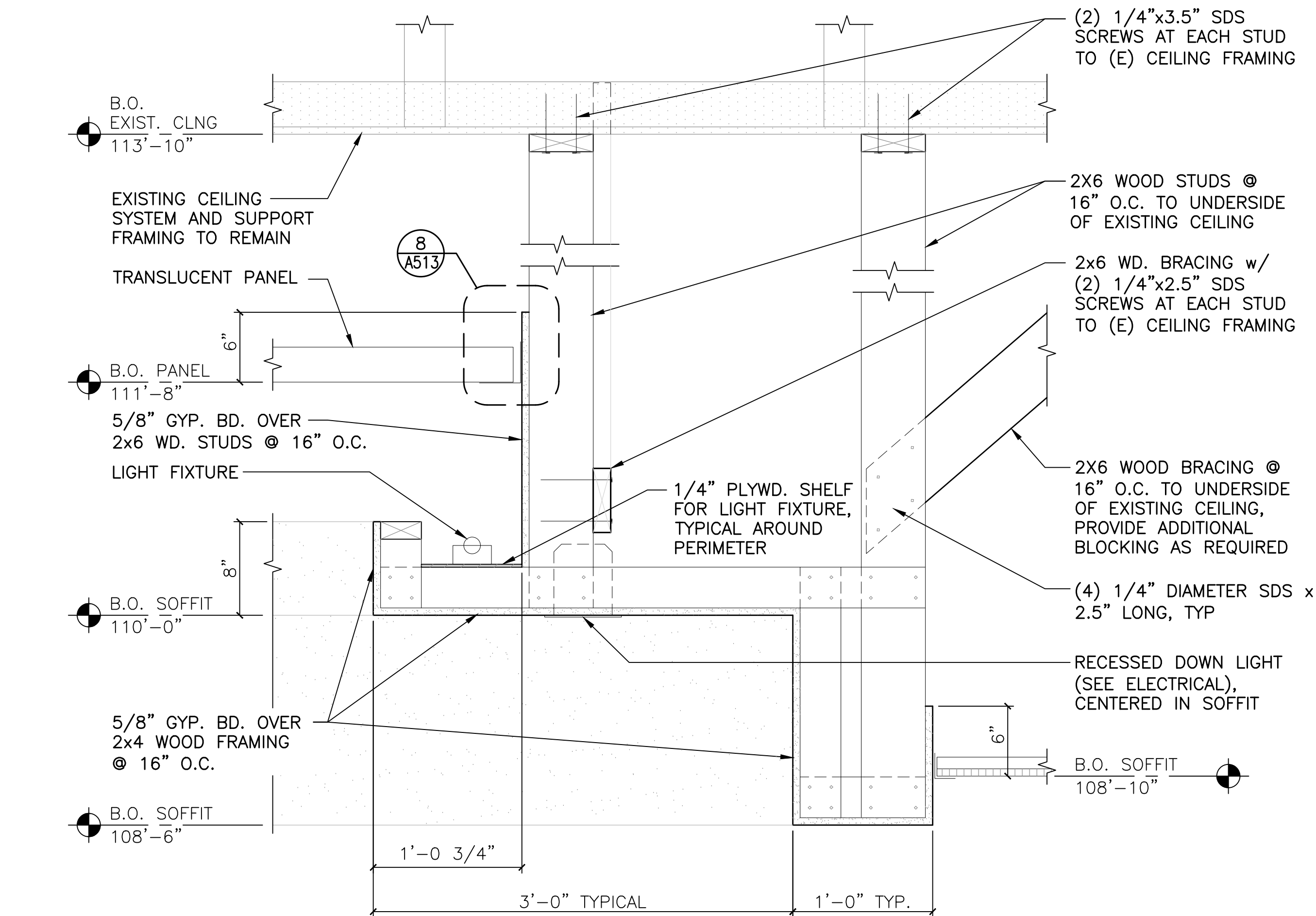
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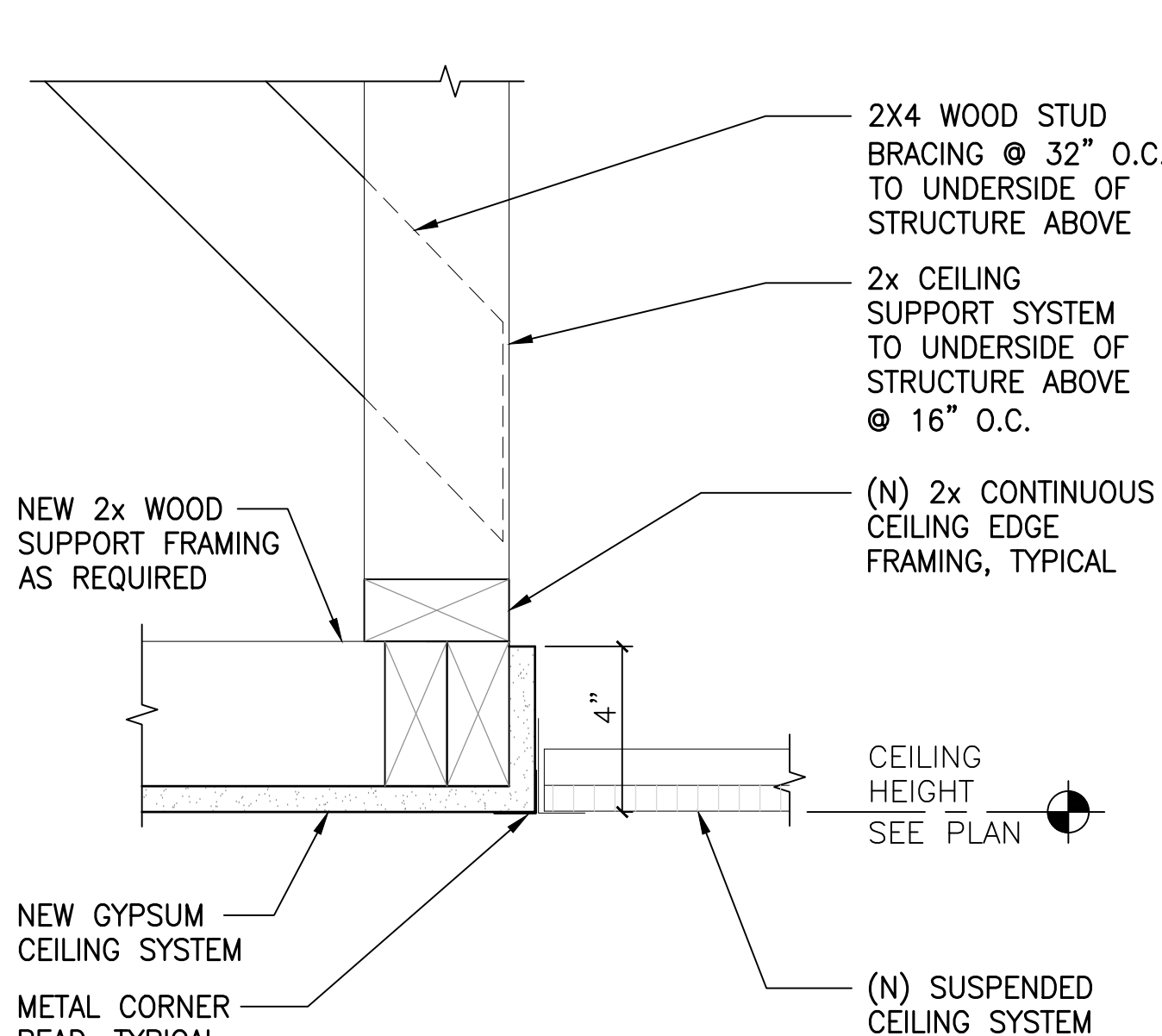
8 TRANSLUCENT PANEL CEILING EDGE SUPPORT DETAIL
3" = 1'-0"



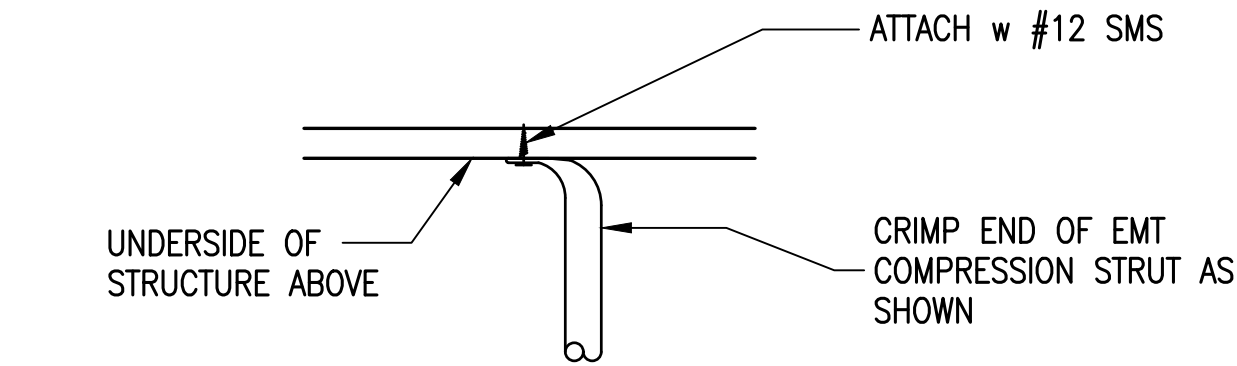
9 GYPSUM BOARD BULKHEAD
NOT TO SCALE AT HALLWAY 200



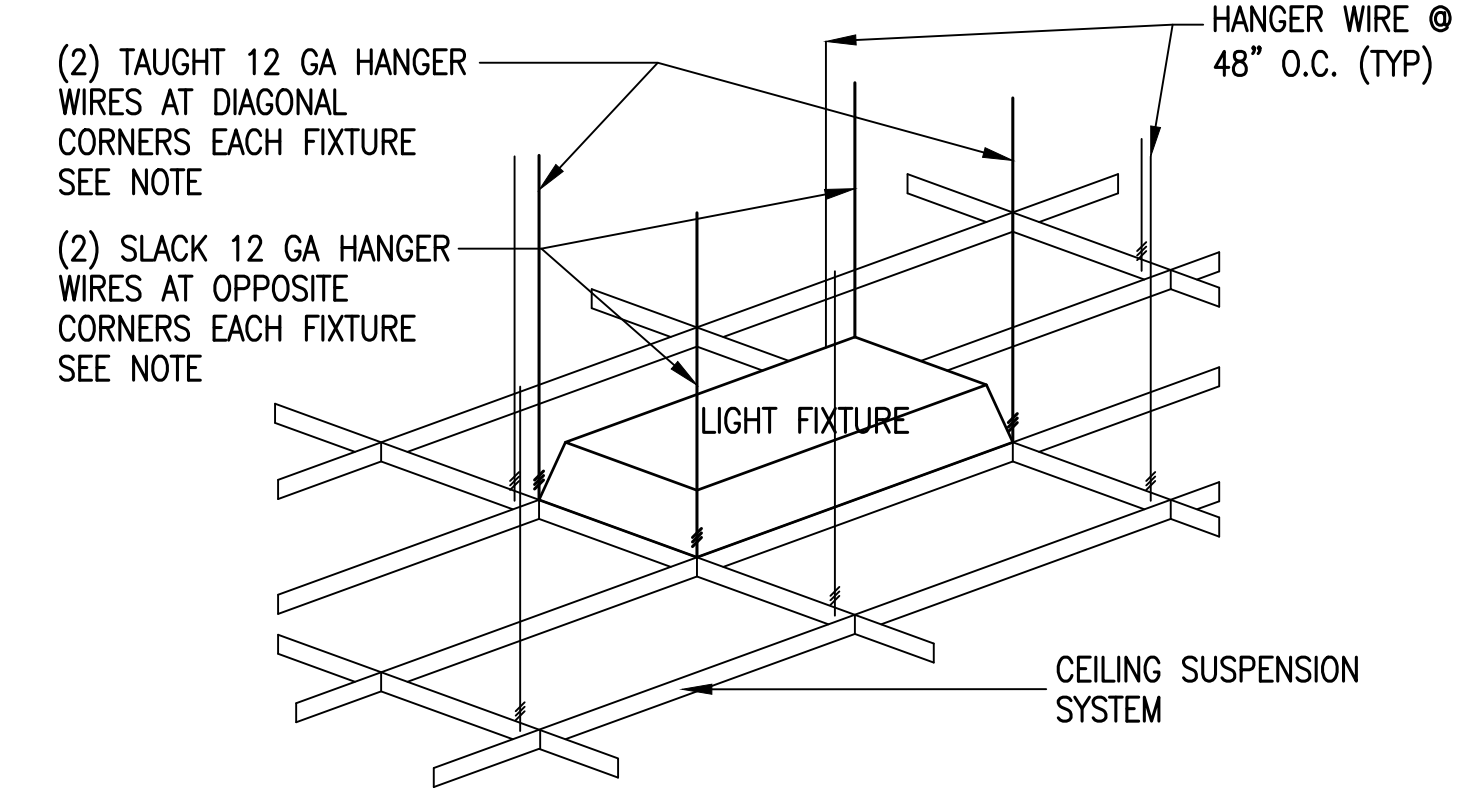
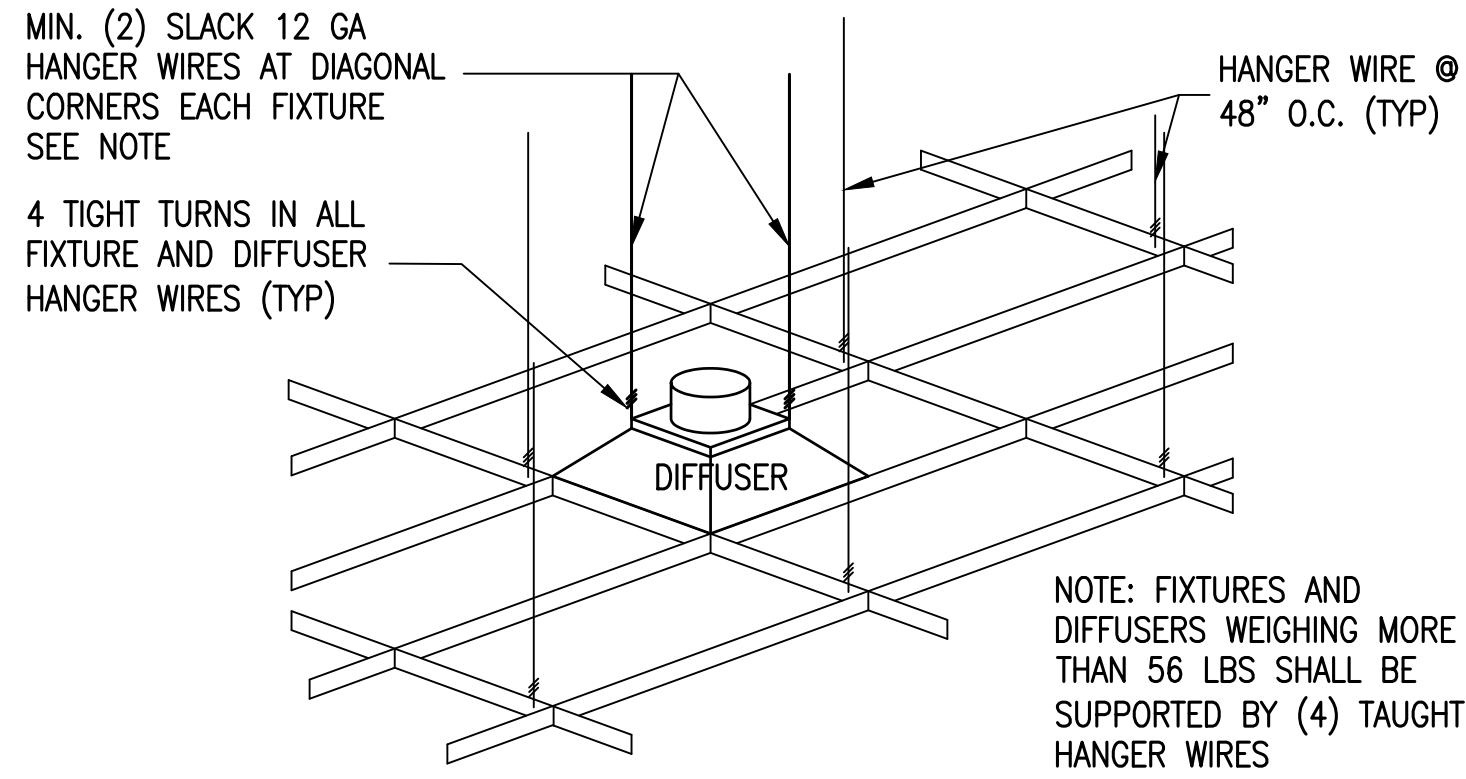
10 GYPSUM BOARD SOFFIT AT COVE LIGHTING
1 1/2" = 1'-0"



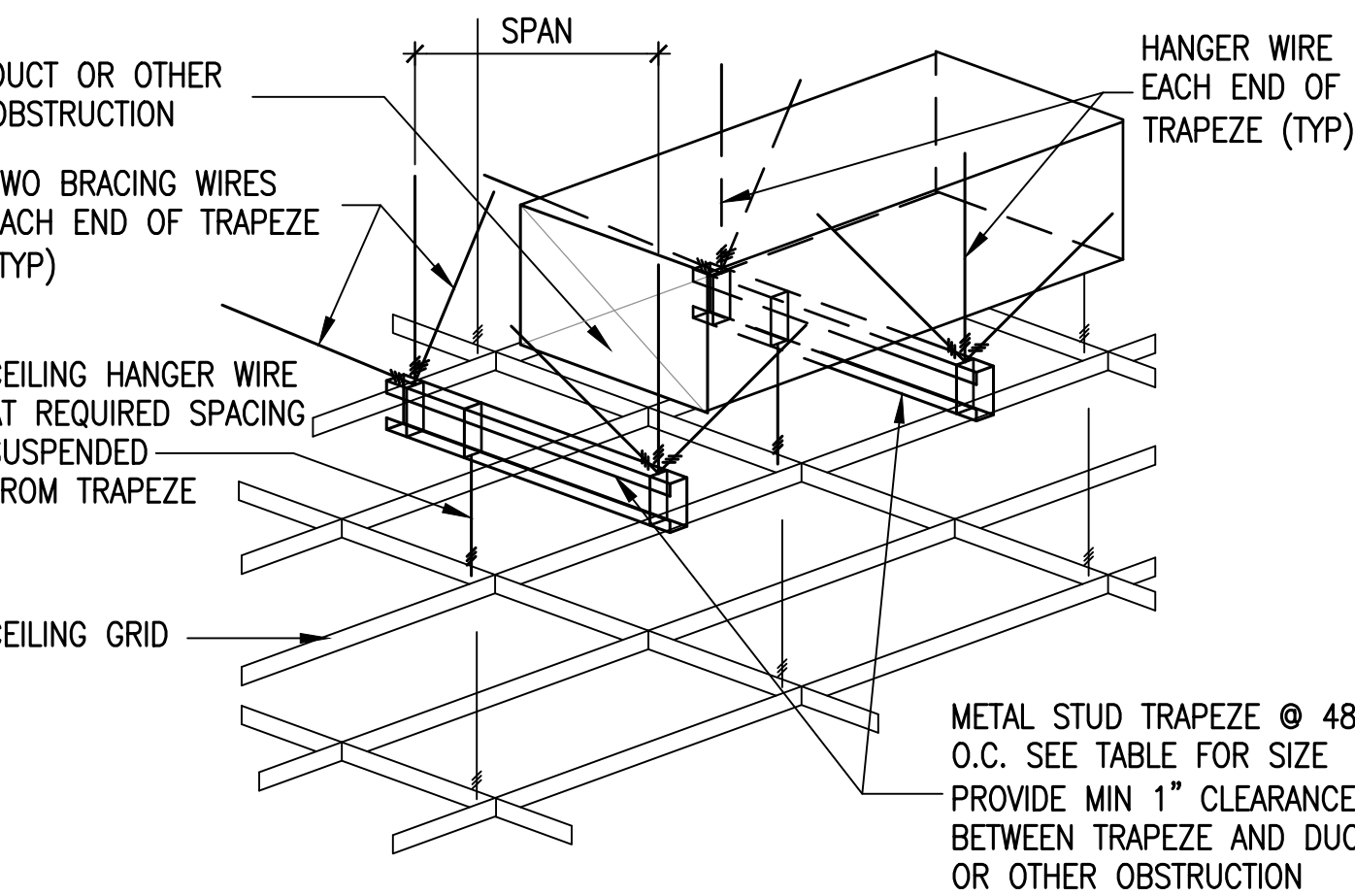
6 CEILING EDGE DETAIL



7 TYPICAL COMPRESSION STRUT ATTACHMENT TO STRUCTURE
NOT TO SCALE

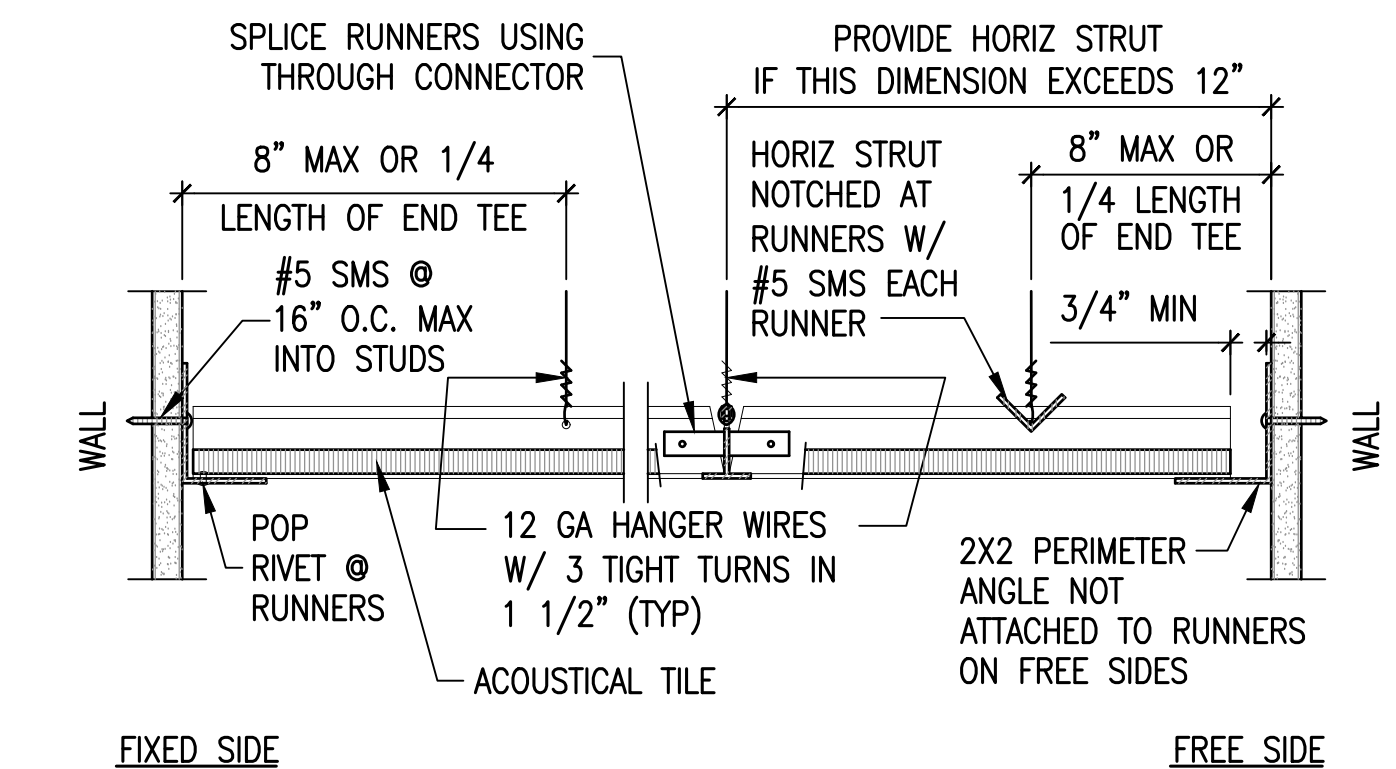


3 RECESSED FIXTURE AND DIFFUSER AT ACT
NOT TO SCALE



TRAPEZE FRAMING SIZE	
MAXIMUM SPAN	TRAPEZE SIZE
UP TO 4'-0"	2-1/2" x 1-5/8" x 16 GA MTL STUD
UP TO 8'-0"	4" x 1-5/8" x 16 GA MTL STUD
UP TO 12'-0"	6" x 1-5/8" x 16 GA MTL STUD

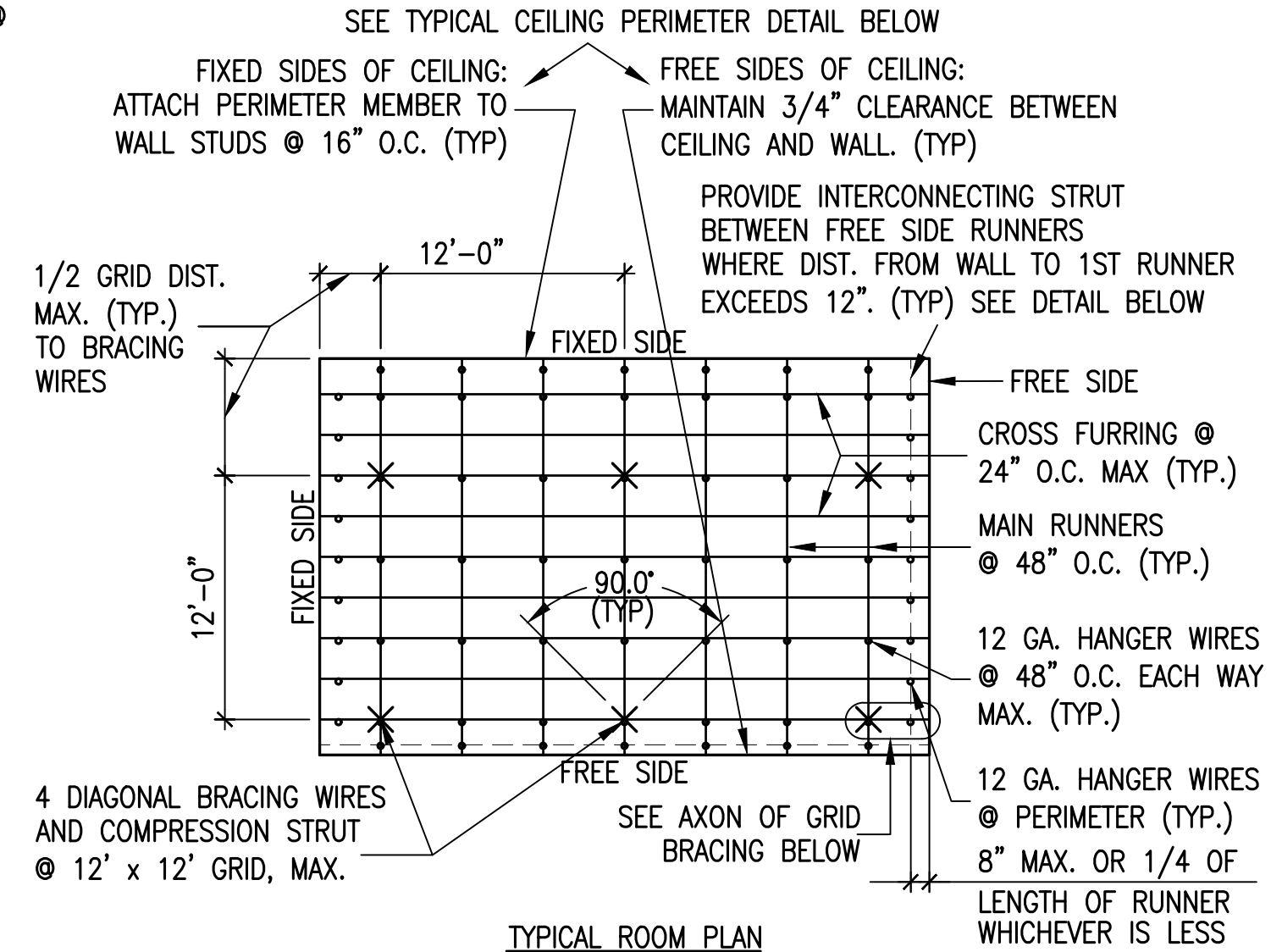
4 TRAPEZE FRAMING AT SUSPENDED CEILING
NOT TO SCALE



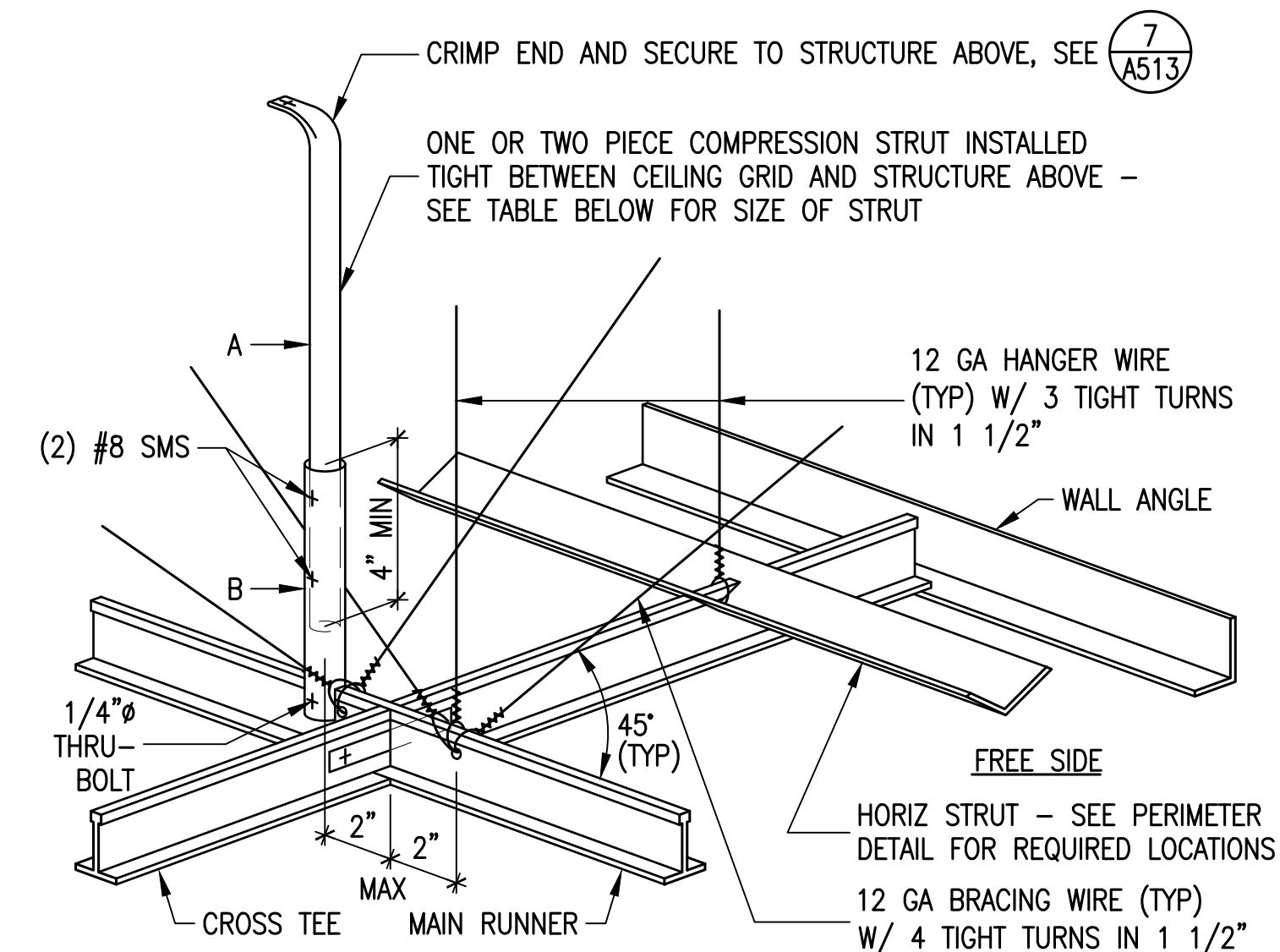
5 TYPICAL CEILING PERIMETER DETAIL ACOUSTICAL TILE CEILING
NOT TO SCALE

SUSPENDED ACOUSTICAL TILE CEILING GENERAL NOTES:

- CEILINGS SHALL BE INSTALLED WITH TWO SIDES FIXED TO WALL AND TWO SIDES FREE FROM WALL AS DETAILED BELOW.
- SUSPEND CEILING FROM STRUCTURE ABOVE USING WIRES AND COMPRESSION STRUTS PLACED IN LOCATIONS SHOWN IN SUSPENSION WIRE LOCATION DIAGRAM BELOW. PROVIDE ADDITIONAL HANGER AND BRACING WIRES AND COMPRESSION STRUT AS REQUIRED OR DETAILED AT ALL CEILING BREAKS, SOFFITS OR DISCONTINUOUS AREAS. HANGER WIRES THAT ARE MORE THAN 1 IN 6 OUT OF PLUMB SHALL BE PROVIDED WITH COUNTERSLOPING WIRES. SEPARATE ALL HANGER AND BRACING WIRES FROM UNBRACED DUCTS, CONDUITS, PIPES, ETC., BY AT LEAST 6 INCHES.
- PROVIDE SUPPLEMENTAL FRAMING THAT IS SUPPORTED ON MAIN RUNNERS FOR ANY LIGHT FIXTURE OR DIFFUSER NOT SUPPORTED DIRECTLY ON THE MAIN RUNNER.
- FOR HANGER AND BRACING WIRE ATTACHMENT TO STRUCTURE ABOVE SEE DETAIL 8/A513.



1 SUSPENSION WIRE LOCATION DIAGRAM ACOUSTICAL TILE CEILING
NOT TO SCALE



COMPRESSION STRUT SIZE	
MAXIMUM LENGTH	STRUT SIZE
UP TO 4'-0"	3/4" O.D. EMT X 0.107" WALL THICKNESS
UP TO 6'-0"	MEMBER (A) 1" O.D. EMT X 0.126" WALL THICKNESS MEMBER (B) 1 1/4" O.D. EMT X 0.133" WALL THICKNESS
UP TO 8'-0"	MEMBER (A) 1 1/4" O.D. EMT X 0.133" WALL THICKNESS MEMBER (B) 1 1/2" O.D. EMT X 0.138" WALL THICKNESS

2 AXONOMETRIC OF GRID BRACING ACOUSTICAL TILE CEILING
NOT TO SCALE

Revisions:

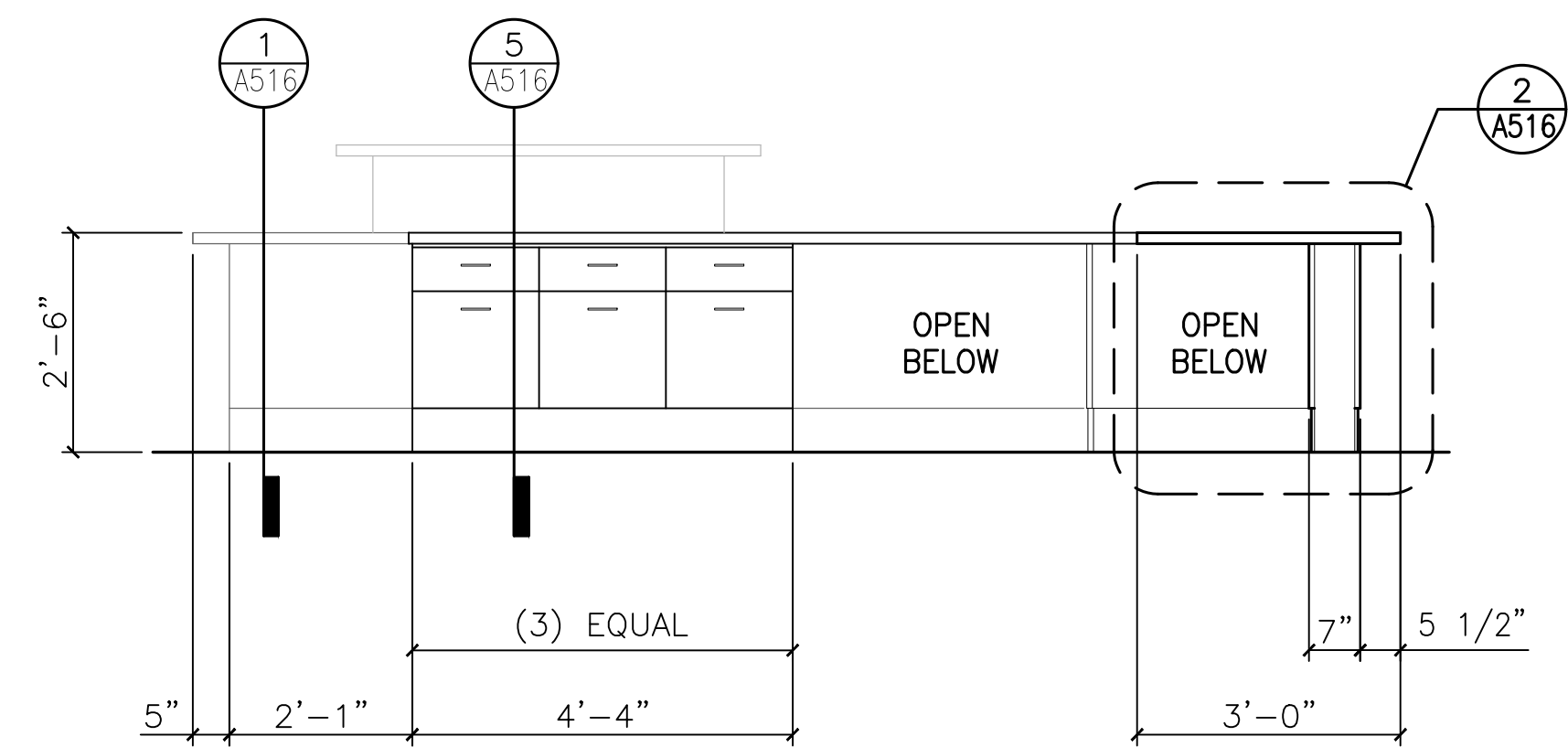
Client Project Number: 000
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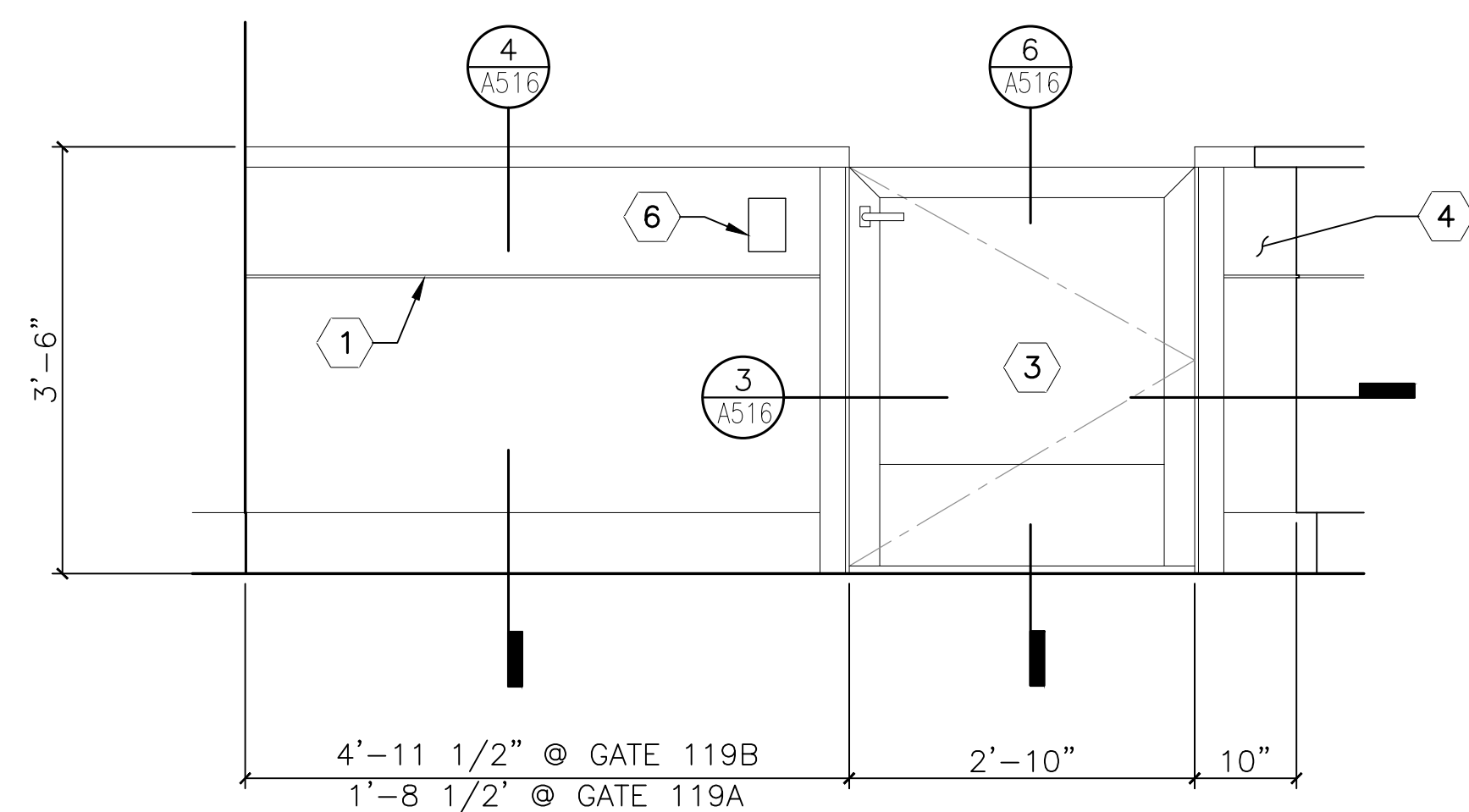
TYPICAL CEILING DETAILS

Sheet Number:

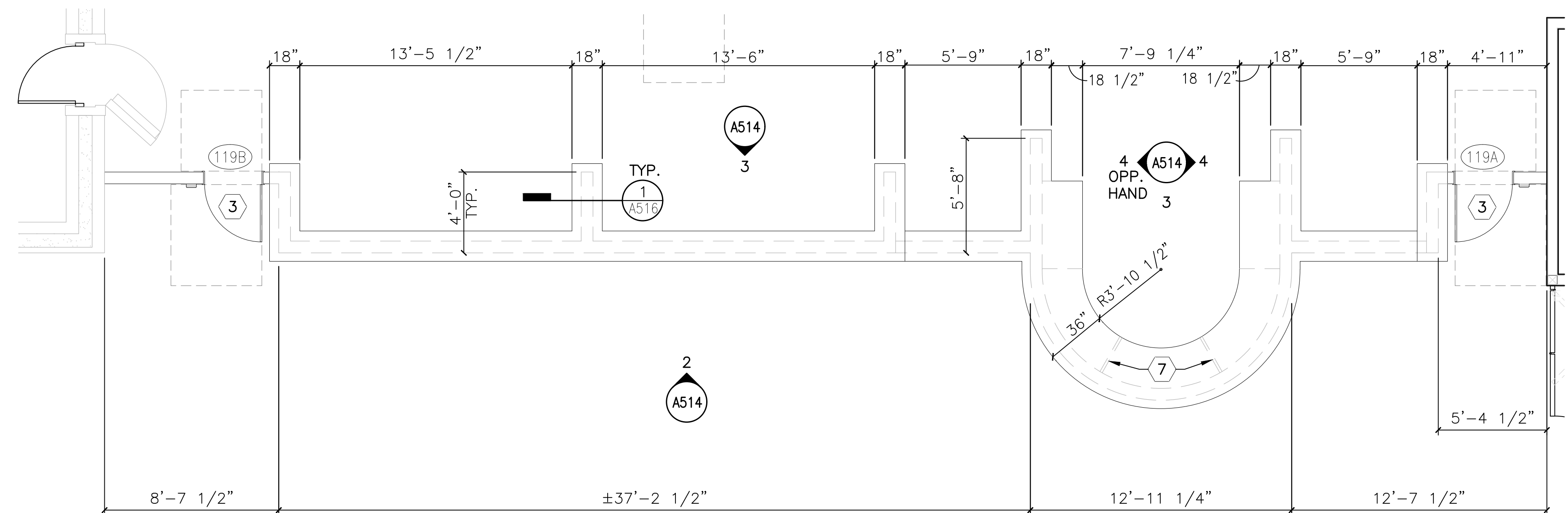
A513



4 MILLWORK COUNTER ELEVATION
1/2" = 1'-0"

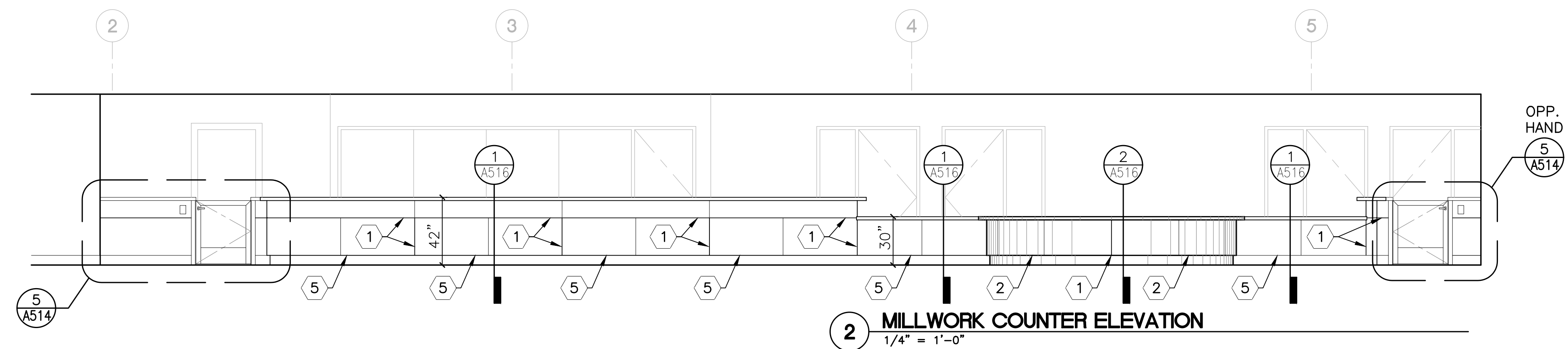


5 MILLWORK GATE ELEVATION
3/4" = 1'-0"

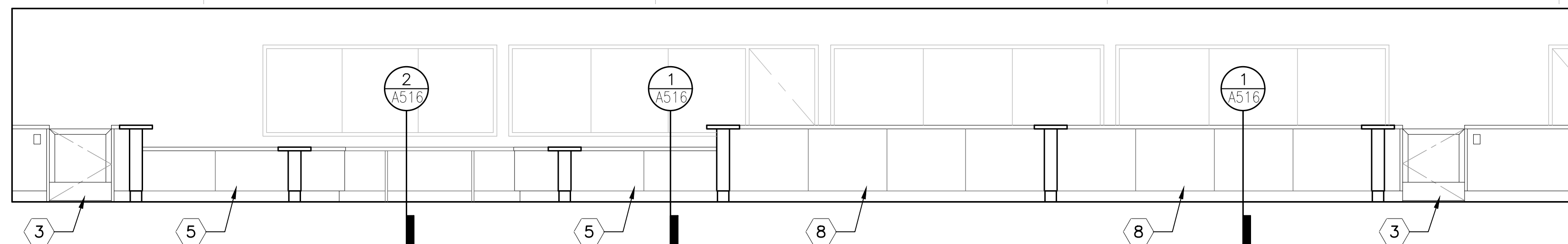


PLAN
NORTH

 **1** **ENLARGED MILLWORK COUNTER PLAN**
1/4" = 1'-0"



2 MILLWORK COUNTER ELEVATION
1/4" = 1'-0"



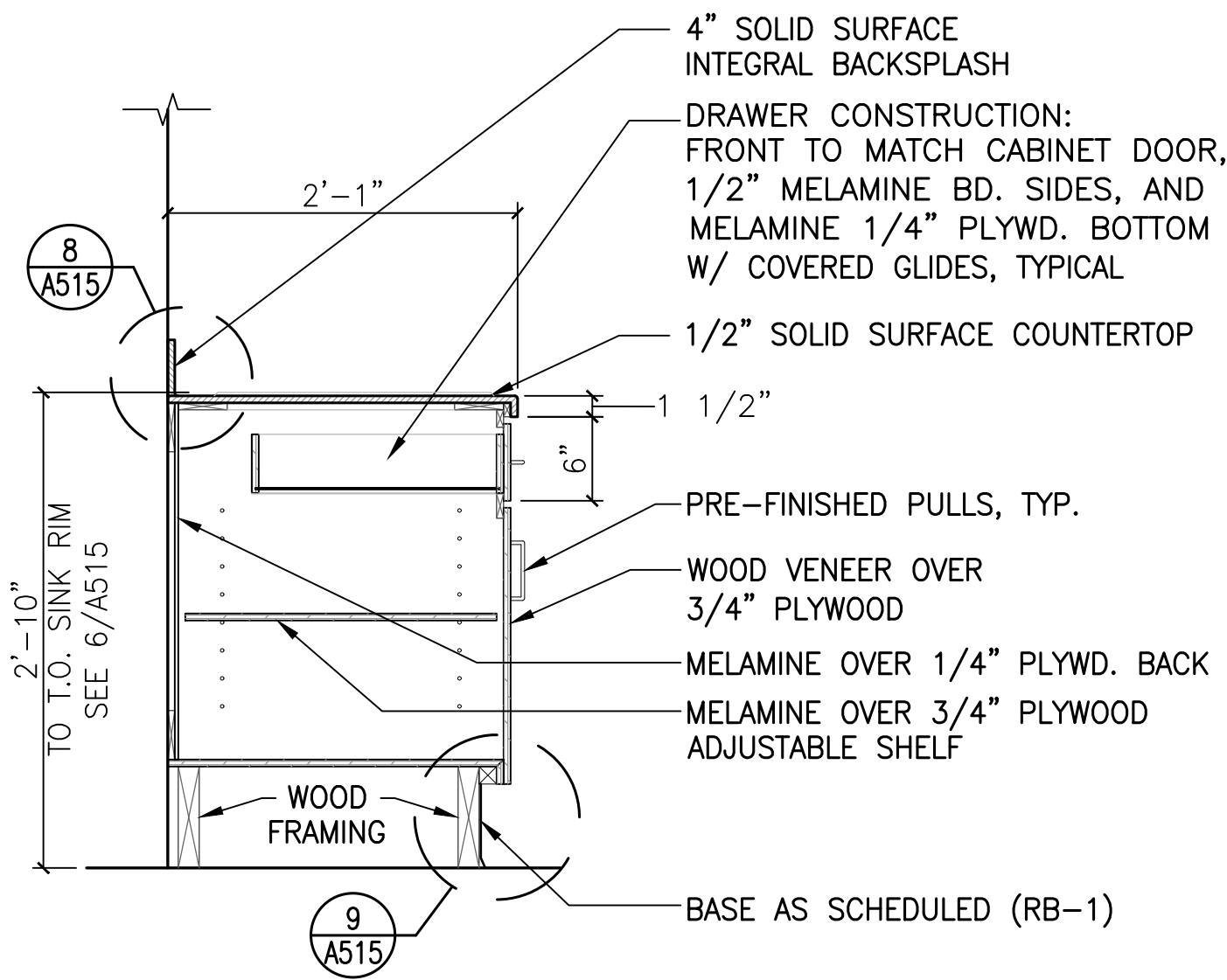
3 MILLWORK COUNTER ELEVATION

KEYED NOTES:

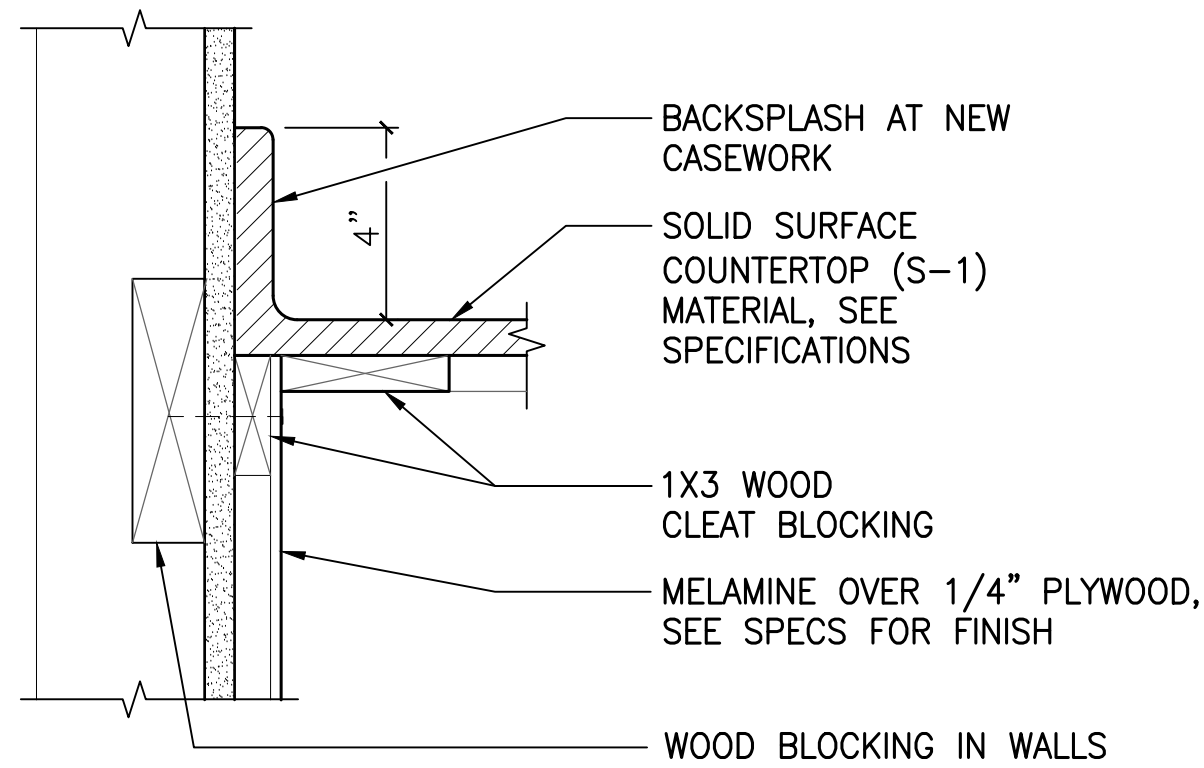
- ①- 1/4" REVEAL IN PANEL
- ②- (3) EQUAL PANELS (BUTT JOINT) FROM CENTER REVEAL
- ③- 34"w. x 40"h. WOOD VENEER DOOR (ST-1) WITH HEAVY DUTY SPRING HINGES, SEE HARDWARE SPECIFICATIONS
- ④- WOOD VENEER OVER (1) LAYER OF 3/4" PLYWOOD EACH SIDE OF 2x6 WOOD STUDS
- ⑤- (2) EQUAL PANELS (BUTT JOINT)
- ⑥- CARD READER, COORDINATE w/ ELECTRICAL DRAWINGS
- ⑦- COUNTERTOP SUPPORT DIVIDERS, (3) EQUAL SPACES: WOOD VENEER OVER (2) LAYERS OF 3/4" PLYWOOD, ATTACH END OF SUPPORT DIVIDERS TO FLOOR w/ CLIP ANGLES, SEE DETAIL 2/A516
- ⑧- (4) EQUAL PANELS (BUTT JOINT)

GENERAL NOTES:

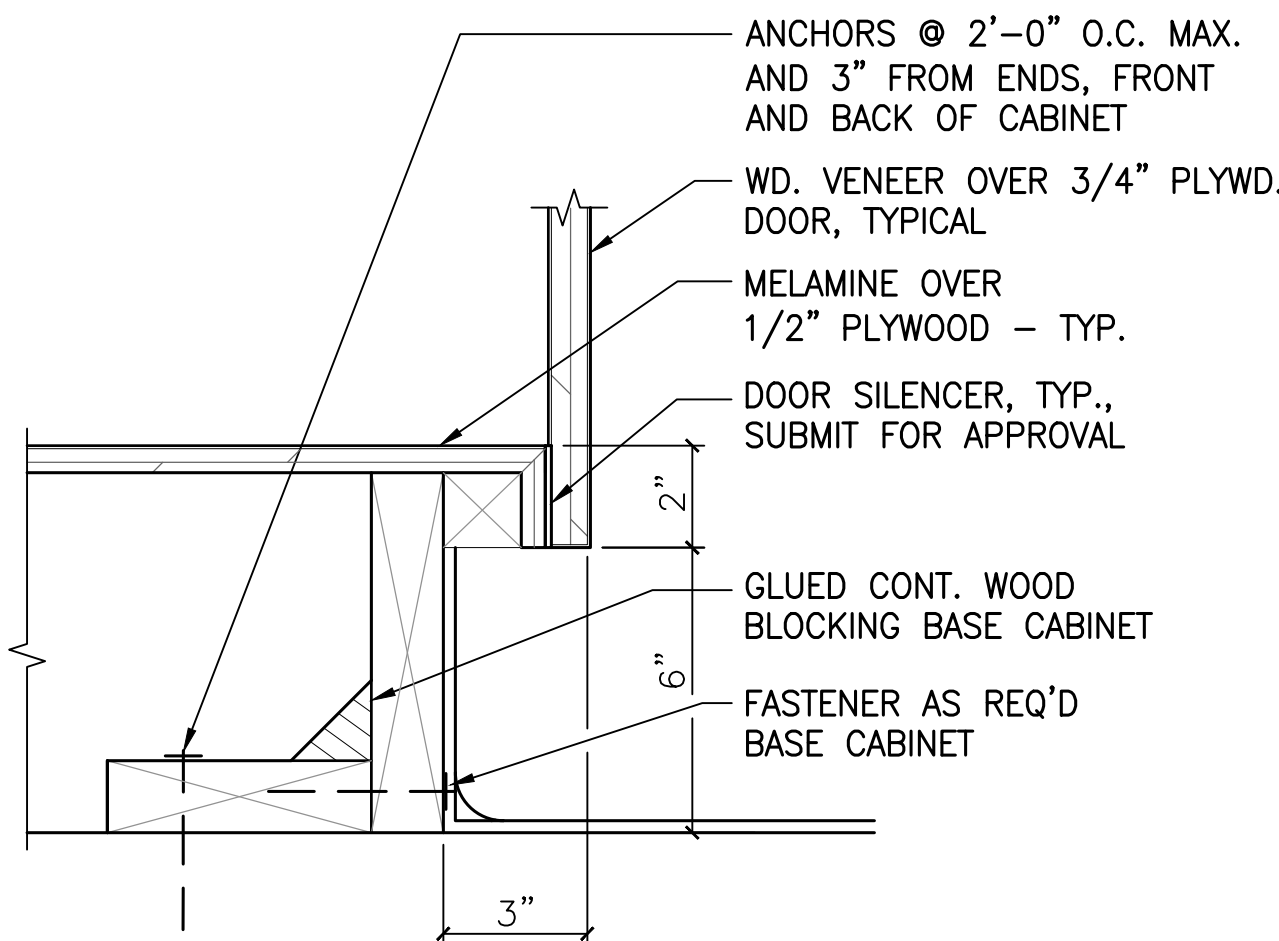
1. SEE SPECIFICATION SECTION 09 06 00 SCHEDULE FOR FINISHES FOR ALL FINISH DESIGNATIONS.
2. HALF HEIGHT DOOR AND CASEWORK WITH WOOD VENEER TO RECEIVE STAIN (ST-1) FINISH.
3. ALL EXPOSED WOOD SURFACES TO BE WOOD VENEER WITH STAIN (ST-1).
4. PROVIDE MITERED EDGES AT COUNTER WALL CORNERS, TYPICAL AT OUTSIDE AND INSIDE CORNERS.
5. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CASEWORK PRODUCTION AND INSTALLATION.



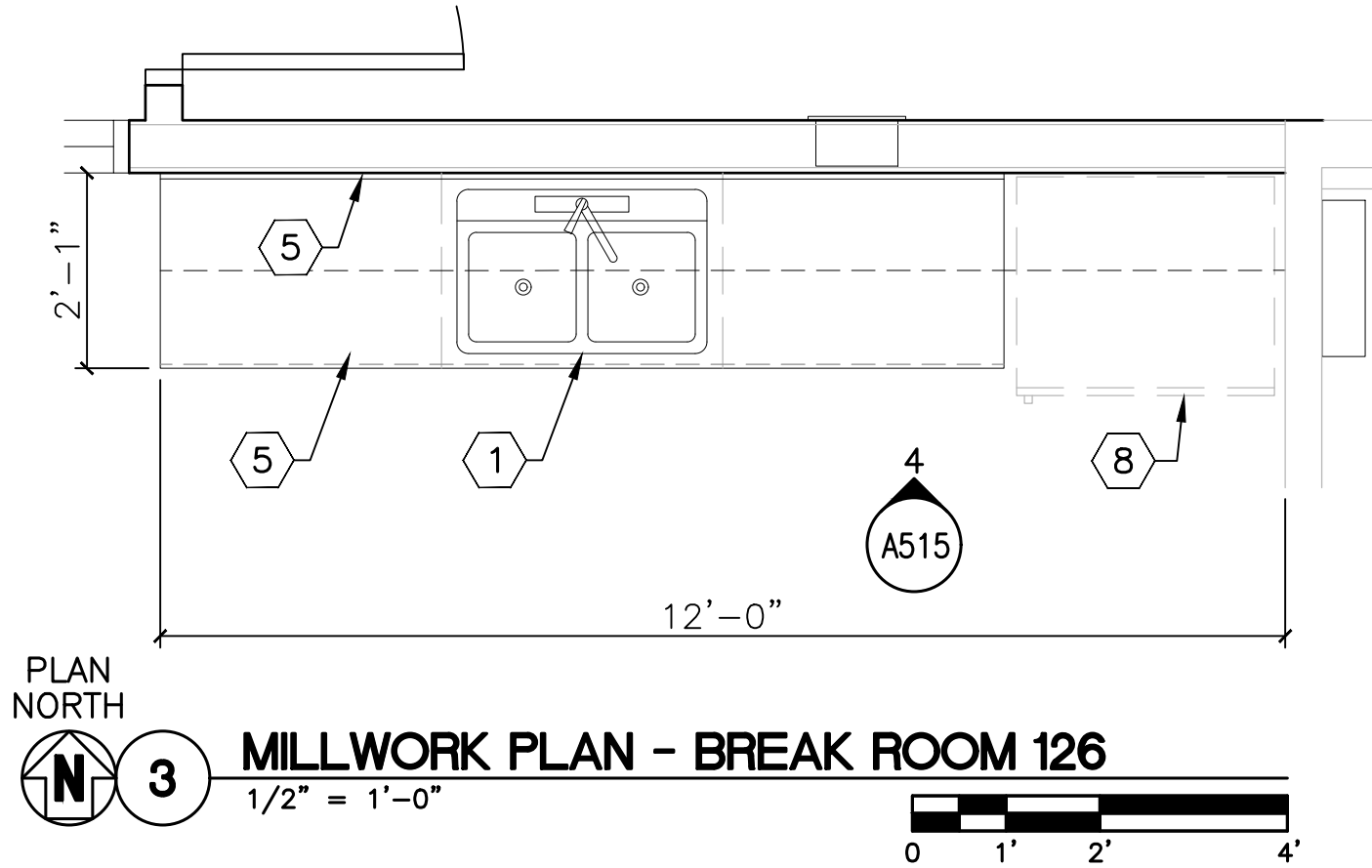
7 BASE CABINET W/ DRAWER AND SHELF
NOT TO SCALE



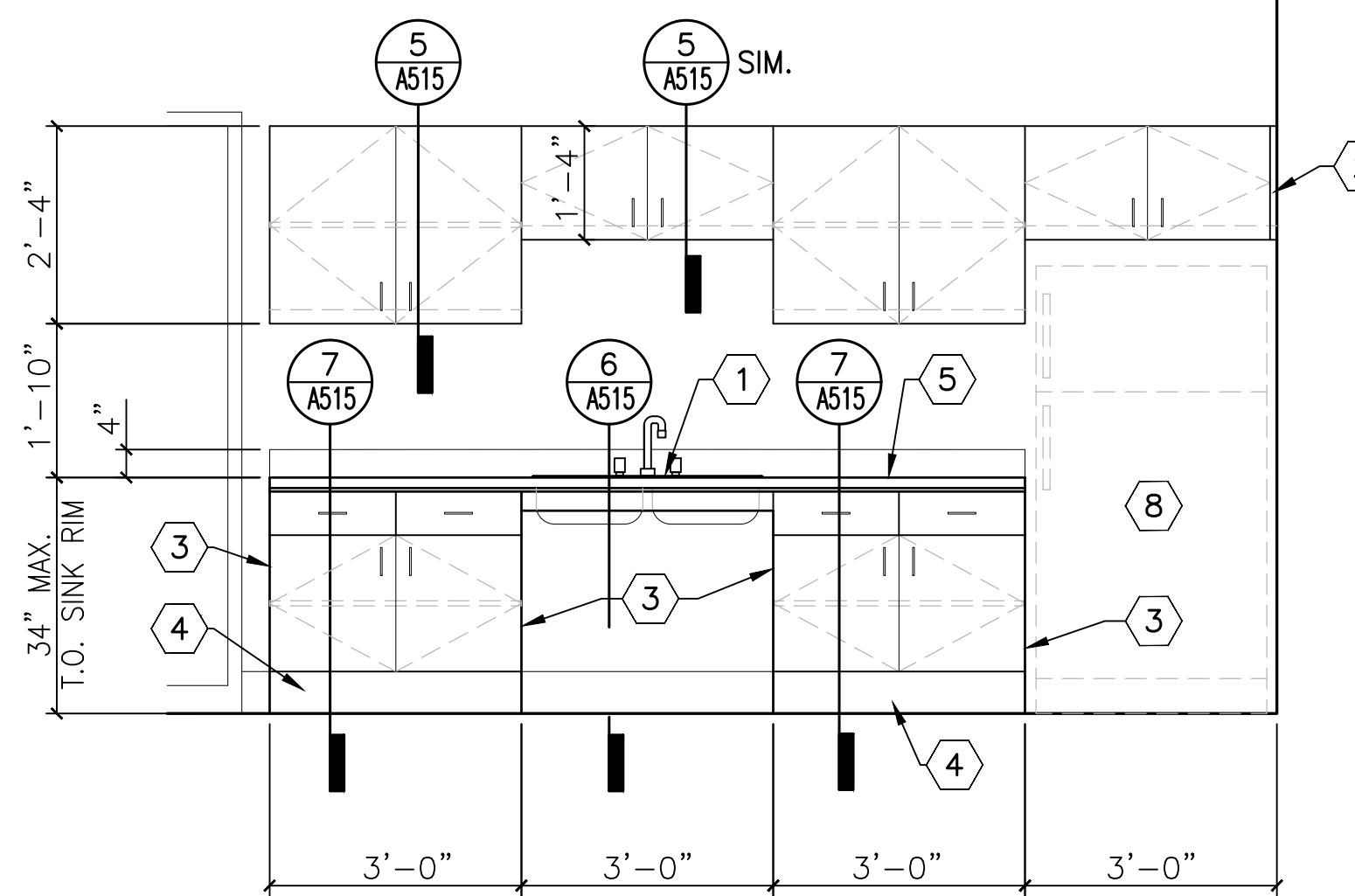
8 BACK OF COUNTER ANCHORAGE
NOT TO SCALE



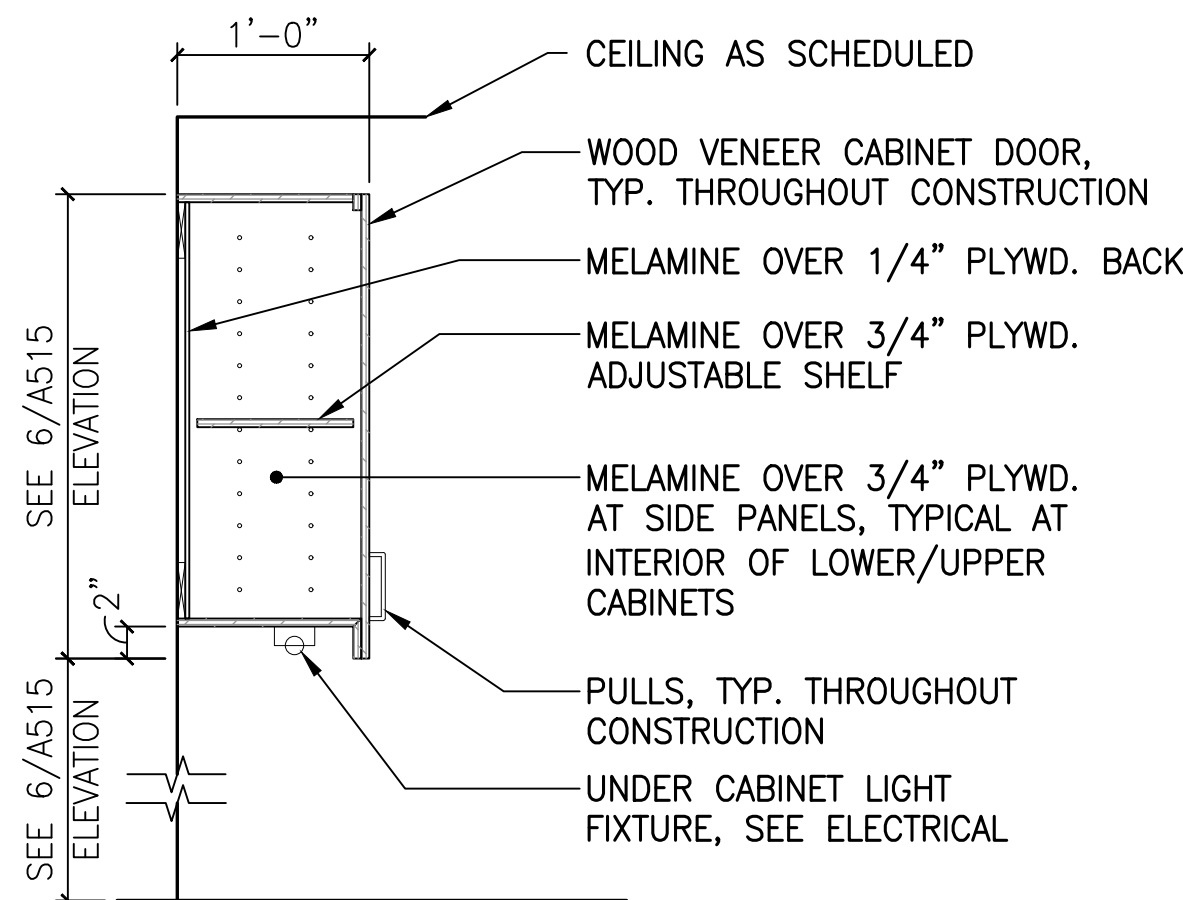
9 BASE CABINET ANCHORAGE
NOT TO SCALE



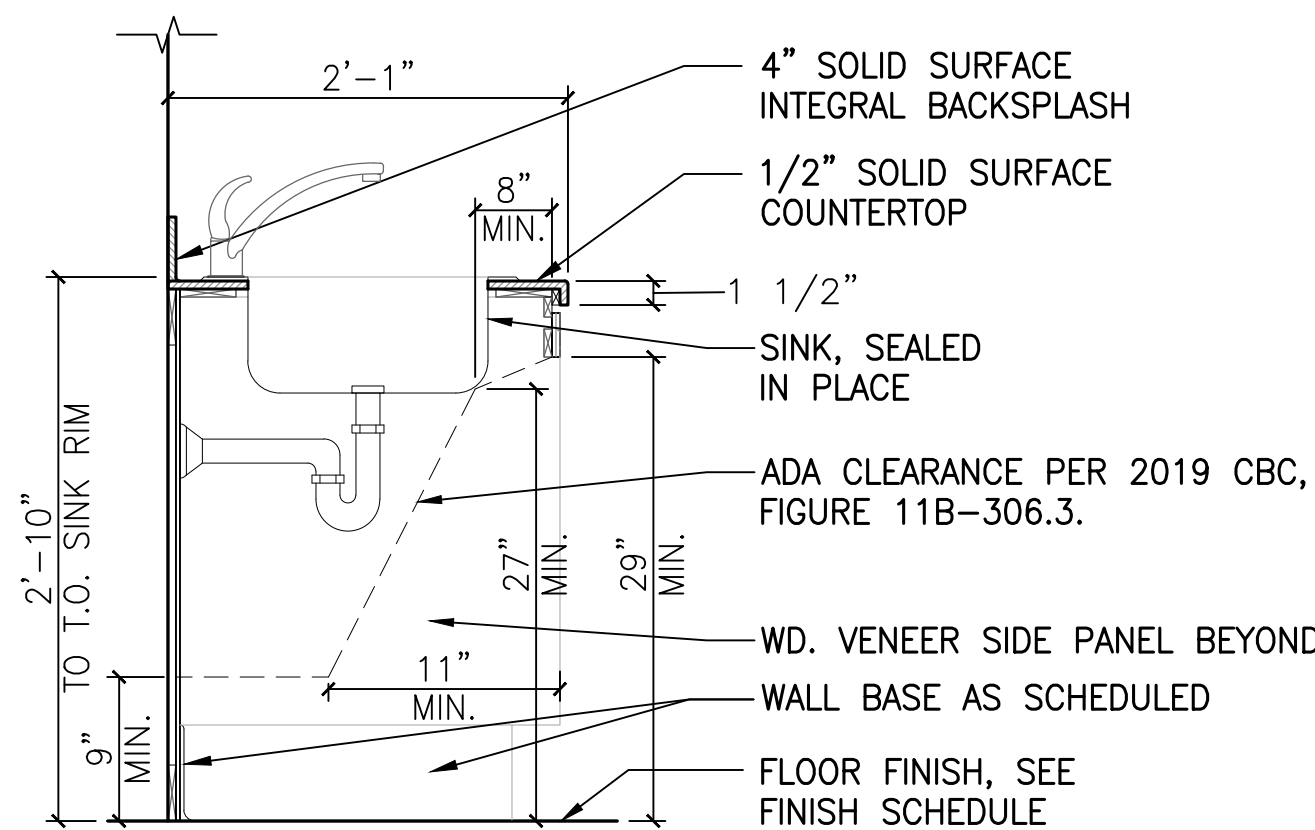
3 MILLWORK PLAN - BREAK ROOM 126
1/2" = 1'-0"



4 MILLWORK ELEVATION - BREAK ROOM 126
1/2" = 1'-0"



5 CABINETRY SECTION - UPPERS
1" = 1'-0"



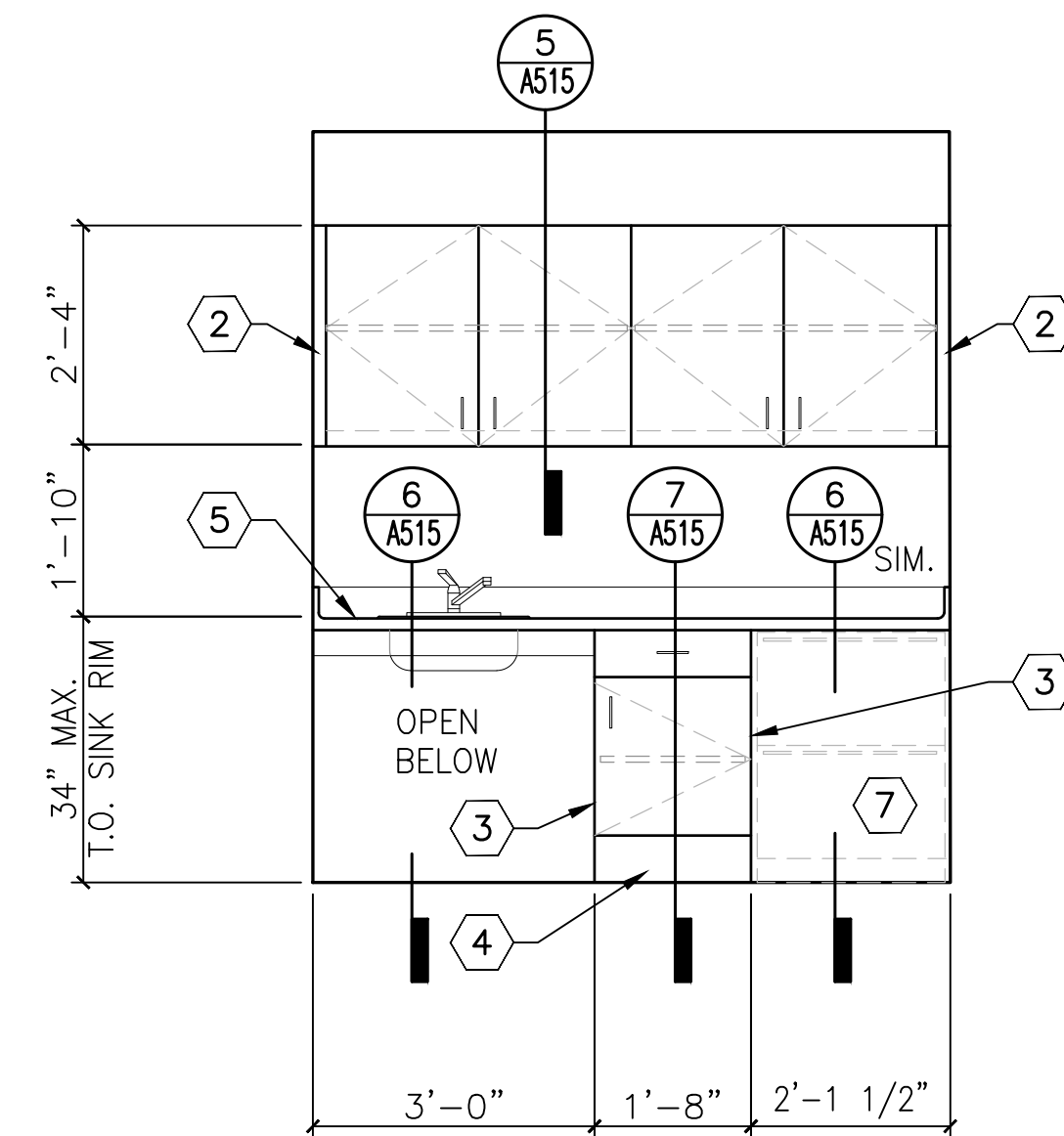
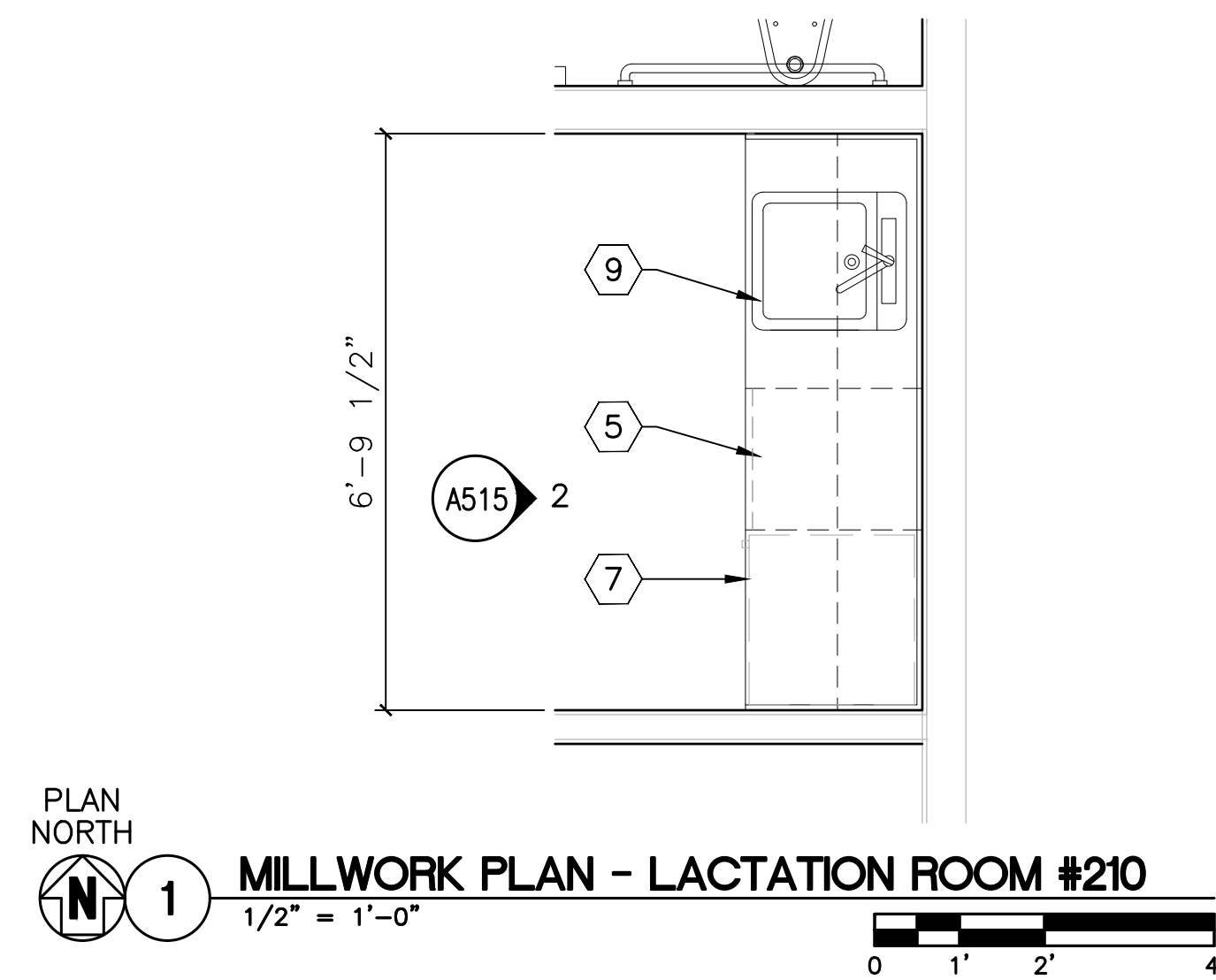
6 COUNTERTOP W/ SINK
NOT TO SCALE

GENERAL NOTES:

- SEE SPECIFICATION SECTION 09.06.00 SCHEDULE FOR FINISHES FOR ALL FINISH DESIGNATIONS.
- CASEWORK WITH WOOD VENEER TO RECEIVE STAIN (ST-1) FINISH.

KEYED NOTES:

- STAINLESS STEEL DOUBLE BOWL SINK WITH ACCESSIBLE CONNECTION, SEE PLUMBING DRAWINGS
- FILLER PANEL AT END OF UPPER CABINET
- WOOD VENEER OVER PLYWOOD END PANEL
- 6" RUBBER BASE (RB-1)
- SOLID SURFACE COUNTERTOP (S-1) WITH INTEGRAL 4"H. SOLID SURFACE (S-1) BACK AND/OR SIDE SPLASH
- UNDERCOUNTER REFRIGERATOR, N.I.C.
- FULL HEIGHT REFRIGERATOR, N.I.C.
- STAINLESS STEEL SINGLE BOWL SINK WITH ACCESSIBLE CONNECTION, SEE PLUMBING DRAWINGS



2 MILLWORK ELEVATION - LACTATION ROOM #210
1/2" = 1'-0"

Revisions:

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Sheet Title:

MILLWORK PLANS,
ELEVATIONS AND
DETAILS

Sheet Number:

A515



CITY OF UKIAH
BANK OF AMERICA
ADA BARRIER REMOVAL
501 South State St. Ukiah, CA 95482

Parent Project Number: 000
 PN Number: 000-000-000
 PA Project Number: 761.00
 Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Number:

A516

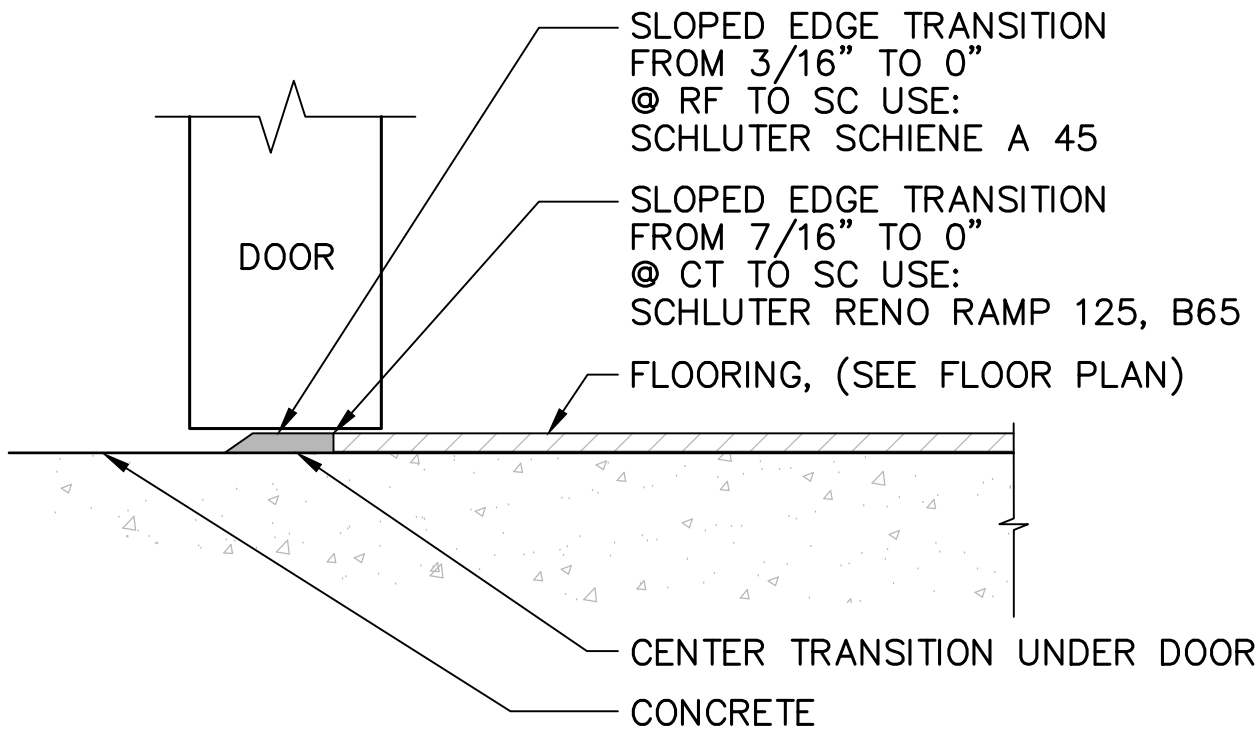


OPP. HAND AT GATE 119A

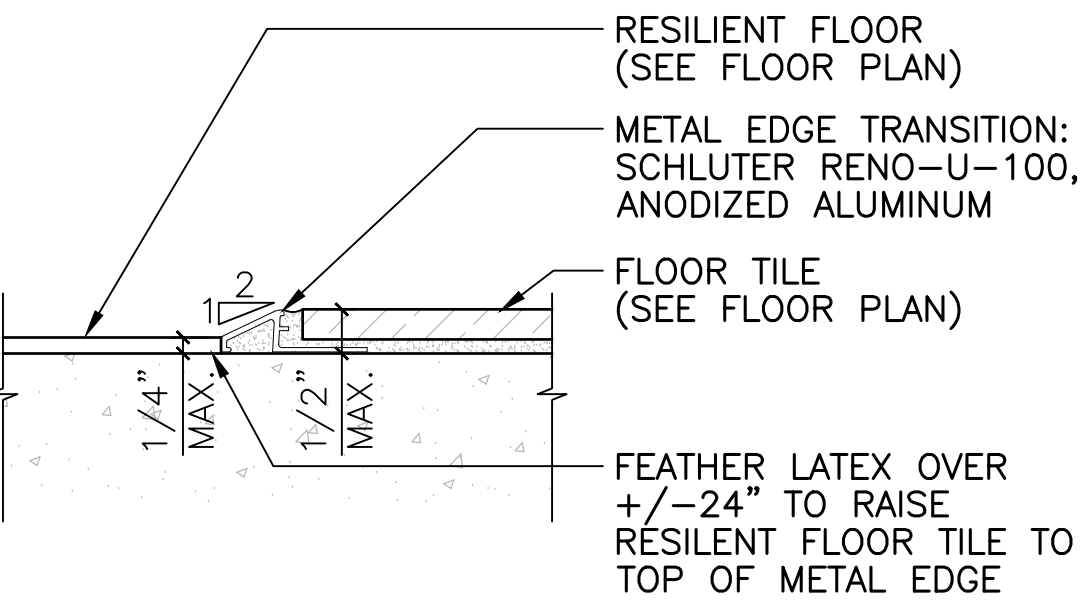
ROOM FINISH SCHEDULE REMARKS	
SEE SECTION 09 06 00 FOR ADDITIONAL FINISH NOTES AND MATERIAL INFORMATION	
1	SEE REFLECTED CEILING PLAN FOR VARIOUS MATERIALS AND HEIGHTS.
2	CERAMIC WALL TILE TO BE INSTALLED ON WALL DIRECTLY BEHIND DRINKING FOUNDATION ONLY (CT-3). WALL BASE WILL BE RB-1. SEE PLANS FOR ADDITIONAL INFORMATION.
3	ALL EXISTING AND NEWLY INSTALLED GWB ON CEILING TO BE PAINTED PT-1.
4	PRE-MANUFACTURED STAINLESS STEEL (SS) WALL GUARD @ MOP SINK PER PLUMBING DRAWINGS AND SPECIFICATIONS. SEE DETAIL 3/A402
5	STAIR TREAD AND RISER FINISH SHALL BE RF-2 AS PER "SCHEDULE FOR FINISHES" IN SPECIFICATION SECTION 09 06 00 OR U.N.O.
6	IIN TOILET ROOMS, ONLY INSTALL CT-B WALL BASE ON PAINTED WALLS. TILED WALL WILL BE FULL TILE WITH CT-2 TILE.
7	PATCH WINDOW FRAMES, REPAINT FRAMES TO MATCH EXISTING ADJACENT FRAMES.
8	STAIR S-2 INTERMEDIATE LANDING FLOORING IS RF-3.

ABBREVIATION LIST:

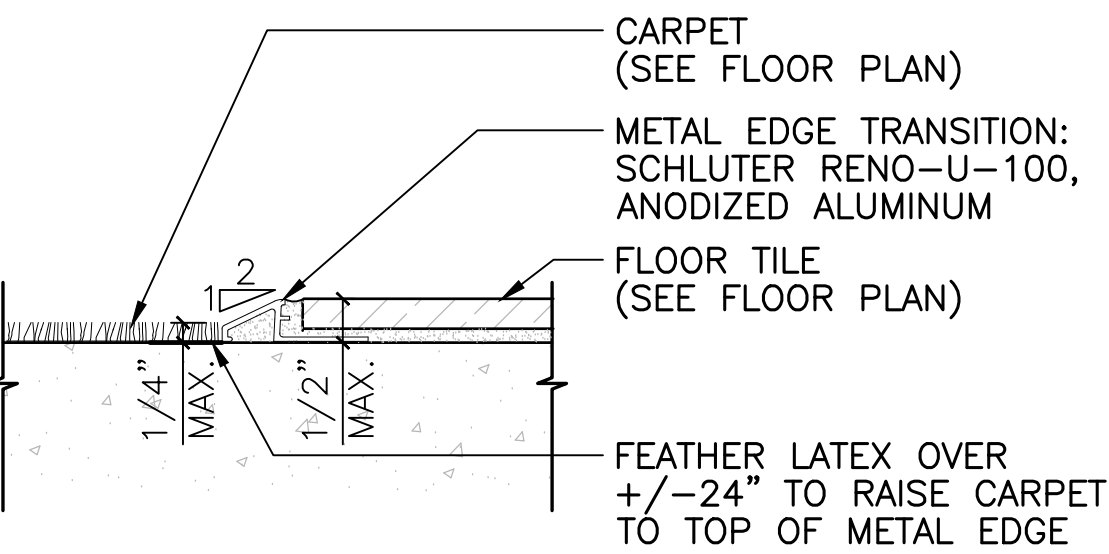
XXX\XXX	FLOOR MATERIAL TRANSITION (AS SHOWN ON PLANS)
ACT	ACOUSTIC CEILING TILE
CCT	CONCRETE
CPT	CARPET TILE
CT	CERAMIC/PORCELAIN TILE
EXP	EXPOSED TO STRUCTURE
ETR	EXISTING TO REMAIN
FE	FIRE EXTINGUISHER-WALL MOUNTED BRACKET
FEC	FIRE EXTINGUISHER CABINET
GRT	GROUT
GWB	GYPSUM WALL BOARD
PT	PAINT
RF	RESILIENT FLOORING (RUBBER TILE)
RB	6" RESILIENT BASE (RUBBER)
S	SOLID SURFACE
SC	SEALED CONCRETE
SDT	STATIC DISSIPATIVE TILES
SS	STAINLESS STEEL



3 TRANSITION - LVT TO CONCRETE
6" = 1'-0"



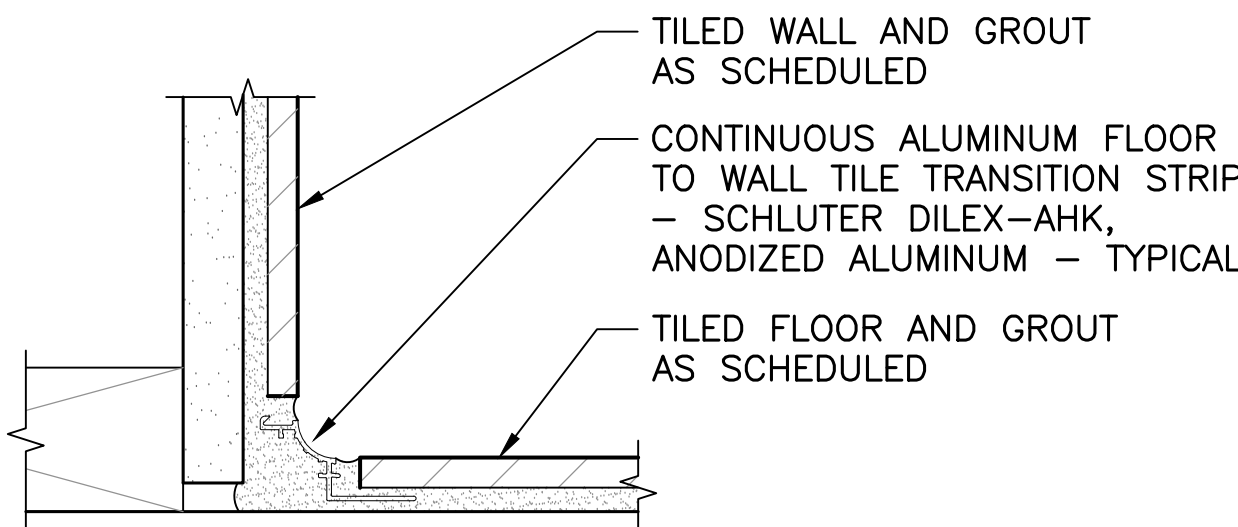
4 TRANSITION - LVT TO TILE
6" = 1'-0"



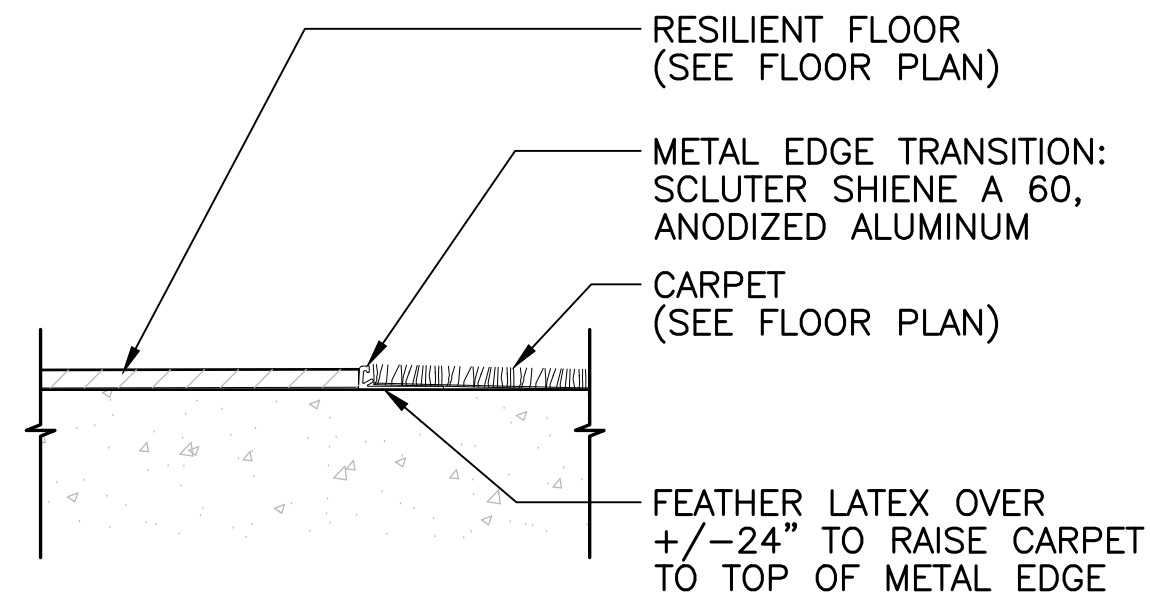
5 TRANSITION - TILE TO CARPET
6" = 1'-0"

GENERAL NOTES:

- SEE SPECIFICATION SECTION 09 06 00 FOR MATERIAL/FINISH SELECTIONS.
- ALL GWB WALLS TO BE PAINTED (PT-2) UNLESS OTHERWISE NOTED. INSTALL WALL BASE (RB-1) ON ALL EXPOSED GWB.
- ALL GYPSUM BOARD CEILINGS TO BE PAINTED PT-1 U.N.O., SEE REFLECTED CEILING PLANS.
- ALL ACOUSTICAL CEILINGS TO BE ACT-1 WITH SUSPENSION SYSTEM TYPE 1 U.N.O. SEE REFLECTED CEILING PLANS - SHEET A111.
- SEE PAINT SPECIFICATION SECTION 09 90 00 FOR ALL PAINT FINISH AND APPLICATION INFORMATION.
- ALL PENETRATIONS IN ACOUSTIC CEILING OR DRYWALL FOR PIPES (OR ANY SIMILAR PENETRATION) SHALL HAVE A PROPERLY FITTED ALUMINUM ESCUTCHEON.
- ALL WALL PENETRATIONS (DUCTWORK, PIPING, CONTROLS, CONDUITS, ETC.) AT RATED WALLS MUST BE SEALED WITH NON-COMBUSTIBLE MATERIAL U.N.O.
- CERAMIC TILE (CT-1) TO BE USED WITH GROUT (GRT-1).
- CERAMIC TILE (CT-2 & CT-3) TO BE USED WITH GROUT (GRT-2).
- ALL INTERIOR HOLLOW METAL DOOR FRAMES, INTERIOR HOLLOW METAL DOORS, & HANDRAILS ARE TO BE PAINTED PT-3 AS PER "SCHEDULE FOR FINISHES" IN SPECIFICATION SECTION 09 06 00 OR U.N.O.
- ALL EXTERIOR HOLLOW METAL DOORS TO BE PAINTED P-4 AND EXTERIOR HOLLOW METAL DOOR FRAMES TO BE PAINTED PT-5 AS PER "SCHEDULE FOR FINISHES" IN SPECIFICATION SECTION 09 06 00 OR U.N.O.
- PREPARE EXISTING FLOOR FOR INSTALLATION OF NEW FINISHES PER "SCHEDULE FOR FINISHES" IN SPECIFICATION SECTION 09 06 00 OR U.N.O. FINISH FLOOR BY OTHERS.



1 BASE OF TILED WALL
6" = 1'-0" TYPICAL AT BASE OF WALL AND FLOOR



2 TRANSITION - LVT TO CARPET
6" = 1'-0"

ROOM FINISH SCHEDULE									
ROOM NO.	ROOM NAME	FLOOR	BASE	WALL				CEILING	REMARKS
				NORTH	EAST	SOUTH	WEST		
				FINISH	FINISH	FINISH	FINISH	MATERIAL/FINISH	
100	LOBBY	CT-1	RB-1	PT-2	-	PT-2	-	ACT-1	-
101	MECHANICAL	ETR	ETR	ETR	ETR	ETR	ETR	ETR	-
102	STORAGE	ETR	ETR	ETR	ETR	ETR	ETR	ETR	-
103	RESTROOM VESTIBULE	CT-1	RB-1	PT-2	PT-2	PT-2	CT-3	GYP/PT-1	2
104	UNISEX TOILET	CT-1	CT-B	CT-2	PT-2	CT-2	CT-2	GYP/PT-1	6
105	UNISEX TOILET	CT-1	CT-B	CT-2	CT-2	CT-2	PT-2	GYP/PT-1	6
106	UNISEX TOILET	CT-1	CT-B	CT-2	PT-2	CT-2	CT-2	GYP/PT-1	6
107	CONFERENCE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
108	PASSAGE	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
109	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
110	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
111	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
112	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
113	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
114	COPY AREA	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	5, 8
116	PASSAGE	CT-1	RB-1	PT-2	PT-2	PT-2	PT-2	VARIES	1
117	ELEVATOR LOBBY	RF-1	RB-1	PT-2	PT-2	-	PT-2	ACT-1	-
118	STORAGE	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ETR/PT-1	-
119	OPEN OFFICE	RF-1	RB-1	PT-2	PT-2	-	PT-2	VARIES	1
120	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
121	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
122	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
123	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
124	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
126	BREAK ROOM	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
127	WORK ROOM	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
200	HALLWAY	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	2
201	STORAGE	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ETR/PT-1	-
202	IT ROOM	SDT-1	RB-1	PLWD/PT-2	PLWD/PT-2	PLWD/PT-2	PLWD/PT-2	ETR/PT-1	3
203	OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	7
204	OPEN OFFICE	CPT-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	7
205	UNISEX TOILET	CT-1	CT-B	PT-2	PT-2	CT-2	CT-2	ACT-2	6
206	UNISEX TOILET	CT-1	CT-B	PT-2	CT-2	CT-2	PT-2	ACT-2	6
207	JANITOR	SC	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-2	4
208	UNISEX TOILET	CT-1	CT-B	CT-2	CT-2	PT-2	PT-2	ACT-2	6
209	ELEVATOR EQUIPMENT	SC	RB-1	PT-2	PT-2	PT-2	PT-2	ETR/PT-1	3
210	LACTATION	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	-
211	STORAGE	RF-1	RB-1	PT-2	PT-2	PT-2	PT-2	PT-1	-
212	UTILITY	ETR	ETR	ETR	ETR	ETR	ETR	ETR	-
S1-1	STAIR	RF-1/RF-2	RB-1	PT-2	PT-2	PT-2	PT-2	PT-1	5
S1-2	STAIR	RF-1/RF-2	RB-1	PT-2	PT-2	PT-2	PT-2	ACT-1	5
S2-1	STAIR	RF-1/RF-2	RB-1	PT-2	PT-2	PT-2	PT-2	PT-1	5, 8
S2-2	STAIR	RF-1/RF-2	RB-1	PT-2	PT-2	PT-2	PT-2	PT-1	5, 8



Revisions:

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APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

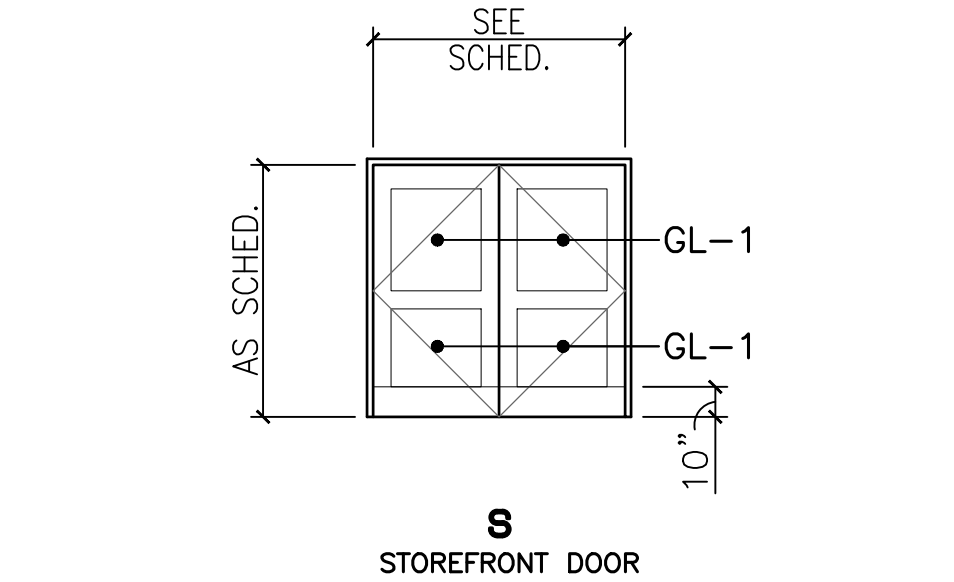
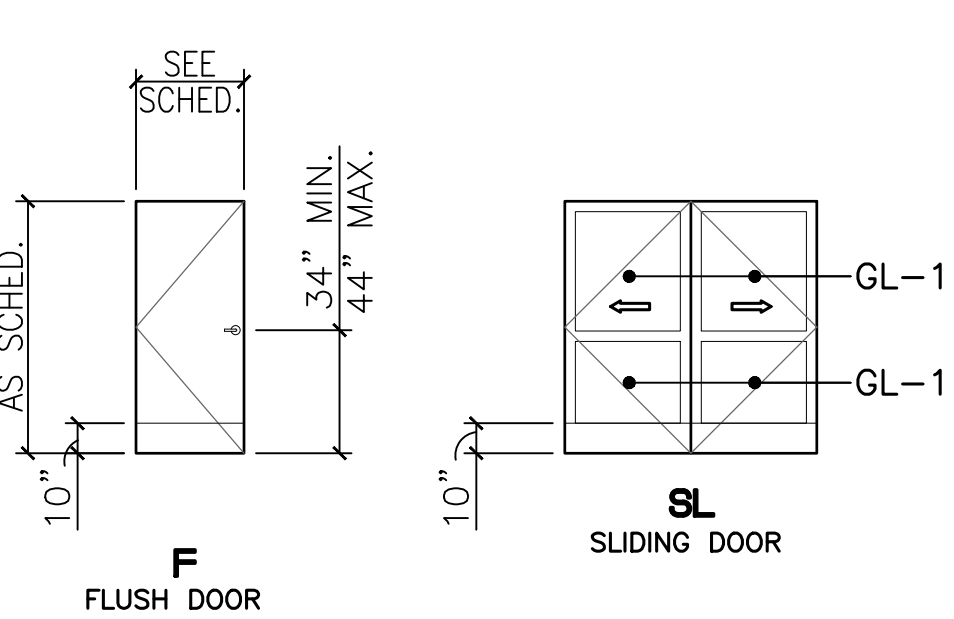
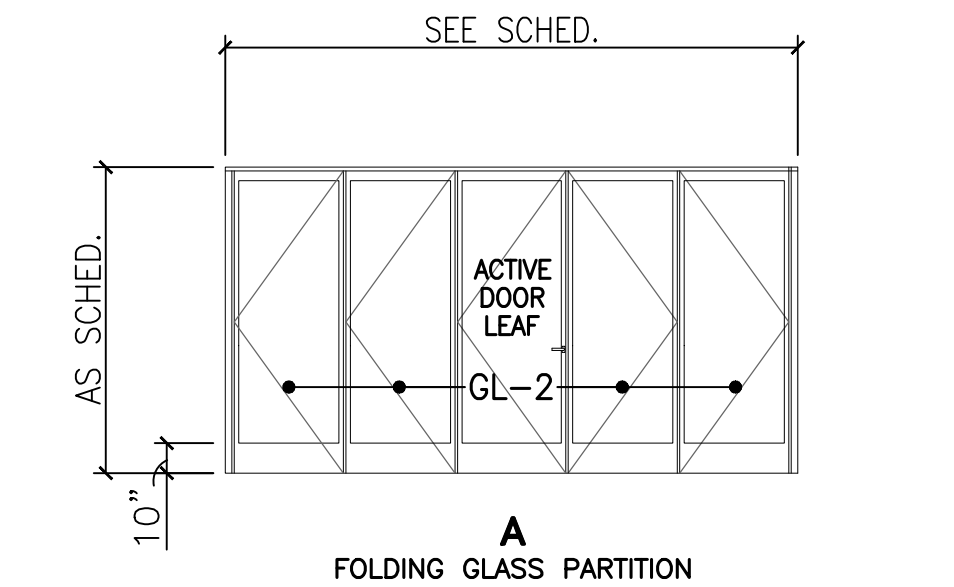
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FINISH SCHEDULE

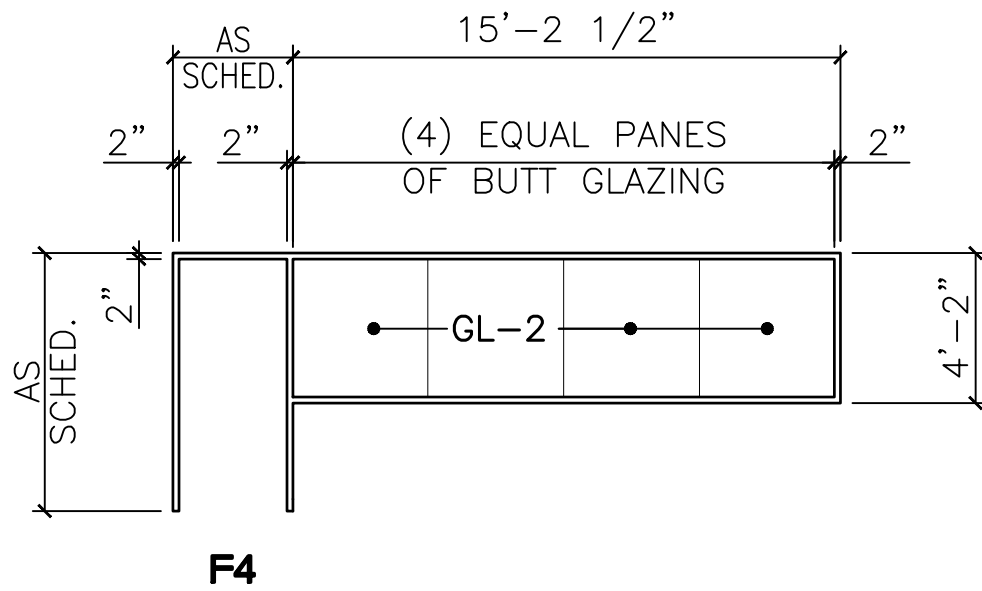
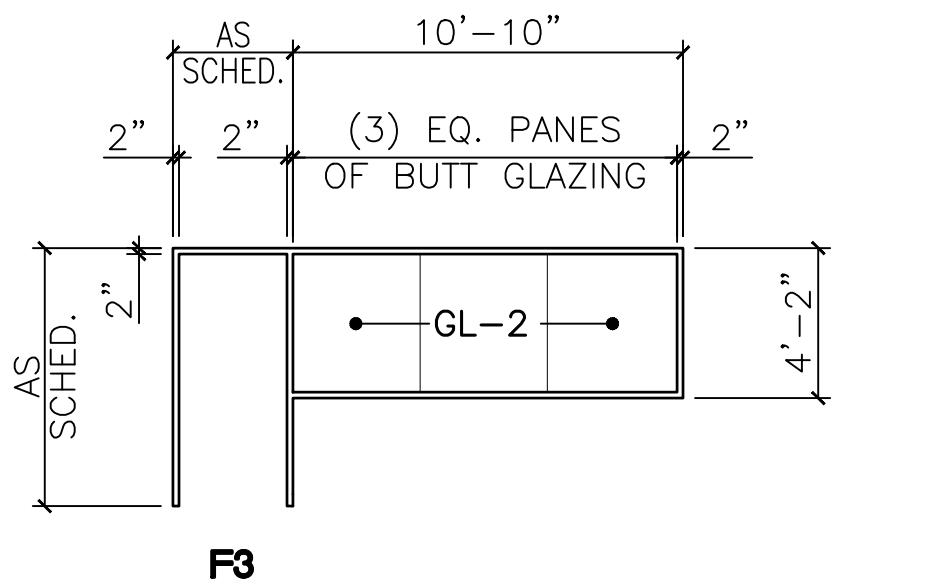
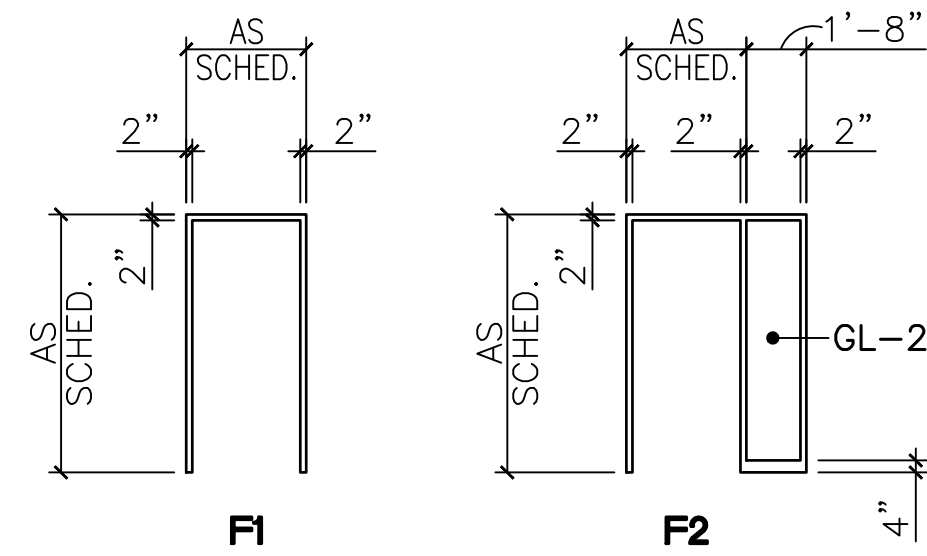
Sheet Number:

A601

DOOR AND FRAME MATERIALS/ABBREVIATIONS			
DOOR AND FRAMES			
AL	ALUMINUM	HM	HOLLOW METAL
CONC	CONCRETE	M	MODIFIED EXISTING DOOR OPENING
E	EXISTING DOOR OPENING	N	NEW DOOR OPENING
EXPD	EXPOSED	PF	PRE-FINISHED
ETR	EXISTING TO REMAIN	PT	PAINT
F	FLUSH	ST	STAIN
GL	GLAZING -- SEE SPECIFICATIONS	SS	STAINLESS STEEL
HF	HALF DOOR/GATE		
REMARKS			
1. INCREASE HEIGHT OF (E) OPENING FOR NEW DOOR AND FRAME. 2. EXISTING FRAME TO REMAIN AT (E) CONCRETE WALL OPENING. 3. EXISTING STOREFRONT TO REMAIN, REPLACE DOORS ONLY. 4. CLEAN, PREP, FILL, SAND, PAINT (E) FRAME. 5. PROVIDE 1" UNDERCUT AT DOOR BOTTOM. 6. SLIDING DOOR TO MATCH EXISTING DOOR THAT HAS BEEN REMOVED. SEE SPECIFICATION SECTION 08 42 29 SLIDING AUTOMATIC ENTRANCES. 7. ALUMINUM FINISH COLOR TO MATCH ADJACENT EXISTING FRAMING. 8. EXTERIOR SIDE OF HOLLOW METAL DOOR AND FRAME COLOR PER ARCHITECT SELECTION. 9. PROVIDE 10" SS KICKPLATE AT BOTTOM OF DOOR. 10. NEW DOOR FRAME TO BE INSTALLED WITHIN EXISTING DOOR FRAME. FIELD VERIFY WIDTH AND HEIGHT OF OPENING, PRIOR TO FABRICATION. 11. VERIFY EXISTING WALL AND FRAME MEET 45 MIN. FIRE RATING. 12. DOOR HARDWARE AND GLAZING SHOWN IN SPECIFICATION SECTION 10 22 39 -- FOLDING GLASS PARTITIONS.			
GENERAL NOTES			
1. SEE SPECIFICATION SECTION 09.06.00 "SCHEDULE FOR FINISHES" FOR ALL FINISH DESIGNATIONS. 2. SEE SPECIFICATION SECTION 08.71.00 FOR DOOR HARDWARE SET DESIGNATIONS. 3. SEE SPECIFICATION SECTION 08.41.13 FOR ALUMINUM-FRAMED ENTRANCES AND STOREFRONT INFORMATION AND HARDWARE. 4. MAXIMUM OPENING FORCE SHALL BE 5 POUNDS. 5. FIELD VERIFY ALL DIMENSIONS AND DOOR ORIENTATIONS PRIOR TO FABRICATION. 6. THRESHOLDS PER CBC 11B-302 & 11B-303. 7. PAINT NEW/EXISTING HOLLOW METAL DOORS AND FRAMES AS SCHEDULED. 8. EXTERIOR DOORS AND FRAMES MAY HAVE DIFFERENT INTERIOR/EXTERIOR COLORS. CONFIRM W/ ARCHITECT, AND SPEC. SECTION. 9. KNOCK-DOWN HOLLOW METAL FRAMES ARE ACCEPTABLE AT (E) OPENINGS, WHERE FRAME WRAPS AROUND HEAD AND JAMB. 10. SEE SPECIFICATION SECTION 08 42 29 -- SLIDING AUTOMATIC ENTRANCES FOR SLIDING DOOR INFORMATION AND HARDWARE			



2 DOOR TYPES
NO SCALE



1 FRAME TYPES
NO SCALE

DOOR AND HARDWARE SCHEDULE																		
DOOR NO.	ROOM NAME	DOOR						FRAME						HARD WARE	LABEL	REMARKS	OPENING	
		SIZE		TYPE	PANEL MAT'L	GLASS	DOOR FINISH	TYPE	MAT'L	HEAD DETAIL	JAMB DETAIL	MISC. DETAIL	FRAME FINISH					
		WIDTH	HEIGHT															
100	OPEN AREA	7'-0"	7'-0"	SL	AL	GL-1	PF	ETR	ETR	-	-	-	ETR	2	-	3, 6, 7	E	
101	MECH	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	SIM. 4/A603	SIM. 5/A603	-	PT-3	10	-	1	M	
102	STORAGE	3'-4"	6'-8"	F	HM	-	PT-3, 4	F1	HM	-	-	-	PT-3, 5	5	-	2, 4, 8	E	
104	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
105	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
106	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
107	CONFERENCE	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	14	-	8	N	
108	PASSAGE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	10,12/A603	2/A605	PF	14	-	-	N	
109	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
110	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
111	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
112	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
113	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
116A	LOBBY	15'-11"	8'-6"	A	AL	GL	PF	-	AL	1/A604	2/A604	-	PF	15	-	12	N	
116B	PASSAGE	3'-0"	7'-0"	F	WD	-	ST-1	F3	AL	6/A603	11,12/A603	7/A605	PF	13	-	-	N	
116C	PASSAGE	3'-0"	7'-0"	F	WD	-	ST-1	F1	AL	4/A604	13/A603	-	PF	13	-	-	N	
116D	VESTIBULE	(2) 3'-0"	7'-0"	S	AL	GL-1	PF	ETR	ETR	-	-	-	ETR	AL-1	-	3, 7	E	
118	STORAGE	3'-0'	7'-0"	F	WD	-	ST-1	F1	SS	3/A604	3/A604	-	PF	10	45 MIN.	10, 11	E	
119A	OPEN OFFICE	2'-10"	3'-4 1/2"	F	WD	-	ST-1	-	-	-	7/A514	6/A514	-	13	-	9	HF	
119B	OPEN OFFICE	2'-10"	3'-4 1/2"	F	WD	-	ST-1	-	-	-	7/A514	6/A514	-	13	-	9	HF	
120	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F4	AL	14/A603	12,13/A603	5,11/A605	PF	3	-	-	N	
121	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
122	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
123	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
124	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	8/A603	9/A603	10/A603	PF	3	-	-	N	
126A	BREAK ROOM	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	13	-	8	N	
126B	BREAK ROOM	3'-0"	7'-0"	F	WD	-	ST-1	F2	AL	4/A604	7/A603	-	PF	6	-	-	N	
127A	WORK ROOM	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	7	-	-	N	
127B	WORK ROOM	3'-0"	6'-8"	F	HM	-	PT-3, 4	F1	HM	-	-	-	PT-3, 5	12	-	8, 10	E	
201	STORAGE	3'-0"	6'-8"	F	WD	-	ST-1	ETR	ETR	-	-	-	PT-3	1	45 MIN.	2, 4, 11	E	
202	IT	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	SIM. 4/A603	SIM. 5/A603	-	PT-3	13	-	-	N	
203	OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	8	-	-	N	
204	OPEN OFFICE	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	5/A603	5/A603	-	PT-3	8	-	-	N	
205	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
206	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
207	JANITOR	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	10	-	-	N	
208	UNISEX TOILET	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
209	ELEVATOR EQUIPMENT	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	SIM. 4/A603	SIM. 5/A603	-	PT-3	1	60 MIN.	-	N	
210	LACTATION	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	4	-	5	N	
211	STORAGE	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	SIM. 4/A603	SIM. 5/A603	-	PT-3	1	-	-	N	
S1-1	STAIR	3'-0"	7'-0"	F	HM	-	PT-3, 4	F1	HM	1/A603	2/A603	3/A603	PT-3, 5	11	-	8	E	
S1-2	STAIR	3'-0"	7'-0"	F	WD	-	ST-1	F1	HM	4/A603	5/A603	-	PT-3	6	60 MIN.	-	N	

Revisions:

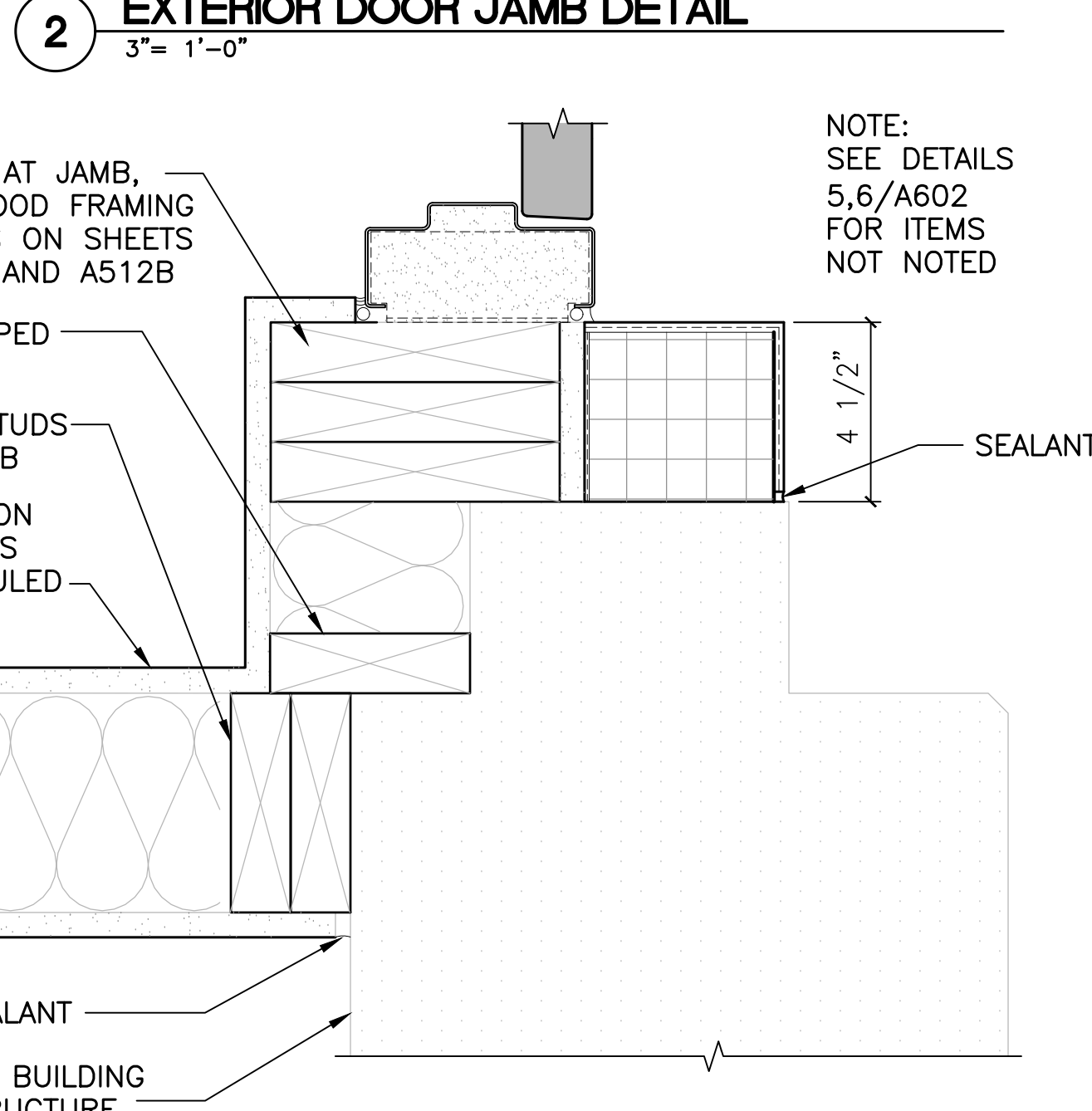
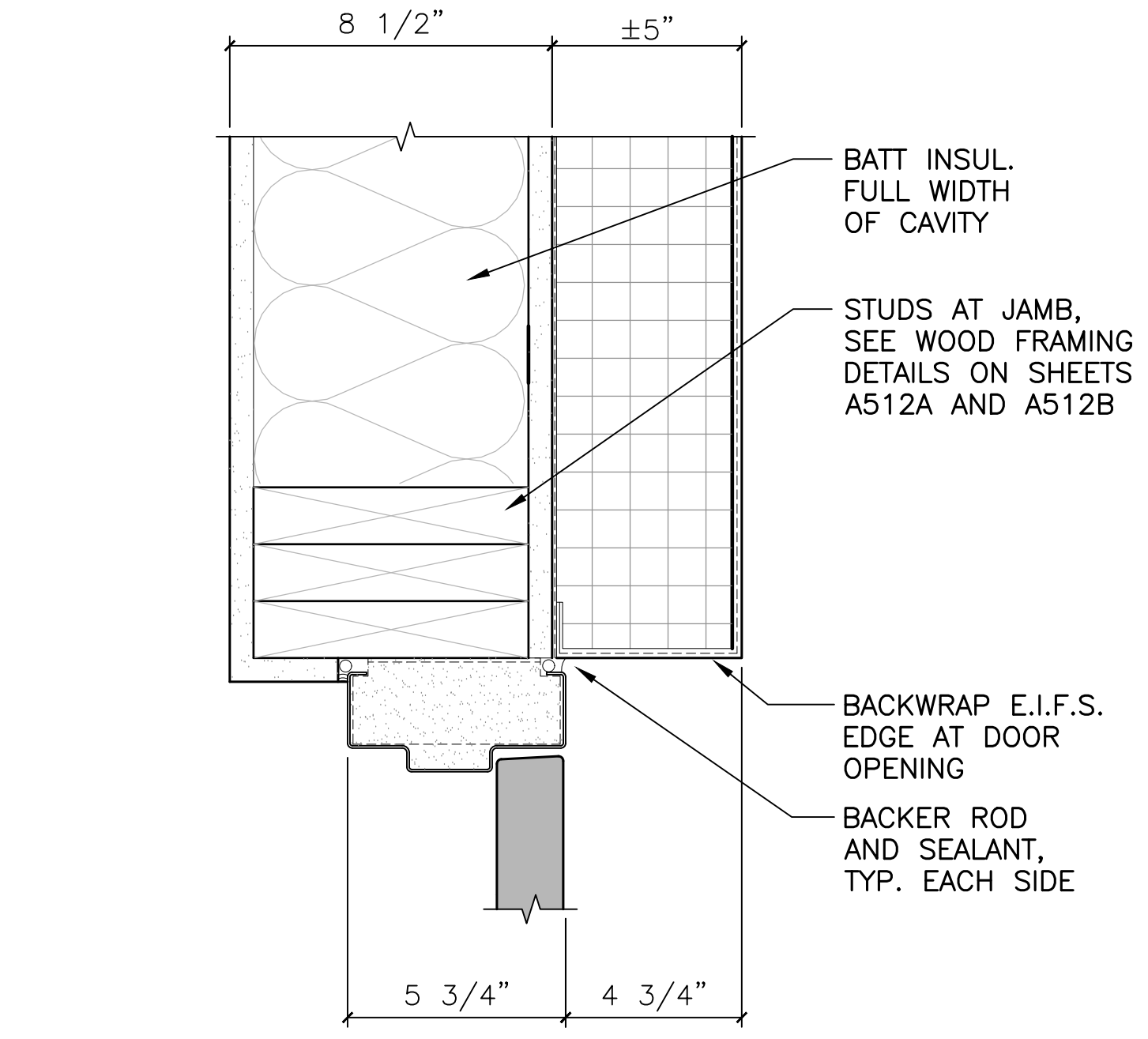
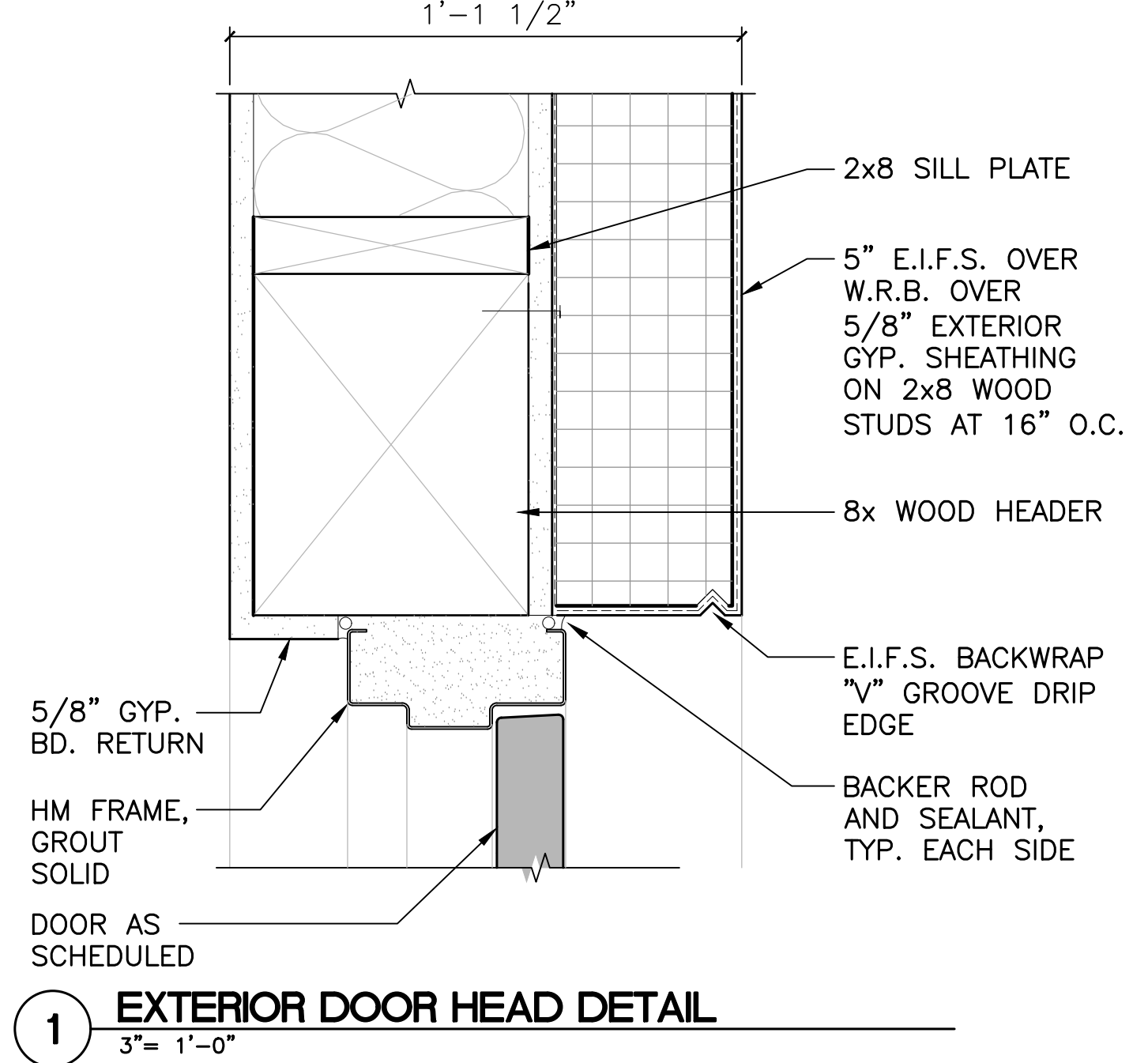
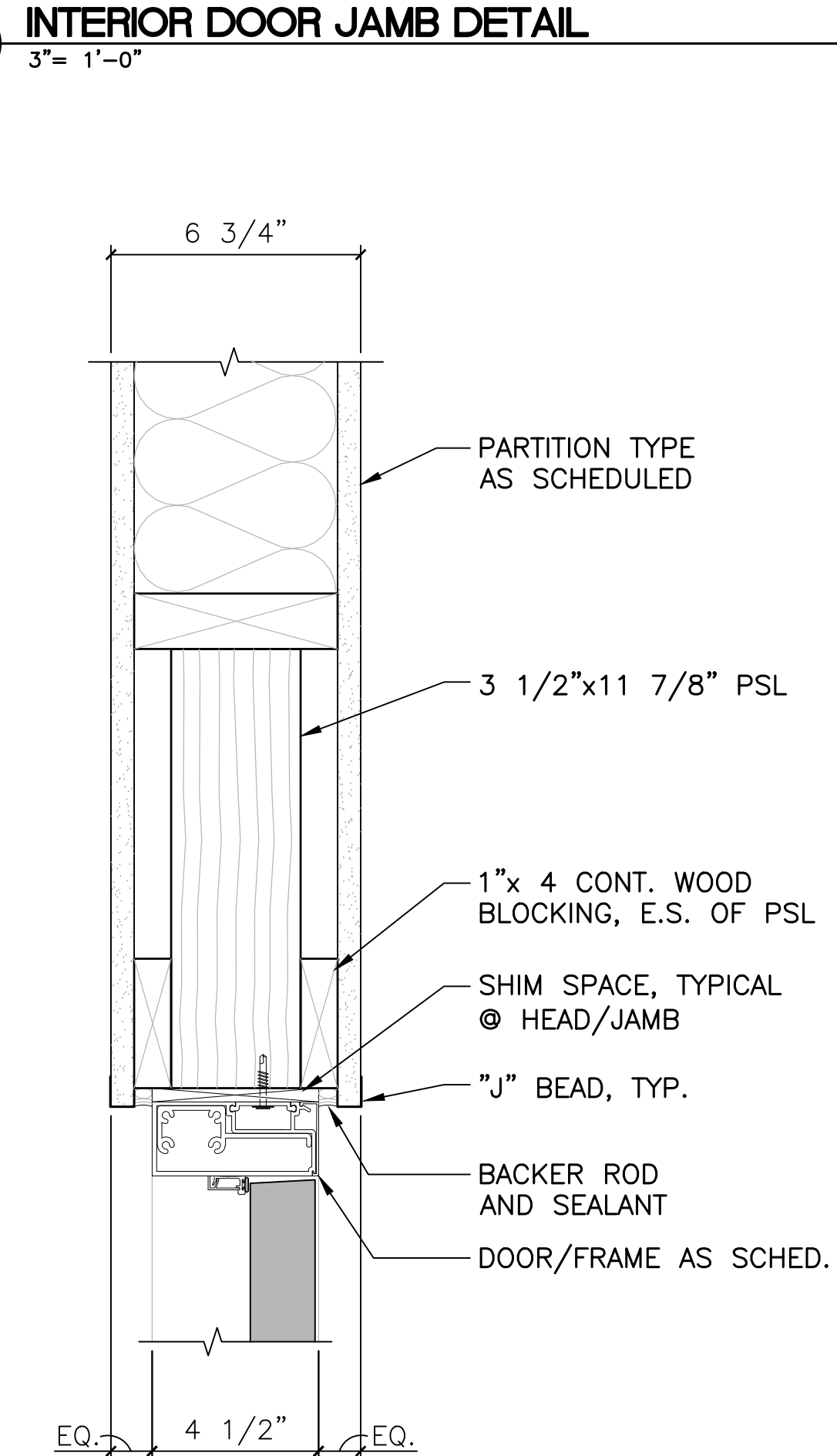
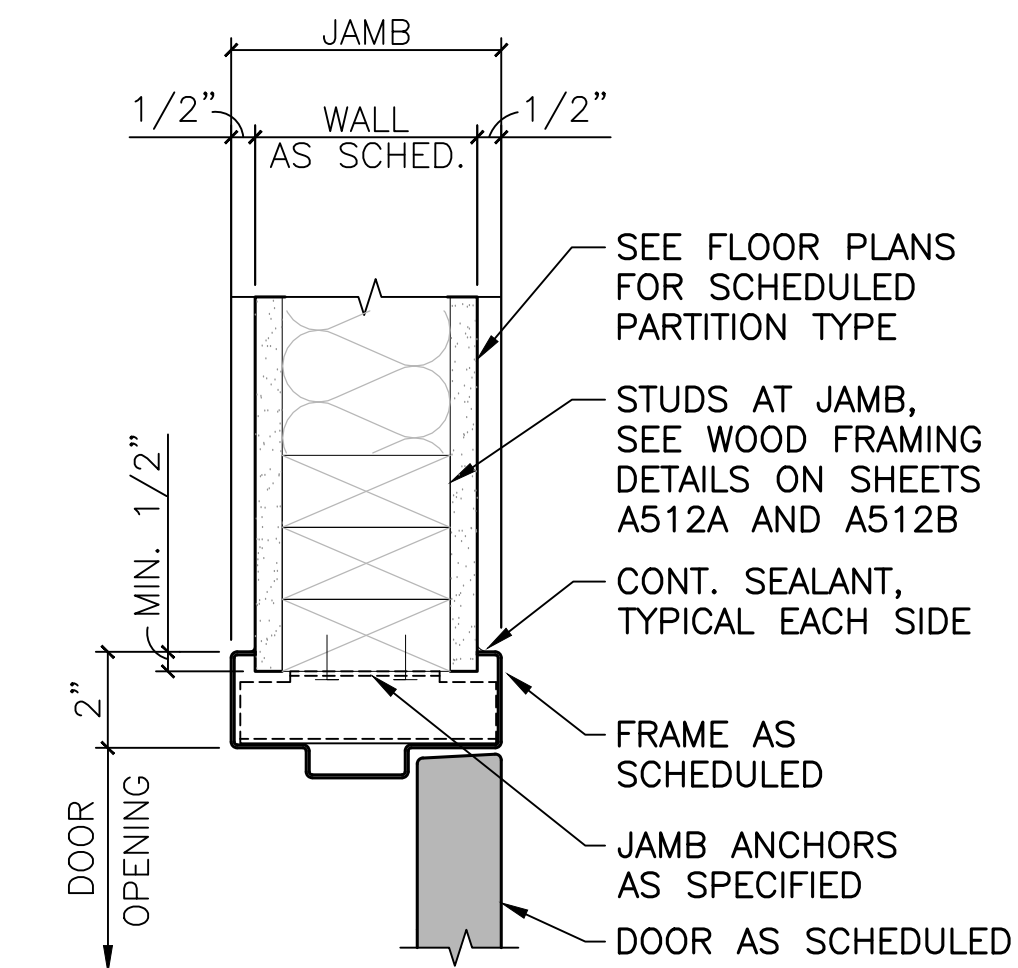
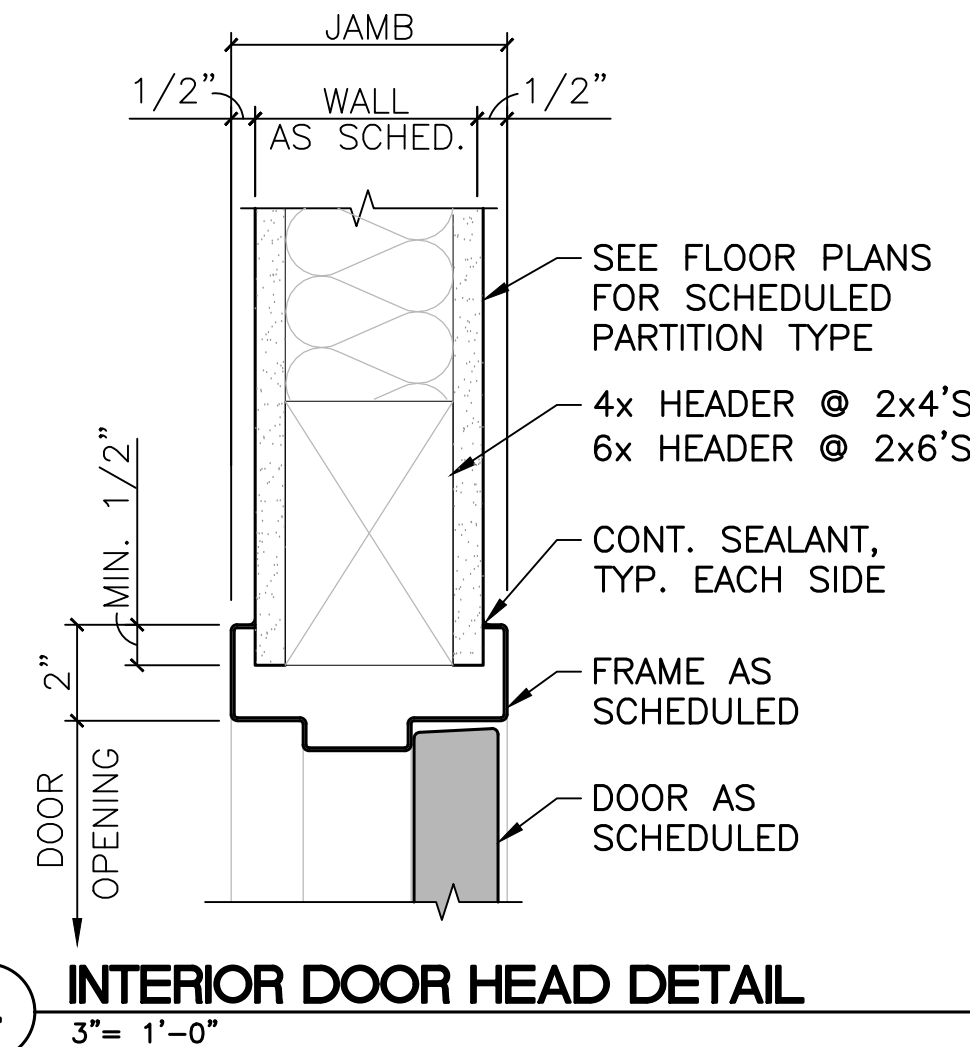
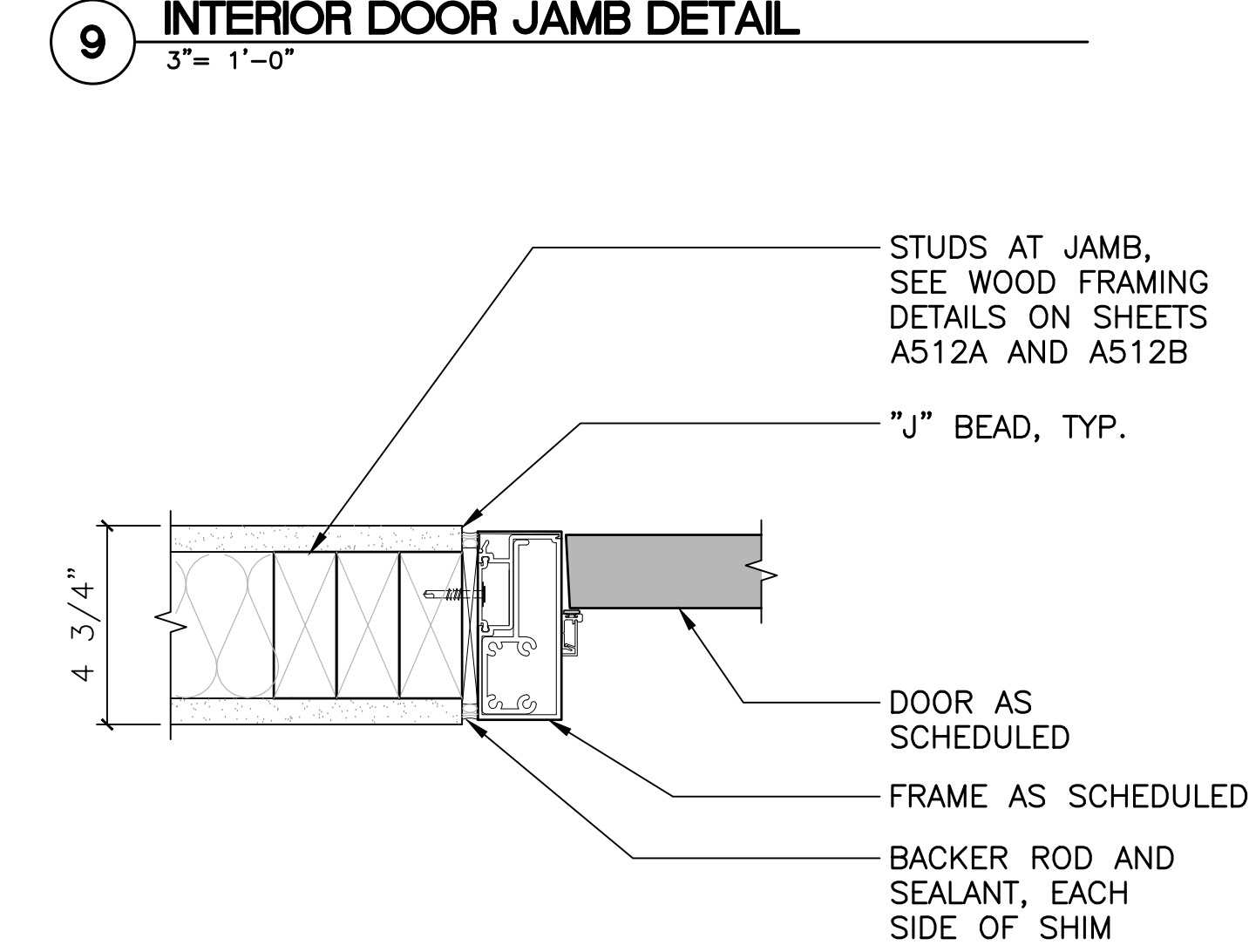
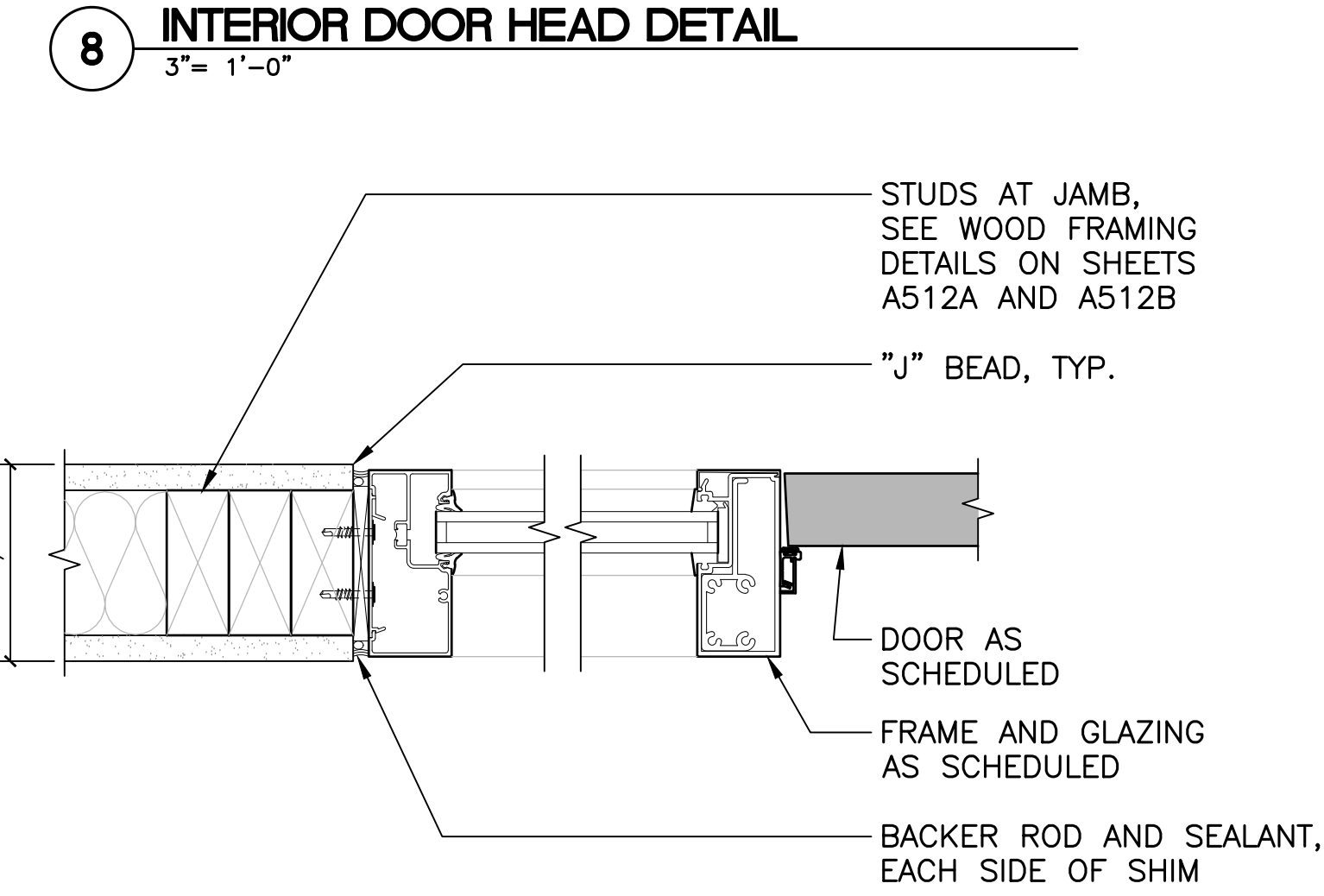
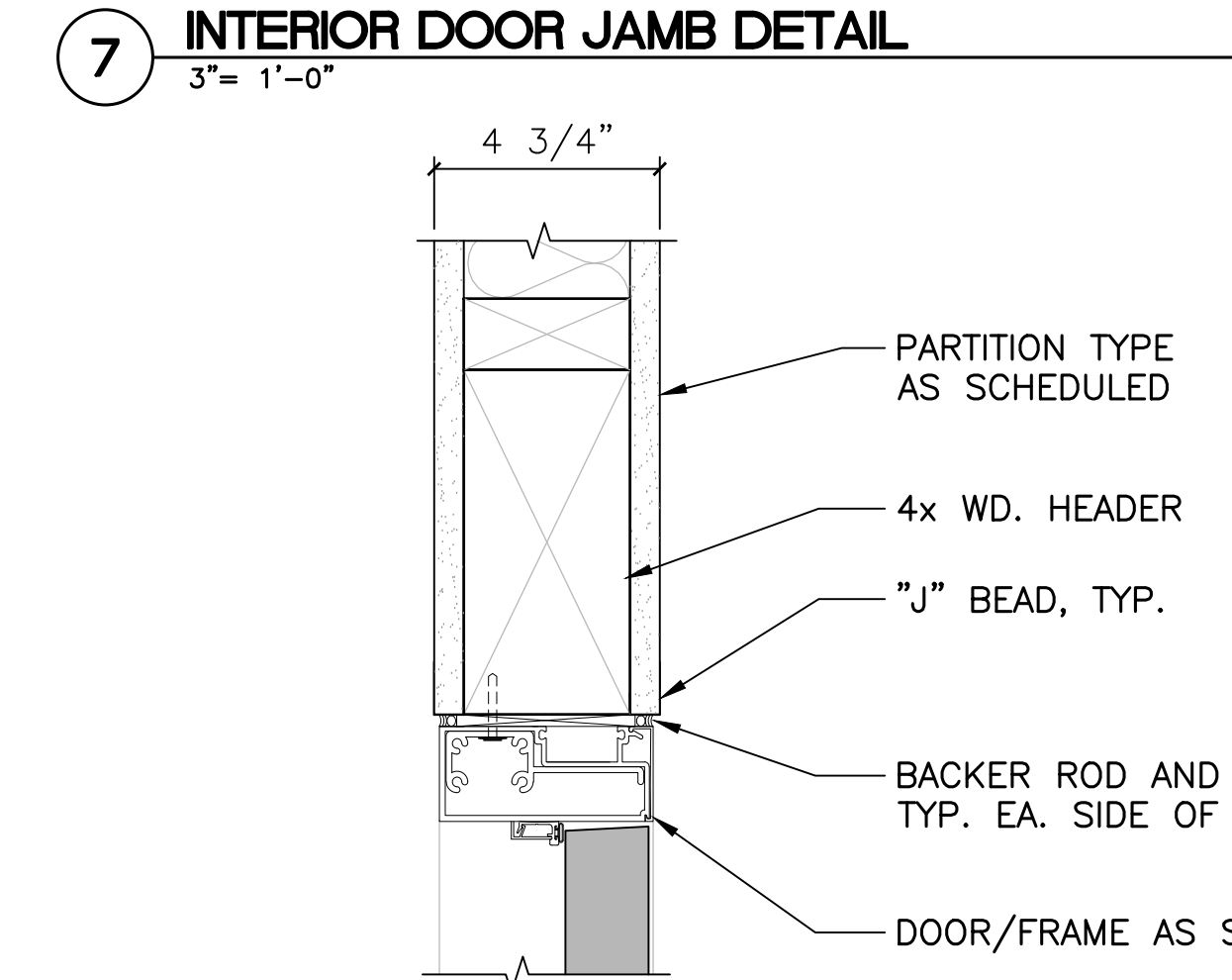
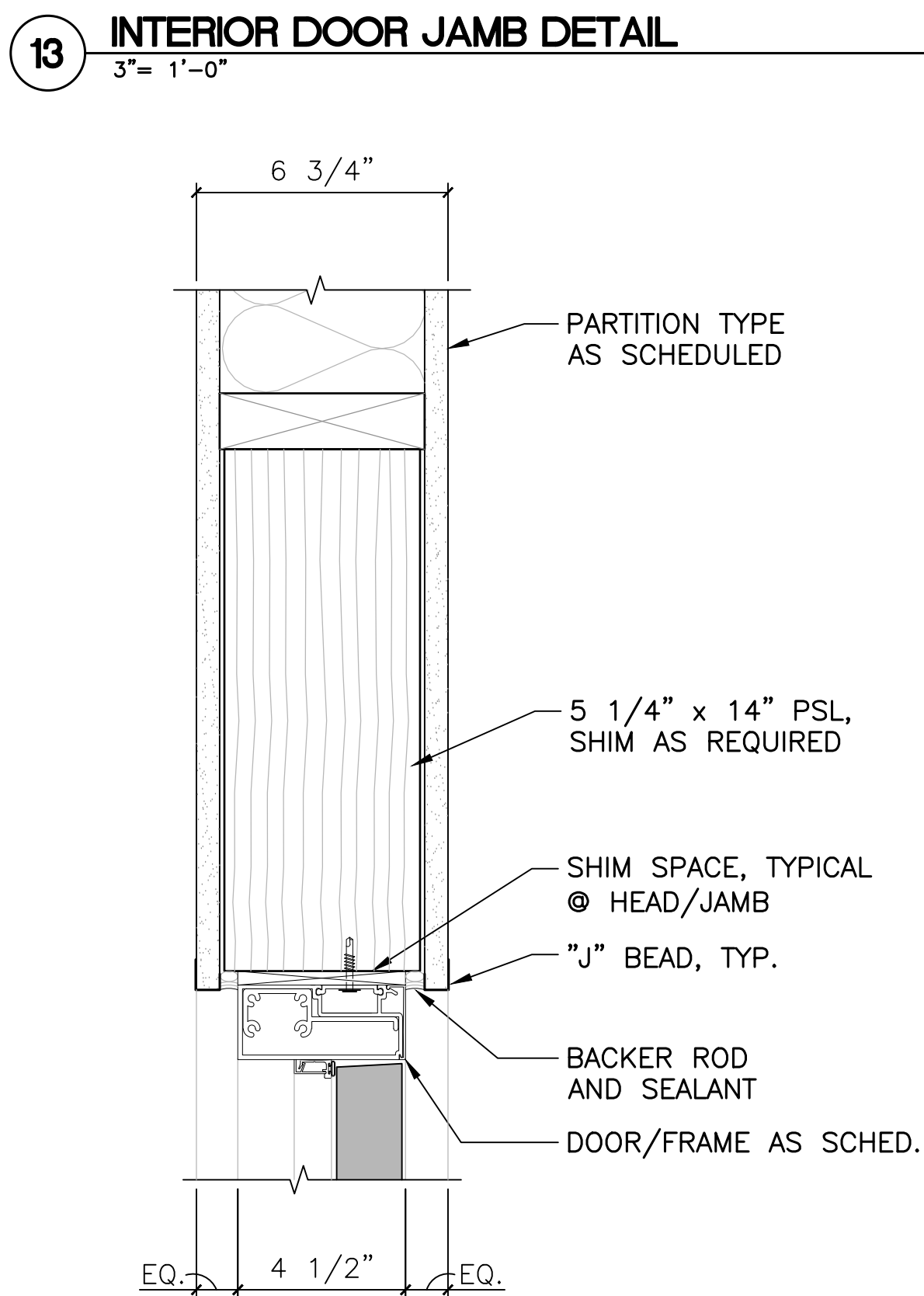
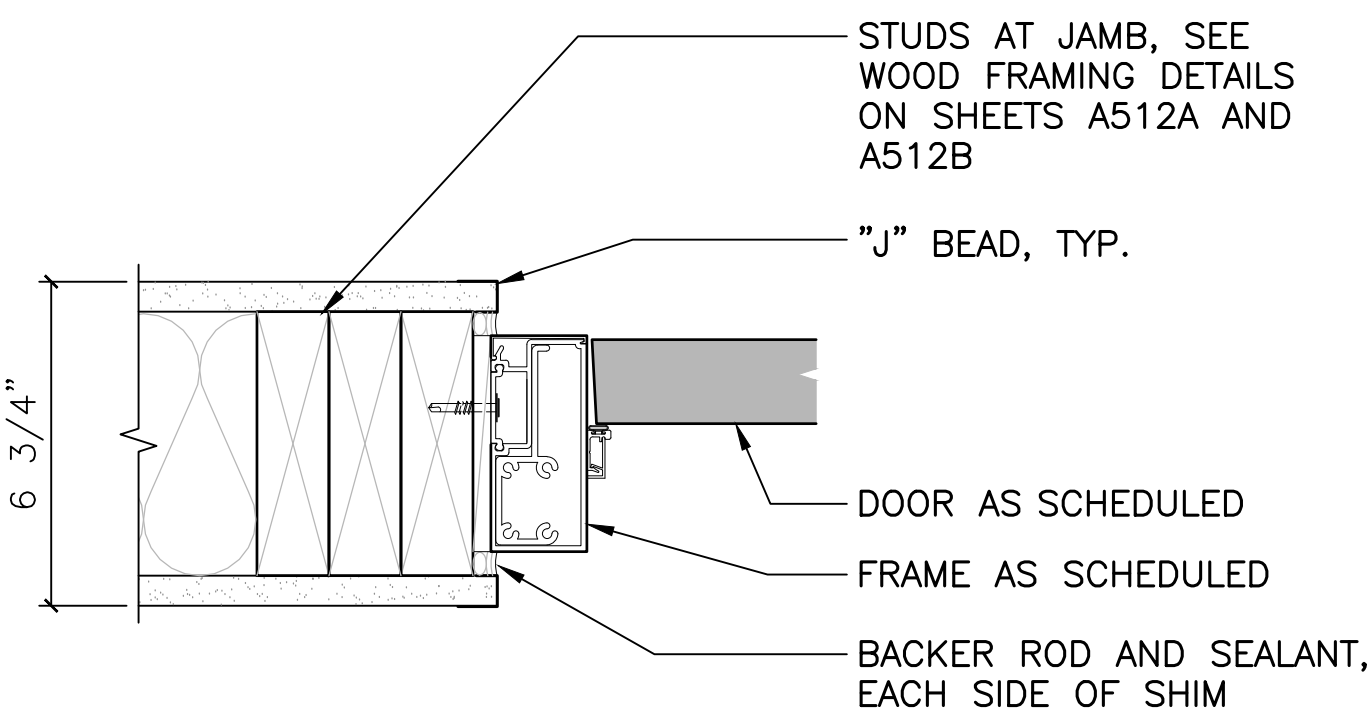
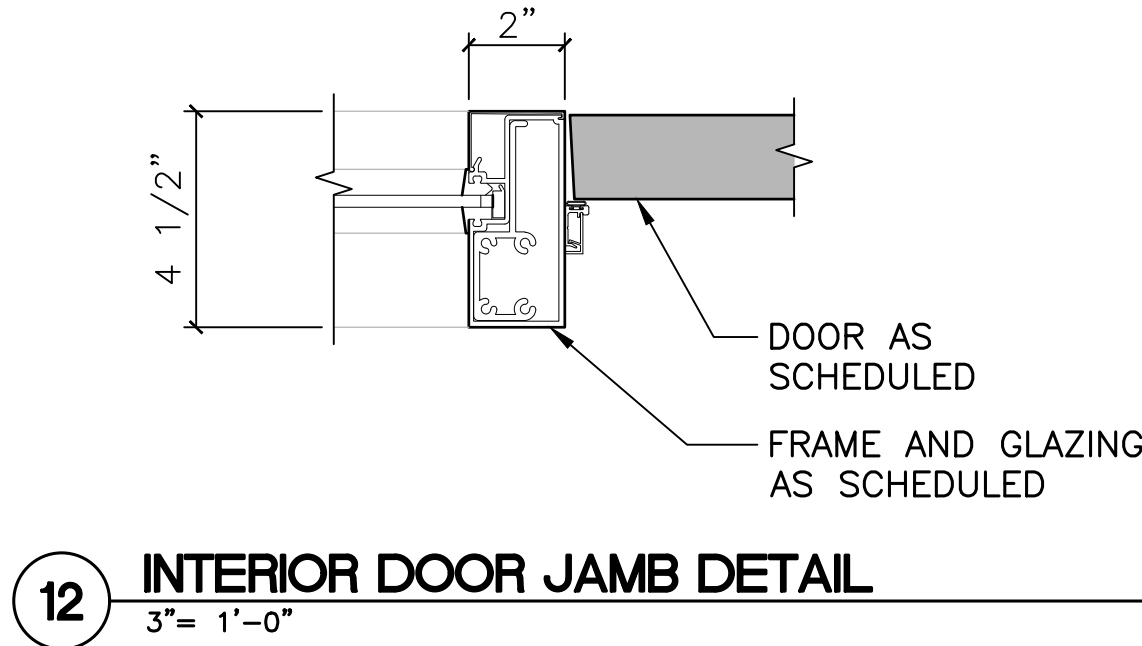
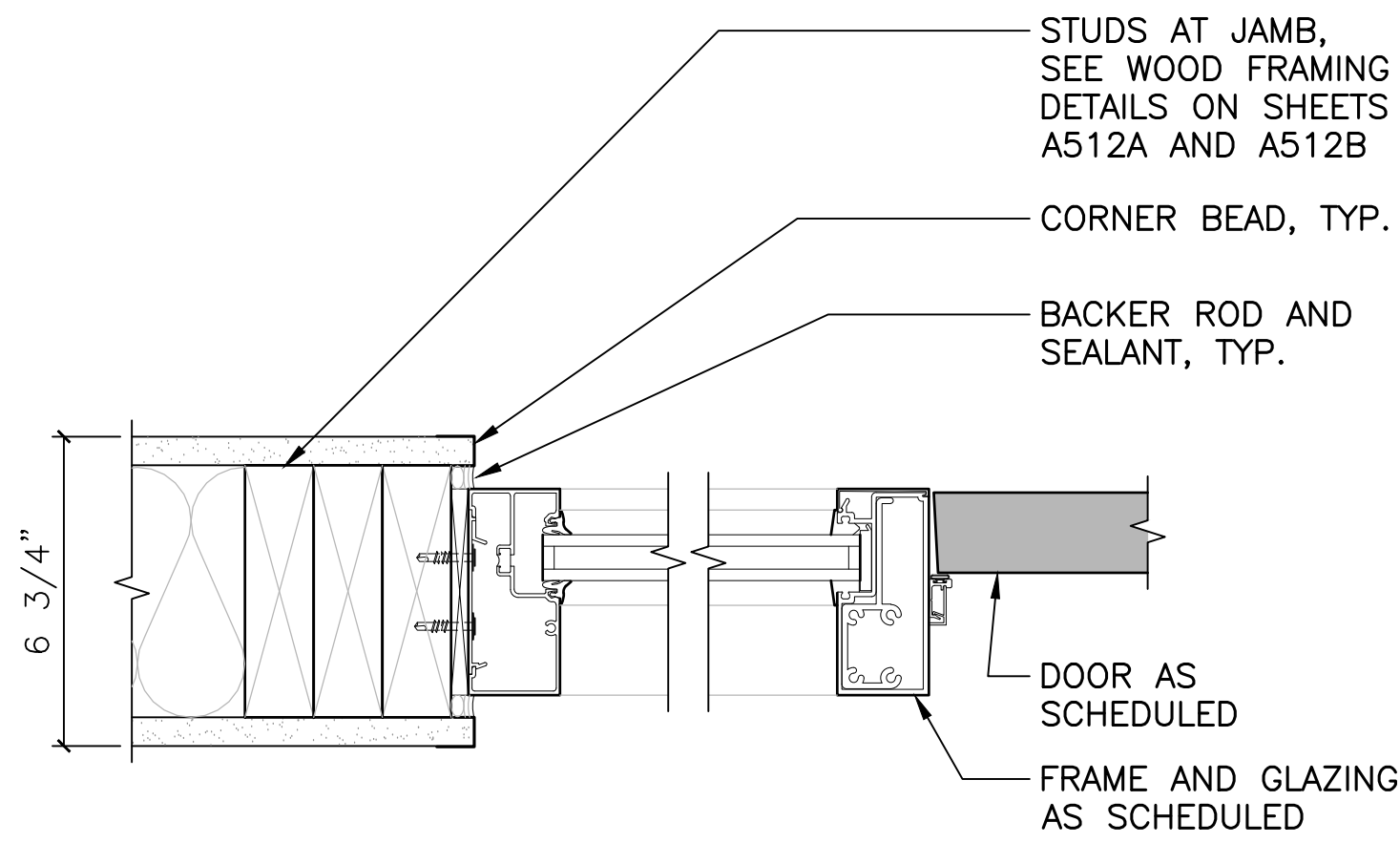
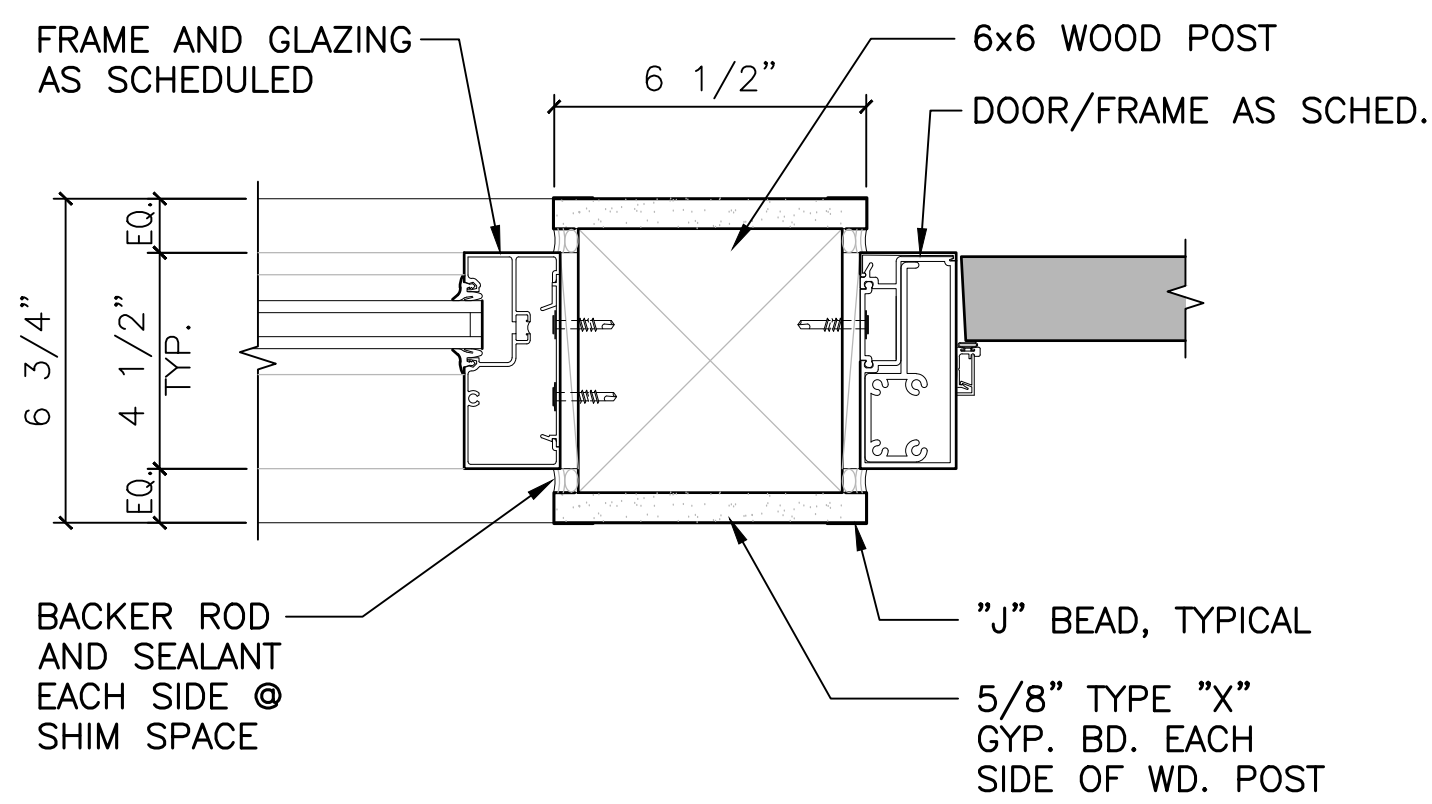
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

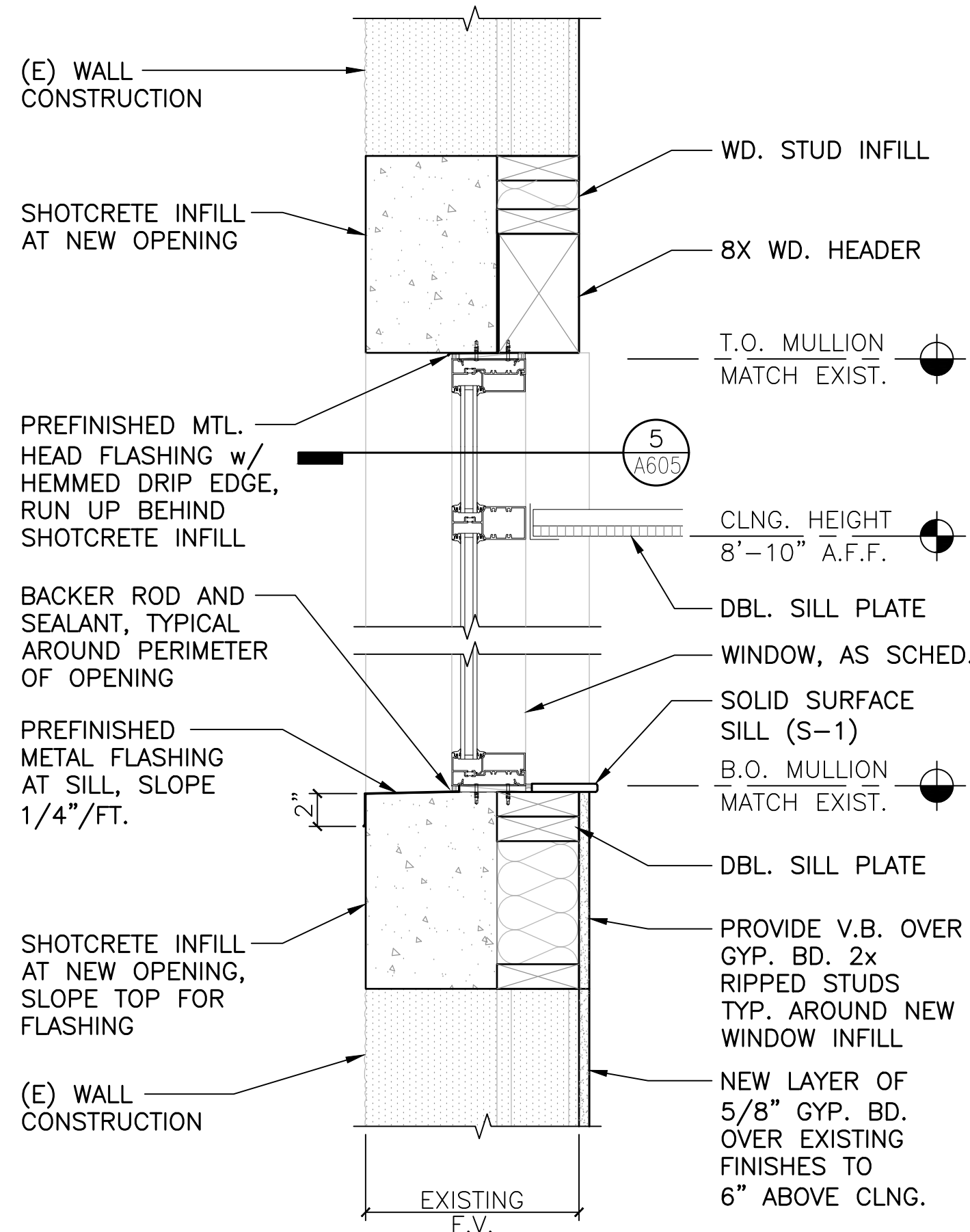
Sheet Title:

DOOR SCHEDULE,
DOOR TYPES AND
FRAME TYPES

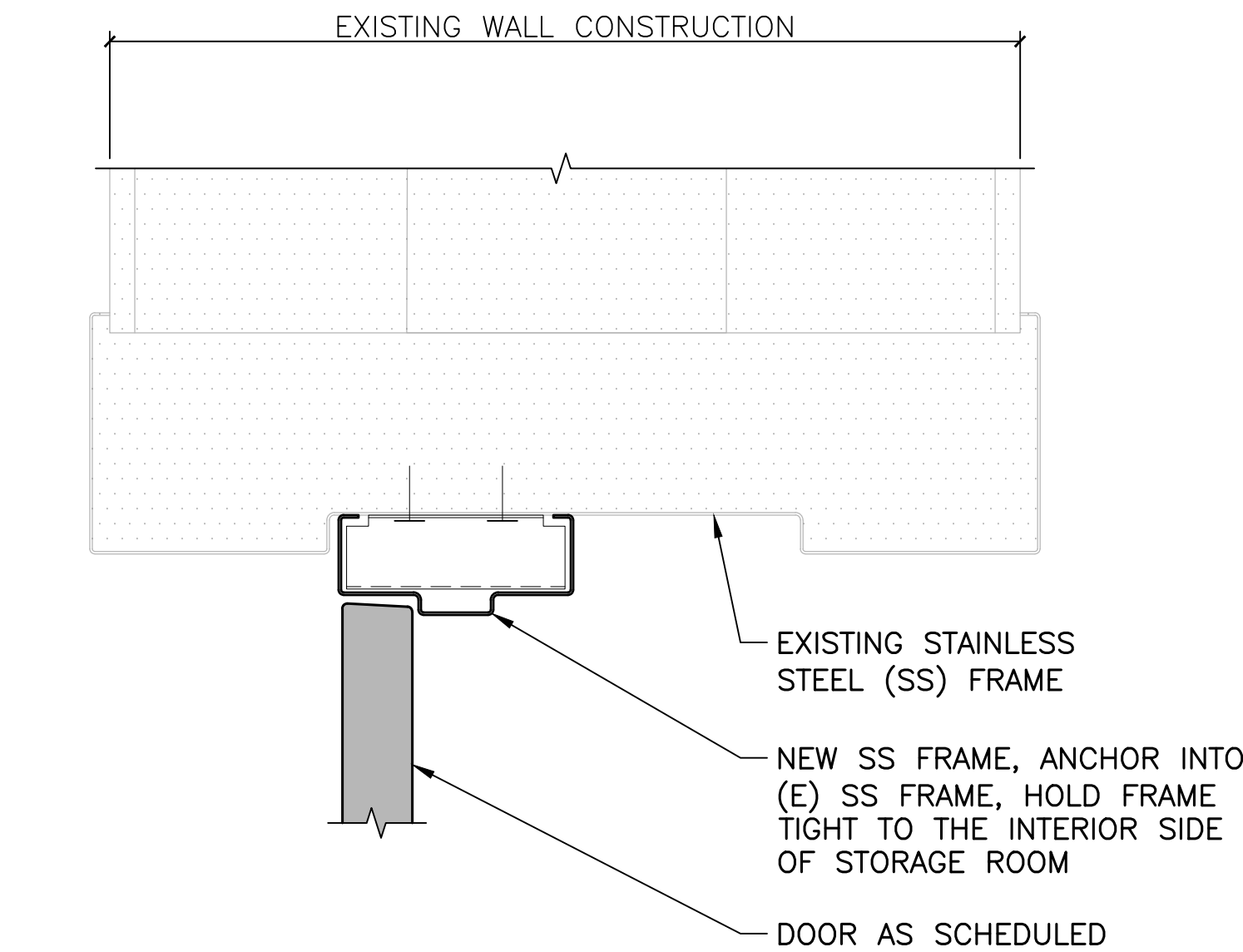
Sheet Number:

A602

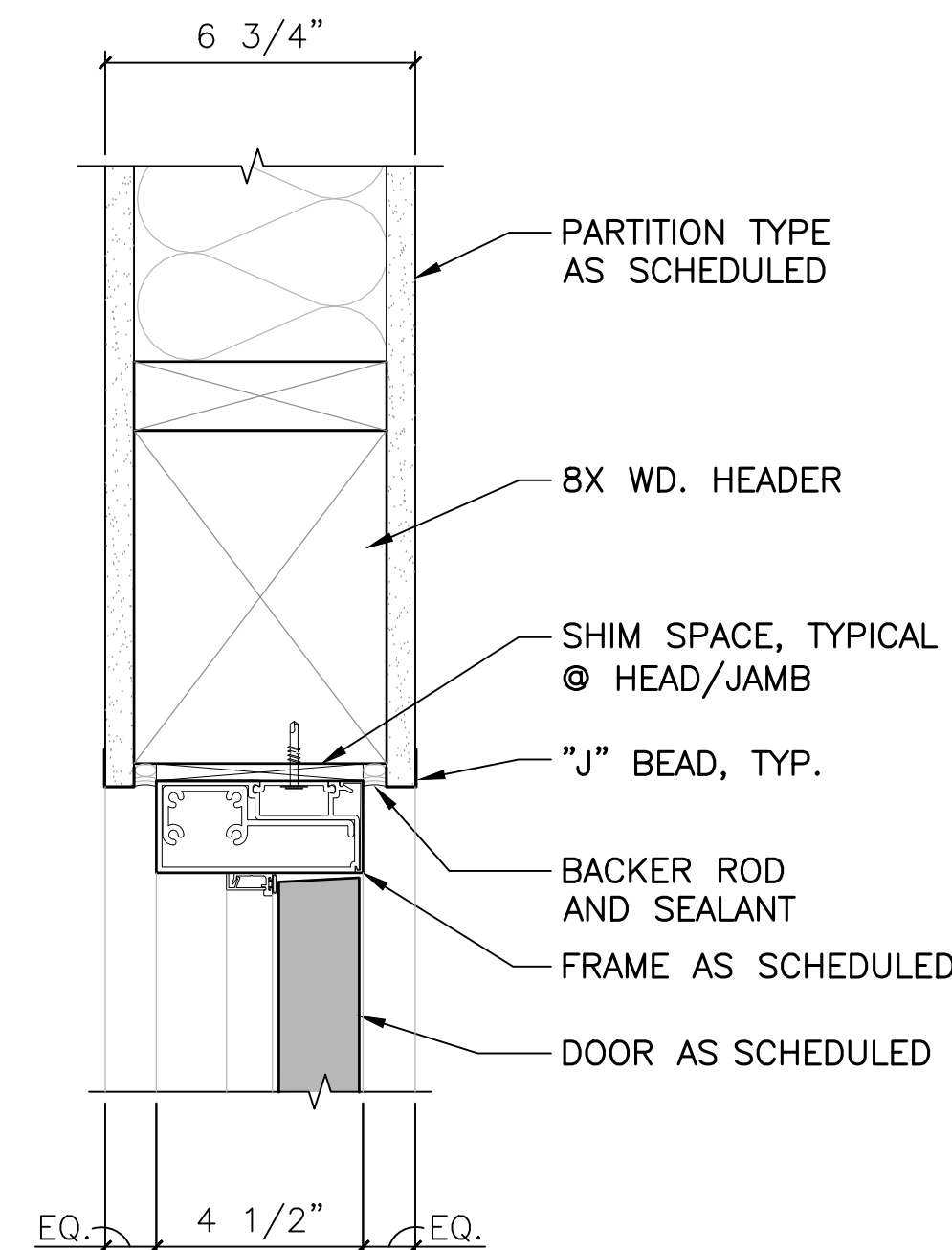




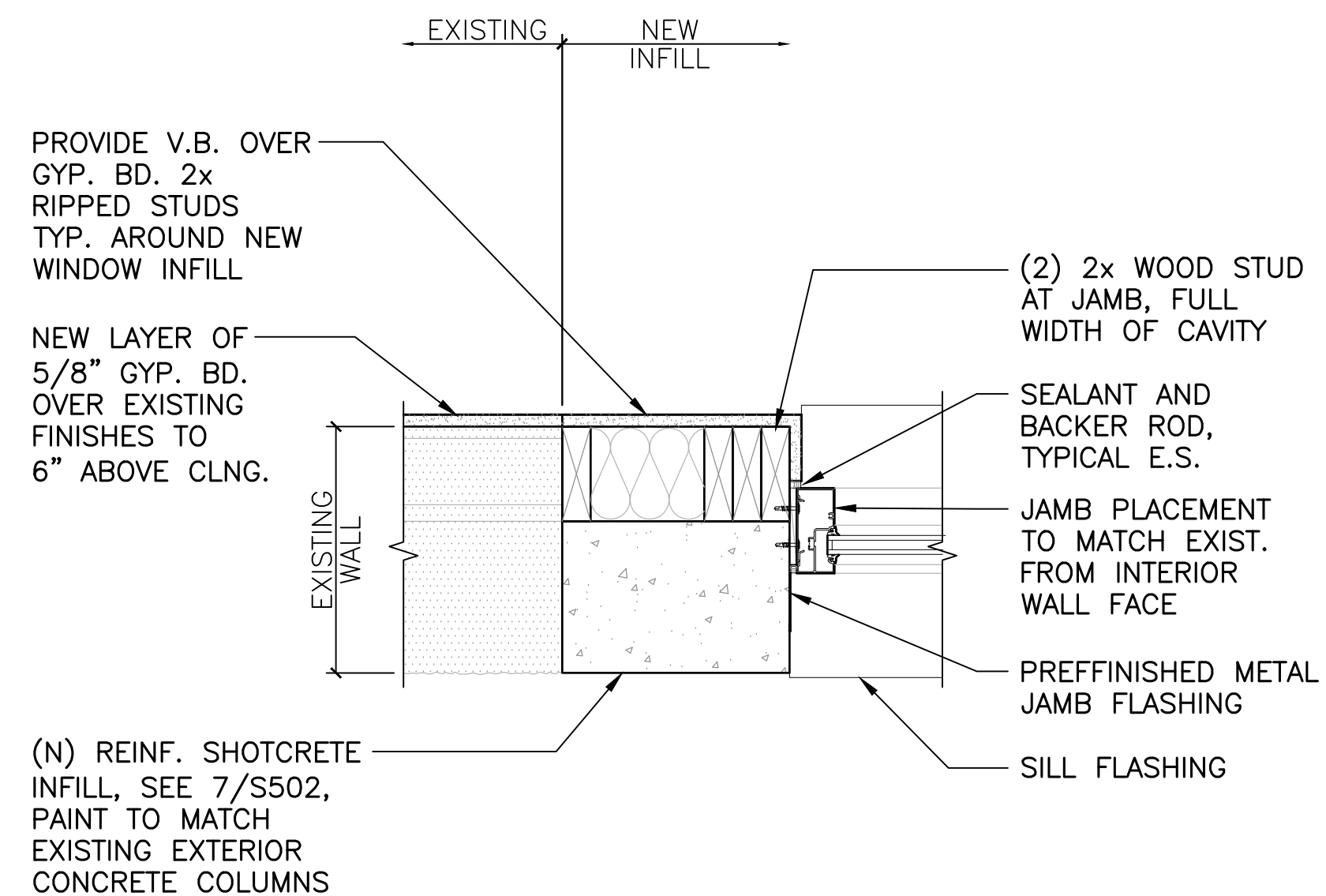
6 WINDOW SILL/HEAD DETAIL
1 1/2" = 1'-0"



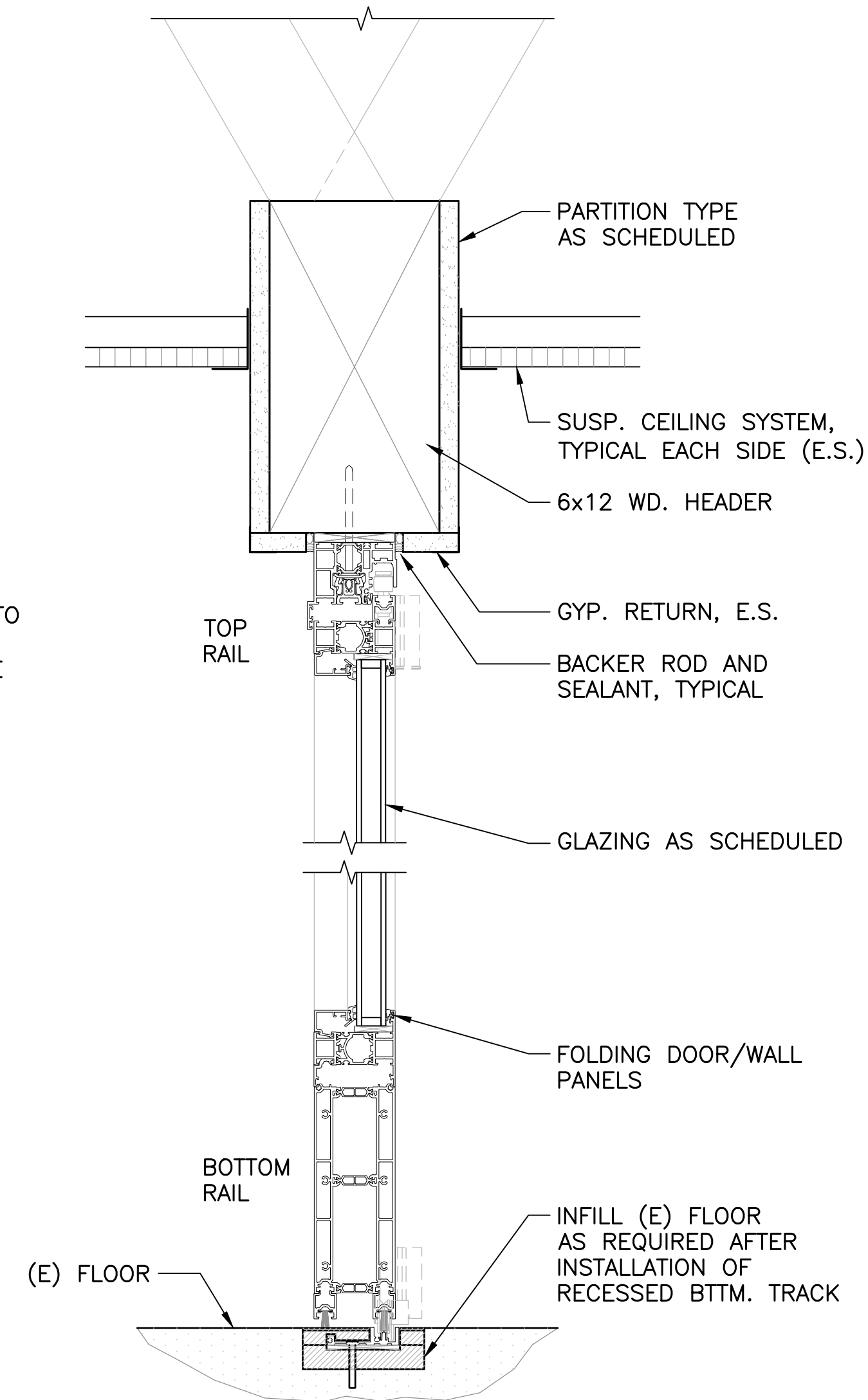
3 INTERIOR DOOR JAMB DETAIL
3" = 1'-0"



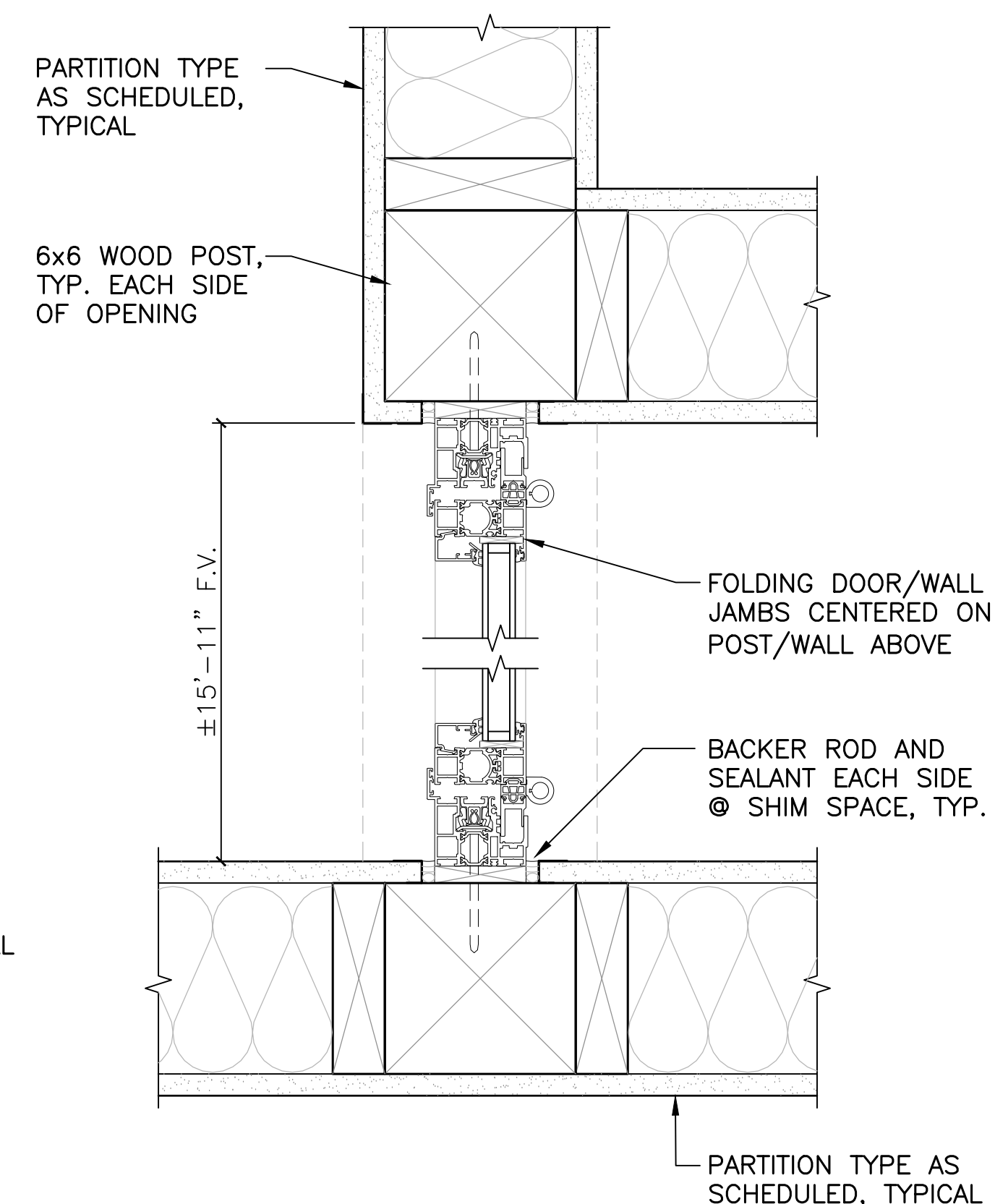
4 INTERIOR DOOR HEAD DETAIL
3" = 1'-0"



5 WINDOW JAMB DETAIL
1 1/2" = 1'-0"



1 DOOR SECTION DETAIL
3" = 1'-0"



2 JAMB DETAIL
3" = 1'-0"

Revisions:

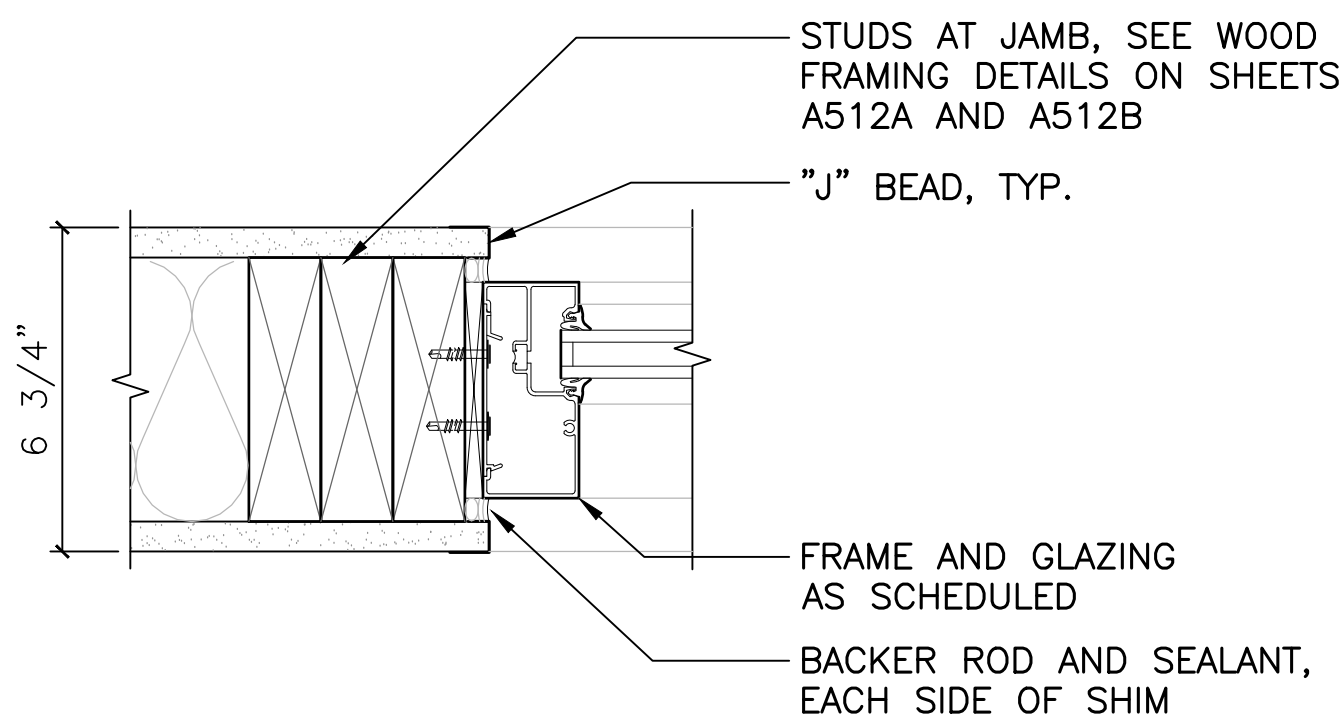
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

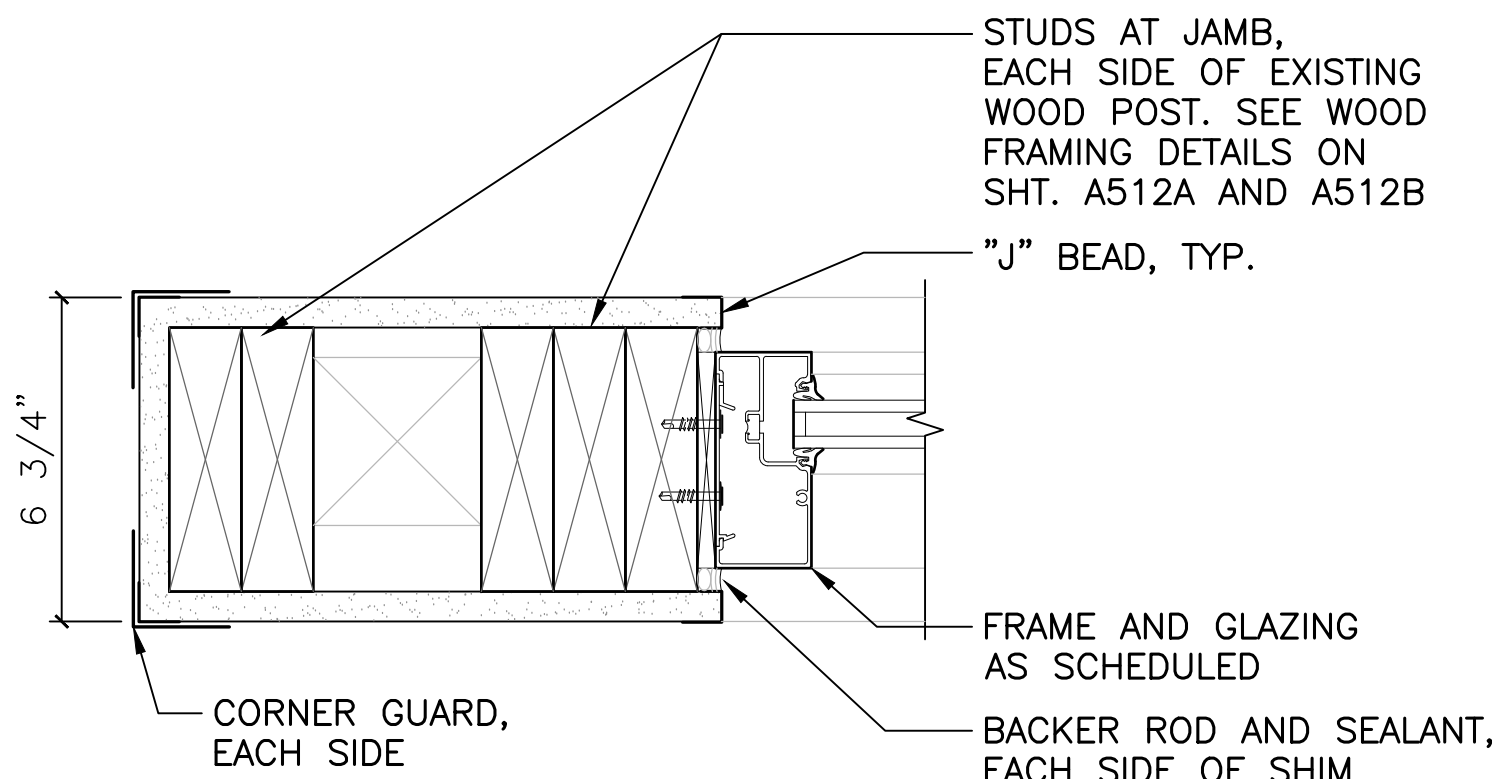
DOOR/MISC. DETAILS

Sheet Number:

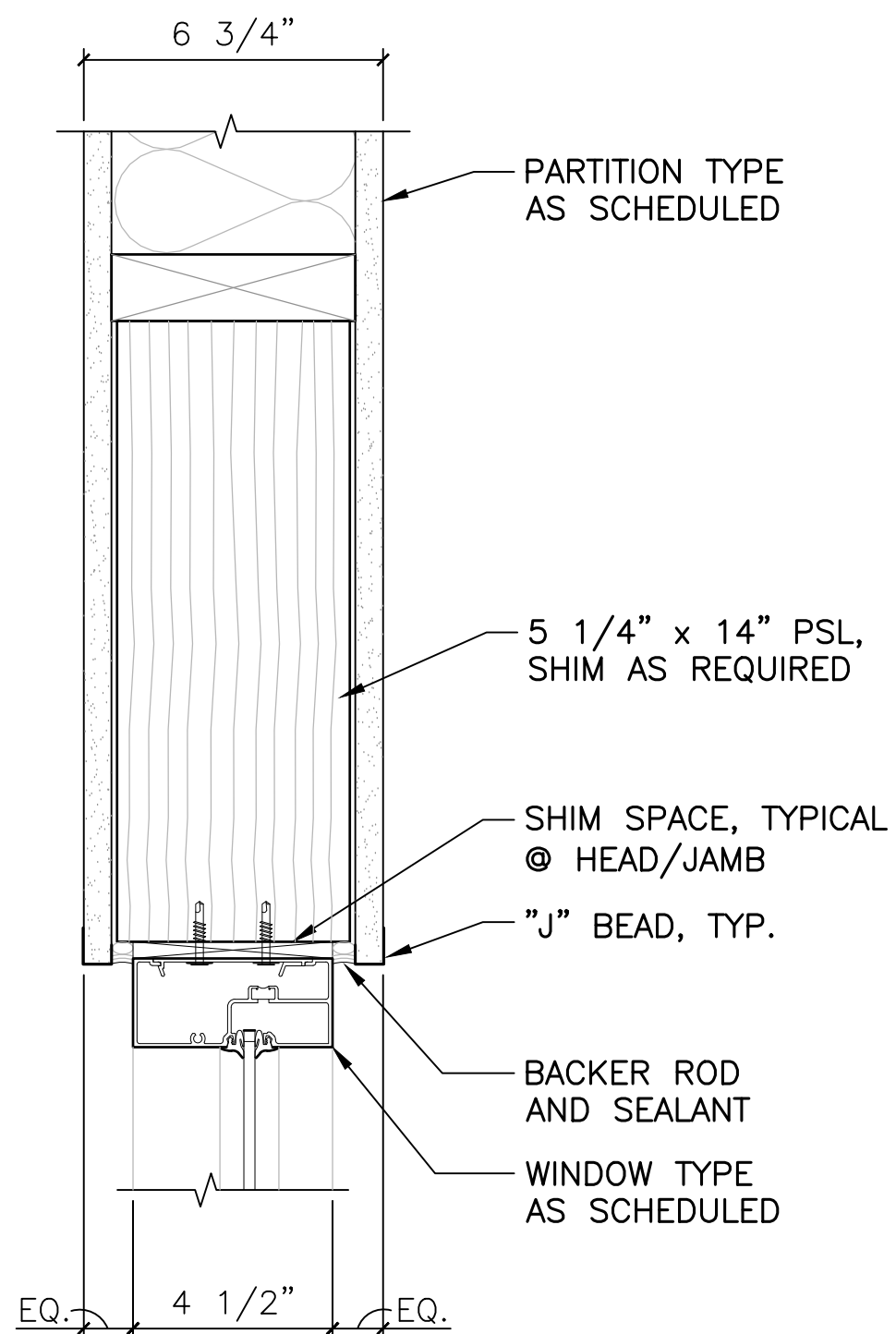
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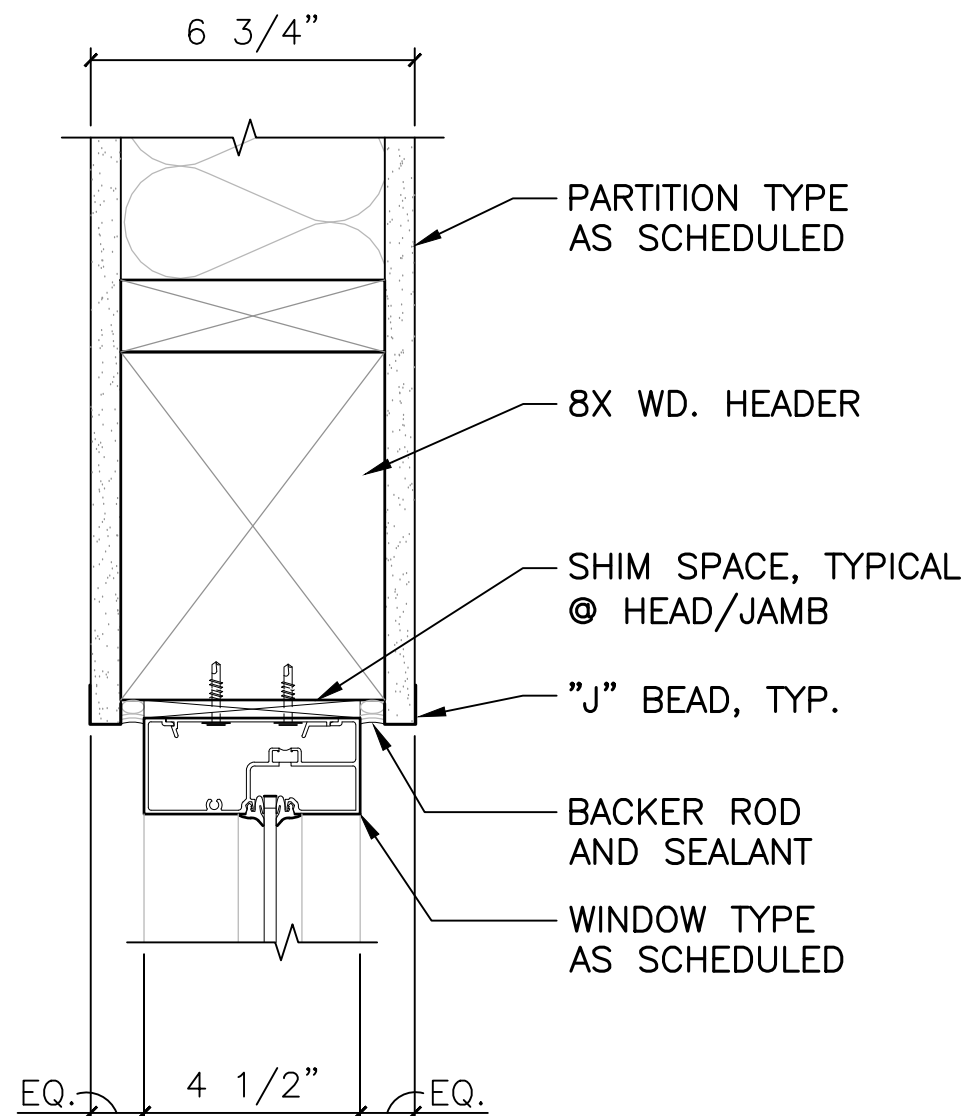
9 INTERIOR WINDOW JAMB DETAIL
3"= 1'-0"



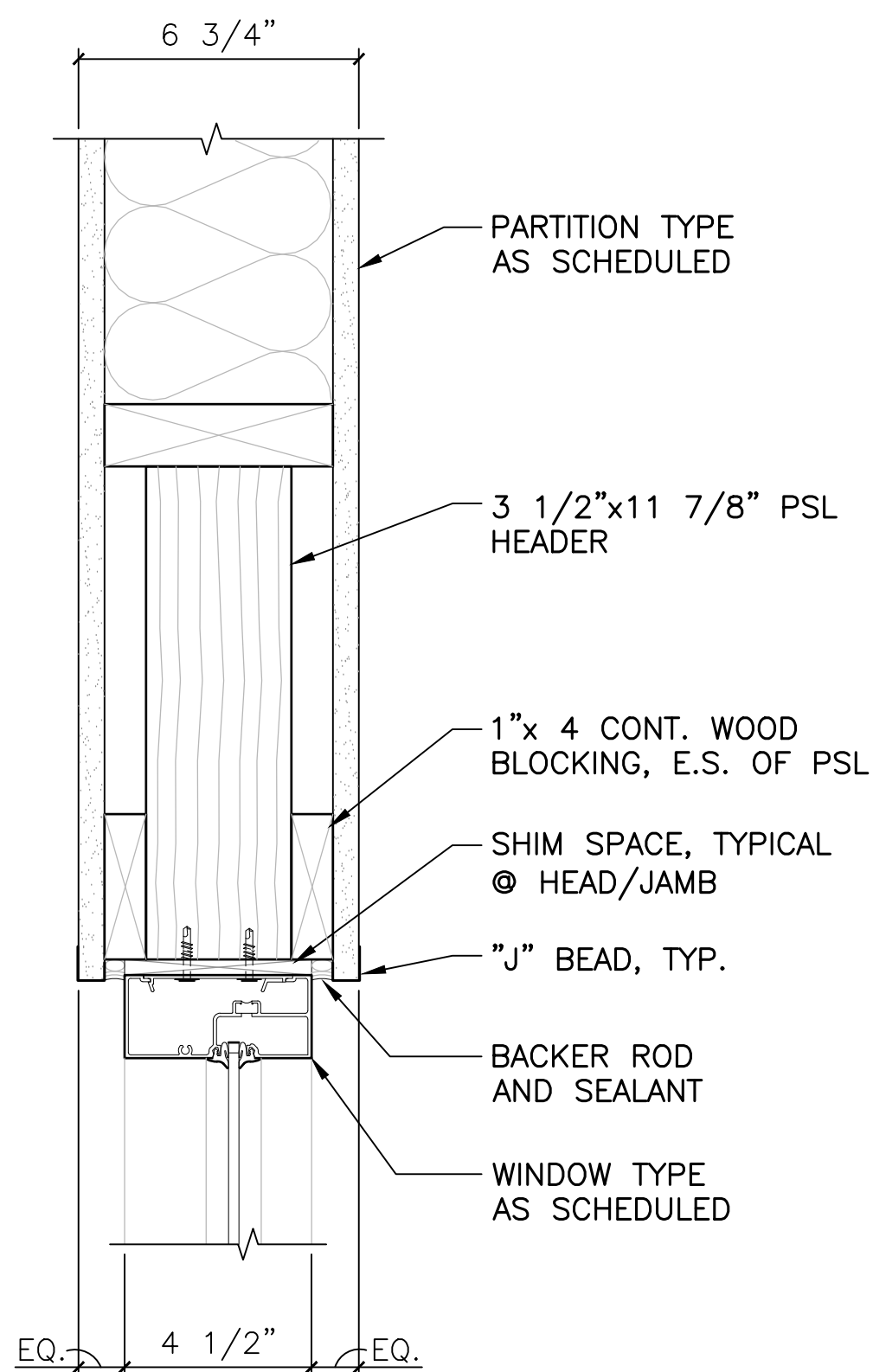
10 INTERIOR WINDOW JAMB DETAIL
3"= 1'-0"



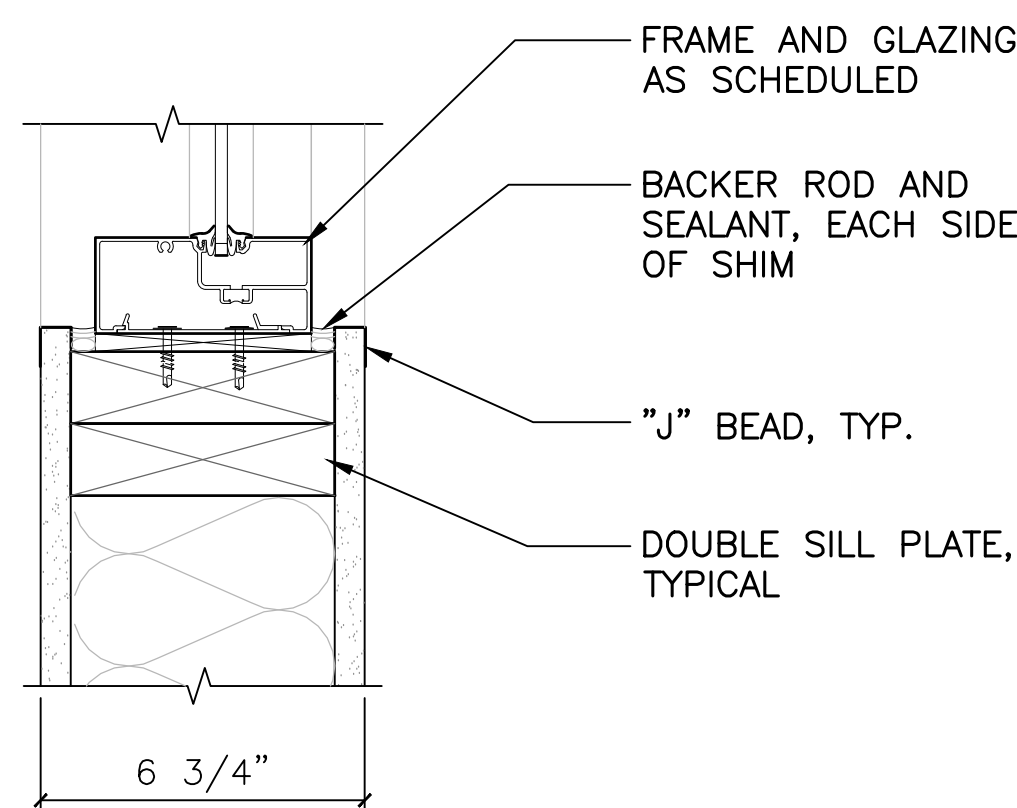
11 INTERIOR WINDOW HEAD DETAIL
3"= 1'-0"



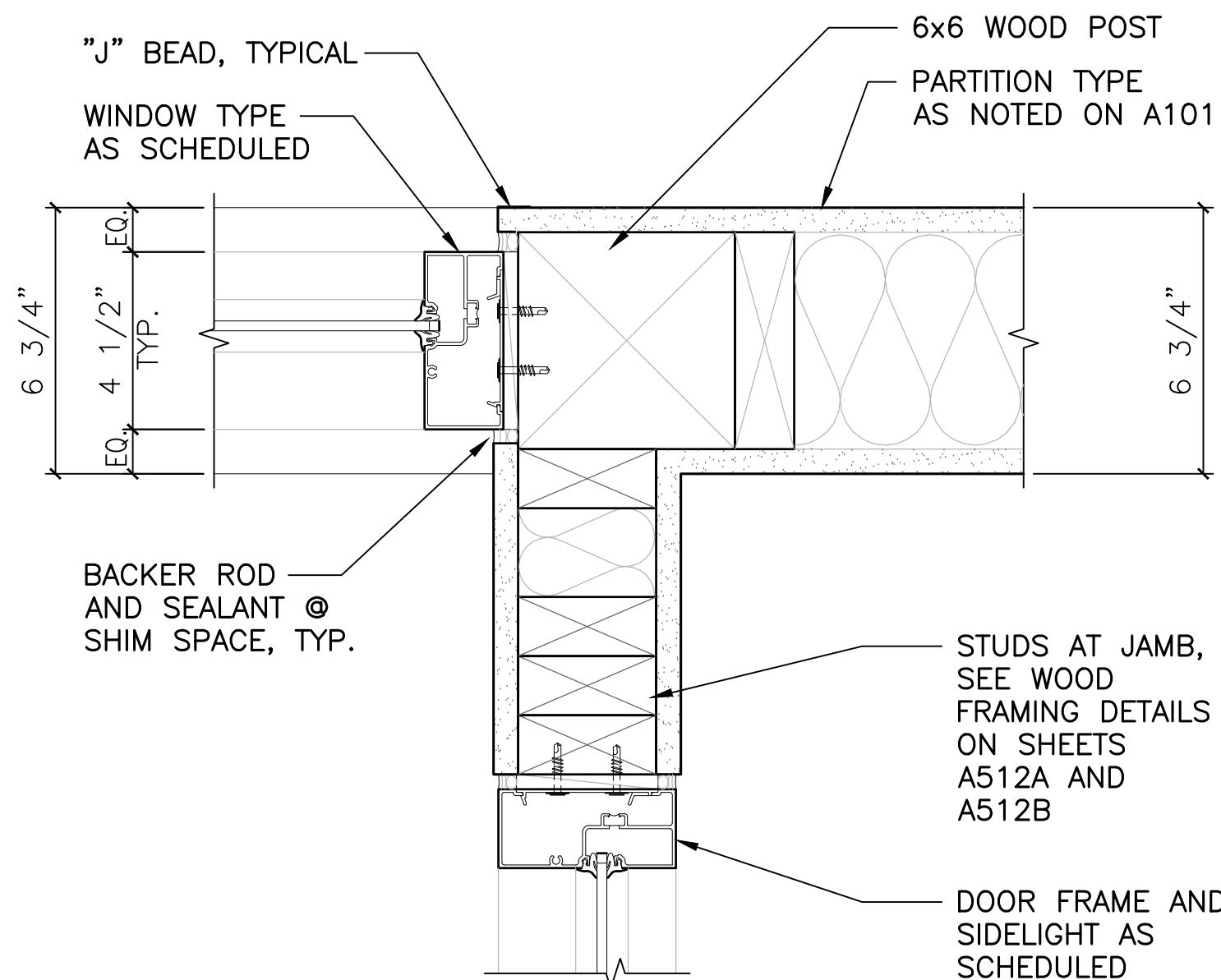
6 INTERIOR WINDOW HEAD DETAIL
3"= 1'-0"



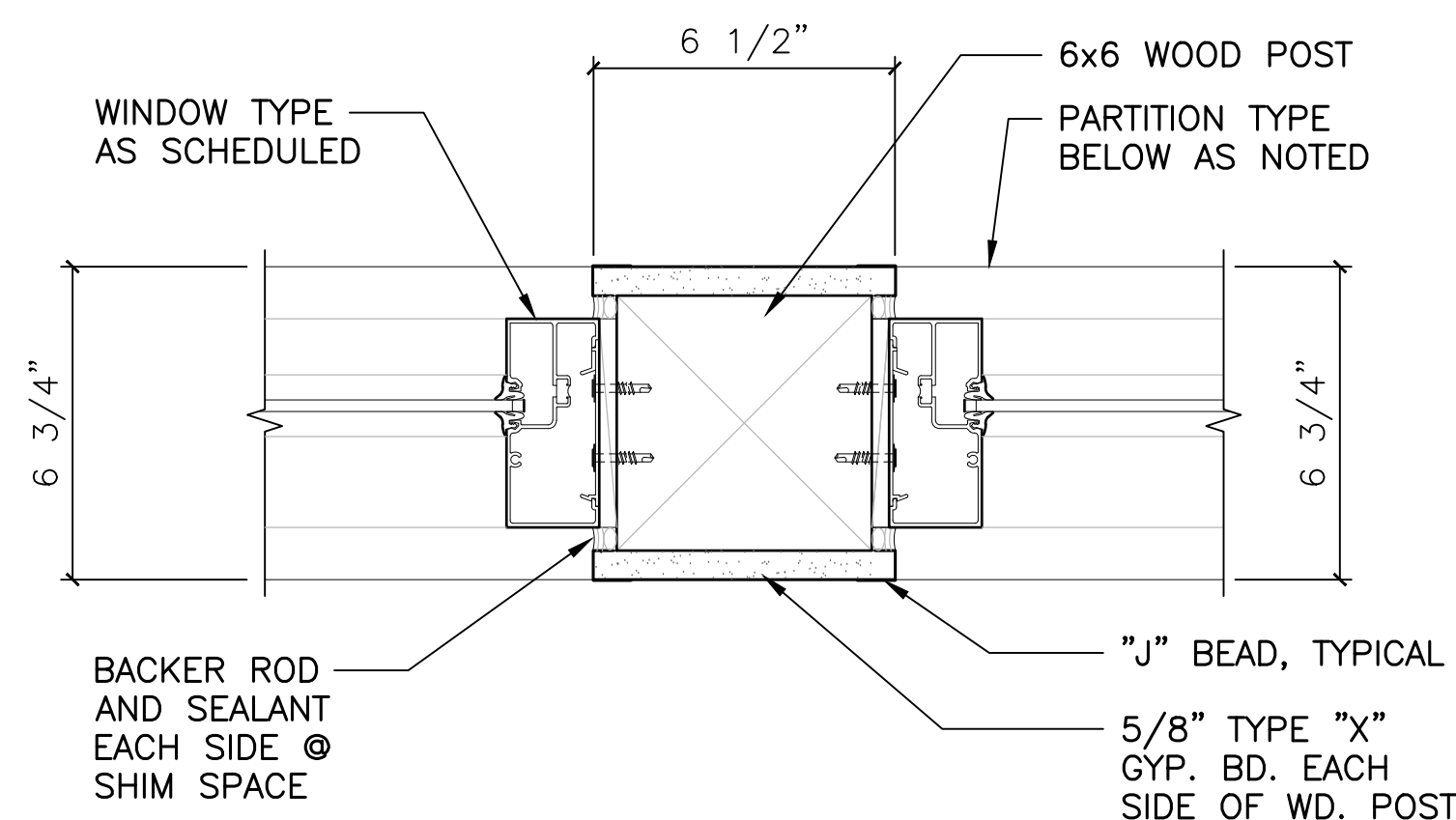
7 INTERIOR WINDOW HEAD DETAIL
3"= 1'-0"



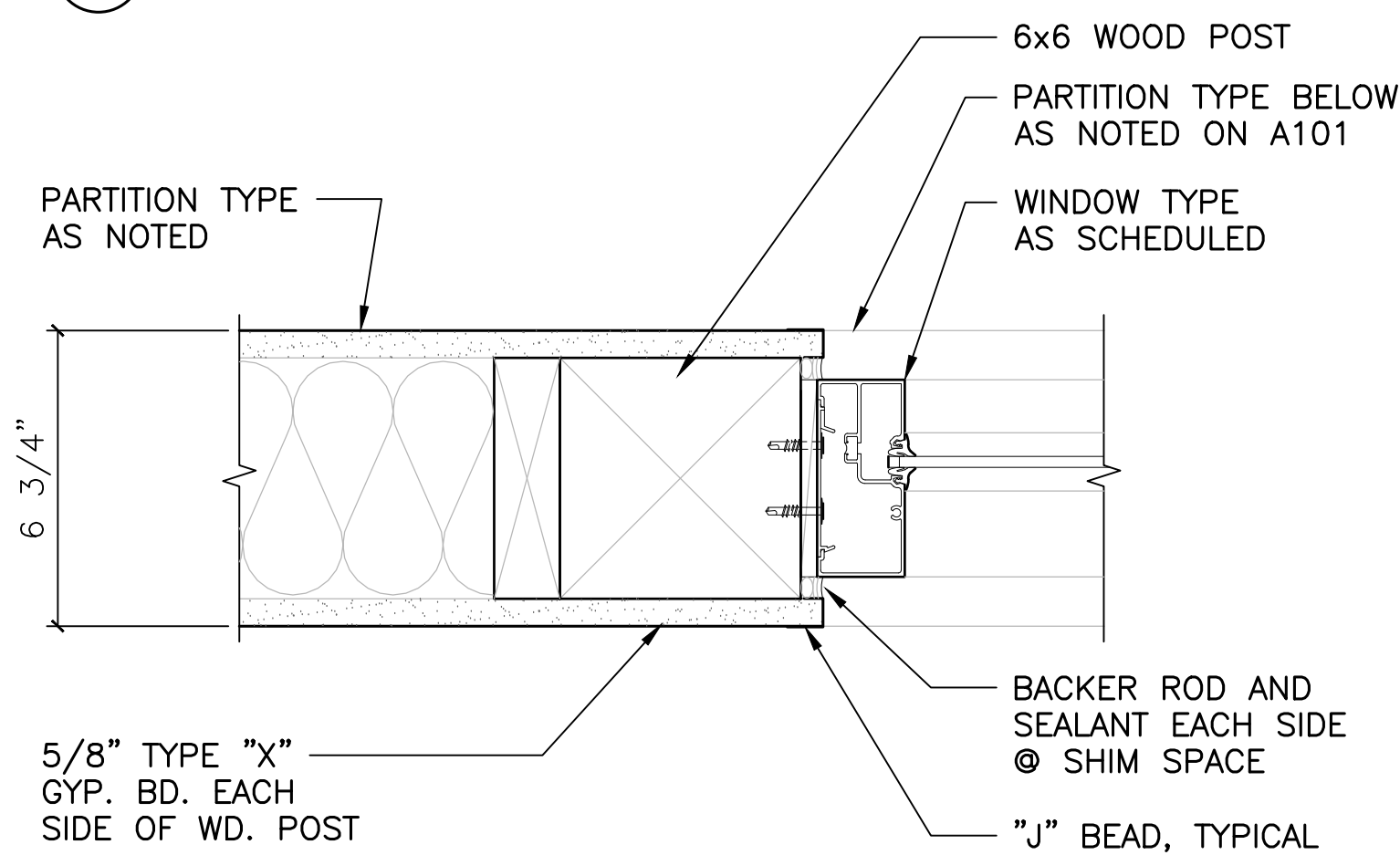
8 INTERIOR WINDOW SILL DETAIL
3"= 1'-0"



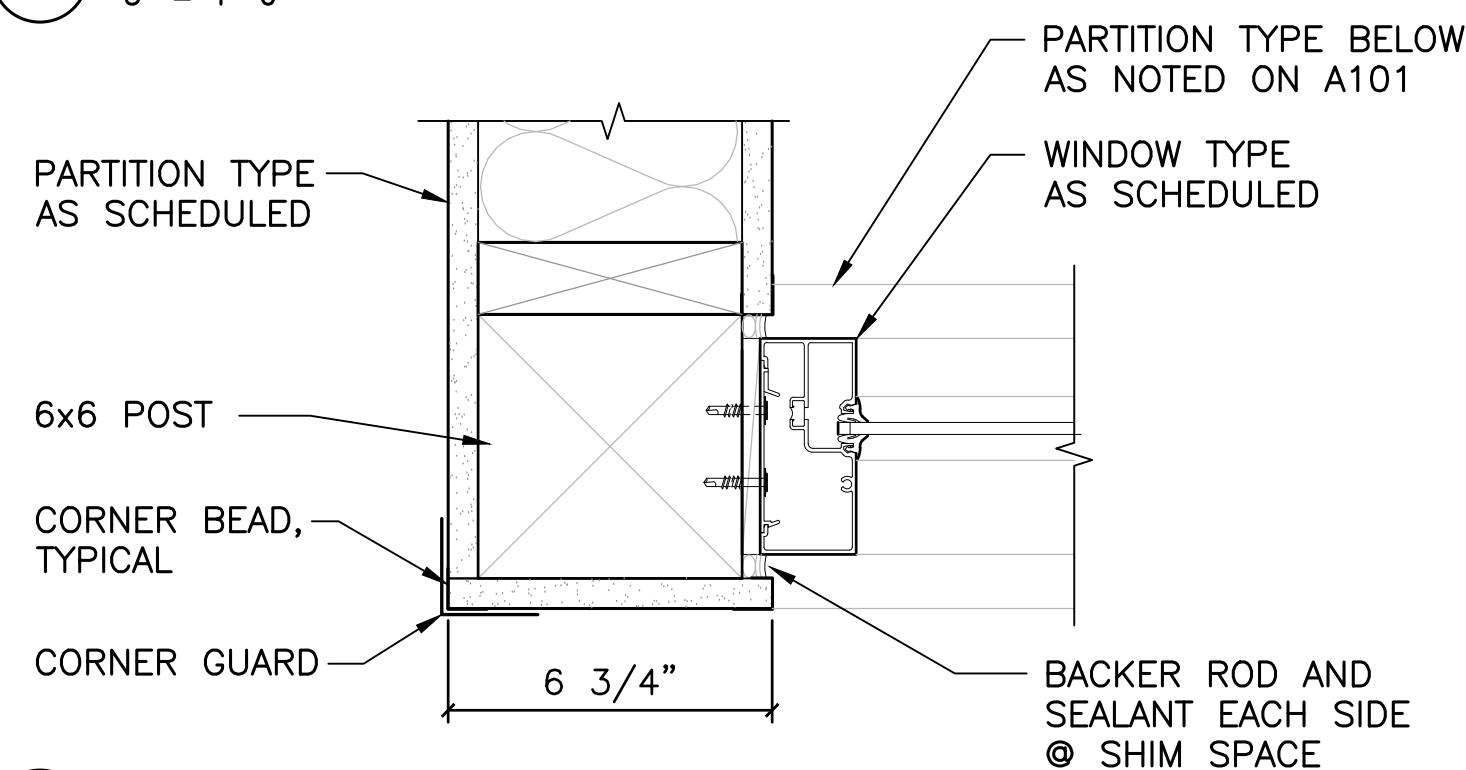
2 DOOR SIDELIGHT/WINDOW JAMB DETAIL
3"= 1'-0"



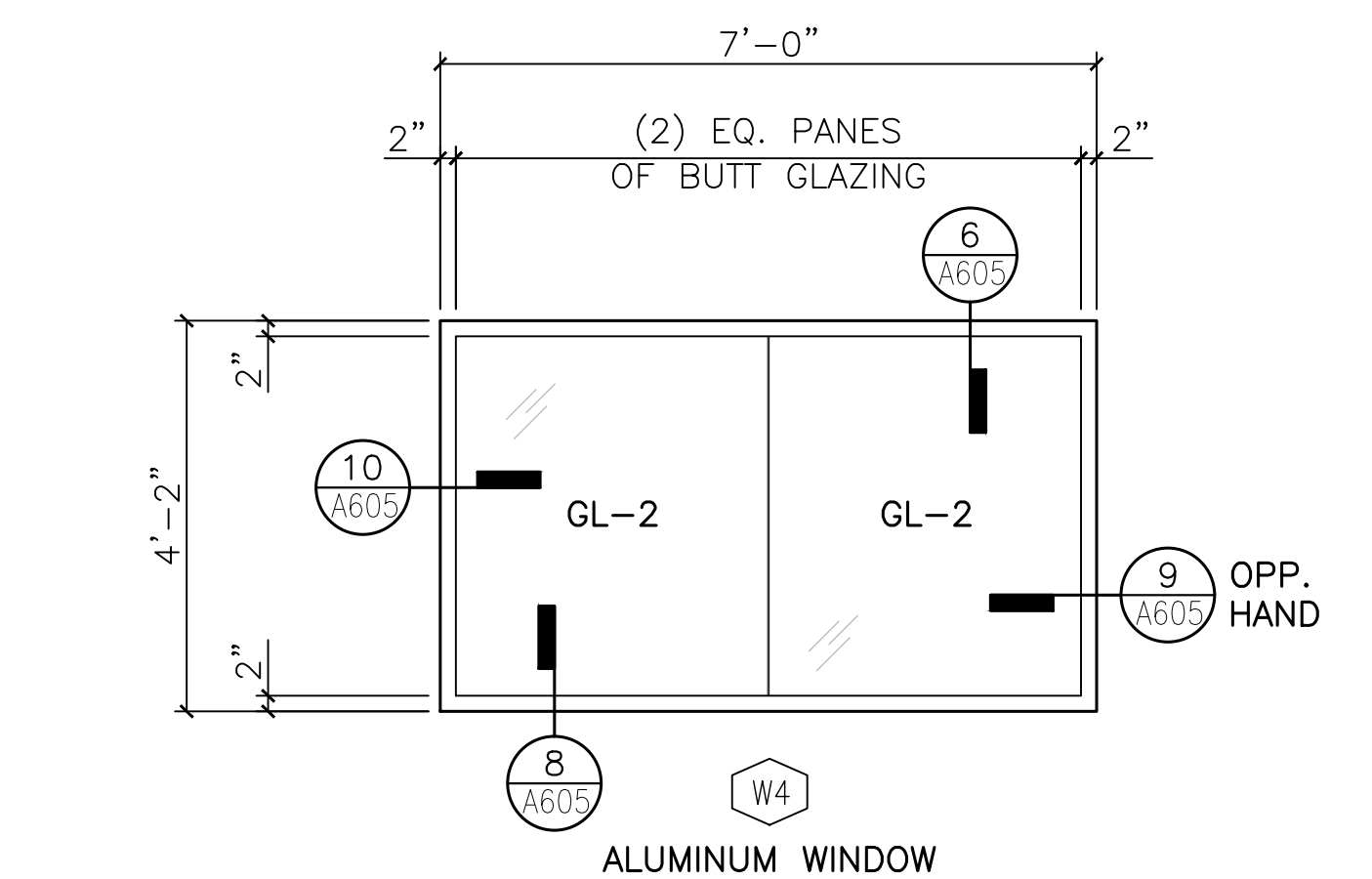
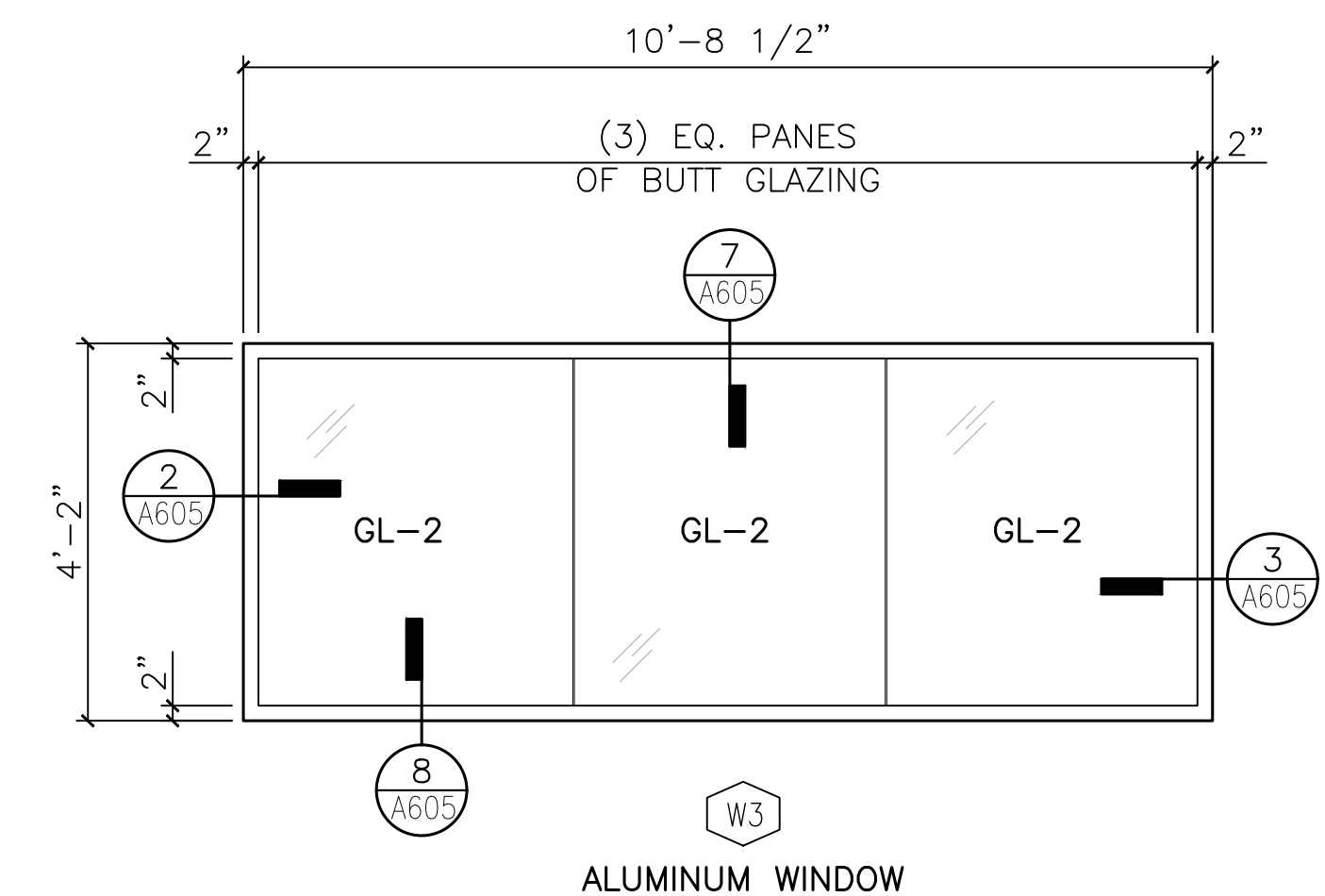
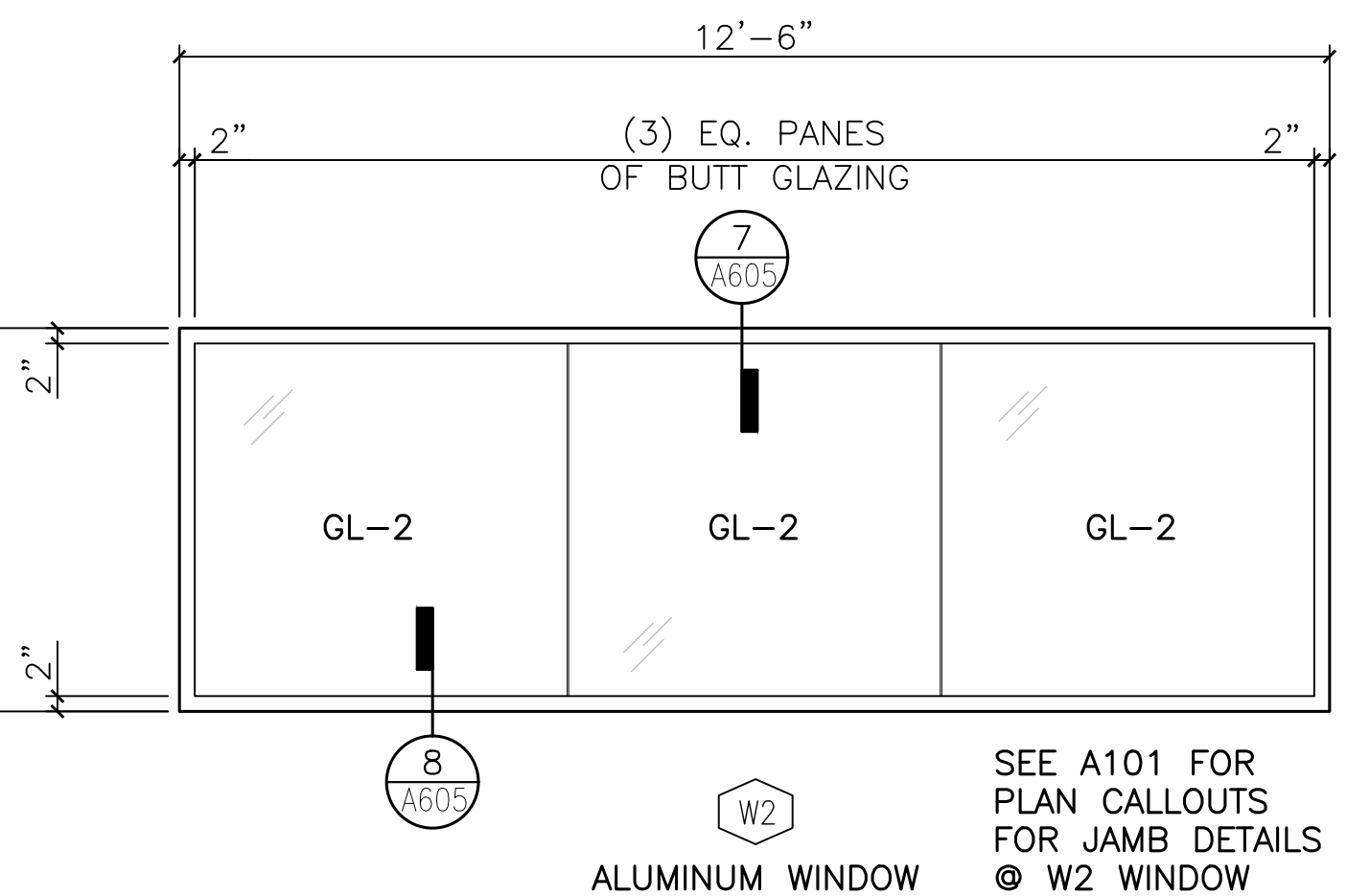
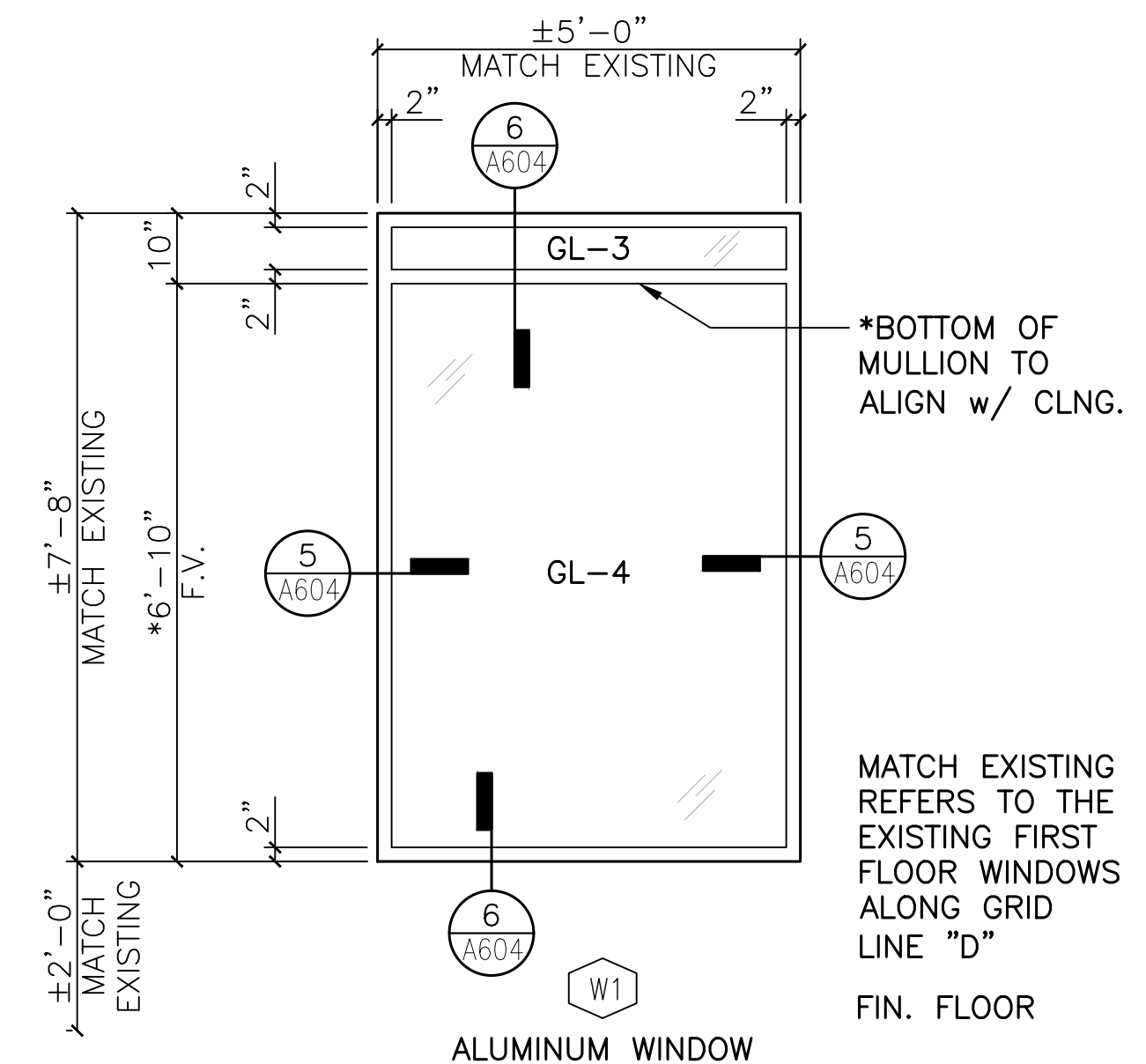
3 WINDOW JAMB DETAIL
3"= 1'-0"



4 JAMB DETAIL
3"= 1'-0"



5 JAMB DETAIL
3"= 1'-0"



1 WINDOW TYPES
1/2"= 1'-0"

Revisions:

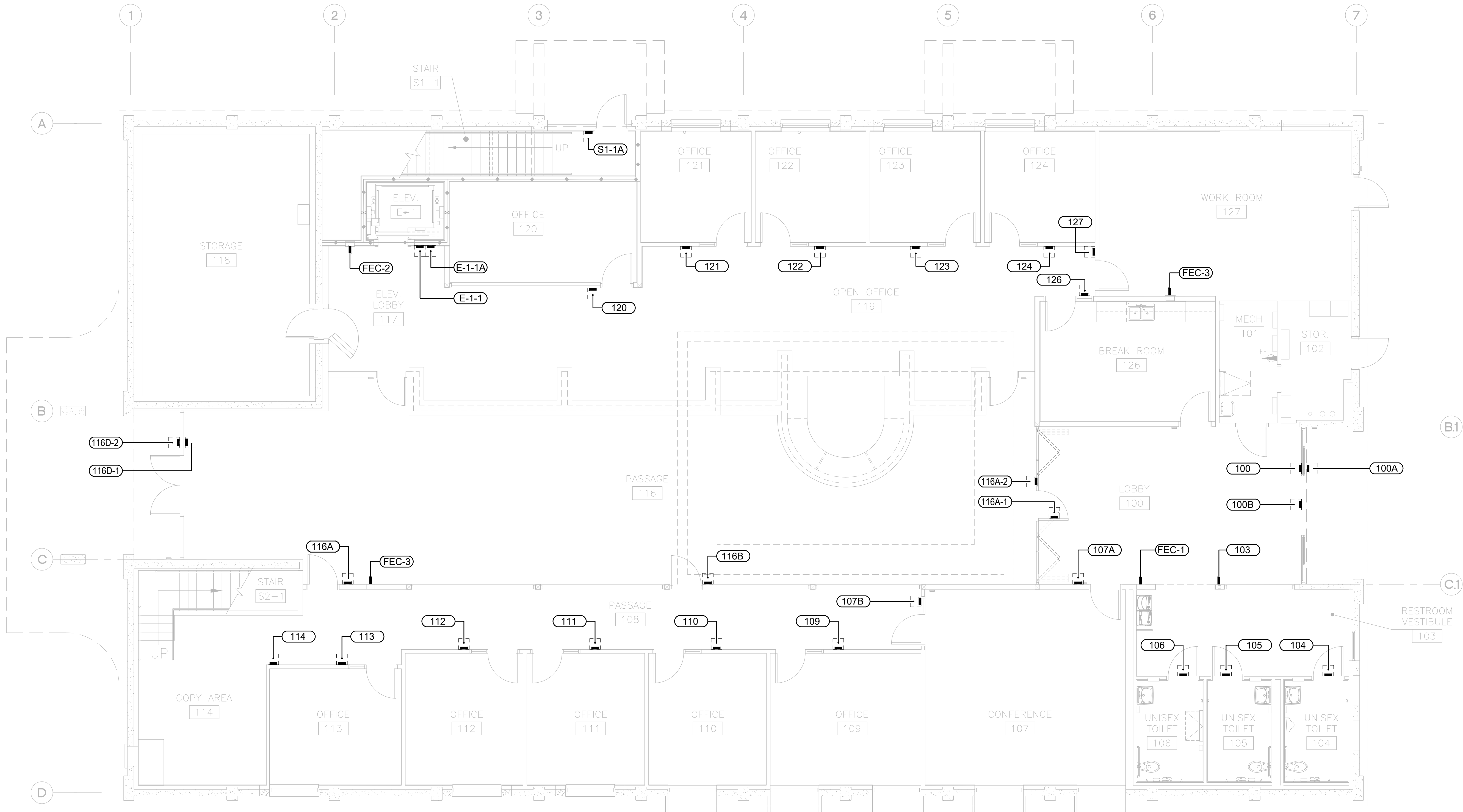
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

**SIGNAGE FIRST
FLOOR PLAN**

Sheet Number:

A606



GENERAL NOTES:

1. ALL SIGNAGE SHALL COMPLY WITH 2022 CBC CHAPTER 11B, DIVISION 11 – COMMUNICATION ELEMENTS AND FEATURES.
2. ALL SIGN SURFACES SHALL HAVE A NON-GLARE FINISH.
3. PROTRUSION FROM WALL FACE SHALL NOT EXCEED 4”.
4. ALL EXIT SIGN LED LIGHTS SHALL OPERATE ON NORMAL (AC INPUT) AND EMERGENCY (DC INPUT).
5. BUILDING OWNER TO APPROVE ALL SIGNS.
6. SEE SHEET A608 FOR SIGN TYPES AND TYPICAL MOUNTING HEIGHTS.
7. SITE SIGNAGE FOR FIRE ACCESS PER CFC503.3.
8. SEE SHEETS C101, C401, C501, AND C503 FOR LOCATION OF SITE SIGNS.
9. COORDINATE WITH DOOR AND PARTITION COMPONENTS TO INSTALL DOOR EXIT AND ADA CBC CHAPTER 11B SIGNAGE.
10. COORDINATE LOCATION OF ALL EXTERIOR SIGN POSTS WITH ARCHITECT PRIOR TO INSTALLATION.

PLAN
NORTH



1

FIRST FLOOR SIGNAGE PLAN

3/16" = 1'-0"



Revisions:

Client Project Number: 000
 PN Number: 000-000-000
 PA Project Number: 761.00
 Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

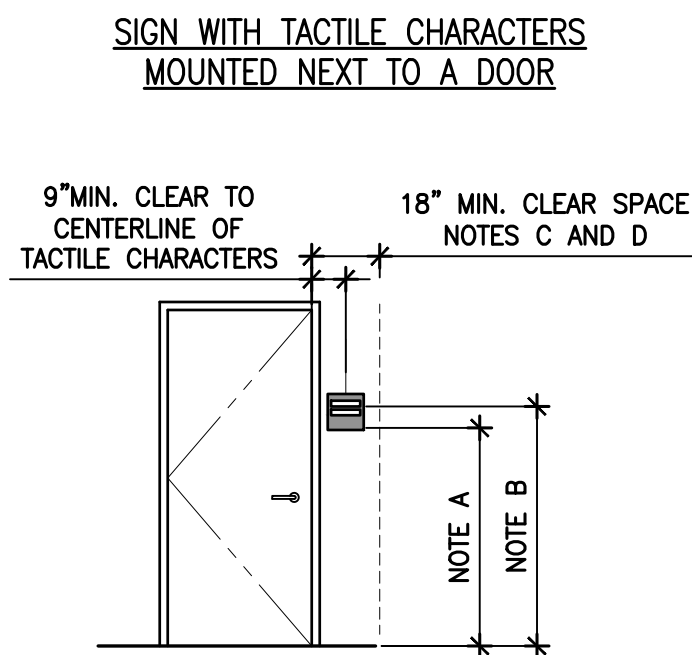
SIGNAGE SECOND
FLOOR PLAN

Sheet Number:

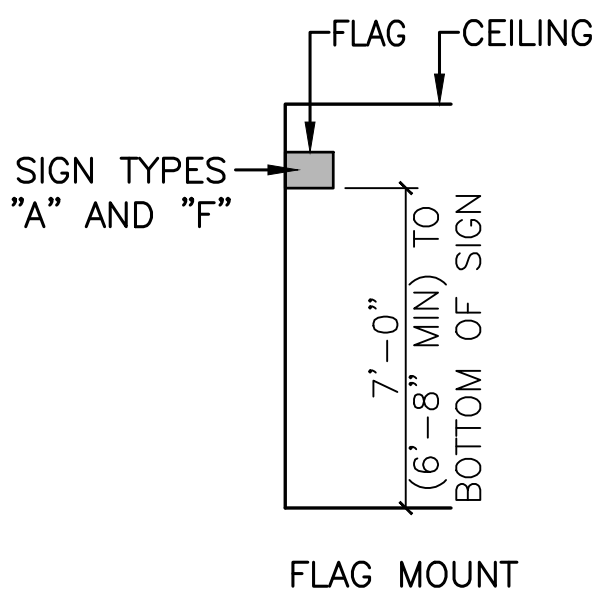
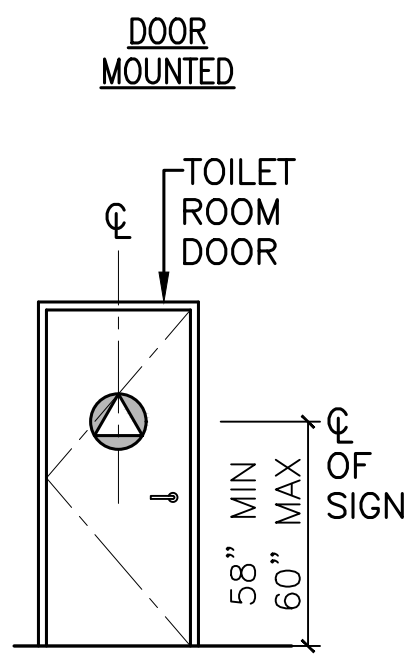
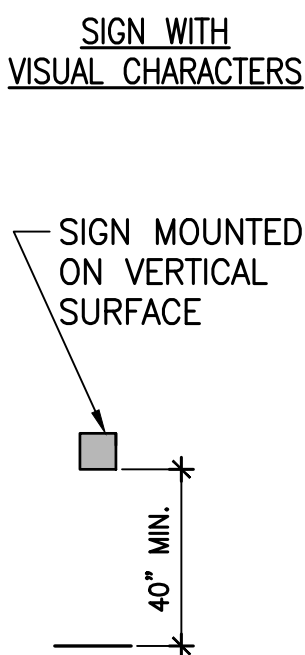
A607

1. ALL SIGNAGE SHALL COMPLY WITH 2022 CBC CHAPTER 11B, DIVISION 11 – COMMUNICATION ELEMENTS AND FEATURES.
2. ALL SIGN SURFACES SHALL HAVE A NON-GLARE FINISH.
3. PROTRUSION FROM WALL FACE SHALL NOT EXCEED 4”.
4. ALL EXIT SIGN LED LIGHTS SHALL OPERATE ON NORMAL (AC INPUT) AND EMERGENCY (DC INPUT).
5. BUILDING OWNER TO APPROVE ALL SIGNS.
6. SEE SHEET A608 FOR SIGN TYPES AND TYPICAL MOUNTING HEIGHTS.
7. SITE SIGNAGE FOR FIRE ACCESS PER CFC503.3.
8. SEE SHEETS C101, C401, C501, AND C503 FOR LOCATION OF SITE SIGNS.
9. COORDINATE WITH DOOR AND PARTITION COMPONENTS TO INSTALL DOOR EXIT AND ADA CBC CHAPTER 11B SIGNAGE.
10. COORDINATE LOCATION OF ALL EXTERIOR SIGN POSTS WITH ARCHITECT PRIOR TO INSTALLATION.



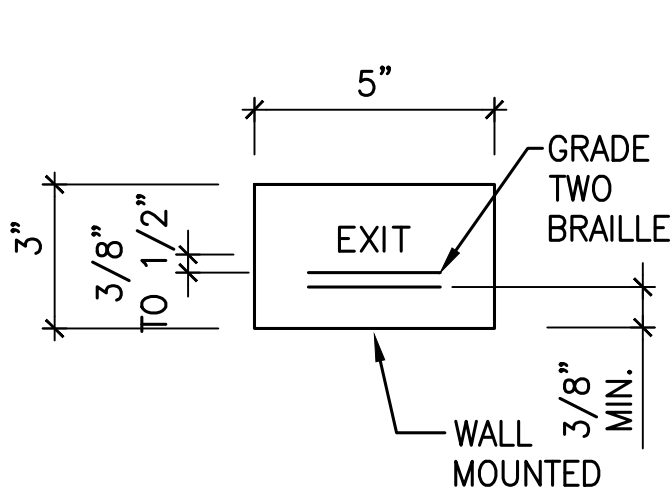


TACTILE CHARACTERS INCLUDE RAISED LETTERS, NUMBERS AND BRAILLE
NOTE A: 48" MIN WHEN MEASURING TO BASELINE OF THE LOWEST BRAILLE CELLS
NOTE B: 60" MAX WHEN MEASURING TO BASELINE OF THE HIGHEST RAISED CHARACTERS
NOTE C: BRAILLE CELLS SHALL BE CENTERED IN 18" MIN CLEAR SPACE
NOTE D: 18" MIN CLEAR SPACE EXTENDS BOTH PARALLEL AND PERPENDICULAR TO THE SIGN



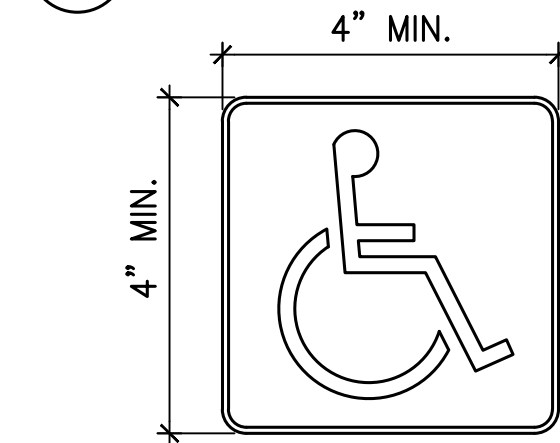
WALL MOUNTING HEIGHT REQUIREMENTS PER 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

3
NOT TO SCALE



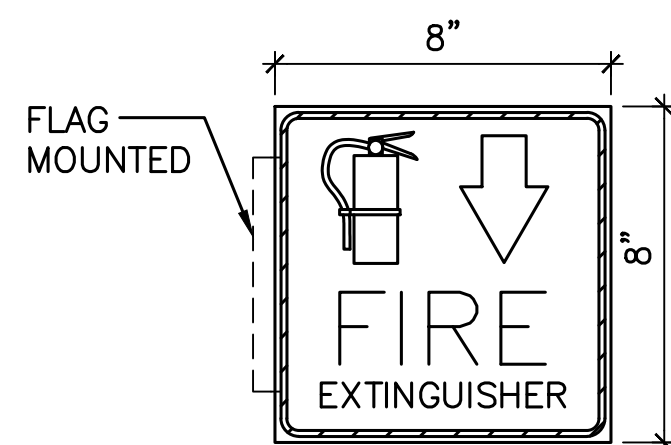
NOTES:
USE THIS SIGN AT WALLS NEXT TO DOORS AS INDICATED.
FONT: 5/8" FUTURA CONDENSED BOLD OR FUTURA CONDENSED EXTRA BOLD
LETTERING SHALL BE LIGHT COLOR ON A DARK BACKGROUND, BRAILLE IDENTIFICATION SHALL BE PROVIDED AS REQUIRED. SIGNAGE SHALL BE 5" X 3" RECTANGLE WITH RADIUS CORNERS

D 5' X 3' TACTILE EXIT SIGN



NOTES:
VINYL DECAL
SYMBOL SHALL CONSIST OF WHITE FIGURE ON A BLUE (FS15090) BACKGROUND

E INTERNATIONAL SYMBOL OF ACCESSIBILITY DECAL



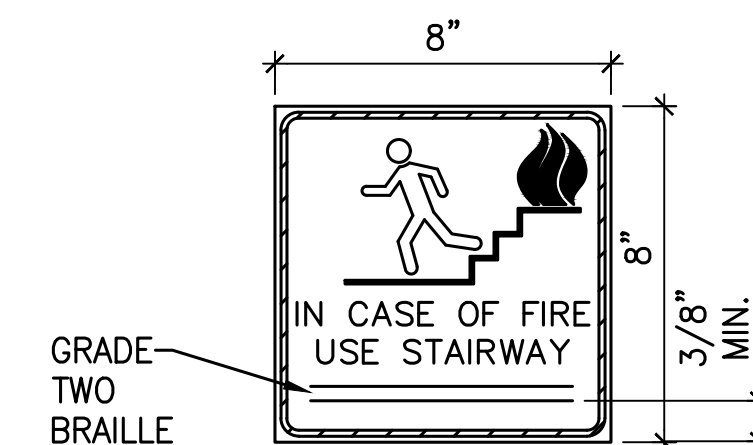
NOTES:
USE THIS SIGN AT WALLS ABOVE FIRE EXTINGUISHERS.
INSTALL ACCORDING TO MANUFACTURER INSTRUCTIONS.

F FIRE EXTINGUISHER SIGN - FLAG MOUNTED



NOTES:
USE THIS SIGN AT WALLS ABOVE DOORS AS INDICATED.
FONT: 1" FUTURA CONDENSED BOLD OR FUTURA CONDENSED EXTRA BOLD
LETTERING SHALL BE LIGHT COLOR ON A DARK BACKGROUND, SIGNAGE SHALL BE A RECTANGLE SIZED TO FIT TEXT WITH RADIUS CORNERS

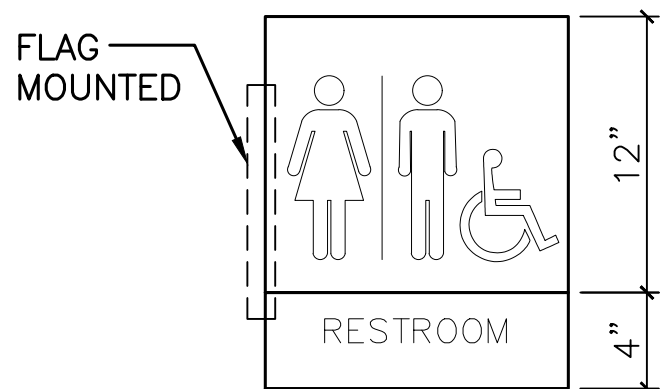
G EXIT SIGN



NOTES:
USE THIS SIGN AT WALLS ADJACENT TO ELEVATOR CAR DOORS.
LETTERING SHALL BE WHITE IN COLOR ON CONTRASTING DARK BACKGROUND
INSTALL ACCORDING TO MANUFACTURER INSTRUCTIONS.

H 8' X 8' TACTILE EGRESS SIGN

4 SIGN TYPES NOT TO SCALE



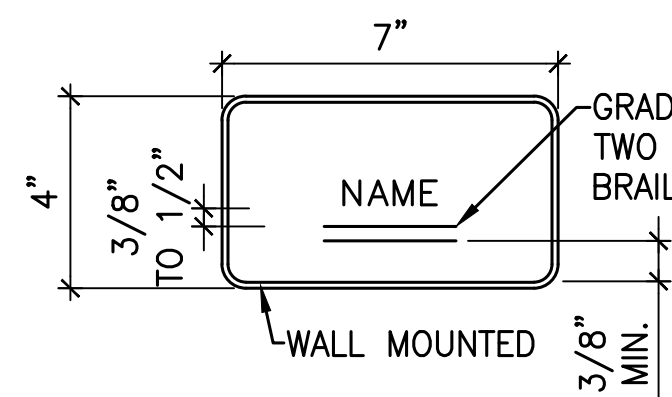
NOTES:
PP: 12"x12"x1/4" PHOTOPOLYMER - COPY & ASI, WHITE; BACKGROUND, DARK ATTACHMENT: DOUBLE FACED TAPE & SILICONE
CBC 11B-703.5.1 BACKGROUND TO PROVIDE 70% CONTRAST WITH COPY/FIGURE

A TOILET ROOM IDENTIFICATION - FLAG MOUNTED



NOTES:
PP: 12"x12"x1/4" PHOTOPOLYMER - COPY & ASI, WHITE; BACKGROUND, DARK ATTACHMENT: DOUBLE FACED TAPE & SILICONE
CBC 11B-703.5.1 BACKGROUND TO CONTRAST WITH DOOR & PROVIDE 70% CONTRAST WITH COPY/FIGURE
11B-703.7.2.6.3 TRIANGLE SYMBOL TO CONTRAST WITH THE CIRCLE SYMBOL, CIRCLE SYMBOL TO CONTRAST WITH THE DOOR.
CBC 11B-703.7.2.6.4. EASE EDGES.
11B-703.7.2.6 SYMBOLS AT ENTRANCES TO TOILET AND BATHING ROOMS SHALL BE MOUNTED AT 58 INCHES MINIMUM AND 60 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED FROM THE CENTERLINE OF THE SYMBOL.

B TOILET ROOM IDENTIFICATION - DOOR MOUNTED



NOTES:
USE THIS SIGN AT WALLS NEXT TO DOORS AS INDICATED.
FONT: 5/8" FUTURA CONDENSED BOLD OR FUTURA CONDENSED EXTRA BOLD
LETTERING SHALL BE LIGHT COLOR ON A DARK BACKGROUND, BRAILLE IDENTIFICATION SHALL BE PROVIDED AS REQUIRED. SIGNAGE SHALL BE 7" X 4" RECTANGLE WITH RADIUS CORNERS

C 7' X 4' ROOM IDENTIFICATION SIGN

INTERIOR SIGN SCHEDULE

SIGN NUMBER	ROOM or AREA	ROOM NUMBER	SIGN FUNCTION	SIGN TYPE	MESSAGE
100	VESTIBULE (INTERIOR)	100	EGRESS	D	EXIT
100A	VESTIBULE (EXTERIOR)	100	ACCESSIBILITY	E	SEE DETAIL 3,4/A608
100B	VESTIBULE (INTERIOR)	100	INFORMATION	G	SEE DETAIL 4/A608
103	RESTROOM VESTIBULE	103	REST ROOM FLAG	A	RESTROOMS
104	UNISEX TOILET	104	RESTROOM DOOR	B	ALL GENDER RESTROOM
105	UNISEX TOILET	105	RESTROOM DOOR	B	ALL GENDER RESTROOM
106	UNISEX TOILET	106	RESTROOM DOOR	B	ALL GENDER RESTROOM
107A	CONFERENCE	107	ROOM IDENTIFICATION	C	CONFERENCE 107
107B	CONFERENCE	107	ROOM IDENTIFICATION	C	CONFERENCE 107
116B	PASSAGE	108	ROOM IDENTIFICATION	C	PASSAGE
116C	PASSAGE	108	ROOM IDENTIFICATION	C	PASSAGE
109	OFFICE	109	ROOM IDENTIFICATION	C	OFFICE 109
110	OFFICE	110	ROOM IDENTIFICATION	C	OFFICE 110
111	OFFICE	111	ROOM IDENTIFICATION	C	OFFICE 111
112	OFFICE	112	ROOM IDENTIFICATION	C	OFFICE 112
113	OFFICE	113	ROOM IDENTIFICATION	C	OFFICE 113
114	STORAGE	114	ROOM IDENTIFICATION	C	COPY AREA 114
116A-1	VESTIBULE (INTERIOR)	116	EGRESS	D	EXIT
116A-2	VESTIBULE (INTERIOR)	116	INFORMATION	G	SEE DETAIL 4/A608
116B	PASSAGE	116	ROOM IDENTIFICATION	C	PASSAGE
116C	PASSAGE	116	ROOM IDENTIFICATION	C	PASSAGE
116D-1	VESTIBULE (INTERIOR)	116	EGRESS	D	EXIT
116D-2	VESTIBULE (EXTERIOR)	116	ACCESSIBILITY	E	SEE DETAIL 3,4/A608
120	OFFICE	120	ROOM IDENTIFICATION	C	OFFICE 120
121	OFFICE	121	ROOM IDENTIFICATION	C	OFFICE 121
122	OFFICE	122	ROOM IDENTIFICATION	C	OFFICE 122
123	OFFICE	123	ROOM IDENTIFICATION	C	OFFICE 123
124	OFFICE	124	ROOM IDENTIFICATION	C	OFFICE 124
126	BREAK ROOM	126	ROOM IDENTIFICATION	C	BREAK ROOM 126
127	WORK ROOM	127	ROOM IDENTIFICATION	C	WORK ROOM 127
201	STORAGE	201	ROOM IDENTIFICATION	C	STORAGE 201
202	IT	202	ROOM IDENTIFICATION	C	IT 202
203	OFFICE	203	ROOM IDENTIFICATION	C	OFFICE 203
204	OPEN OFFICE	204	ROOM IDENTIFICATION	C	OFFICE 204
205	UNISEX TOILET	205	RESTROOM DOOR	B	ALL GENDER RESTROOM
205A	UNISEX TOILET	205/206	RESTROOM FLAG	A	RESTROOMS
206	UNISEX TOILET	206	RESTROOM DOOR	B	ALL GENDER RESTROOM
207	JANITOR	207	ROOM IDENTIFICATION	C	JANITOR
208	UNISEX TOILET	208	RESTROOM DOOR	B	ALL GENDER RESTROOM
208A	UNISEX TOILET	208	RESTROOM FLAG	A	RESTROOM
209	ELEVATOR EQUIPMENT	209	ROOM IDENTIFICATION	C	ELEVATOR EQUIPMENT 209
210	LACTATION	210	ROOM IDENTIFICATION	C	LACTATION 210
211	STORAGE	211	ROOM IDENTIFICATION	C	STORAGE 211
E-1-1	ELEVATOR	E-1	ROOM IDENTIFICATION	C	ELEVATOR
E-1-1A	ELEVATOR	E-1	EGRESS	H	SEE DETAIL 4/A608
E-1-2	ELEVATOR	E-1	ROOM IDENTIFICATION	C	ELEVATOR
E-1-2A	ELEVATOR	E-1	EGRESS	H	SEE DETAIL 4/A608
FEC-1	LOBBY	100	FEC LOCATION	F	SEE DETAIL 3,4/A608
FEC-2	ELEVATOR LOBBY	117	FEC LOCATION	F	SEE DETAIL 3,4/A608
FEC-3	WORK ROOM	127	FEC LOCATION	F	SEE DETAIL 3,4/A608
FEC-4	PASSAGE	116	FEC LOCATION	F	SEE DETAIL 3,4/A608
S1-1A	STAIR	S1-1	EGRESS	D	EXIT
S1-2	STAIR	S1-2	EGRESS	D	EXIT

GENERAL NOTES:
1. SEE DETAIL 4/A608 FOR SIGNAGE TYPE. SEE DETAIL 3/A608 FOR TYPICAL SIGNAGE MOUNTING REQUIREMENTS.
2. ALL SIGNAGE TEXT AND REQUIREMENTS AS PER CBC, CHAPTER 11B, DIVISION 7: COMMUNICATION ELEMENTS AND FEATURES.

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SIGNAGE SCHEDULE
AND DETAILS

Sheet Number:

A608



CITY OF UKIAH
**BANK OF AMERICA
ADA BARRIER REMOVAL**
501 South State St. Ukiah, CA 95482

Revisions:

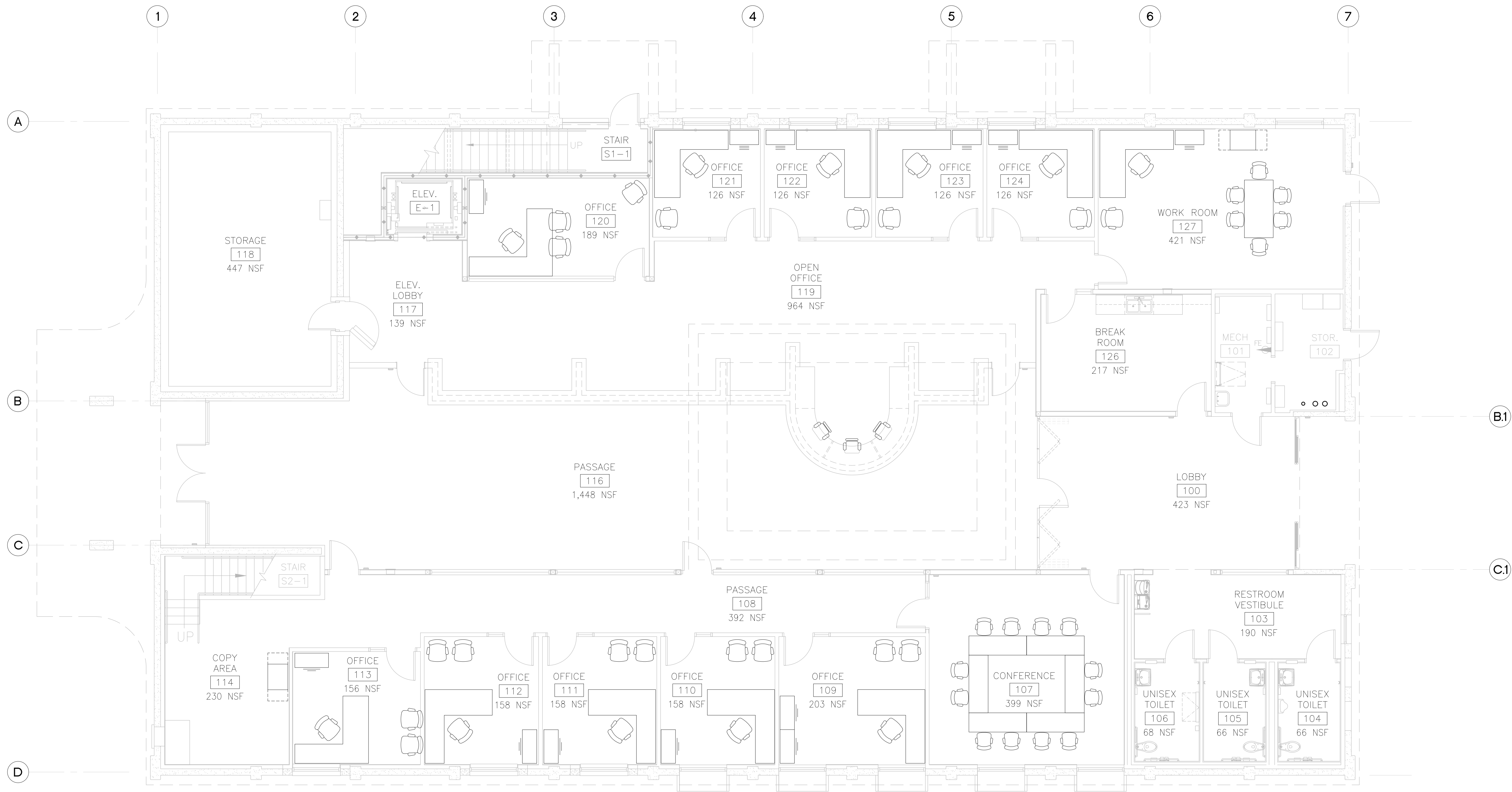
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

FIRST FLOOR
FURNITURE PLAN

Sheet Number:

A901



GENERAL NOTES:

1. FURNITURE IS NOT IN CONTRACT. FOR REFERENCE ONLY.

PLAN
NORTH



FIRST FLOOR FURNITURE PLAN

3/16" = 1'-0"





CITY OF UKIAH
**BANK OF AMERICA
ADA BARRIER REMOVAL**
501 South State St. Ukiah, CA 95482

Revisions:

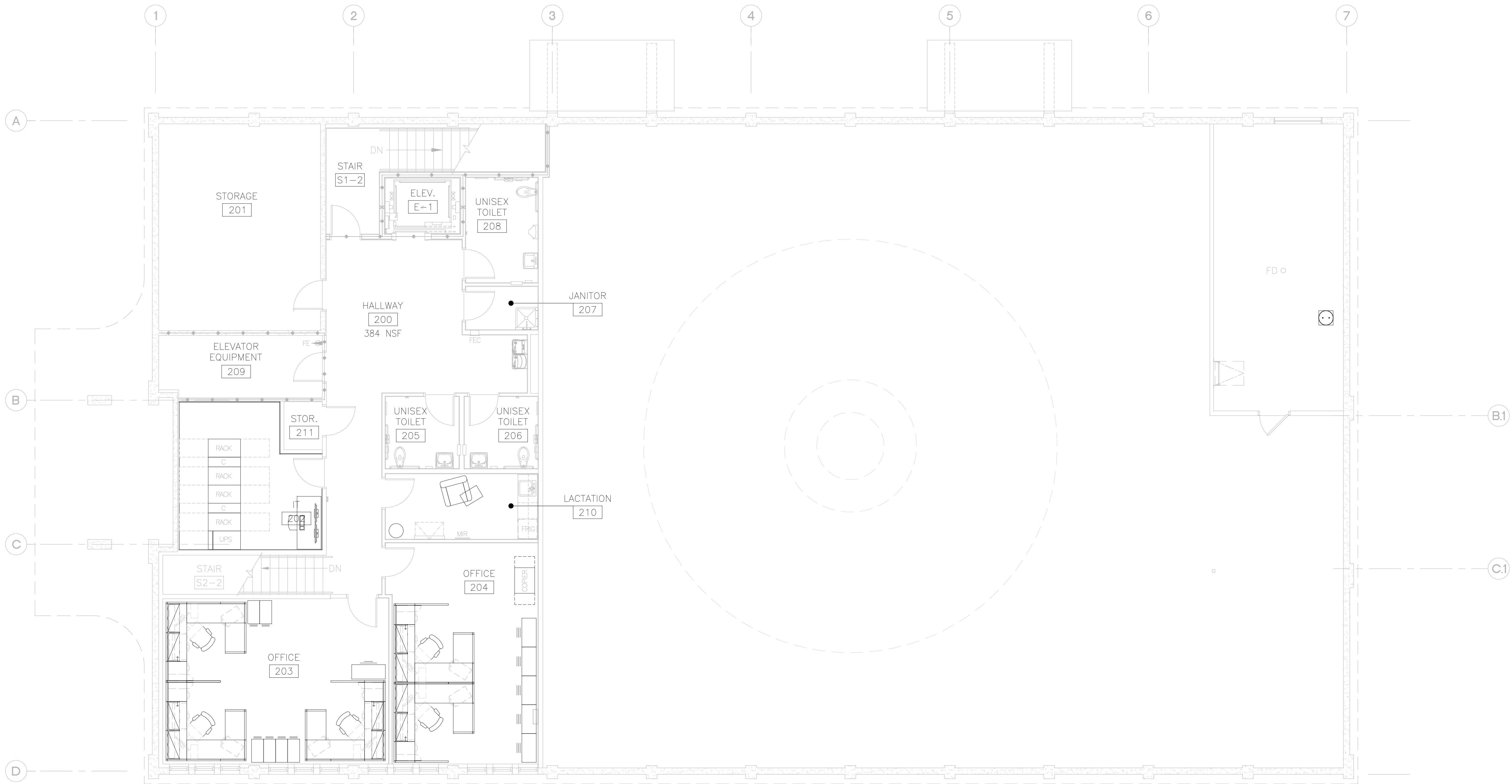
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

SECOND FLOOR
FURNITURE PLAN

Sheet Number:

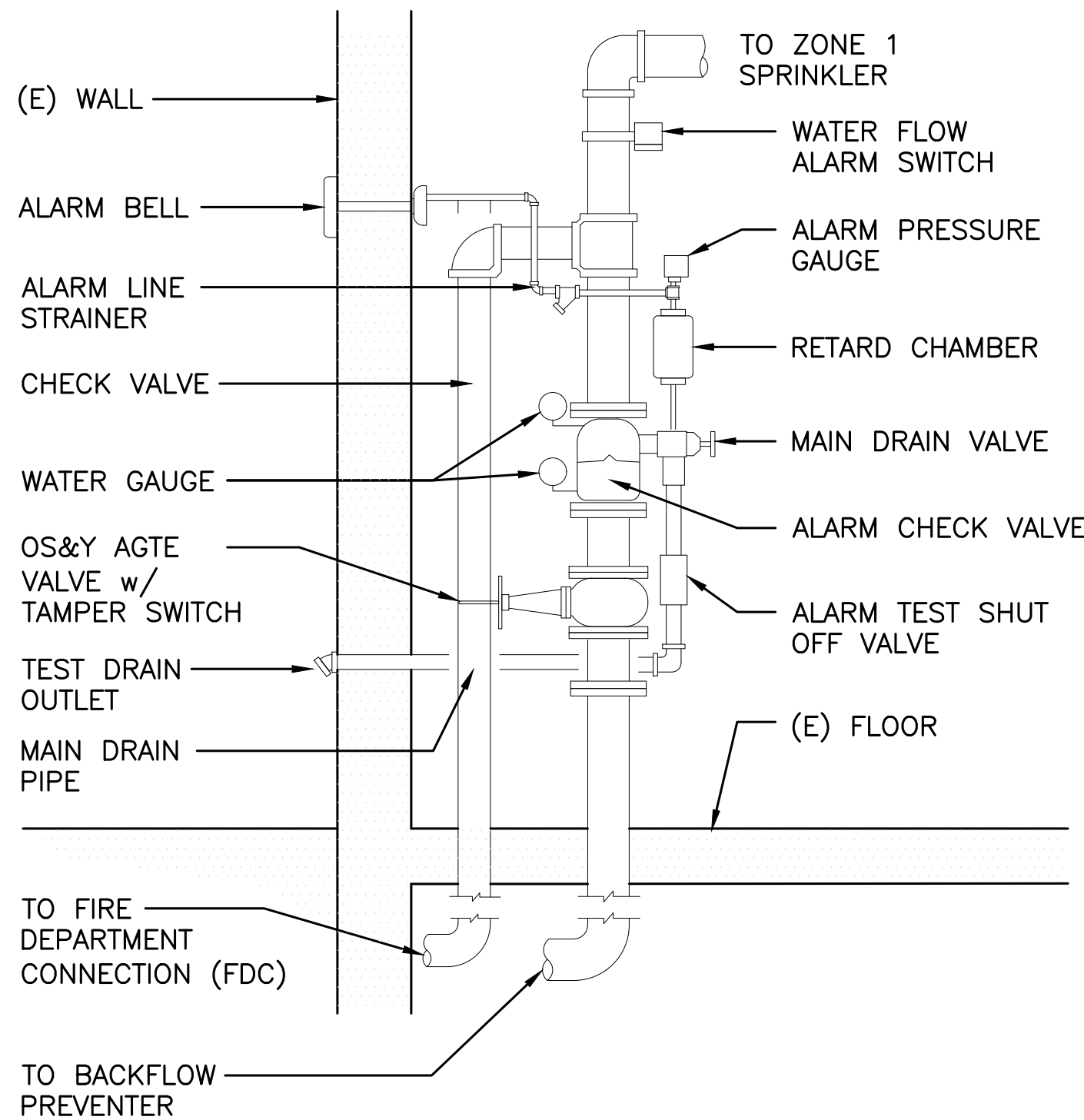
A902



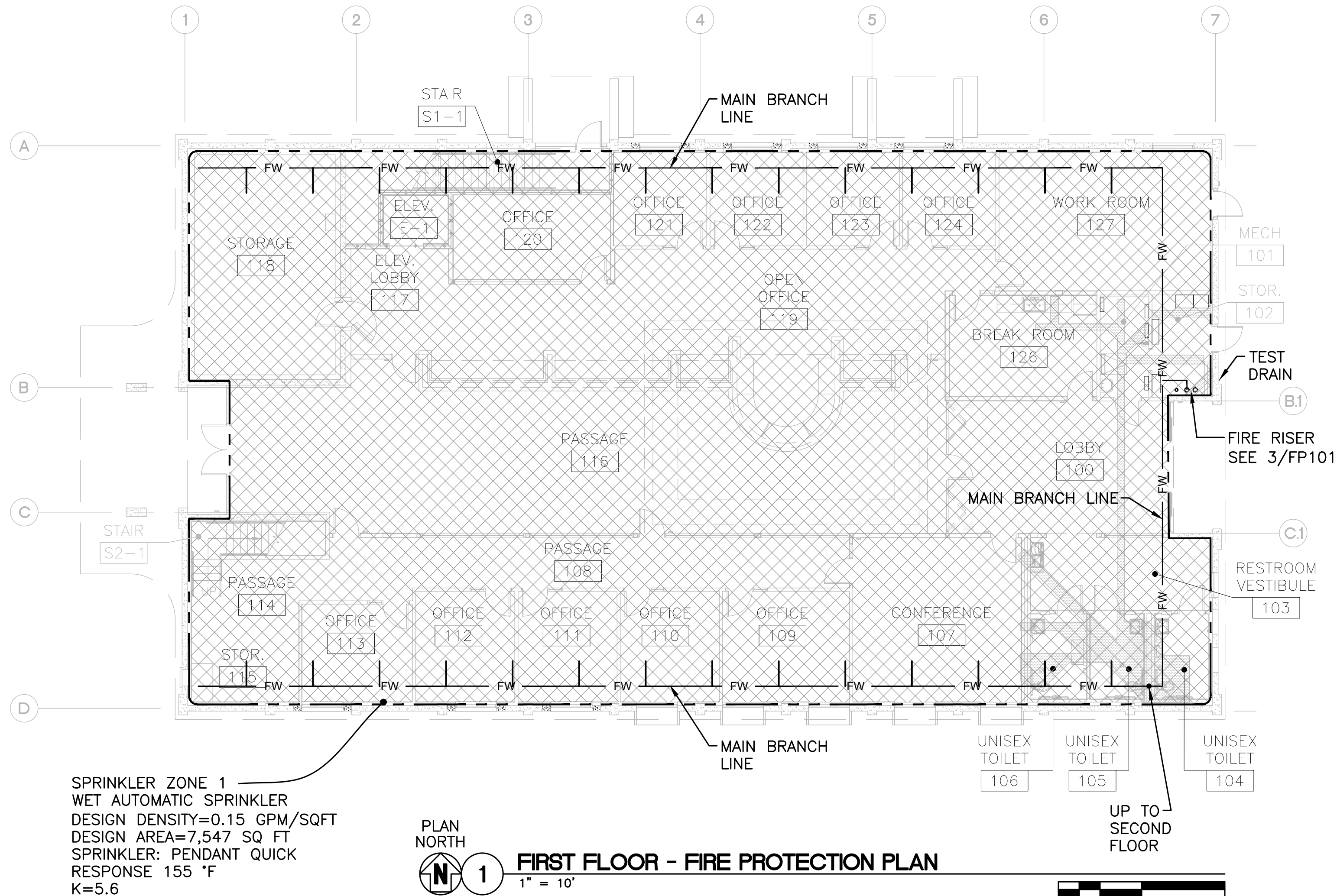
GENERAL NOTES:

1. FURNITURE IS NOT IN CONTRACT. FOR REFERENCE ONLY.





3 WET PIPE SPRINKLER RISER DETAIL
N.T.S.

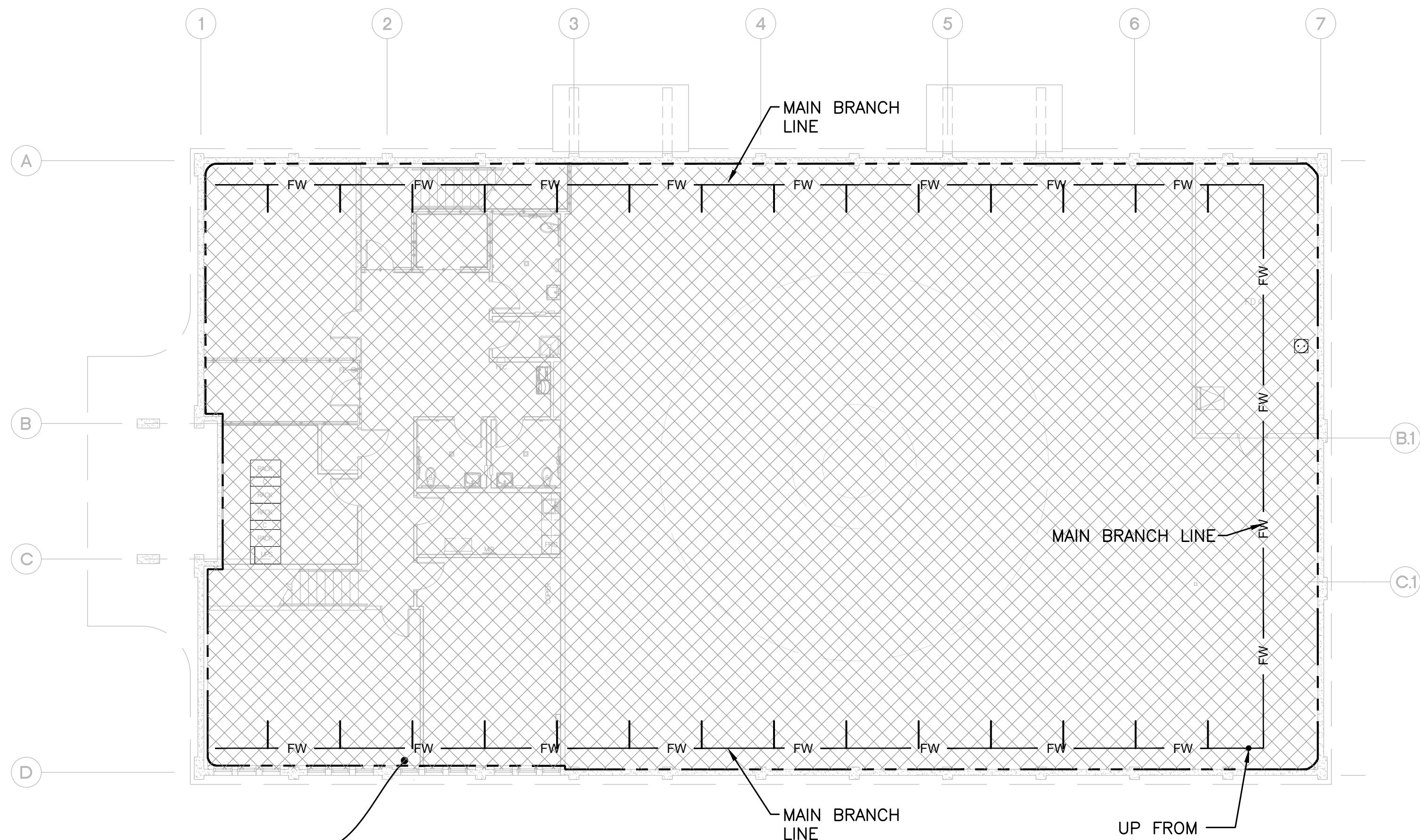


SPRINKLER ZONE 1
WET AUTOMATIC SPRINKLER
DESIGN DENSITY=0.15 GPM/SQFT
DESIGN AREA=7,547 SQ FT
SPRINKLER: PENDANT QUICK
RESPONSE 155 °F
K=5.6



1 FIRST FLOOR - FIRE PROTECTION PLAN

1" = 10'

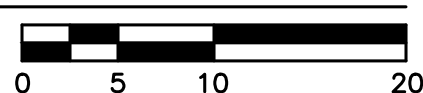


SPRINKLER ZONE 1
WET AUTOMATIC SPRINKLER
DESIGN DENSITY=0.15 GPM/SQFT
DESIGN AREA=8,142 SQFT
SPRINKLER: PENDANT QUICK
RESPONSE 155 °F
K=5.6



2 SECOND FLOOR - FIRE PROTECTION PLAN

1" = 10'



GENERAL NOTES:

1. NEW WET PIPE FIRE SPRINKLER SYSTEM ZONE 1. PROVIDE CONTROL VALVE.
2. OCCUPANCY AND CONSTRUCTION TYPE PER G005
3. PROVIDE COMPLETE PLANS, CALCULATIONS AND OTHER SUBMITTALS REQUIRED BY PROJECT SPECIFICATION FOR NEW WORK.
4. PROVIDE A COMPLETE AUTOMATIC WET FIRE SPRINKLER SYSTEM FOR THE ENTIRE BUILDING. THE AUTOMATIC SPRINKLER SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - NFPA 13, 2022 EDITION: STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.
 - NFPA 24, 2022 EDITION: STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTANCES.
 - CALIFORNIA FIRE CODE, 2022 EDITION.
5. INSTALLATION OF THE SPRINKLER SYSTEMS SHALL NOT BE STARTED UNTIL COMPLETE PLANS AND CALCULATIONS (INCLUDING WATER SUPPLY INFORMATION) HAVE BEEN APPROVED BY THE FIRE MARSHAL. AT VARIOUS STAGES AND UPON COMPLETION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF FIRE MARSHALL REPRESENTATIVE.
6. ALL FIRE SPRINKLER WORK SHALL BE PERFORMED BY A LICENSED FIRE PROTECTION CONTRACTOR WITH A CURRENT STATE OF CALIFORNIA C-16 LICENSE.
7. PROVIDE SPRINKLERS BELOW ALL EXPOSED DUCTS, OBSTRUCTIONS AND OPEN GRATINGS GREATER THAN FOUR FEET WIDE.
8. PAINT AND INSULATE SPRINKLER RISER AND PROVIDE METAL PROTECTIVE COVERING, BY MECHANICAL AND PAINTING CONTRACTORS.
9. ALL FIRE SPRINKLER PIPING SHALL BE CONCEALED WHERE POSSIBLE.
10. FURNISH AND INSTALL ANY INCIDENTAL WORK NOT SHOWN OR SPECIFIED WHICH ARE NECESSARY TO PROVIDE A COMPLETE AND WORKABLE SYSTEM.
11. KEEP FIRE SPRINKLER AS HIGH AS POSSIBLE TO STRUCTURE ABOVE AND OFFSET PIPING AS REQUIRED.
12. SEE REFLECTED CEILING PLANS FOR CENTERING SPRINKLER HEADS IN GRIDS AND LOCATIONS OF LIGHT, DIFFUSERS, ETC.
13. LOCATIONS OF PIPE PENETRATIONS THROUGH BEAMS, CONCRETE WALLS AND FLOORS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
14. PROVIDE STEEL PIPE SLEEVES WHERE PIPES PASS THROUGH NEW CONCRETE WALLS. REFER TO STRUCTURAL DRAWINGS AND STRUCTURAL DETAILS FOR PIPE SLEEVE REQUIREMENTS. REFER TO STRUCTURAL DRAWINGS FOR CLEARANCE REQUIREMENTS BETWEEN SLEEVES AND PIPES.
15. PROVIDE FLEXIBLE HEAD DROPS FOR ALL CEILING MOUNTED SPRINKLER HEADS THROUGHOUT TO COMPLY WITH CBC 2019 AND NFPA 13 REQUIREMENTS FOR (1") ONE INCH CLEARANCE BETWEEN THE SPRINKLER HEAD AND THE CEILING. THE USE OF OVERSIZED CEILING ESCUTCHEONS ARE NOT ACCEPTABLE.
16. PROVIDE SYSTEM BACKFLOW PREVENTER PER UTILITY REQUIREMENTS.
17. PROVIDE MULTI-ZONE FIRE PROTECTION SYSTEM HEADER WITH EACH ZONE: SHUT-OFF VALVE, FLOW SWITCH, PRESSURE GAUGE, PRESSURE RELIEF VALVE, DRAIN AND INSPECTION TEST VALVE, SIGHT GLASS AND OTHER SYSTEMS REQUIRED BY CODE.
18. PROVIDE FIRE DEPARTMENT CONNECTION BY THE BACKFLOW PREVENTER, SEE SHEET 1/C402.
19. FIRE PROTECTION TEST PIPE SHALL DISCHARGE INTO LANDSCAPE BED.
20. NO SPRINKLER LINES SHALL BE LOCATED ABOVE ELECTRICAL EQUIPMENT.
21. CONTRACTOR TO PROVIDE A NEW FLOW TEST AT EXISTING FIRE HYDRANT.
22. THE CONTRACTOR SHALL PROVIDE SPRINKLERS AT THE TOP AND BOTTOM OF THE HOISTWAY AND ELEVATOR MACHINE ROOM ALONG WITH REQUIRED SHUNT TRIPS ON ASSOCIATED BREAKERS.
23. PROVIDE UPRIGHT SPRINKLERS IN AREAS WITHOUT CEILINGS, THIS INCLUDES THE ATTIC SPACE.

LEGEND:

ZONE 1 - WET PIPE SPRINKLERED
ORDINARY HAZARD GROUP 1
0.15 GPM/SQFT OVER 1,500 SQFT

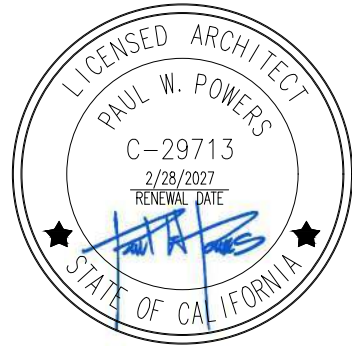
Revisions:

Client Project Number: 000
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KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:
FIRST AND SECOND
FLOOR PLAN
FIRE PROTECTION
PLANS

Sheet Number:

FP101



CITY OF UKIAH
BANK OF AMERICA
ADA BARRIER REMOVAL
501 SOUTH STATE ST. UKIAH, CA 95482

Revisions:
Client Project Number: 000
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Date: JUNE 6, 2025 ISSUE FOR BID
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PLUMBING DETAILS & LEGENDS
SheetNumber:

P001

ABBREVIATIONS

ACC	AIR COOLED CONDENSER	ID	INSIDE DIAMETER
ACU	AIR CONDITIONING UNIT	IFB	INTEGRAL FACE & BYPASS
AD	ACCESS DOOR	IGV	INLET GUIDE VANES
ADJ	ADJUSTABLE	IPS	IRON PIPE SIZE
AF	AIR FOIL	IU	INDUCTION UNIT
AFF	ABOVE FINISHED FLOOR	KW	KILOWATTS
AFG	ABOVE FINISHED GRADE	KWH	KILOWATT HOUR
AFR	ABOVE FINISHED ROOF	LAT	LEAVING AIR TEMPERATURE (°F)
AFS	AIR FLOW STATION	LF	LINEAR FEET
AHU	AIR HANDLING UNIT	LWT	LEAVING WATER TEMPERATURE (°F)
AP	ACCESS PANEL	M	MOTOR OPERATED
ATC	AUTOMATIC TEMPERATURE CONTROL	MAU	MAKEUP AIR UNIT
ATM	ATMOSPHERE	MB	MIXING BOX
AWG	AMERICAN WIRE GAUGE	MBH	1000 BTU/HR
		MC	MECHANICAL CONTRACTOR
B	BOILER	MFR	MANUFACTURER
BB	BASEBOARD	MS	MINI-SPLIT
BC	BACKWARD CURVED	NC	NOISE CRITERIA
BD	BACKDRAFT DAMPER	NC	NORMALLY CLOSED
BF	BOILER FEED	NC	NOT IN CONTRACT
BHP	BRAKE HORSEPOWER	NO	NORMALLY OPEN
BI	BACKWARD INCLINED	NPS	NOMINAL PIPE SIZE
BMS	BUILDING MANAGEMENT SYSTEM	OA	OUTSIDE AIR
BOD	BOTTOM OF DUCT	OAD	OUTSIDE AIR DAMPER
BOJ	BOTTOM OF JOIST	OBD	OPPOSED BLADE DAMPER
BOS	BOTTOM OF STEEL		
BTU	BRITISH THERMAL UNIT	P	PUMP
		PC	PLUMBING CONTRACTOR
C	COMMON	PD	PRESSURE DROP
CAV	CONSTANT AIR VOLUME	PH	PHASE
CC	COOLING COIL	PHC	PREHEAT COIL
CCW	COUNTER CLOCKWISE	PPM	PART PER MILLION
CFM	CUBIC FEET PER MINUTE	PROP	PROPELLER
CH	CHILLER	PRV	PRESSURE REDUCING VALVE
C&I	CONTROLS & INSTRUMENTATION	PSIA	PSI, ABSOLUTE
CLG	CEILING	PSIG	PSI, GAUGE
CMU	CONCRETE MASONRY UNIT	QTY	QUANTITY
CND	CONDENSATE	R	REGISTER
CONT	CONTINUATION	RA	RETURN AIR
CORR	CORRIDOR	RD	RADIAL DAMPER
CT	COOLING TOWER	RF	RETURN/RELIEF AIR FAN
CU	CONDENSING UNIT	RH	RELATIVE HUMIDITY
CH	CABINET HEATER	RHC	REHEAT COIL
CV	CONTROL VALVE		
CVS	CONTROL VALVE STATION	SA	SUPPLY AIR
CW	CLOCKWISE	SAP	SUPPLY AIR FAN
		SC	SENSIBLE COOLER
dB	DECIBEL	SCFM	CFM, STANDARD CONDITIONS
DB	DRY BULB TEMPERATURE (°F)	SD	SMOKE DETECTOR
DDC	DIRECT DIGITAL CONTROL	SEER	SEASONAL ENERGY EFFICIENCY RATIO
DH	DUCT HEATER	SENS	SENSIBLE
DP	DEW POINT TEMPERATURE (°F)	SP	STATIC PRESSURE
DX	DIRECT EXPANSION	SPS	STATIC PRESSURE SENSOR
		SS	STAINLESS STEEL
E	EXHAUST	T	THERMOSTAT
EA	EXHAUST AIR	TA	TRANSFER AIR
EAT	ENTERING AIR TEMPERATURE (°F)	TCC	TEMPERATURE CONTROL CONTRACTOR
EC	ELECTRICAL CONTRACTOR	TCP	TEMPERATURE CONTROL PANEL
EDR	EQUIVALENT DIRECT RADIATION	TG	TRANSFER GRILL
EER	ENERGY EFFICIENCY RATIO	TOD	TOP OF DUCT
EF	EXHAUST FAN	TOP	TOP OF PIPE
EFF	EFFICIENCY	TOS	TOP OF STEEL
ELEV	ELEVATION	TSP	TOTAL STATIC PRESSURE
ERV	ENERGY RECOVERY VENTILATOR	TYP	TYPICAL
ESP	EXTERNAL STATIC PRESSURE	UH	UNIT HEATER
ET	EXPANSION TANK	UNC	UNDERCUT
EWT	ENTERING WATER TEMPERATURE (°F)	UV	UNIT VENTILATOR
		VA	VOLT-AMPERE
F&T	FLOAT & THERMOSTATIC	VAV	VARIABLE AIR VOLUME
FA	FACE AREA	VD	VOLUME DAMPER
FC	FORWARD CURVED	VEL	VELOCITY
FC	FAN COIL	VFD	VARIABLE FREQUENCY DRIVE
FP	FIRE PROTECTION	VRF	VARIABLE REFRIGERANT FLOW
FPM	FEET PER MINUTE	WB	WET BULB TEMPERATURE (°F)
FT	FEET	WC	WATER COLUMN
		WG	WATER GAUGE
GA	GAUGE OR GAGE	WSHP	WATER SOURCE HEAT PUMP
GC	GENERAL CONTRACTOR	ΔT	TEMPERATURE DIFFERENCE (°F)
GEN	GENERATOR		
GH	GRAVITY HOOD		
GPD	GALLONS PER DAY		
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE		
H	HUMIDIFIER		
HC	HEATING COIL		
HG	MERCURY		
HOA	HAND-OFF-AUTOMATIC		
HP	HORSEPOWER		
HR	HOUR		
HX	HEAT EXCHANGER		

PLUMBING LEGEND

ANNOTATION SYMBOLS

	3D VIEW NUMBER
	SHEET NUMBER
	DETAIL NUMBER
	SECTION NUMBER
	PF# PLUMBING FIXTURE / EQUIPMENT MARK
	(E) PF# EXISTING PLUMBING FIXTURE / EQUIPMENT
	(D) PF# DEMOLISHED PLUMBING FIXTURE / EQUIPMENT
	POINT OF NEW CONNECTION
	POINT OF DISCONNECTION
	1/4" SLOPE → DIRECTION OF FLOW AND SLOPE PER FOOT

GENERAL

	NAME (E) EXISTING PIPE TO REMAIN
	NAME (D) EXISTING PIPE TO BE DEMOLISHED
	NAME NEW PIPING
	DIRECTION OF FLOW

PLUMBING

	DCW DOMESTIC COLD WATER
	DHW DOMESTIC HOT WATER (120°F)
	DHWR DOMESTIC HOT WATER RECIRC.
	HTHW HIGH TEMPERATURE HOT WATER (140°F)
	IRR IRRIGATION
	RO REVERSE OSMOSIS TREATED
	SAN SANITARY WASTE
	V SANITARY VENT
	GW GREASE WASTE
	AW ACID WASTE
	AV ACID VENT
	NG NATURAL GAS
	LPG LIQUIFIED PETROLEUM GAS
	RWL RAIN WATER LEADER
	ORL RAIN WATER OVERFLOW
	CND CONDENSATE DRAIN
	CA COMPRESSED AIR

PIPE FITTINGS

	ELBOW
	PIPE BREAK
	PIPE UP
	PIPE DOWN
	CHANGE IN ELEVATION OF PIPE
	SIDE CONNECTION OR TEE FITTING
	TOP CONNECTION
	BOTTOM CONNECTION
	UNION
	FLANGE
	CAPPED OUTLET
	BLIND FLANGE

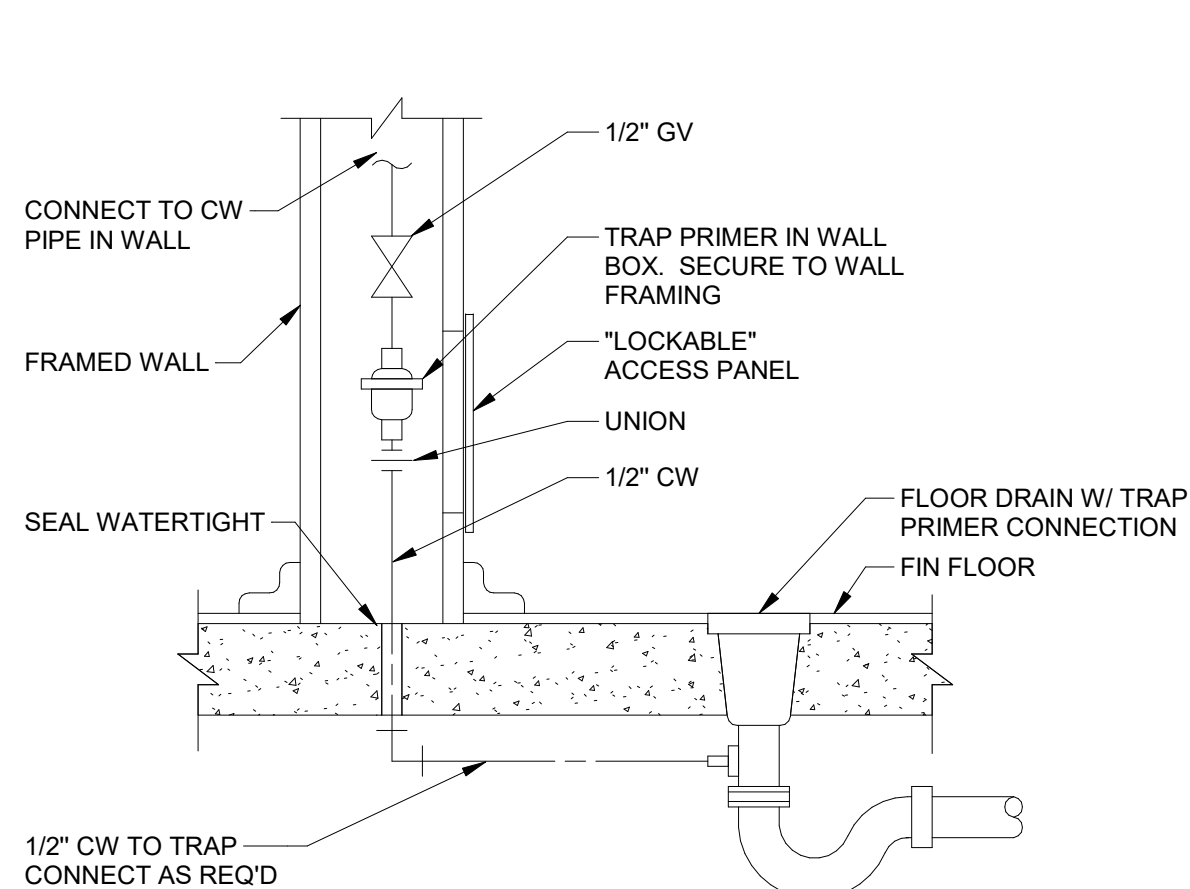
VALVES

	COMBINATION Y-STRAINER & SHUTOFF VALVE
	COMBINATION AUTOFLOW & SHUTOFF VALVE
	MANUAL BALANCING VALVE
	AUTOFLOW VALVE
	ISOLATION VALVE - SEE SPECIFICATIONS FOR TYPE
	3-WAY VALVE
	BUTTERFLY VALVE
	HOSE END DRAIN
	STRAINER
	MANUAL BALANCING VALVE
	AUTOFLOW VALVE
	CHECK VALVE
	BACKFLOW PREVENTER
	PRESSURE REDUCING VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	SOLENOID VALVE
	2-WAY TEMPERATURE CONTROL VALVE
	3-WAY TEMPERATURE CONTROL VALVE

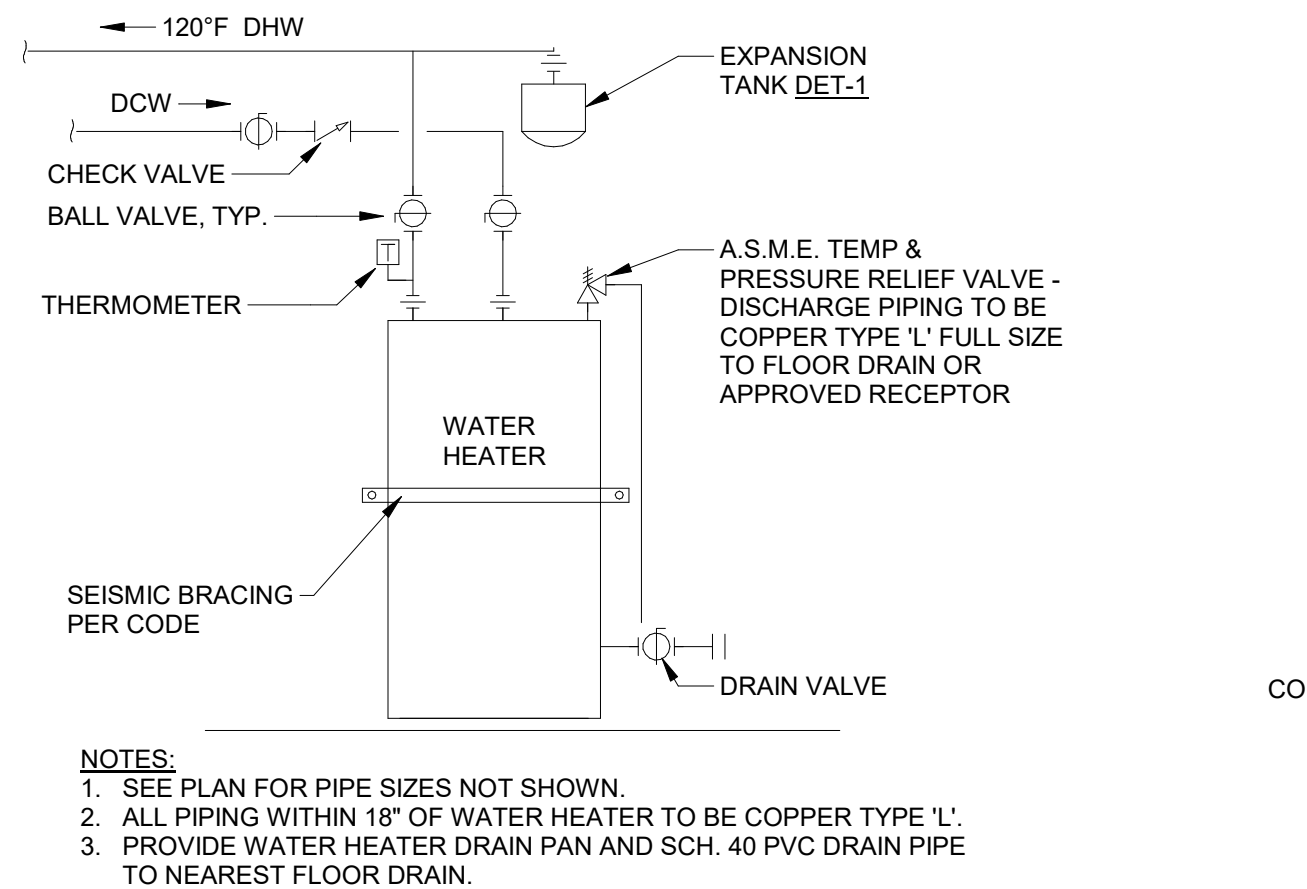
PIPING SPECIALTIES

	AUTOMATIC AIR VENT
	MANUAL AIR VENT - 1/4" BALL VALVE WITH 12" SOFT COPPER TUBE
	PRESSURE / TEMPERATURE PORT
	DDC TEMP SENSOR
	DDC PRESSURE SENSOR
	PIPE WELL - EMPTY
	FLOW SWITCH
	PRESSURE SWITCH
	PRESSURE GAUGE
	PRESSURE GAUGE & COCK
	TEMPERATURE GAUGE
	SCHEMATIC PUMP
	FLEXIBLE CONNECTOR
	PIPE GUIDES
	ANCHOR
	THERMAL EXPANSION LOOP
	WATER METER
	FLOOR CLEAN OUT
	WALL CLEAN OUT
	WATER HAMMER ARRESTER
	HOSE BIBB
	WALL HYDRANT
	IRRIGATION BLOWOUT PORT

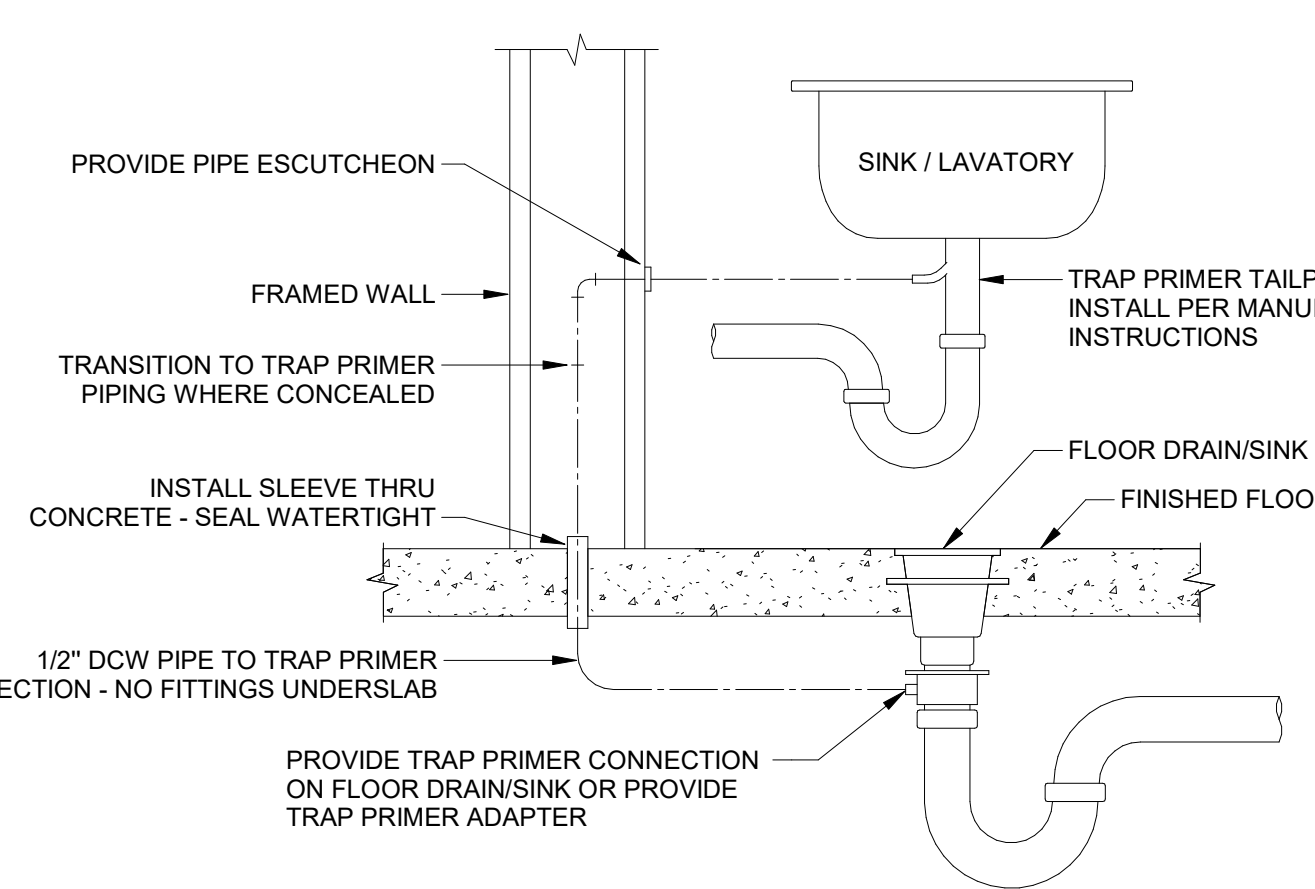
NOTE: THIS IS A STANDARD LEGEND. NOT ALL PIPE TYPES AND SYMBOLS ARE NECESSARILY UTILIZED IN THE DRAWINGS.



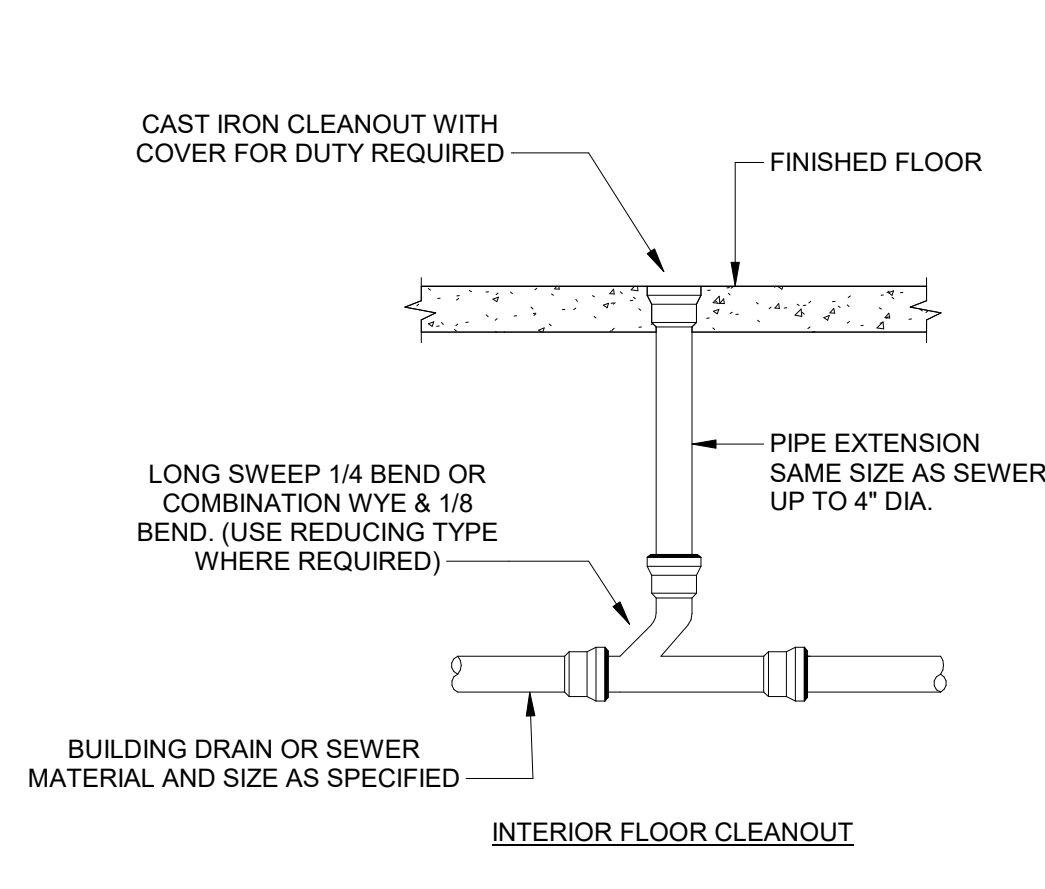
1 TRAP PRIMER TO FLOOR DRAIN DETAIL
N.T.S.



2 WATER HEATER DETAIL
N.T.S.



3 TAILPIECE TRAP PRIMER DETAIL
N.T.S.



4 SEWER LINE CLEANOUT DETAIL
N.T.S.

DOMESTIC WATER HEATER SCHEDULE													
MARK	MFGR.	MODEL #	DESCRIPTION	FUEL TYPE	STORAGE CAPACITY (GAL)	STORAGE TEMP (F)	HEIGHT (IN)	DIAMETER (IN)	GPH @ 100F RISE	ELECTRICAL DATA			REMARKS
										LOAD	VOLTAGE	PHASE	
DWH-1	BRADFORD WHITE	ELECTRIFLEX LD UTILITY LE110U3-1	ELECTRIC WATER HEATER	ELECTRIC	55	120	56 15/16"	23	45	4500 W	208	1	SEE NOTES
NOTES: ASME TEMPERATURE AND PRESSURE RELIEF VALVE, TEMPERATURE AND PRESSURE GAUGE AND 4"x6" CLEAN-OUT PORT. MOUNT HEATER ON HOUSE KEEPING PAD OR GALVANIZED FLOOR SUPPORT FRAME. INSTALL SEISMIC BRACING PER CODE. PIPE T&P RELIEF VALVE TO FLOOR SINK.													

DOMESTIC HOT WATER EXPANSION TANK							
MARK	MFGR.	MODEL	TOTAL VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	SYSTEM	SYSTEM (PSI)	REMARKS
DET-1	AMTROL	ST-12	4.4	3.2	DWH-1	80	SEE NOTES
NOTES: PROVIDE ASME RATED EXPANSION TANK, NSF RATED FOR USE IN POTABLE DOMESTIC WATER SYSTEMS. SEE DETAIL P001.2.							

PLUMBING PUMP SCHEDULE								
ACCESSORIES: 1. PROVIDE GRUNDFOS DIGITAL TIMER AND AQUASTAT.			REMARKS: 1. PROVIDE ALL NECESSARY VALVING AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.			CONTROLS: 1. PUMP TO ONLY OPERATE DURING OCCUPIED HOURS (ADJUSTABLE WITH TIMER). 2. PUMP TO ACTIVATE AT A RECIRCULATION TEMPERATURE LESS THAN 105°F AND DEACTIVATE AT A RECIRCULATION TEMPERATURE OF 120°F (ADJUSTABLE WITH AQUASTAT).		ELECTRICAL DATA: SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.
MARK	MANUF.	MODEL	MATERIAL	DESCRIPTION	FLOW (GPM)	HEAD (FT)	TEMPERATURE (°F)	
PP-1	Taco	003	STAINLESS STEEL	HOT WATER RECIRCULATION PUMP	4	2	120	

MEP COORDINATION SCHEDULE

CONTROL TYPE:		DISCONNECT/STARTER TYPE:		DIVISION OF RESPONSIBILITIES:	
BAS	BUILDING AUTOMATION SYSTEM	CB	PANELBOARD CIRCUIT BREAKER WITHIN SIGHT OF EQUIPMENT	22/22	FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 22
CO	CARBON MONOXIDE DETECTOR	CSFD	COMBINATION STARTER/DISCONNECT - HOA	22/26	FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 26
CONT	CONTINUOUS OPERATION	FD	FUSED DISCONNECT	23/23	FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 23
EF	INTERLOCK WITH EXHAUST FAN	FST	FUSTAT	23/26	FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 26
HCP	HOOD CONTROL PANEL	FW	FACTORY-WIRED SINGLE POINT CONNECTION	26/26	FURNISHED AND INSTALLED BY DIV. 26, WIRED BY DIV. 26
INT	INTEGRAL	MOCP	MOTOR OVER-CURRENT PROTECTION		
L	LIGHT SWITCH	MSS	MANUAL STARTER SWITCH WITH THERMAL OVERLOADS (1-, 2- OR 3-POLE AS REQUIRED)		
MS	MANUAL SWITCH	NFD	NON-FUSED DISCONNECT		
OS	OCCUPANCY SENSOR	RCPT	20A DUPLEX RECEPTACLE (GFCI PROTECTED AS REQUIRED), CORD AND PLUG		
PS	PRESSURE SWITCH	RVSS	REDUCED VOLTAGE SOLID-STATE		
T	THERMOSTAT	VFD	VARIABLE FREQUENCY DRIVE - HOA		
TC	TIME CLOCK	N/A	NOT APPLICABLE		
UC	UNIT CONTROLLER				
VE	VEHICLE EXHAUST DETECTION SYSTEM				
N/A	NOT APPLICABLE				

GENERAL NOTES:

A. CONTROL WIRING SHALL BE CONCEALED WITHIN WALL CONSTRUCTION, ABOVE CEILING, OR RUN IN CONDUIT. EXPOSED CONTROL WIRING IS UNACCEPTABLE.

B. UNLESS SPECIFICALLY NOTED, ALL FEEDERS SHALL INCLUDE A FULL SIZE NEUTRAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH THE MANUFACTURER OF THE ACTUAL EQUIPMENT BEING SUPPLIED WHETHER A NEUTRAL IS REQUIRED PRIOR TO ROUGH-IN.

C. ALL DUCT SMOKE DETECTORS FURNISHED BY DIV. 26, INSTALLED BY DIV. 23, AND WIRED BY DIV. 26. DIV. 26 SHALL WIRE ALL FANS TO SHUT DOWN WHEN ALARM IS INITIATED BY ANY DUCT SMOKE DETECTOR.

MARK	DESCRIPTION	ELECTRICAL DATA		CONTROL		NOTES
		LOAD		VOLT-PHASE	TYPE	
DAC-1	DUCTLESS AC CONDENSER	MCA 19.8 / MOCP 20		208-1	UC	23/23
DCU-1	SINGLE ZONE AHU	FROM OUTDOOR UNIT		208-1	T	23/23
DWH-1	DOMESTIC HOT WATER HEATER	1500 W		120-1	INT	22/26
PP-1	HOT WATER RECIRCULATION PUMP	0.43 A		120-1	INT	22/26
						4

PLUMBING FIXTURE SCHEDULE																
REMARKS: 1. PROVIDE ALL FIXTURES WITH APPROPRIATE COMMERCIAL GRADE SUPPORTS/CARRIERS, P-TRAPS, STOP VALVES, BRAIDED FLEXIBLE SUPPLIES, UNDER FIXTURE PIPING INSULATION AND HAMMER ARRESTORS. 2. PROVIDE AND INSTALL TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOORS. INSTALL ALL TRAP PRIMERS IN RECESSED WALL MOUNTED BOXES IN AN ACCESSIBLE LOCATION. 4. FIELD COORDINATE INSTALLATION LOCATION OF TRAP PRIMER WALL BOXES, WATER CLOSETS, LAVATORIES, AND URINALS FOR ADA COMPLIANCY WITH ARCHITECT/ENGINEER.																
MARK	FIXTURE						TRIM				ROUGH-IN SIZE (IN)				REMARKS	
	DESCRIPTION	ADA	MANUF.	MODEL	MATERIAL / FINISH	MOUNTING / HEIGHT	DESCRIPTION	MANUF.	MODEL	MATERIAL / FINISH	WASTE	VENT	COLD	HOT		
DF-1	DUAL HEIGHT W/ BOTTLE FILL	YES	ELKAY	EZWS-EDFPBM117K	STAINLESS STEEL	WALL / ADA HEIGHT	N / A	N / A	N / A	N / A	1-1/2"	1-1/2"	1/2"	--	PROVIDE COMPLETE WITH QUARTER TURN ISOLATION VALVE IN ACCESSIBLE LOCATION. COORDINATE ADA MOUNTING HEIGHT WITH ARCHITECTURAL PLANS.	
FD-1	FLOOR DRAIN	N / A	JR SMITH	2005	CAST IRON BODY / NICKEL BRONZE STRAINER	FLOOR	N / A	N / A	N / A	N / A	SEE PLANS	1-1/2"	1/2"	--	PROVIDE COMPLETE WITH SQUARE NICKEL BRONZE STRAINER HEAD, TRAP PRIMER CONNECTION, AND JR SMITH QUAD CLOSE TRAP SEAL.	
FS-1	FLOOR SINK	N / A	JR SMITH	3101	CAST IRON BODY / NICKEL BRONZE STRAINER	FLOOR	N / A	N / A	N / A	N / A	SEE PLANS	1-1/2"	1/2"	--	PROVIDE COMPLETE WITH SQUARE NICKEL BRONZE STRAINER HEAD, TRAP PRIMER CONNECTION, AND JR SMITH QUAD CLOSE TRAP SEAL.	
LAV-1	LAVATORY	YES	KOHLER	"KINGSTON" K-2005	VITREOUS CHINA	WALL / ADA HEIGHT	CHROME SENSOR-OPERATED FAUCET	MOEN	CA8302	CHROME	1-1/2"	1-1/2"	1/2"	1/2"	PROVIDE COMPLETE WITH KOHLER # K-7131-A OFFSET DRAIN, TRUEBRO LAV GUARD COVERS, QUARTER TURN STOP VALVE, CHROME PLATED TUBULAR BRASS P-TRAP AND WATTS 1170 MIXING VALVE SET TO 110 DEGREES F.	
MS-1	JANITORIAL MOP SPINK	N / A	FIAT	MSB2424	STAINLESS STEEL	FLOOR	SERVICE SINK FAUCET	MOEN	8124	CHROME	3"	2"	3/4"	3/4"	PROVIDE COMPLETE WITH GRID DRAIN, CAST IRON P-TRAP, STAINLESS STEEL WALL GUARDS, MOEN MODEL #8199 RUBBER HOSE AND BRACKET, MOEN #8198 MOP/BROOM HOLDER.	
S-1	DOUBLE COMPARTMENT SINK	YES	JUST	DLADA1933	STAINLESS STEEL	COUNTER	FAUCET W/ PULLOUT SPRAY	MOEN	8707	CHROME	2"	1-1/2"	1/2"	1/2"	PROVIDE COMPLETE WITH CHROME P-TRAP, QUARTER TURN STOP VALVES, AND BASKET STRAINER.	
S-2	SINGLE COMPARTMENT SINK	YES	JUST	SLADA1617	STAINLESS STEEL	COUNTER	FAUCET W/ PULLOUT SPRAY	MOEN	8707	CHROME	2"	1-1/2"	1/2"	1/2"	PROVIDE COMPLETE WITH CHROME P-TRAP, QUARTER TURN STOP VALVES, AND BASKET STRAINER.	
UR-1	HIGH EFFICIENCY WALL MOUNTED URINAL	NO	KOHLER	"BARDON" K-4991-ET	VITREOUS CHINA	WALL / ADA HEIGHT	FLUSH VALVE	MOEN	8316	CHROME	2"	1-1/2"	3/4"	--	PROVIDE COMPLETE WITH COMMERCIAL CARRIER, CHROME P-TRAP, QUARTER TURN STOP VALVES, AND HAMMER ARRESTOR.	
WC-1	FLOOR MOUNT FLUSH VALVE WATER CLOSET	YES	KOHLER	"HIGHCLIFF" K-96057-SS-0	VITREOUS CHINA	FLOOR	FLUSH VALVE	SLOAN	GEM-2 11 SFSM	CHROME	4"	2"	1"	--	PROVIDE COMPLETE WITH KOHLER MODEL # K-466-SA SEAT, QUARTER TURN STOP VALVES, AND HAMMER ARRESTOR. 1.28 GPF FLUSH VALVE.	
WH-1	TRAP PRIMER - PRESSURE ACTIVATED	N / A	SIOUX CHIEF MANUFACTURING	Prime Perfect Trap Primer 695-01	BRASS - LEAD FREE - EPDM SEALS	WALL	N / A	N / A	N / A	N / A	--	--	1"	1"	MAX WORKING TEMPERATURE 250F - MAX WORKING PRESSURE 350 PSIG - 33-60 FIXUTRE UNITS.	

WATER SUPPLY FIXTURE UNIT CALCULATIONS			
FIXTURE	QTY	(PRIVATE, PUBLIC, OR ASSEMBLY) WSFU	TOTAL WSFU
DRINKING FOUNTAIN OR WATER COOLER	4	0.75	3
LAVATORY	7	1.0	7.0
SINKS	--	--	--
KITCH, DOMESTIC	2	1.5	3.0
SERVICE OR MOP BASIN	1	3.0	3.0
URINAL (1.0 GPF FLUSHOMETER VALVE)	4	*SIZED ON TABLE 610.10	35.0
WATER CLOSET (1.6 GPF FLUSHOMETER VALVE)	6	*SIZED ON TABLE 610.10	125.0
TOTAL WSFU =			171.5
MAX LENGTH:	115 FT		
TOTAL PEAK FLOW:	58 GPM		
WATER METER SIZE (BY UTILITY):	1.5"		
BUILDING SUPPLY SIZE (CONFIRM ON SITE):	2"		
BASED ON 2022 CALIFORNIA PLUMBING CODE TABLE 610.3			

NEW WASTE FIXTURE UNIT CALCULATION			
FIXTURE	QTY	(PRIVATE, PUBLIC, OR ASSEMBLY) WFU	TOTAL WFU
DRINKING FOUNTAIN OR WATER COOLER	2	0.5	1.0
FLOOR DRAIN (FOR ADDITIONAL SIZES SEE SECTION 702.0)	3	2.0	6.0
LAVATORY, SINGLE	3	1.0	3.0
URINAL INTEGRAL TRAP 1.0 GPF*	1	2.0	2.0
WATER CLOSET, 1.6 GPF GRAVITY TANK	3	4.0	12.0
TOTAL WFU =			
* = PROVIDE 2" MIN DRAIN ** = SIZED IN ACCORDANCE WITH 2022 CALIFORNIA PLUMBING CODE, TABLE 702.1		TOTAL	24
		TOTAL FIX UNITS	WASTE PIPE SIZE
		24	3

EXISTING LINE WASTE FIXTURE UNIT CALCULATION			
FIXTURE	QTY	(PRIVATE, PUBLIC, OR ASSEMBLY) WFU	TOTAL WFU
DRINKING FOUNTAIN OR WATER COOLER	2	0.5	1.0
FLOOR DRAIN (FOR ADDITIONAL SIZES SEE SECTION 702.0)	3	2.0	6.0
LAVATORY, SINGLE	3	1.0	3.0
SINK, KITCHEN DOMESTIC	1	2.0	2.0
MOP BASIN	1	3.0	3.0
URINAL INTEGRAL TRAP 1.0 GPF*	1	2.0	2.0
WATER CLOSET, 1.6 GPF GRAVITY TANK	3	6.0	18.0
TOTAL WFU =			
* = PROVIDE 2" MIN DRAIN ** = SIZED IN ACCORDANCE WITH 2022 CALIFORNIA PLUMBING CODE, TABLE 702.1		TOTAL	35
		TOTAL FIX UNITS	WASTE PIPE SIZE
		35	4



Revisions:

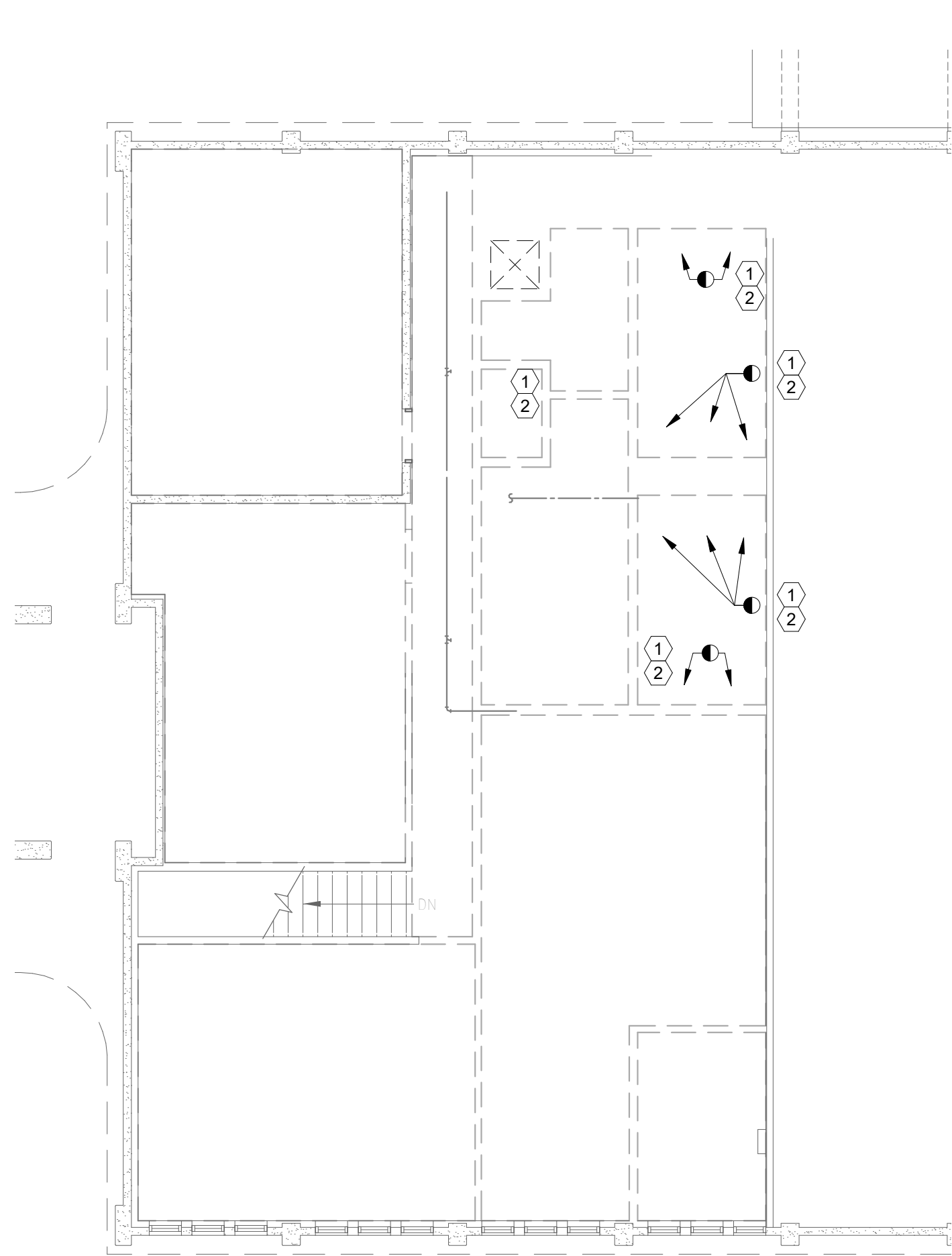
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

PLUMBING
SCHEDULES

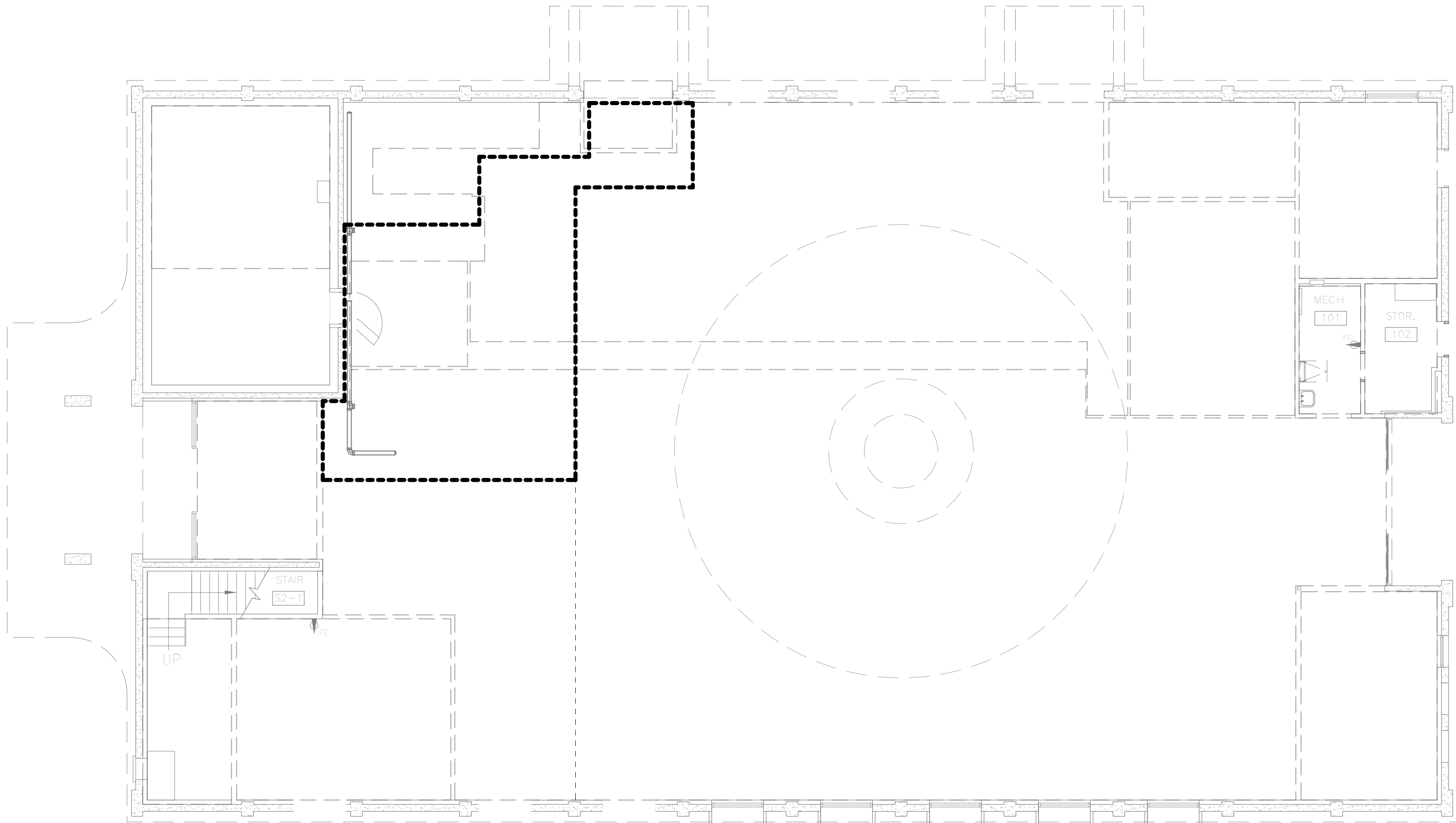
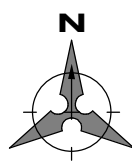
SheetNumber:

P002



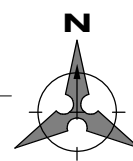
NOTE:
ALL EXISTING AND NEW PIPING SHOWN IS FOR REPRESENTATION. CONTRACTOR IS TO FIELD
VERIFY ALL EXISTING PIPING SIZES AND LOCATIONS AND MAKE PIPING CONNECTIONS AND
ALTERATIONS AS REQUIRED FOR NEW RESTROOM FIXTURE CONNECTIONS.

2 SECOND FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"



NOTE:
ALL EXISTING AND NEW PIPING SHOWN IS FOR REPRESENTATION. CONTRACTOR IS TO FIELD
VERIFY ALL EXISTING PIPING SIZES AND LOCATIONS AND MAKE PIPING CONNECTIONS AND
ALTERATIONS AS REQUIRED FOR NEW RESTROOM FIXTURE CONNECTIONS.

1 FIRST FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"



PLUMBING DEMO NOTES

- LOCATIONS AND DIMENSIONS OF EXISTING FACILITIES IDENTIFIED ON THIS DRAWING ARE APPROXIMATE AND REPRESENT THE BEST AVAILABLE INFORMATION BASED ON A COMBINATION OF FIELD INVESTIGATIONS AND VARIOUS DESIGN AND RECORD DRAWINGS AVAILABLE AT THE TIME OF DESIGN. FIELD VERIFY LOCATIONS AND DIMENSIONS PRIOR TO ORDERING EQUIPMENT AND DURING PERFORMANCE OF THE WORK. PROVIDE DEMOLITION WORK, NECESSARY FITTINGS, TRANSITIONS, AND OTHER COMPONENTS AS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION OF NEW SYSTEMS AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING PLUMBING EQUIPMENT, FIXTURES, AND PIPING SHOWN AS DARK AND DASHED SHALL BE DEMOLISHED. EXISTING PLUMBING EQUIPMENT, FIXTURES, AND PIPING SHOWN LIGHT SHALL REMAIN UNCHANGED.
- THE PLUMBING CONTRACTOR SHALL COORDINATE SALVAGE OF REMOVED EQUIPMENT IN GOOD CONDITION WITH THE OWNER. THE PLUMBING CONTRACTOR SHALL DISPOSE OF UNWANTED EQUIPMENT.
- COORDINATE WITH GENERAL CONTRACTOR TO PATCH AND REPAIR ROOF AND WALL ASSEMBLIES ASSOCIATED WITH PLUMBING DEMOLITION.
- CONCRETE SLAB CUTTING REGIONS SHOWN ON DRAWINGS ARE APPROXIMATE AND MUST BE FIELD COORDINATED PRIOR TO THE CUTTING OF THE SLAB.
- PROTECT EXISTING BUILDING ELEMENTS DURING DEMOLITION WORK. COORDINATE WITH OTHER TRADES TO ENSURE NO EXISTING EQUIPMENT/PIPING TO REMAIN IS DAMAGED DURING THE DEMOLITION WORK.

KEY NOTES:

- DEMO EXISTING FIXTURES, CARRIERS, VALVES, AND ASSOCIATED PIPING AS REQUIRED FOR CONNECTION OF NEW FIXTURES. NEW FIXTURES TO BE CONNECTED PER P002.
- DEMO ALL EXISTING PIPING ASSOCIATED WITH FIXTURES BEING REMOVED. DEMO UP TO THE PIPING MAIN OR POINT OF NEW CONNECTION TO FIXTURE. DO NOT LEAVE PIPING DEAD-ENDS. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL DEMO INFORMATION.

GENERAL DEMO. NOTES:

- SEE ARCH. SHEET AD111 FOR DEMOLITION WORK. DEMOLITION INCLUDES EXISTING GRILLES, DIFFUSERS, AND PORTIONS OF DUCTWORK.
- CEILING AREAS AT THE FIRST FLOOR, BELOW THE NEW SECOND FLOOR TOILET ROOMS WILL BE DEMO'D AND RECONSTRUCTED TO ALLOW ACCESS FOR DEMO. OF EXISTING PIPING AND INSTALLATION OF NEW PIPING. SEE ARCH SHEET A111.

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Sheet Title:

FIRST AND SECOND
FLOOR PLUMBING
DEMOLITION

SheetNumber:

PD101

Revisions:

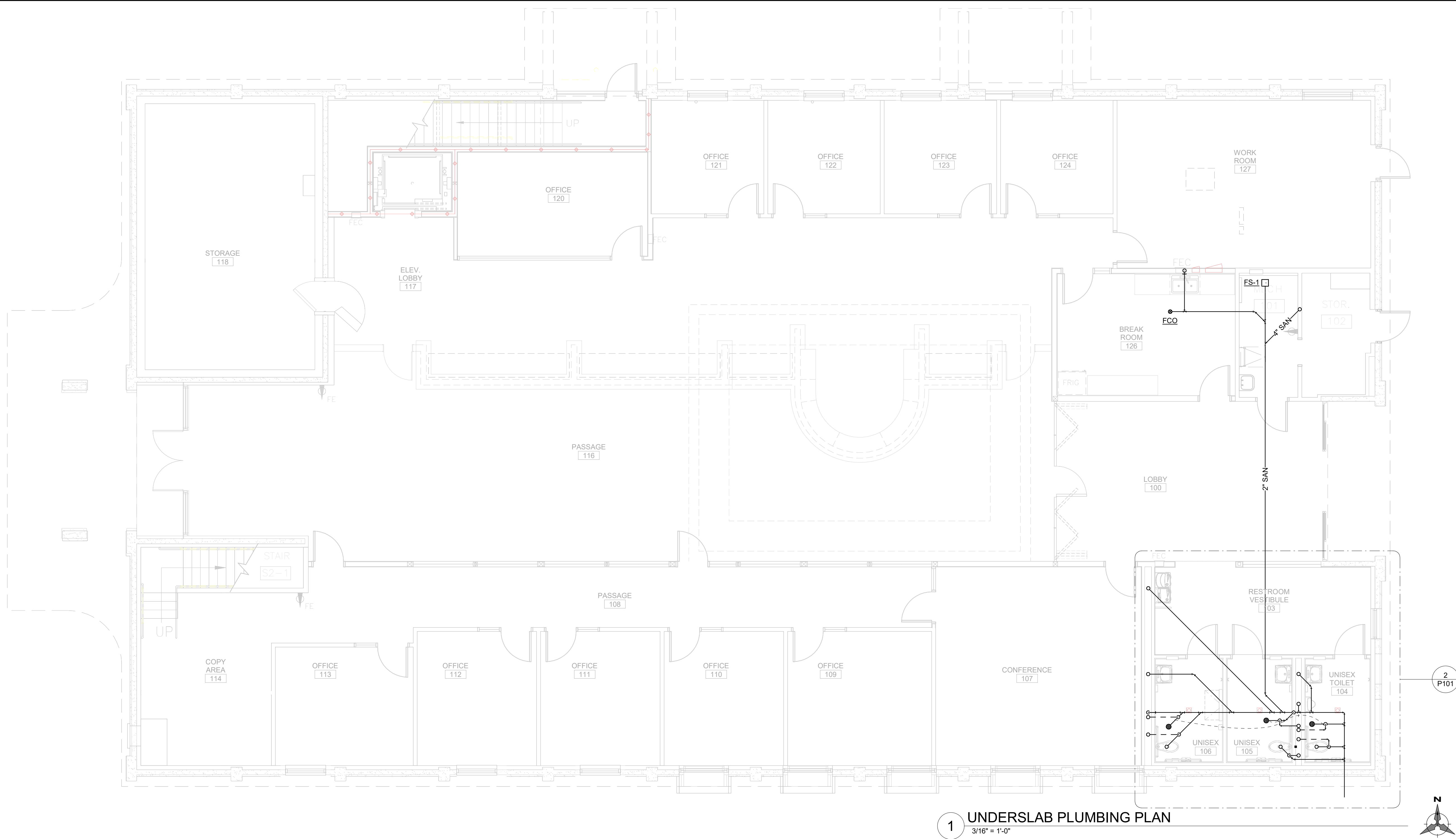
Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

UNDERSLAB
PLUMBING PLAN

SheetNumber:

P101



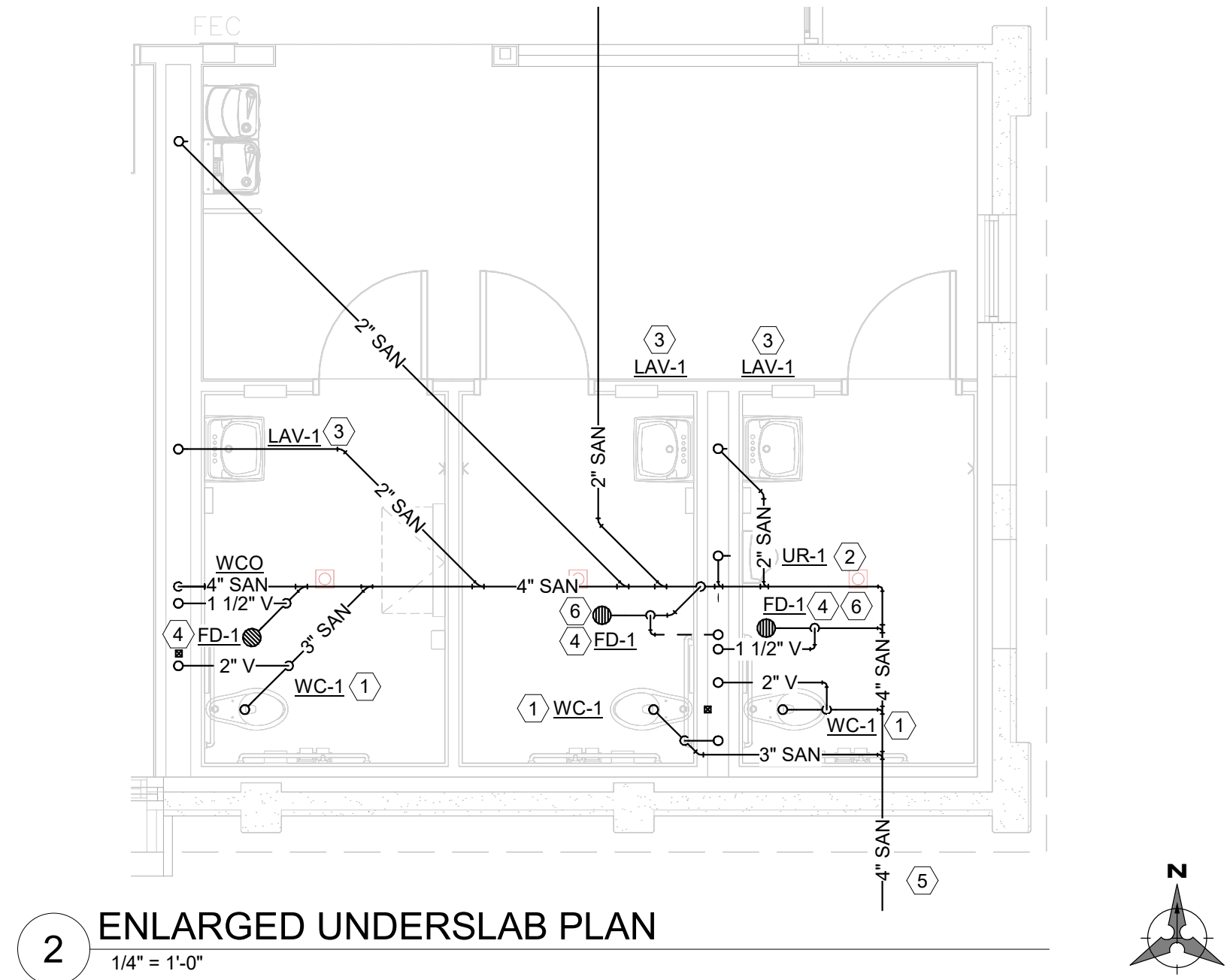
1 UNDERSLAB PLUMBING PLAN
3/16" = 1'-0"

PLUMBING GENERAL NOTES

- PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, AND OTHER DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH ARCHITECT AND ENGINEER.
- PROVIDE TRAP SEALS FOR FLOOR DRAINS AND FLOOR SINKS.
- PROVIDE TRAP PRIMERS FOR FLOOR DRAINS AND FLOOR SINKS. LOCATE TRAP PRIMERS IN A VALVE BOX AS INDICATED ON PLAN.
- INSTALL ACCESSIBLE PLUMBING FIXTURES IN COMPLIANCE WITH ADA REQUIREMENTS. INSULATE EXPOSED PIPING BELOW ADA ACCESSIBLE FIXTURES.
- INSTALL FLOOR DRAIN STRAINERS AND CLEANOUT COVERS FLUSH AND LEVEL WITH FINISHED FLOOR.
- PIPING SHALL BE IDENTIFIED WITH PIPE LABELS MARKED AT A MAXIMUM OF EVERY 25 FT. VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.
- PROVIDE AND INSTALL PIPE GUIDES, EXPANSION JOINTS, AND HANGERS PER MANUFACTURER'S RECOMMENDATIONS.
- PIPING WALL PENETRATIONS SHALL BE FINISHED WITH A CHROME ESCUTCHEON PLATE.
- NO FITTINGS OR PIPING CONNECTIONS SHALL BE INSTALLED UNDERSLAB.
- GAS PIPING IS TO BE WELDED IN CONCEALED SPACES.
- REFER TO THE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES TO INDIVIDUAL FIXTURES.
- COORDINATE CONCRETE PENETRATIONS WITH STRUCTURAL DRAWINGS TO VERIFY HOW AND WHERE CONCRETE CAN BE CUT.
- EXPOSED PIPING SHALL BE PAINTED PER ARCHITECTURAL OR PROVIDED WITH A PVC COATED JACKET IN THE COLOR OF THE ARCHITECT'S CHOOSING. CONTRACTOR TO CLEAN AND DRY PIPING PRIOR TO PAINTING.
- SANITARY SEWER, RAINWATER, AND OTHER DRAIN PIPING SHALL BE INSTALLED AT A MINIMUM 1/4" PER FOOT (2%) SLOPE IN DIRECTION OF FLOW. UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

KEY NOTES:

- 4" SAN UP TO WATER CLOSET, 2" V UP.
- 3" SAN UP TO URINAL, 1-1/2" V UP.
- 2" SAN UP TO LAVATORY.
- 2" SAN UP TO FLOOR DRAIN, 1-1/2" V UP.
- NEW 4" SAN, REFER TO CIVIL SITE UTILITY PLAN FOR CONTINUATION. COORDINATE INV. ELEVATION.
- PEX PIPING BELOW SLAB TO LAVATORY TRAP TAILPIECE. SEE DETAIL P001.03.



2 ENLARGED UNDERSLAB PLAN
1/4" = 1'-0"

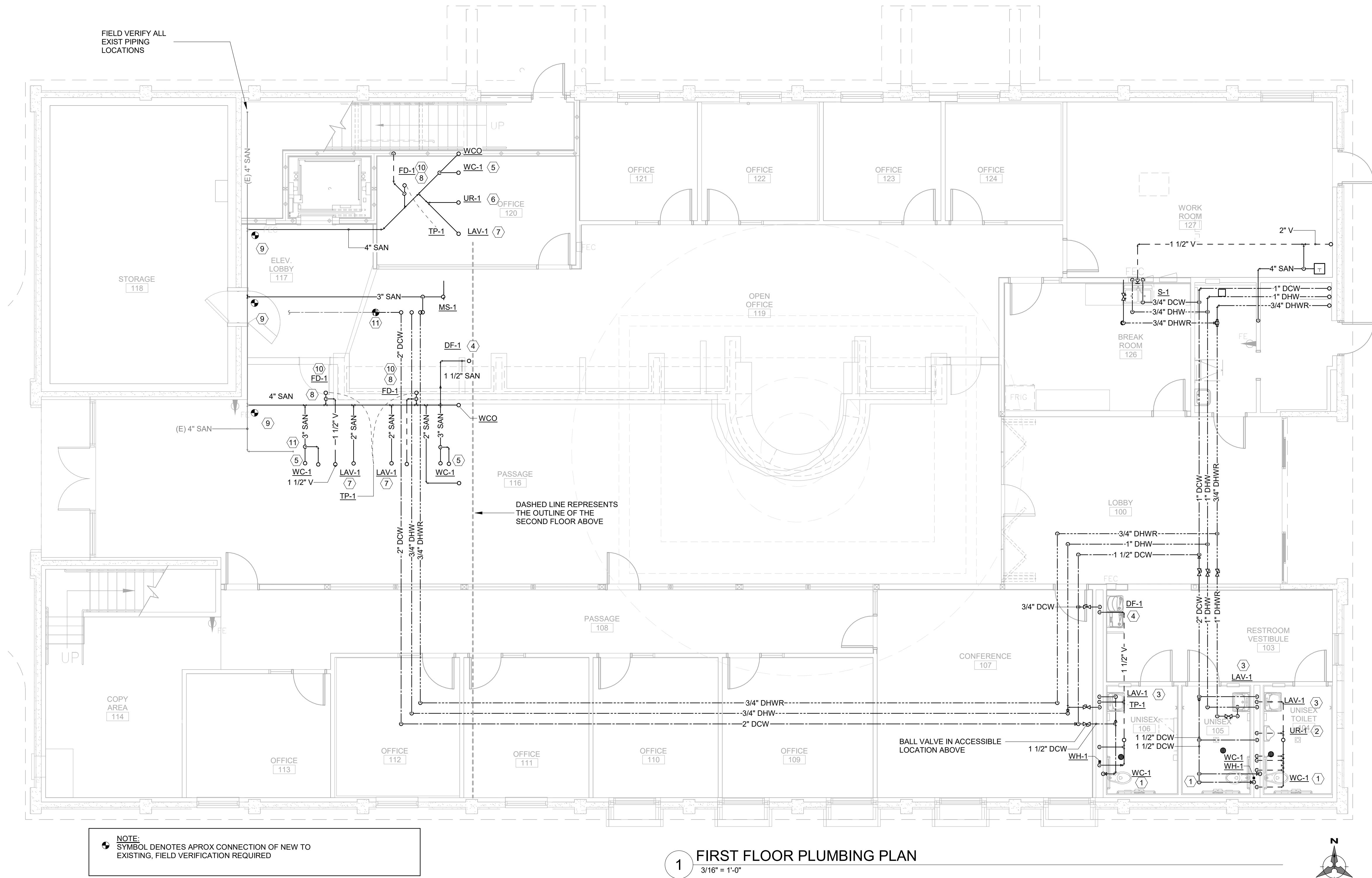


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KPA Project Number: 761.00
Date: JUNE 6, 2025 ISSUE FOR BID

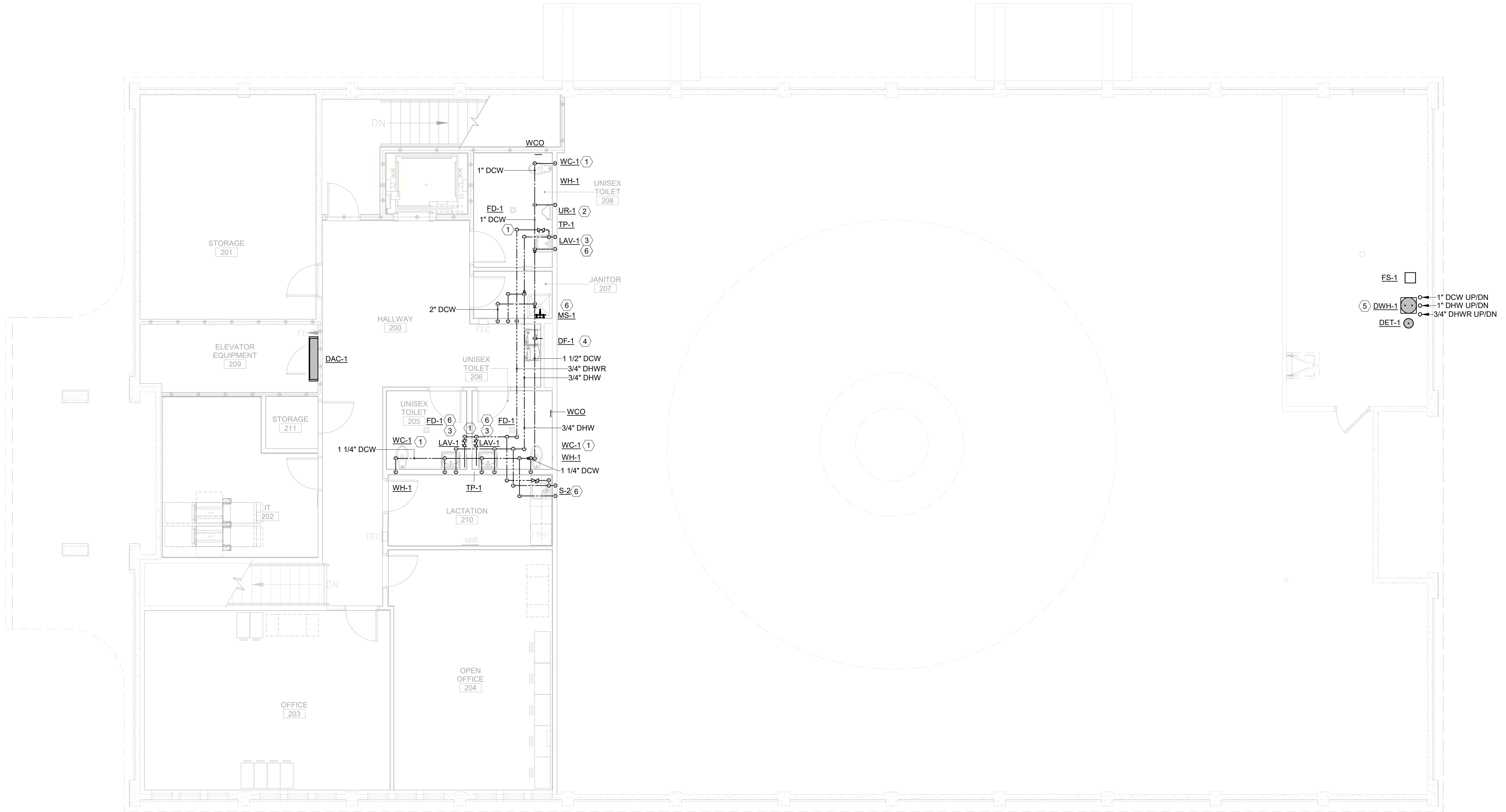
FIRST FLOOR PLUMBING PLAN

P102



- A. PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, AND OTHER DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH ARCHITECT AND ENGINEER.
- B. PROVIDE TRAP SEALS FOR FLOOR DRAINS AND FLOOR SINKS.
- C. PROVIDE TRAP PRIMERS FOR FLOOR DRAINS AND FLOOR SINKS. LOCATE TRAP PRIMERS IN A VALVE BOX AS INDICATED ON PLAN.
- D. INSTALL ACCESSIBLE PLUMBING FIXTURES IN COMPLIANCE WITH ADA REQUIREMENTS. INSULATE EXPOSED PIPING BELOW ADA ACCESSIBLE FIXTURES.
- E. INSTALL FLOOR DRAIN STRAINERS AND CLEANOUT COVERS FLUSH AND LEVEL WITH FINISHED FLOOR.
- F. PIPING SHALL BE IDENTIFIED WITH PIPE LABELS MARKED AT A MAXIMUM OF EVERY 25 FT. VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.
- G. PROVIDE AND INSTALL PIPE GUIDES, EXPANSION JOINTS, AND HANGERS PER MANUFACTURER'S RECOMMENDATIONS.
- H. PIPING WALL PENETRATIONS SHALL BE FINISHED WITH A CHROME ESCUTCHEON PLATE.
- I. NO FITTINGS OR PIPING CONNECTIONS SHALL BE INSTALLED UNDERSLAB.
- J. GAS PIPING SHALL BE WELDED IN CONCEALED SPACES.
- K. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES TO INDIVIDUAL FIXTURES.
- L. COORDINATE CONCRETE PENETRATIONS WITH STRUCTURAL DRAWINGS TO VERIFY HOW AND WHERE CONCRETE CAN BE CUT.
- M. EXPOSED PIPING SHALL BE PAINTED PER ARCHITECTURAL OR PROVIDED WITH A PVC COATED JACKET IN THE COLOR OF THE ARCHITECT'S CHOOSING. CONTRACTOR TO CLEAN AND DRY PIPING PRIOR TO PAINTING.
- N. SANITARY SEWER, RAINWATER, AND OTHER DRAIN PIPING SHALL BE INSTALLED AT A MINIMUM OF 4' FOOT OF SLOPE IN DIRECTION OF FLOW, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

1. 1" DCW, 2" V DN TO WATER CLOSET.
2. 3/4" DCW, 1-1/2" V DN TO URINAL.
3. 3/4" DCW, 3/4" DHW, 3/4" DHWR AND 1-1/2" V DN TO LAVATORY. PROVIDE MANUAL BALANCING VALVE SET TO 0.5 GPM.
4. 3/4" DCW, 1-1/2" VENT DN TO DRINKING FOUNTAIN.
5. 4" SAN UP TO WATER CLOSET, 2" V UP.
6. 3" SAN UP TO URINAL, 1-1/2" V UP.
7. 2" SAN UP TO LAVATORY.
8. 2" SAN UP TO FLOOR DRAIN, 1-1/2" V UP.
9. CONNECT NEW SAN TO EXISTING MAIN OF MINIMUM OF 4". FIELD COORDINATE EXACT CONNECTION LOCATION.
10. PIPING TO EXISTING FRAI TAILPIECE. SEE DETAIL P001.03.
11. CONNECT TO EXISTING 2" BUILDING SUPPLY DCW PIPING. FIELD COORDINATE EXACT CONNECTION LOCATION.



PLUMBING GENERAL NOTES

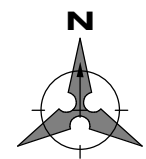
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KEY NOTES:

- 1" DCW, 2" V DN TO WATER CLOSET.
- 3/4" DCW, 1-1/2" V DN TO URINAL.
- 3/4" DCW, 3/4" DHW, AND 1-1/2" V DN TO LAVATORY.
- 3/4" DCW, 1-1/2" VENT DN TO DRINKING FOUNTAIN.
- WATER HEATER TO BE INSTALLED IN SECOND FLOOR STORAGE MEZZANINE. REFER TO DETAIL P001.2. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH ELECTRICAL TRADES.
- MANUAL BALANCING VALVE SET TO 0.5 GPM. PROVIDE VALVE IN ACCESSIBLE LOCATION OR PROVIDE ACCESS PANEL.

1 SECOND FLOOR PLUMBING PLAN

3/16" = 1'-0"



Revisions:

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SECOND FLOOR
PLUMBING PLAN

SheetNumber:

P103



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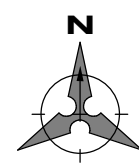
PLUMBING GENERAL NOTES

- PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, AND OTHER DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH ARCHITECT AND ENGINEER.
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- PROVIDE TRAP PRIMERS FOR FLOOR DRAINS AND FLOOR SINKS. LOCATE TRAP PRIMERS IN A VALVE BOX AS INDICATED ON PLAN.
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- SANITARY SEWER, RAINWATER, AND OTHER DRAIN PIPING SHALL BE INSTALLED AT A MINIMUM 1/4" PER FOOT (2%) SLOPE IN DIRECTION OF FLOW. UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

KEY NOTES:

- ROUTE CONDENSATE FROM OAC-1 AND CRAC UNITS (BY OTHERS) TO LAVATORY IN RESTROOM. FIELD COORDINATE CONDENSATE DRAIN FROM CRAC UNIT.

1 SECOND FLOOR DWV PLUMBING PLAN
3/16" = 1'-0"



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SECOND FLOOR
PLUMBING PLAN

SheetNumber:

P104



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Sheet Title:

MECHANICAL
LEGENDS

SheetNumber:

M001

ABBREVIATIONS	
ACC	AIR COOLED CONDENSER
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFR	ABOVE FINISHED ROOF
AFS	AIR FLOW STATION
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AWG	AMERICAN WIRE GAUGE
B	BOILER
BB	BASEBOARD
BC	BACKWARD CURVED
BD	BACKDRAFT DAMPER
BF	BOILER FEED
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOJ	BOTTOM OF JOIST
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
C	COMMON
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
C&I	CONTROLS & INSTRUMENTATION
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CND	CONDENSATE
CONT	CONTINUATION
CORR	CORRIDOR
CT	COOLING TOWER
CU	CONDENSING UNIT
CH	CABINET HEATER
CV	CONTROL VALVE
CVS	CONTROL VALVE STATION
CW	CLOCKWISE
dB	DECIBEL
DB	DRY BULB TEMPERATURE (°F)
DDC	DIRECT DIGITAL CONTROL
DH	DUCT HEATER
DP	DEW POINT TEMPERATURE (°F)
DX	DIRECT EXPANSION
E	EXHAUST
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE (°F)
EC	ELECTRICAL CONTRACTOR
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEV	ELEVATION
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE (°F)
F&T	FLOAT & THERMOSTATIC
FA	FACE AREA
FC	FORWARD CURVED
FC	FAN COIL
FP	FIRE PROTECTION
FFM	FEET PER MINUTE
FT	FEET
GA	GAUGE OR GAGE
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HUMIDIFIER
HC	HEATING COIL
HG	MERCURY
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HR	HOUR
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IFB	INTEGRAL FACE & BYPASS
IGV	INLET GUIDE VANES
IPS	IRON PIPE SIZE
IU	INDUCTION UNIT
KW	KILOWATTS
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE (°F)
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE (°F)
M	MOTOR OPERATED
MAU	MAKEUP AIR UNIT
MB	MIXING BOX
MBH	1000 BTU/HR
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MS	MINI-SPLIT
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OBD	OPPOSED BLADE DAMPER
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PPM	PART PER MILLION
PROP	PROPELLER
PRV	PRESSURE REDUCING VALVE
PSIA	PSI, ABSOLUTE
PSIG	PSI, GAUGE
QTY	QUANTITY
R	REGISTER
RA	RETURN AIR
RD	RADIAL DAMPER
RF	RETURN/RELIEF AIR FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SC	SENSIBLE COOLER
SCFM	CFM, STANDARD CONDITIONS
SD	SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SS	STAINLESS STEEL
T	THERMOSTAT
TA	TRANSFER AIR
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TG	TRANSFER GRILL
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UNC	UNDERCUT
UV	UNIT VENTILATOR
VA	VOLT-AMPERE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VRF	VARIABLE REFRIGERANT FLOW
WB	WET BULB TEMPERATURE (°F)
WC	WATER COLUMN
WG	WATER GAUGE
WSHP	WATER SOURCE HEAT PUMP
ΔT	TEMPERATURE DIFFERENCE (°F)

MECHANICAL LEGEND	
ANNOTATION SYMBOLS	
	3D VIEW NUMBER
	DETAIL NUMBER
	SECTION NUMBER
	AIR DEVICE MARK AND CFM
	AIR DEVICE MARK AND CFM - PROVIDE OPPOSED BLADE DAMPER
	AIR DEVICE MARK AND CFM - PROVIDE RADIAL DAMPER
	MECHANICAL EQUIPMENT MARK
	EXISTING MECHANICAL EQUIPMENT
	DEMOLISHED MECHANICAL EQUIPMENT
	POINT OF NEW CONNECTION
	POINT OF DISCONNECTION
HVAC CONTROL SYMBOLS	
	THERMOSTAT
	ZONED THERMOSTAT
	ZONED THERMOSTAT - MASTER
	THERMOSTAT W/ LOCKABLE COVER
	WALL SWITCH
	HUMIDISTAT
	ROOM TEMPERATURE SENSOR
	ADJUSTABLE ROOM TEMPERATURE SENSOR
	COMBO ROOM TEMPERATURE & CO2 SENSOR
	ADJUSTABLE COMBO ROOM TEMP & CO2 SENSOR
	ROOM HUMIDITY SENSOR
	ROOM CO2 SENSOR
	BUILDING PRESSURE SENSOR
	STATIC PRESSURE SENSOR
	DIFFERENTIAL PRESSURE SENSOR
	CARBON MONOXIDE / NITRIC OXIDE SENSOR

HVAC DUCTWORK	
	RECTANGULAR DUCT WIDTH x DEPTH
	ROUND DUCT DIAMETER
	OVAL DUCT WIDTH/DEPTH
	FLEXIBLE DUCT DIAMETER
	FLOOR/CEILING SUPPLY DIFFUSER
	FLOOR/CEILING RETURN GRILLE
	FLOOR/CEILING EXHAUST GRILLE
	SIDEWALL SUPPLY DIFFUSER
	SIDEWALL RETURN/EXHAUST GRILLE
	SUPPLY DUCT (SECTION VIEW)
	RETURN DUCT (SECTION VIEW)
	EXHAUST DUCT (SECTION VIEW)
	OUTDOOR AIR DUCT (SECTION VIEW)
	DUCT UP (PLAN VIEW)
	DUCT DOWN (PLAN VIEW)
	INCLINED RISE - IN DIRECTION OF AIRFLOW
	INCLINED DROP - IN DIRECTION OF AIRFLOW
	INTERNAL DUCT LINING
	ELBOW WITH TURNING VANES
	RADIUS ELBOW
	MANUAL VOLUME DAMPER
	REMOTE VOLUME DAMPER
	BACKDRAFT DAMPER
	ZONE DAMPER
	BYPASS DAMPER
	MOTORIZED DAMPER
	FIRE DAMPER
	FIRE/SMOKE DAMPER
	SMOKE DAMPER

NOTE: THIS IS A STANDARD LEGEND. NOT ALL PIPE TYPES AND SYMBOLS ARE NECESSARILY UTILIZED IN THE DRAWINGS.

HVAC SHEET INDEX	
NUMBER	SHEET NAME
M001	MECHANICAL LEGENDS
M002	MECHANICAL DETAILS & SCHEDULES
M101	FIRST FLOOR MECHANICAL PLAN
M102	SECOND FLOOR MECHANICAL PLAN
M103	ROOF MECHANICAL PLAN

DUCTLESS MINI-SPLIT SYSTEM SCHEDULE											
ACCESSORIES: 1. ALL STANDARD ACCESSORIES 2. FILTER KIT 3. ULTRA LOW AMBIENT KIT, COOLING OPERATING LIMIT -40°F TO 115°F			4. PROVIDE BIG FOOT FIX-IT FOOT SUPPORT FOR OUTDOOR UNIT. 5. PROVIDE INTERNAL CONDENSATE PUMP FOR WALL-MOUNTED INDOOR UNIT.			CONTROLS: 1. FACTORY PROVIDED CONTROLS - NO INTERCONNECTION TO THE DDC SYSTEM. 2. T.C.C. SHALL INDEPENDENTLY MONITOR THE SPACE TEMPERATURE. SEE POINTS/SEQUENCES FOR MORE INFORMATION.			ELECTRICAL DATA: SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.		
INDOOR COOLING UNIT						OUTDOOR CONDENSING UNIT				MANUF.	NOMINAL COOLING CAPACITY (MBH)
MARK	MODEL	TYPE	RATED / SENSIBLE CAPACITY (BTU/HR)	EER / SEER	WEIGHT (LBS)	MARK	MODEL	TYPE	WEIGHT (LBS)		
DAC-1	FTX36NVJU	WALL MOUNT UNIT	36,000/34,400	9.85/17.5	38	DCU-1	RX36NMVJUA	SINGLE ZONE AHU	133	Daikin	34.4

MEP COORDINATION SCHEDULE											
CONTROL TYPE:			DISCONNECT/STARTER TYPE:			DIVISION OF RESPONSIBILITIES:					
BAS	BUILDING AUTOMATION SYSTEM		CB	PANELBOARD CIRCUIT BREAKER WITHIN SIGHT OF EQUIPMENT		22/22	FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 22				
CO	CARBON MONOXIDE DETECTOR		CSFD	COMBINATION STARTER/DISCONNECT - HOA		22/26	FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 26				
CONT	CONTINUOUS OPERATION		FD	FUSED DISCONNECT		23/23	FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 23				
EF	INTERLOCK WITH EXHAUST FAN		FST	FUSTAT		23/26	FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 26				
HCP	HOOD CONTROL PANEL		FW	FACTORY-WIRED SINGLE POINT CONNECTION		26/26	FURNISHED AND INSTALLED BY DIV. 26, WIRED BY DIV. 26				
INT	INTEGRAL		MOCP	MOTOR OVER-CURRENT PROTECTION							
L	LIGHT SWITCH		MSS	MANUAL STARTER SWITCH WITH THERMAL OVERLOADS (1-, 2- OR 3-POLE AS REQUIRED)							
MS	MANUAL SWITCH		NFD	NON-FUSED DISCONNECT							
OS	OCCUPANCY SENSOR		RCPT	20A DUPLEX RECEPTACLE (GFCI PROTECTED AS REQUIRED), CORD AND PLUG							
PS	PRESSURE SWITCH		RVSS	REDUCED VOLTAGE SOLID-STATE							
T	THERMOSTAT		VFD	VARIABLE FREQUENCY DRIVE - HOA							
TC	TIME CLOCK		N/A	NOT APPLICABLE							
UC	UNIT CONTROLLER										
VE	VEHICLE EXHAUST DETECTION SYSTEM										
N/A	NOT APPLICABLE										
NOTES: 1. INTEGRAL DISCONNECTS AND OVERLOADS 2. INTEGRAL OVERLOADS 3. SINGLE POINT CONNECTION 4. PROVIDE RECEPTACLE AND DATA CONNECTION FOR PANEL. 5. MOUNT ON UNI-STRUT IN FRONT OF UNIT 6. SIZE FUSES IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES FOR INSTALLED EQUIPMENT 7. INTEGRAL VARIABLE FREQUENCY DRIVE 8. DUCT SMOKE DETECTOR(S) REQUIRED											
GENERAL NOTES: A. CONTROL WIRING SHALL BE CONCEALED WITHIN WALL CONSTRUCTION, ABOVE CEILING, OR RUN IN CONDUIT. EXPOSED CONTROL WIRING IS UNACCEPTABLE. B. UNLESS SPECIFICALLY NOTED, ALL FEEDERS SHALL INCLUDE A FULL SIZE NEUTRAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH THE MANUFACTURER OF THE ACTUAL EQUIPMENT BEING SUPPLIED WHETHER A NEUTRAL IS REQUIRED PRIOR TO ROUGH-IN. C. ALL DUCT SMOKE DETECTORS FURNISHED BY DIV. 26, INSTALLED BY DIV. 23, AND WIRED BY DIV. 26. DIV. 26 SHALL WIRE ALL FANS TO SHUT DOWN WHEN ALARM IS INITIATED BY ANY DUCT SMOKE DETECTOR.											
MARK	DESCRIPTION		ELECTRICAL DATA			CONTROL		NOTES			
			LOAD			VOLT-PHASE					
DAC-1	DUCTLESS AC CONDENSER		MCA 19.8 / MOCP 20			208-1	UC	23/23			
DCU-1	SINGLE ZONE AHU		FROM OUTDOOR UNIT			208-1	T	23/23			
DWH-1	DOMESTIC HOT WATER HEATER		1500 W			120-1	INT	22/26			
PP-1	HOT WATER RECIRCULATION PUMP		0.43 A			120-1	INT	22/26			4

GRILLE, REGISTER AND DIFFUSER SCHEDULE														
GRD REMARKS: 1. SUBMITTAL DATA SHALL INCLUDE N.C., THROW, VELOCITY, AND PRESSURE DROP AS WELL AS ALL PHYSICAL AND INSTALLATION DATA. 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FITTINGS AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION. 3. N.C. VALUES IN SCHEDULE ARE VALID FOR SCHEDULE AIRFLOW ONLY AND REPRESENT A MAXIMUM ACCEPTABLE VALUE. SUBSTITUTE EQUIPMENT SHALL HAVE N.C. VALUE EQUAL TO OR BELOW THE VALUE SCHEDULE. 4. REMOTE DAMPERS SHALL BE YOUNG REGULATOR MODEL 270-301 WITH REMOTE WALL PLATE(S) WHERE REQUIRED. 5. REMOTE DAMPERS SHALL BE MECHANICAL CABLE DRIVEN WITH CEILING ADJUSTMENT PLATES. COLOR SELECTED BY ARCHITECT.						ACCESSORY REMARKS: 1. PROVIDE FRAME FOR INSTALLATION IN RELEVANT CEILING TYPE. REFER TO ARCHITECTURAL RCP FOR CEILING TYPE. 2. PAINT INTERIOR OF VISIBLE RETURN DUCTS & PLENUMS BLACK. 3. COORDINATE LINEAR SLOT WIDTHS WITH THE WIDTH OF THE WOOD SLAT CEILINGS THEY WILL BE INSTALLED IN PRIOR TO ORDERING. 4. PROVIDE MANUAL BALANCING DAMPER AT LOCATIONS WHERE A SPECIFIED AIR VOLUME IS SHOWN.					5. PROVIDE RUSKIN MODEL CFD7T CEILING RADIATION DAMPER FOR SQUARE NECK DIFFUSERS AND MODEL CFD7RT FOR ALL ROUND NECK DIFFUSERS INSTALLED IN A FIRE RATED CEILING ASSEMBLY. CEILING RADIATION DAMPER TO MEET UL 55C LISTING R8039. 6. PROVIDE PRICE MODEL VCS3 OPPOSED BLADE DAMPER (OBD) WHERE INDICATED ON THE FLOOR PLANS. BALANCE TO AIRFLOW SPECIFIED. 7. PROVIDE PRICE MODEL VCR9 RADIAL DAMPER (RD) WHERE INDICATED ON THE FLOOR PLANS. BALANCE TO THE AIRFLOW SPECIFIED.			
MARK	MANUF.	MODEL	DESCRIPTION	NECK SIZE	FUNCTION	MAX AIRFLOW (CFM)	PERFORMANCE DATA AT MAX CFM					MOUNTING & FINISH		
							N.C.	PRESSURE DROP (IN WC)	THROW AT 50 FPM (FT)	VELOCITY (FPM)	THROW DIRECTION	MOUNTING	MATERIAL	FINISH
E-1	PRICE	535	45° BLADES @ 1/2"	6" x 6"	EXHAUST	100	19	0.10	-	522	-	SURFACE	STEEL	WHITE
E-2	PRICE	535	45° BLADES @ 1/2"	6" x 6"	EXHAUST	100	19	0.10	-	522	-	LAY-IN W/ PAN	STEEL	WHITE
E-3	PRICE	535	45° BLADES @ 1/2"	8" x 8"	EXHAUST	190	21	0.10	-	521	-	LAY-IN W/ PAN	STEEL	WHITE
R-1	PRICE	535	45° BLADES @ 1/2"	10" x 10"	RETURN	300	22	0.10	-	505	-	LAY-IN W/ PAN	STEEL	WHITE
R-2	PRICE	535	45° BLADES @ 1/2"	12" x 12"	RETURN	450	24	0.10	-	512	-	LAY-IN W/ PAN	STEEL	WHITE
R-3	PRICE	535	45° BLADES @ 1/2"	12" x 12"	RETURN	450	24	0.10	-	512	-	SURFACE	STEEL	WHITE
R-4	PRICE	535	45° BLADES @ 1/2"	20" x 20"	RETURN	1150	25	0.08	-	447	-	LAY-IN W/ PAN	STEEL	WHITE
S-1	PRICE	SMCD	MODULAR CORE DIFFUSER	6" x 6"	SUPPLY	125	< 20	0.06	12-43	500	4-WAY ADJUSTABLE	SURFACE	STEEL	WHITE
S-2	PRICE	SMCD	MODULAR CORE DIFFUSER	6" x 6"	SUPPLY	125	< 20	0.06	12-43	500	4-WAY ADJUSTABLE	LAY-IN W/ PAN	STEEL	WHITE
S-3	PRICE	SMCD	MODULAR CORE DIFFUSER	8" x 8"	SUPPLY	225	15	0.06	16-48	506	4-WAY ADJUSTABLE	LAY-IN W/ PAN	STEEL	WHITE
S-4	PRICE	SMCD	MODULAR CORE DIFFUSER	10" x 10"	SUPPLY	350	16	0.06	19-53	504	4-WAY ADJUSTABLE	SURFACE	STEEL	WHITE
S-5	PRICE	SMCD	MODULAR CORE DIFFUSER	10" x 10"	SUPPLY	350	16	0.06	19-53	504	4-WAY ADJUSTABLE	LAY-IN W/ PAN	STEEL	WHITE
S-6	PRICE	SMCD	MODULAR CORE DIFFUSER	12" x 12"	SUPPLY	500	18	0.06	21-56	500	4-WAY ADJUSTABLE	LAY-IN W/ PAN	STEEL	WHITE



CITY OF UKIAH

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ADA BARRIER REMOVAL

501 SOUTH STATE ST. UKIAH, CA 95482

Revisions:

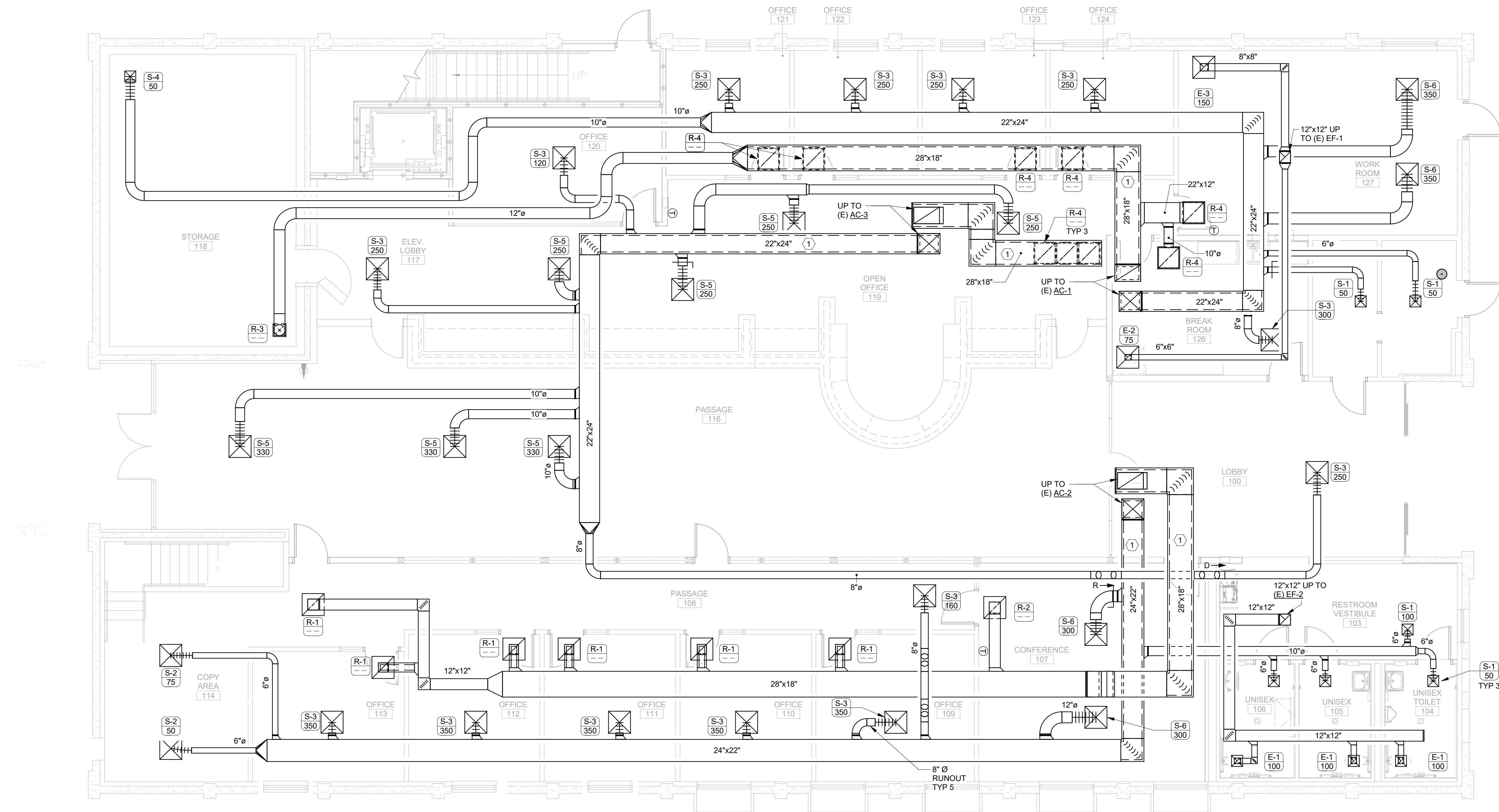
Client Project Number: 000
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Sheet Title:

MECHANICAL
DETAILS &
SCHEDULES

SheetNumber:

M002



MECHANICAL GENERAL NOTES

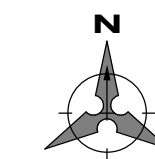
- VERIFY THE LOCATION OF THERMOSTATS AND SENSORS WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.
- PROVIDE AND INSTALL SEISMIC BRACING FOR EQUIPMENT, DUCTWORK AND PIPING PER THE REQUIREMENTS OF THE CURRENTLY ADOPTED INTERNATIONAL BUILDING CODE.
- FLEXIBLE DUCTWORK BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS, OR DIFFUSERS SHALL BE LIMITED TO 5 FT. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.
- PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION FIRE/SMOKE DAMPERS WHERE DUCTWORK PASSES THROUGH RATED ASSEMBLIES. ASSOCIATED DUCT DETECTORS SHALL BE ADDRESSABLE. SMOKE DAMPERS AND COMBINATION SMOKE/FIRE DAMPERS SHALL INCLUDE A KEYED REMOTE TEST SWITCH LOCATED IN AN ACCESSIBLE LOCATION. FIELD COORDINATE THE LOCATION OF TEST SWITCHES WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- SEAL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
- PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT. VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS, COORDINATE SUCH INSTALLATIONS WITH THE ARCHITECT AND ENGINEER.
- EXPPOSED DUCTWORK TO BE HOT DIPPED GALVANIZED STEEL AND PAINTED PER ARCHITECTURAL. CONTRACTOR TO CLEAN AND DRY DUCTWORK PRIOR TO PAINTING.

KEY NOTES:

- DUCTWORK SHOWN WITH DASHED LINES IS TO BE INTERNALLY LINED WITH 1" DUCT LINER FOR SOUND ATTENUATION. DUCT DIMENSIONS SHOWN HAVE BEEN SIZE TO ACCOUNT FOR LINING.

SCOPE OF WORK:

- SEE ARCH. SHEET AD111 FOR DEMOLITION WORK.
- DEMOLISH DUCTWORK BACK TO EACH RTU. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW OF POSSIBLE REUSE OF EXISTING DUCTWORK.



1 FIRST FLOOR MECHANICAL PLAN
3/16" = 1'-0"

Revisions:

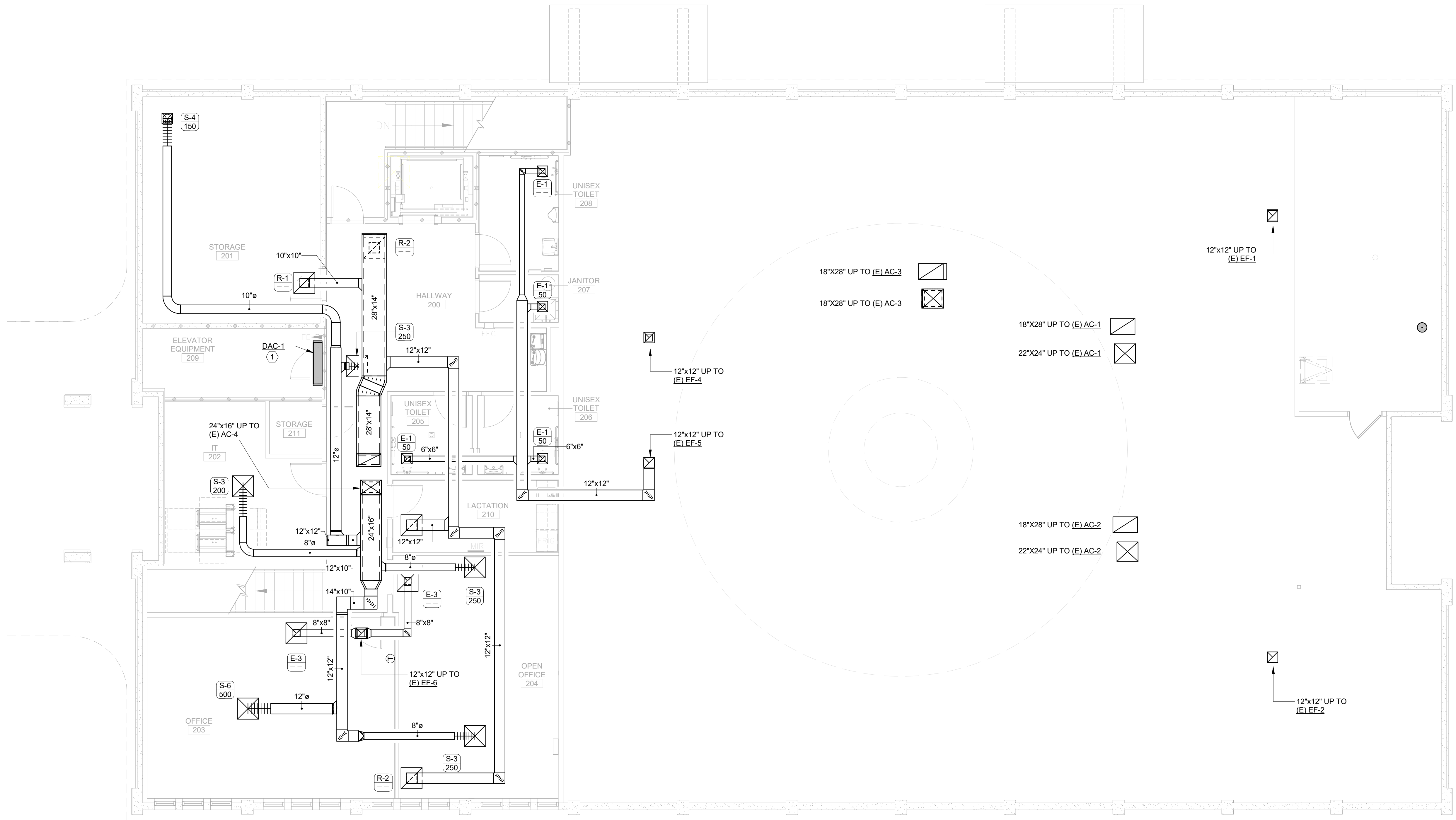
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FIRST FLOOR
MECHANICAL PLAN

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M101



MECHANICAL GENERAL NOTES

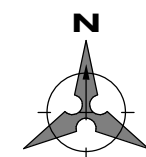
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- SEAL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
- PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT. VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS, COORDINATE SUCH INSTALLATIONS WITH THE ARCHITECT AND ENGINEER.
- EXPOSED DUCTWORK TO BE HOT DIPPED GALVANIZED STEEL AND PAINTED PER ARCHITECTURAL. CONTRACTOR TO CLEAN AND DRY DUCTWORK PRIOR TO PAINTING.

KEY NOTES:

- MINI SPLIT SYSTEM AIR-CONDITIONING SYSTEM. MOUNT INDOOR UNIT ABOVE DOOR (OR ON ADJACENT WALL). FIELD COORDINATE. ROUTE NEW CONDENSATE DRAIN LINE DOWN IN WALL AND TIE-IN TO SAN SEWER AS REQ'D. MOUNT OUTDOOR UNIT ON ROOF ABOVE. POWER FROM INDOOR UNIT FED FROM OUTDOOR UNIT, COORD. W/ ELECTRICAL CONTRACTOR.
- DUCTWORK SHOWN WITH DASHED LINES IS TO BE INTERNALLY LINED WITH 1" DUCT LINER FOR SOUND ATTENUATION. DUCT DIMENSIONS SHOWN HAVE BEEN SIZE TO ACCOUNT FOR LINING.

SCOPE OF WORK:

- SEE ARCH. SHEET AD111 FOR DEMOLITION WORK.
- DEMOLISH DUCTWORK BACK TO EACH RTU. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW OF POSSIBLE REUSE OF EXISTING DUCTWORK.



1 SECOND FLOOR MECHANICAL PLAN
3/16" = 1'-0"

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SECOND FLOOR
MECHANICAL PLAN

SheetNumber:

M102



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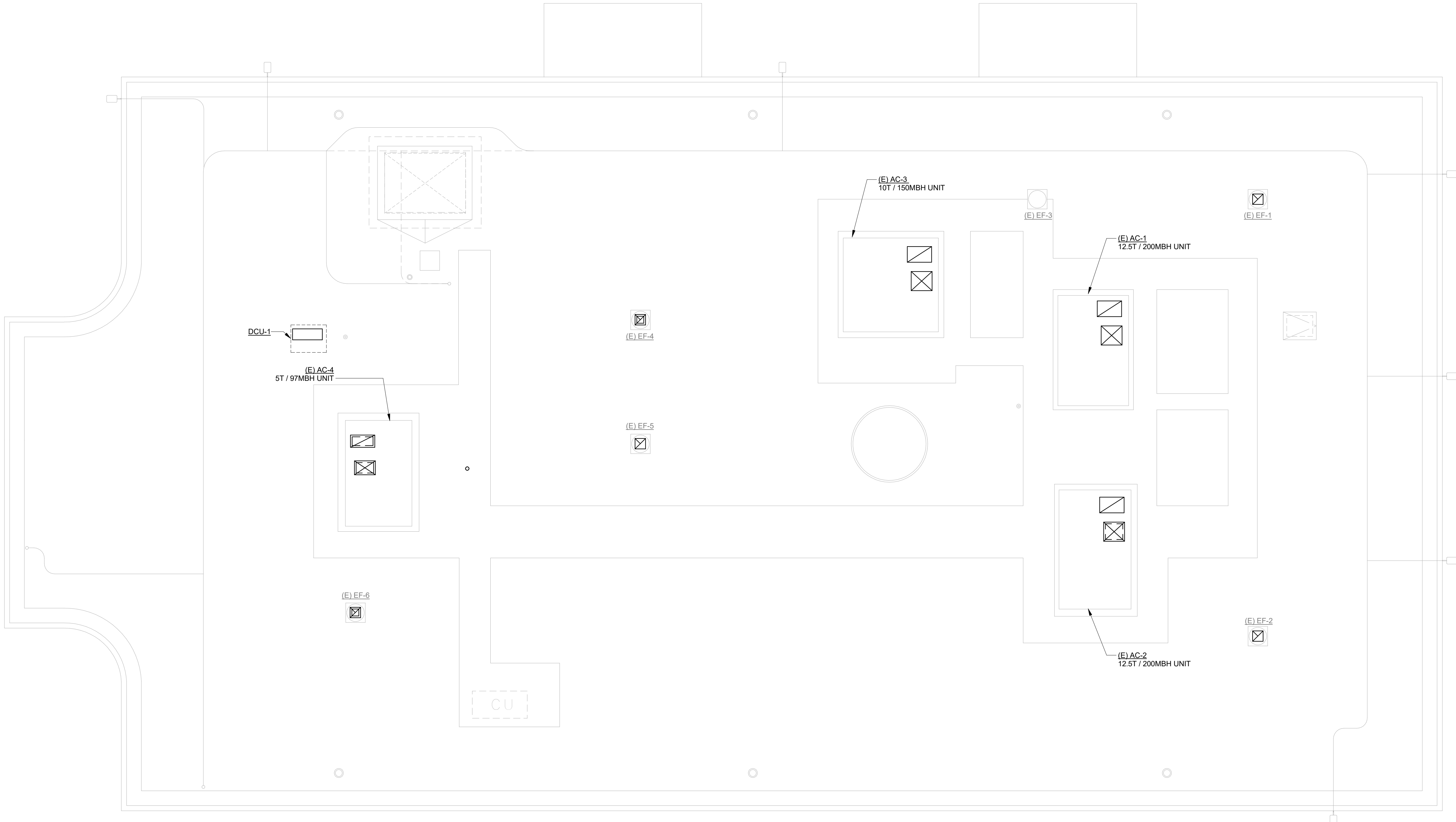
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SheetNumber:	

M103



MECHANICAL GENERAL NOTES

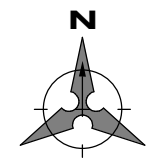
- VERIFY THE LOCATION OF THERMOSTATS AND SENSORS WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.
- PROVIDE AND INSTALL SEISMIC BRACING FOR EQUIPMENT, DUCTWORK AND PIPING PER THE REQUIREMENTS OF THE CURRENTLY ADOPTED INTERNATIONAL BUILDING CODE.
- FLEXIBLE DUCTWORK BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS, OR DIFFUSERS SHALL BE LIMITED TO 5 FT. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.
- PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION FIRE/SMOKE DAMPERS WHERE DUCTWORK PASSES THROUGH RATED ASSEMBLIES. ASSOCIATED DUCT DETECTORS SHALL BE ADDRESSABLE. SMOKE DAMPERS AND COMBINATION SMOKE/FIRE DAMPERS SHALL INCLUDE A KEYED REMOTE TEST SWITCH LOCATED IN AN ACCESSIBLE LOCATION. FIELD COORDINATE THE LOCATION OF TEST SWITCHES WITH THE ARCHITECT AND ENGINEER PRIOR INSTALLATION.
- SEAL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
- PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT. VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH THE ARCHITECT AND ENGINEER.
- EXPPOSED DUCTWORK TO BE HOT DIPPED GALVANIZED STEEL AND PAINTED PER ARCHITECTURAL. CONTRACTOR TO CLEAN AND DRY DUCTWORK PRIOR TO PAINTING.

KEY NOTES:

- NOT USED.

SCOPE OF WORK:

- SEE ARCH. SHEET AD111 FOR DEMOLITION WORK.
- DEMOLISH DUCTWORK BACK TO EACH RTU. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW OF POSSIBLE REUSE OF EXISTING DUCTWORK.



1

MECHANICAL ROOF PLAN

3/16" = 1'-0"

GENERAL NOTES - DEMOLITION:

- (ALL NOTES MAY NOT APPLY TO THIS PROJECT)
- A. COORDINATE WITH ALL TRADES AND THEIR DOCUMENTS FOR THE DEMOLITION AND/OR RELOCATION OF THEIR EQUIPMENT. PROVIDE ALL LABOR AND MATERIAL WHERE REQUIRED. SEE ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
- B. THE LOCATION OF ALL ELECTRICAL DISTRIBUTION EQUIPMENT, DEVICES, SYSTEMS EQUIPMENT, CIRCUITS, FEEDERS, TERMINATIONS, ETC., IF INDICATED ON DRAWINGS WERE TAKEN FROM VARIOUS SOURCES. THE INFORMATION IS DIAGRAMMATIC ONLY AND IS SUBJECT TO VARIATION FROM EXISTING CONDITIONS. IN FACT, CERTAIN EXISTING CONDITIONS MAY NOT BE INDICATED AT ALL. CONTRACTORS PROPOSING TO DO ANY PART OF THE WORK INDICATED HEREIN OR AS DEFINED IN THE SCOPE OF WORK SHALL REVIEW THE COMPLETE SET OF CONTRACT DOCUMENTS, VISIT THE SITE AND DETERMINE TO HIS/HER SATISFACTION THAT HE/SHE WILL BE ABLE TO COMPLETE ALL WORK REQUIRED FOR THE BID AMOUNT PROPOSED. NOTE: ALL WORK IS NOT INDICATED ON THIS PLAN, IN FACT DETAILED LOCATIONS, DEVICE, FIXTURES, CONDUIT, AND WIRING, ETC. ARE NOT SHOWN. SEE NOTE C BELOW FOR SCOPE OF DEMOLITION.
- C. THE GENERAL SCOPE OF THIS PROJECT AND DEVICES/FIXTURES, ETC. IS INDICATED ON ARCHITECTURAL DEMOLITION PLANS. ALL WIRING, CABLING, DEVICES, CONDUIT, AND ASSOCIATED COMPONENTS OF ALL SYSTEMS: LIGHTING, POWER, DATA, TELECOM, SPECIAL SYSTEMS (FIRE ALARM, INTERCOM, ETC.) IN AREAS TO BE DEMOLISHED AND FOR DEVICES/EQUIPMENT PER ARCHITECTURAL SHALL BE REMOVED COMPLETE. CONTRACTOR SHALL VISIT SITE AND PROVIDE TOTAL COST IN BID TO REMOVE ALL COMPONENTS FOR THIS SCOPE.
- E. COORDINATE THE LOCATION OF EXISTING CONDUITS AND JUNCTION BOXES WITH NEW MECHANICAL SYSTEM AND OTHER APPLICABLE SYSTEMS. DEVICES, CONDUITS, CABLING, SUPPORTS, AND JUNCTION BOXES THAT ARE IN CONFLICT SHALL BE RELOCATED TO BOTTOM OF STRUCTURE ABOVE AS NECESSARY TO ACCOMMODATE ALL NEW CONSTRUCTION, INCLUDING BUT NOT LIMITED TO NEW CEILINGS, MECHANICAL, PLUMBING, NEW CONDUIT ROUTING, AND ELECTRICAL EQUIPMENT AND SYSTEMS.
- F. THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHERE DEMOLITION/RELOCATION OF DEVICES AND EQUIPMENT IS INDICATED, THE CONTRACTOR SHALL ENSURE THAT OTHER DEVICES OR EQUIPMENT THAT ARE CONNECTED TO THE SAME CIRCUIT, WHETHER "UPSTREAM" OR "DOWNSTREAM", SHALL REMAIN OPERATIONAL. UNUSED CIRCUIT BREAKERS SHALL REMAIN AND BE LABELED AS SPARES IN ALL AFFECTED PANELBOARDS. IN ADDITION, PROVIDE NEW TYPEWRITTEN DIRECTORIES IN ALL AFFECTED PANELBOARDS.
- G. COORDINATE WITH ALL TRADES NOT TO DAMAGE EXISTING CABLES AND WIRING (DESIGNATED TO BE RELOCATED IN NEW CONSTRUCTION) BEING TEMPORARILY COILING UP AND STORED ABOVE CEILING. TEST ALL CABLES AND WIRING PRIOR TO DEMOLITION. NOTIFY CONSTRUCTION MANAGER OF ALL CABLES THAT DO NOT OPERATE PER SYSTEMS SPECIFICATIONS. CABLES NOT BEING REUSED SHALL BE REMOVED COMPLETELY. MAINTAIN "UPSTREAM" AND/OR "DOWNSTREAM" CONNECTIONS.
- H. COORDINATE WITH CONSTRUCTION MANAGER TO REWORK AND RELOCATE ANY DISTURBED EXISTING SYSTEM DEVICES PER OWNER'S VENDOR.
- I. ELECTRICAL DEVICES (RECEPTACLES, SWITCHES, LIGHTING FIXTURES, OUTLETS OF ALL SYSTEMS TYPES, ETC.) SHALL BE REMOVED COMPLETE FROM EXISTING WALLS AND CEILINGS BEING REMOVED (INCLUDING EXTERIOR CANOPIES) FOR ALL AREAS IN SCOPE OF WORK. DEVICES NECESSARY TO REMAIN IN CEILING SHALL BE RELOCATED TO NEW CEILINGS AS REQUIRED. CIRCUITS/CONDUIT/BOXES, ETC. SHALL BE REMOVED PER OTHER NOTES ABOVE, SEE GENERAL NOTE J FOR ALLOWANCE FOR REUSE OF PORTIONS. SEE NOTES ABOVE CONCERNING CONTINUITY OF CIRCUITS UPSTREAM AND DOWNSTREAM.

GENERAL NOTES- ELECTRICAL:

- A. CONTRACTOR SHALL FOLLOW SEISMIC RESTRAINT AND DESIGN REQUIREMENTS CONTAINED IN LATEST ADOPTED STATE AND INTERNATIONAL BUILDING CODES, WITH ALL AMENDMENTS AS ADOPTED BY THE CURRENT LEGISLATION.
- B. THE TERM "PROVIDE" SHALL MEAN CONTRACTOR SHALL FURNISH AND INSTALL ITEMS AND CONNECT AS REQUIRED TO OBTAIN A COMPLETE WORKING SYSTEM.
- C. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL LOCAL, STATE, AND NATIONAL CODES. INCLUDING BUT NOT LIMITED TO LATEST APPLICABLE CALIFORNIA ELECTRICAL CODE, NFPA 70 (NATIONAL ELECTRIC CODE), NFPA 72, INTERNATIONAL BUILDING CODE, CALIFORNIA TITLE 24, ETC.
- D. ALL WORK SHALL BE COORDINATE WITH EXISTING CONDITIONS, NEW CONSTRUCTION, OWNER'S VENDORS, ALL TRADES, AND THEIR DOCUMENTS. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING HIS BID.
- E. NO MORE THAN THREE CIRCUITS (4-SINGLE CONDUCTOR CABLES PLUS GROUND) SHALL BE PULLED IN SINGLE CONDUIT, (EXCEPTION: SEPARATE NEUTRALS FOR GROUND FAULT CIRCUITS). WIRE (EXCEPT GROUND) MUST BE OF SAME SIZE AND MUST BE ON OPPOSITE PHASES IF USING COMMON NEUTRAL. ALL PANELBOARDS AND WIRING SHALL MEET NEC 210.4 MULTIWIRE BRANCH CIRCUITS. IT IS AT THE CONTRACTOR'S DISCRETION TO EITHER PROVIDE DEDICATED NEUTRALS OR MULTI-POLE BREAKERS.
- F. WHEN RUNNING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT, DERATE AMPACITIES IN ACCORDANCE WITH NFPA 70.
- G. A CODE SIZE INSULATED GROUND CONDUCTOR SHALL BE PROVIDED IN ALL FEEDER AND BRANCH CIRCUIT CONDUITS.
- H. ALL THHN/THWN/THHW/THW/XHHW CONDUCTORS ARE SIZED BASED ON 75°C TEMPERATURE RATING. ALL TERMINATIONS FOR ALL EQUIPMENT AND DEVICES SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75°C CONDUCTORS. IF CONTRACTOR PROVIDES TERMINATIONS OF LESS THAN 75°C, THE ASSOCIATED CONDUCTOR SIZES SHALL BE INCREASED DUE TO THE DERATING AMPACITY PER NEC TABLE 310-15(B)(16). CONTRACTOR SHALL MAKE ALL CHANGES (I.E. CONDUIT SIZES, ETC.) AS NECESSARY AND SHALL MAKE ALL REVISIONS ON "AS-BUILT" DRAWINGS.
- I. MINIMUM CONDUIT SIZE IS 3/4 INCH, MINIMUM WIRE SIZE IS #12 AWG (COPPER CONDUCTOR THHN/THWN), UNLESS OTHERWISE NOTED ON PLANS OR IN CIRCUIT REVIEWS.
- J. ALL CONDUIT SHALL BE RUN CONCEALED WHEREVER POSSIBLE ABOVE CEILINGS, INSIDE WALLS, OR UNDER FLOOR SLAB (ONLY WHERE SHOWN DASHED ON PLAN, OR NOTED/ALLOWED BY ENGINEER), UNLESS OTHERWISE NOTED ON PLAN. IN HIGH-BAY (NO CEILING) AREAS, RUN EXPOSED CONDUIT HIGH AS POSSIBLE. ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO NEARBY SURFACE OR STRUCTURAL MEMBERS AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL. NO CONDUIT SHALL BE INSTALLED IN FLOOR SLAB UNLESS SPECIFICALLY NOTED OTHERWISE.
- K. CONTRACTOR SHALL PROVIDE RIGID METAL SLEEVES TO FACILITATE PATHWAY (I.E. THRU BLOCK WALLS) FOR ELECTRICAL AND TELECOMMUNICATION DEVICES.
- L. PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR CONDUITS. DO NOT LEAVE PIPING/ CONDUITS OPEN ENDED. PROVIDE END BUSHINGS FOR ALL STUB-OUTS AND SLEEVES DESIGNATED TO BE UTILIZED FOR THIS PROJECT. COORDINATE WITH OWNER'S REPRESENTATIVE FOR SYSTEMS NOT PROVIDED UNDER THIS CONTRACT.
- M. PROVIDE FIRE STOP TO ALL CONDUITS AND DEVICES PENETRATING FIRE RATED WALLS, SMOKE WALLS AND FLOORS. ALL PENETRATIONS THROUGH FIRE WALLS SHALL BE BY UL LISTED FIRE PENETRATION METHODS/MATERIALS, ETC. SEE ARCHITECTURAL FOR RATED WALLS.
- N. MOUNTING HEIGHTS ABOVE FINISHED FLOOR (AFF) ARE TO CENTER OF DEVICE UNLESS NOTED OTHERWISE.
- O. DEVICES/OUTLETS SHALL BE COORDINATED WITH ASSOCIATED ARCHITECTURAL DRAWINGS (I.E. FLOOR PLANS, CASEWORK DETAILS/ELEVATIONS, ETC.) FOR EXACT LOCATIONS AND MOUNTING, PRIOR TO ROUGH-IN. IF EXACT LOCATIONS AND MOUNTING ARE NOT INDICATED ON ARCHITECTURAL DRAWINGS, FIELD VERIFY EXACT LOCATIONS AND MOUNTING WITH OWNER AND ALL TRADES. MOUNTING HEIGHTS SHALL MEET CBC ACCESSIBILITY.
- P. DEVICES SHALL NOT BE INSTALLED BACK TO BACK ON A COMMON WALL WHERE CONDITION EXISTS FOR ADJACENT OFFICE ROOMS OR ROOMS WHERE SOUND TRANSMISSION IS NOT PERMITTED. OR PROVIDE SOUND INSULATION.
- Q. RECEPTACLES SHALL BE CIRCUITED WITH A SEPARATE GROUND WIRE. RECEPTACLES PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKER SHALL HAVE A DEDICATED NEUTRAL WIRE PULLED FOR THAT CIRCUIT. RECEPTACLES PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE SHALL BE WIRED PER MANUFACTURERS RECOMMENDATIONS.
- R. RECEPTACLES ARE TO BE INSTALLED WITH THE GROUND PIN IN THE TOP POSITION.
- S. FOR EACH RECEPTACLE SUPPLIED FROM A GROUND FAULT CIRCUIT INTERRUPTER BREAKER IN PANELBOARD, PROVIDE A COVER PLATE WITH THE FOLLOWING PERMANENTLY ETCHED OR ENGRAVED MARKING: "G.F.C.I. PROTECTED".
- T. ELECTRICAL DRAWINGS SHALL BE COORDINATED WITH EXISTING CONDITIONS, ASSOCIATED MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR FOR MOTORS, DEVICES, FIXTURES, ETC. FOR EXACT LOCATIONS BEFORE ROUGH-IN OF CONDUIT SYSTEM
- U. LIGHTING FIXTURES SHALL BE WIRED TO SWITCHES GENERALLY SHOWN IN EACH ROOM AND CONNECTED TO LIGHTING PANELS WITH THE REQUIRED QUANTITY OF WIRES FOR PROPER OPERATION. A CONTINUOUS GROUND MUST BE PROVIDED THROUGH CONDUIT SYSTEM. EXIT LIGHTS, INVERTERS, AND NIGHT LIGHTS SHALL BE CONNECTED AHEAD OF LOCAL SWITCHING ON SAME CIRCUIT.
- V. SEE/VERIFY ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING MOUNTED DEVICES, I.e. LIGHT FIXTURES, SPEAKERS, FIRE ALARM DEVICES, ETC.
- W. FROM EACH TELEPHONE/DATA, TV, ETC. COMMUNICATION TYPE OUTLET, PROVIDE A (MIN.) 1-1/4 INCH CONDUIT (WITH PULL STRING) STUBBED TO ACCESSIBLE CEILING WITH INSULATED BUSHING, UNLESS OTHERWISE NOTED. IF NO CEILING IS INDICATED STUB CONDUIT TO ASSOCIATED TELECOM/IT ROOM, OR TO HEIGHT AFF AS COORDINATED WITH ARCHITECT.
- X. WHEN ROUTED THROUGH AN AIR RETURN PLENUMS, ALL TELEPHONE/DATA, TV, ETC. COMMUNICATION CABLING SHALL BE ROUTED IN A COMPLETE CONDUIT RACEWAY SYSTEM OR SHALL BE PLENUM RATED. (NO PVC CONDUIT SHALL BE INSTALLED). COORDINATE ALL CONDUIT RUNS WITH ALL TRADES AND THEIR VENDORS. SEE MECHANICAL FOR LOCATION OF ANY AIR RETURN PLENUMS.
- Y. TURN OVER TO THE OWNER ALL MANUFACTURER'S WARRANTIES FOR EQUIPMENT AND MATERIALS PROVIDED.
- Z. PROVIDE NEW UPDATED TYPED PANEL LEDGER/CIRCUIT DIRECTORY FOR EACH NEW AND ALTERED PANELBOARD.
- AA. ALL NEW ELECTRICAL JUNCTION BOXES ABOVE CEILING IN AREAS RELATED TO CONSTRUCTION ARE TO BE IDENTIFIED AND LABELED WITH A PERMANENT MARKER. FIRE ALARM JUNCTION BOXES ARE TO BE PAINTED RED.
- AB. NO MC CABLE SHALL BE PERMITTED ON PROJECT UNLESS SPECIFICALLY AUTHORIZED.

LUMINAIRE SCHEDULE											
TYPE	DESCRIPTION	MOUNTING	LAMPS	BALLAST	VOLTAGE	INPUT WATTS	EMERGENCY	MANUFACTURER	CATALOG NUMBER	ALTERNATE MANUFACTURERS	NOTES
D1	6" APERTURE DOWNLIGHT WITH CLEAR MATTE DIFFUSED REFLECTOR AND NIGHT ENABLED	CEILING RECESSED	LED 2000 LUMENS	CONSTANT CURRENT	120	35	N/A	LITHONIA	LDN6 4-2-L06 AR LD	PER REVIEW BY ENGINEER	1
D1E	SAME AS D1 WITH EMERGENCY BATTERY BALLAST	CEILING RECESSED	LED 20000 LUMENS	CONSTANT CURRENT	120	35	N/A	LITHONIA	LDN6 4-2-L06 AR LD EL	PER REVIEW BY ENGINEER	1
E1	EMERGENCY BATTERY PACK UNIT	SURFACE	LED	NA	120	NA	INTEGRAL BATTERY	LITHONIA	ELM2 LED	REVIEW BY ENGINEER	1
OL1	GENERAL EXTERIOR SURFACE AREA FIXTURE W/INTEGRAL EMERG. BATTERY PACK UNIT	SURFACE	LED 1500 LUMEN	CONSTANT CURRENT	120	15	N/A	LITHONIA	WST LED P140K VF MVOLT PBBW EW7C DBXB	PER REVIEW BY ENGINEER	1
OLP1	POLE MOUNTED LED AREA LIGHTING FIXTURE WITH CAST ALUMINUM HOUSING	POLE	LED 22000 LUMENS	CONSTANT CURRENT	120	155	NA	LITHONIA	RSX2 LED P2 40K R3 MVOLT SP04 SSS**	PER REVIEW BY ENGINEER	1,3,5
OLP2	POLE MOUNTED LED AREA LIGHTING FIXTURE WITH CAST ALUMINUM HOUSING	POLE	LED 17000 LUMENS	CONSTANT CURRENT	120	155	NA	LITHONIA	RSX2 LED P2 40K R4 MVOLT SP04 SSS**	PER REVIEW BY ENGINEER	1,3,5
S1	LED SOFFIT LIGHT LED	SURFACE	LED	CONSTANT CURRENT	120	7W/FT	CONNECT TO EMERGENCY PACK	FOCAL POINT	FCOL HN 750LF 40K 1C UNV L11 CV XX' FIELD MEASURE AND PROVIDE FULL LENGTH	PER REVIEW BY ENGINEER	1
T2	2X2 LED FLAT PANEL, SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	RECESSED	LED 3500 LUMEN	CONSTANT CURRENT	120	30	N/A	LITHONIA	2x2 AL07 SWW7 40K	PER REVIEW BY ENGINEER	1,2,3,4
T2E	SAME AS T2 WITH EMERGENCY INVERTER	RECESSED	LED 4300 LUMEN	CONSTANT CURRENT	120	30	N/A	LITHONIA	2x2 AL07 SWW7 40K 1E10WP	PER REVIEW BY ENGINEER	1,2,3,4
T3	2X2 ARCHITECTURAL TROFFER LED, CURVED LENS CENTER BASKET, SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	RECESSED	LED 3683 LUMEN	CONSTANT CURRENT	120	30	N/A	LITHONIA	STAKS 2X2 AL03 SWW7 40L 40K	PER REVIEW BY ENGINEER	1,2,3.
T3E	SAME AS T3 WITH EMERGENCY INVERTER	RECESSED	LED 3683 LUMEN	CONSTANT CURRENT	120	36	N/A	LITHONIA	STAKS 2X2 AL03 SWW7 40L 40K ILBLP CP10 HE SD A LED	PER REVIEW BY ENGINEER	1,2,3
T4	2X2 LED FLAT PANEL, SELECTABLE LUMEN OUTPUT AND COLOR TEMPERATURE	RECESSED	LED 4470 LUMEN	CONSTANT CURRENT	120	30	N/A	LITHONIA	2x4 AL07 SWW7 40K	PER REVIEW BY ENGINEER	1,2,3
T4E	SAME AS T4 WITH EMERGENCY INVERTER	RECESSED	LED 4470 LUMEN	CONSTANT CURRENT	120	30	N/A	LITHONIA	2x4 AL07 SWW7 40K 1E10WP	PER REVIEW BY ENGINEER	1,2,3
W1	2' LONG LED WALL BRACKET WITH FORMED STEEL HOUSING AND IMPACT RESISTANT LINEAR PRISMATIC LENS	WALL	LED 1869 LUMENS	CONSTANT CURRENT	120	18	N/A	LITHONIA	WL2 18L MVOLT G21 LP840	PER REVIEW BY ENGINEER	1
W2	4' LONG LED WALL BRACKET WITH FORMED STEEL HOUSING AND IMPACT RESISTANT LINEAR PRISMATIC LENS	WALL	LED 3251 LUMENS	CONSTANT CURRENT	120	115	N/A	LITHONIA	WL4 30L MVOLT G21 LP840 DIM50	PER REVIEW BY ENGINEER	1
Z1	48" L STRIP LIGHT, LED LENSED	SURFACE	LED 3000 LUMENS	CONSTANT CURRENT	120	35	NA	LITHONIA	Z1L8 L48 SMR 5000LM FST MVOLT 40K 80CRI	PER REVIEW BY ENGINEER	1
LUMINAIRE SCHEDULE NOTES: 1. SUBSTITUTE FIXTURES SHALL BE SUBMITTED FOR PRIOR APPROVAL BY ENGINEER 10 DAYS PRIOR TO BID, NO EXCEPTIONS 2. LUMEN PACKAGES ARE SELECTABLE, SELECT LUMENS PER LUMENS COLUMN 3. COORDINATE FINISH SELECTION WITH ARCHITECT 4. FOR 2X2 FIXTURES MOUNTED TO HARD SURFACE (I.E. NOT INSTALLED IN RECESSED GRID CEILING) PROVIDE SURFACE KIT AS APPLICABLE 5. MATCH POLE HEIGHT OF EXISTING POLE, FIELD VERIFY PRIOR TO ORDER											

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	CEILING OUTLET AND INCANDESCENT, FLUORESCENT, LED OR HID FIXTURE
	WALL OUTLET AND INCANDESCENT, FLUORESCENT, LED OR HID FIXTURE
	CEILING OUTLET AND FLUORESCENT FIXTURE OR LED FIXTURE (SEE FIXTURE SCHEDULE)
	FIXTURE ON EMERGENCY POWER OR POWERED BY EMERGENCY INVERTER, SEE PLANS AND KEYNOTES AND FIXTURE SCHEDULE FOR EXACT INFORMATION
	WALL MOUNTED LED FIXTURE
	FLOODLIGHT
	EMERGENCY BATTERY PACK (8"-6" A.F.F. TO CENTER UNLESS OTHERWISE NOTED)
	EMERGENCY LIGHTING REMOTE HEAD
	EXIT SIGN, CEILING MOUNTED
	EXIT SIGN, MOUNT 4" ABOVE DOOR FRAME
a, b, c	LOWER CASE LETTERS AT OUTLETS INDICATE SWITCHING ARRANGEMENT
(A)	LIGHT FIXTURE TYPE CALLOUT. REFER TO FIXTURE SCHEDULE FOR COMPLETE FIXTURE DESCRIPTION. QUANTITY OF THIS TYPE NOTED IN PARENTHESIS.
\$	SINGLE POLE SWITCH - 20 AMP, 277V (46" A.F.F. TO BOTTOM, TYP. ALL SWS.)
\$D	DIMMER SWITCH, TO MATCH TYPE OF LIGHTING CONTROLLED - COORDINATE WITH FIXTURE MANUFACTURER AND ENGINEER. LUTRON DVSDTV-XX UNO
\$2	2=2-POLE SWITCH, 3=THREE-WAY, 4=FOUR-WAY, LV0##=LOW VOLTAGE FOR OCC SENSOR (SEE DETAIL FOR MODEL NUMBERS), OC=OCCUPANCY SENSOR TYPE SENSOR SWITCH #WSXPDT, VSD= VACANCY SENSOR TYPE SENSOR SWITCH #WSXPDTSA (SEMI-AUTOMATIC TO MEET IECC)
	DUPLEX RECEPTACLE - 20 AMP, 125V, 2P, 3W, TYP. MTG. AT 18" A.F.F. TO BOTTOM UNO WITH HEIGHT NOTED AFF
	DEDICATED 20AMP DUPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE - (2) DUPLEX RECEPTACLES IN 3 GANG BOX WITH 2 GANG PLASTER RING
	FLUSH FLOOR MOUNTED RECEPTACLE(S) PER SYMBOL, - VERIFY COVERPLATE WITH FLOOR TYPE AND COLOR/FINISH BY ARCHITECT PRIOR TO ORDERING. WHEN SHOWN WITH ADJACENT COMMUNICATION DEVICE, PROVIDE COMBINATION DEVICE PER SYMBOL SHOWN. SEE COMMUNICATION DEVICE/GENERAL NOTES FOR ADDITIONAL INFORMATION, ROUTE CONDUITS UNDER FLOOR OVER TO NEAREST WALL AND STUB UP OR DOWN TO ABOVE CEILING AS NECESSARY.
	DUPLEX RECEPTACLE - 20 AMP, 125V, 2P, 3W, TYP. MTG. ABOVE DROP CEILING
	JUNCTION BOX
	SPECIAL OUTLET, NEMA CONFIGURATION AS NOTED OR AS REQUIRED BY EQUIPMENT
	SPECIALTY RECEPTACLE - TL = TWIST LOCK, AMPERAGE INDICATED NEMA CONFIGURATION INDICATE. COORDINATE ALL RECEPTACLES WITH EQUIPMENT MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
	PUSH-BUTTON REMOTE RELEASE OR DOOR OPERATOR - COORDINATE WITH ARCHITECT, VENDOR/MANUFACTURER/SUPPLIER
	EMERGENCY POWER OFF PUSH-BUTTON, RED MUSHROOM HEAD, AT 54" AFF, UNO.
	START/STOP PUSH-BUTTON STATION, AT 54" AFF, UNO.
	NEMA 1 ENCL., 600 VOLT, 3P, 30AMP, FUSED DISCONNECT SWITCH AT 4'-6" AFF, UNO.
	NEMA 1 ENCL., 600 VOLT, 3P, 30AMP, NON-FUSED DISCONNECT SWITCH AT 4'-6" A.F.F, UNO.
	MAGNETIC STARTER SIZE 1, NEMA 1 ENCLOSURE WITH HAND-OFF-AUTO SELECTOR SWITCH AT 4'-6" AFF, UNO.
	COMBINATION MAGNETIC STARTER AND FUSED SWITCH SIZE 1, NEMA 1 ENCLOSURE WITH HAND-OFF-AUTO SELECTOR SWITCH AT 4'-6" AFF, UNO.
	MOTOR LOCATION
	EXHAUST FAN WITH INTEGRAL DISCONNECT FURNISHED BY MECHANICAL
	MANUAL MOTOR RATED SWITCH/CONTROLLER, SIZE AS REQUIRED BY LOAD. MOUNT 46" A.F.F. UNLESS OTHERWISE NOTED
	CONDUIT CONCEALED WHERE POSSIBLE (NOTE NOT ALL CONDUIT IS INDICATED ON PLANS)
	CONDUIT CONCEALED IN FLOOR OR BELOW GRADE (NOTE NOT ALL CONDUIT IS INDICATED ON PLANS)
	RECESSED MOUNTED PANELBOARDSEE PLANS/SINGLE-LINE FOR NAME, VOLTAGE AND SIZE
	SURFACE MOUNTED PANELBOARD, SEE PLANS/SINGLE-LINE FOR NAME, VOLTAGE AND SIZE
	SURFACE MOUNTED PANELBOARD, SEE PLANS/SINGLE-LINE FOR NAME, VOLTAGE AND SIZE
	BOX AND COVER PLATE FOR COMMUNICATION OUTLET. MOUNT 18" A.F.F. (W = 48" AFF). PROVIDE 1-1/4" CONDUIT W/BUSHING & PULLSTRING STUBBED ABOVE ACCESSIBLE CEILING U.O.N. PROVIDE (2) CAT 6A TO EACH OUTLET, UNO WITH (#) - #=QTY OF CAT 6A
	BOX AND COVER PLATE FOR COMMUNICATION OUTLET. FLOOR MOUNTED. PROVIDE 1-1/4" CONDUIT W/BUSHING & PULLSTRING STUBBED ABOVE ACCESSIBLE CEILING U.O.N. PROVIDE (2) CAT 6A TO EACH OUTLET, UNO WITH (#) - #=QTY OF CAT 6A
	BOX AND COVER PLATE FOR COMMUNICATION OUTLET. CEILING MOUNTED. PROVIDE (2) CAT 6A TO EACH OUTLET, UNO WITH (#) - #=QTY OF CAT 6A
	VISUAL ADA COMPLIANT FIRE ALARM APPLIANCE:(WALL MOUNT AT 80" A.F.F.), 30 CANDELLA(cd), OR AS OTHERWISE REQUIRED BY SPACE TO MEET CODE. VERIFY CANDELLA OF STROBE WITH CODE AND FIRE ALARM VENDOR.
	VISUAL ADA COMPLIANT FIRE ALARM APPLIANCE:(CEILING MOUNTED), 30 CANDELLA(cd), OR AS OTHERWISE REQUIRED BY SPACE TO MEET CODE. VERIFY CANDELLA OF STROBE WITH CODE AND FIRE ALARM VENDOR.
	70db CALCULATED SOUND VALUE IN DECIBELS(db), ASSUME 100db AT 10FT FROM HORN WITH 35db LOSS THRU DOOR OR PARTITION TO OBTAIN 70db DESIGN AVERAGE
	SMOKE DETECTOR IN DUCT SYSTEM WITH REMOTE TEST SWITCH IN CORRIDOR WALL UNLESS OTHERWISE NOTED. CONNECT PER CODE AND MANUFACTURER REQUIREMENTS, COORDINATE WITH HVAC AND FIRE ALARM MANUFACTURER. PROVIDE FOR FAN SHUTDOWN.
	FIRE ALARM FLOW SWITCH
	FIRE ALARM PRESSURE SWITCH
	FIRE ALARM TAMPER SWITCH
	FIRE ALARM BREAK STATION MOUNTED 46" A.F.F. TO BOTTOM
	AUDIO/VISUAL ADA COMPLIANT FIRE ALARM DEVICE (WALL MOUNT @80" A.F.F.), HORN (OR SPEAKER IN HIGH RISE) WITH STROBE APPLIANCE, UNLESS NOTED OTHERWISE ON PLAN OR SPECS. VERIFY CANDELLA OF STROBE WITH CODE & FIRE ALARM VENDOR.
	AUDIO/VISUAL ADA COMPLIANT FIRE ALARM DEVICE (CEILING MOUNTED), HORN (OR SPEAKER IN HIGH RISE) WITH STROBE APPLIANCE, UNLESS NOTED OTHERWISE ON PLAN OR SPECS. VERIFY CANDELLA OF STROBE WITH CODE & FIRE ALARM VENDOR.
	SPEAKER/SOUNDER CODE COMPLIANT FIRE ALARM DEVICE(WALL MOUNT AT 80" A.F.F.),
	SYSTEM SMOKE DETECTOR, CEILING MOUNTED UNLESS OTHERWISE NOTED. A= LOW FREQ. AUDIBLE BASE TO MEET APPLICABLE RESIDENTIAL CODE REQUIREMENTS, COORDINATE EXACT LOCATION WITH VENDOR, OTHER EQUIPMENT AND CODE.
	135 DEGREE FIXED TEMPERATURE & RATE OF RISE DETECTOR, UNLESS OTHERWISE NOTED ON PLAN
	FIRE FIGHTERS PHONE JACK. COORDINATE EXACT REQUIREMENTS WITH FIRE ALARM.
	MAIN FIRE ALARM CONTROL PANEL
	REMOTE FIRE ALARM ANNUNCIATOR
	BEAM TYPE WALL MOUNTED SMOKE DETECTOR TRANSMITTER, FIELD ALIGN BEAM WITH RECEIVER, SEE PLANS FOR LOCATION.
	BEAM TYPE WALL MOUNTED SMOKE DETECTOR RECEIVER, FIELD ALIGN BEAM FROM TRANSMITTER, SEE PLANS FOR LOCATION.
	BOX AND COVER PLATE FOR TV OUTLET AND 120V RECEPTACLE WITH SEPARATE COMPARTMENTS. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECTURAL ELEVATIONS, PROVIDE COMMON DUAL COVERPLATE. SEE GENERAL NOTES, PROVIDE RG-6U COAX TO CTV AND/OR CAT 6 TO PATCH PANEL IN DATA/TELECOM RM AS DIRECTED BY OWNER
	INCOMING COAX PATCH PANEL/SPLITTERS BY LOCAL UTILITY. COIL RG-6U COAX AT LOCATION FOR TERMINATION BY LOCAL PROVIDER.
	KP = KEYPAD, OR = CARD READER, EL = ELECTRIC LATCH. CONTRACTOR SHALL PROVIDE BACKBOX AND 1" C STUBBED AND TURNED ABOVE ACCESSIBLE CEILING WITH PULL STRING FOR SECURITY/ACCESS CONTROL DEVICE. PROVIDE 120V CONNECTION TO DOOR LATCHES AS REQUIRED, COORDINATE WITH SECURITY VENDOR FOR EXACT REQUIREMENTS
	SECURITY CAMERA, OWNER FURNISHED. PROVIDE (2) CAT 6A WITH 10' SPOOLED ABOVE CEILING IN APPROX LOCATION
	SURGE PROTECTION DEVICE, ALSO LABELED AS "TVSDS" TRANSIENT VOLTAGE SURGE SUPPRESSION
AC	ABOVE COUNTER - BOTTOM OF COVER PLATE FOR OUTLET 2" ABOVE COUNTER TOP BACKSLASH.
AFF	ABOVE FINISHED FLOOR - (TO CENTER, UNO.)
HD	HD TELEVISION OUTLET DUPLEX RECEPTACLE AT 57" AFF IN A RECESSED FLAT SCREEN COMBINATION BACK BOX, UNO.
C	CONDUIT
IG	ISOLATED GROUND (TYPE RECEPTACLE)
EM	EMERGENCY
NL	NIGHT LIGHT CIRCUIT (NON-SWITCHED)
WP	WEATHERPROOF (NEMA 3R). PROVIDE IN USE TYPE COVER WHERE NEC REQUIRED
GND	GROUND
GF1 GF	GROUND FAULT INTERRUPTER(RECEPTACLE)
UNO	UNLESS OTHERWISE NOTED
	THIS IS A STANDARD LEGEND. ALL ITEMS MAY NOT APPEAR ON THIS JOB.

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".



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Revisions:

Client Project Number: 000
APN Number: 000-000-000
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Sheet Title:

ELECTRICAL LEGEND,
GENERAL NOTES AND
SCHEDULES

Sheet Number:

E000

Revisions:

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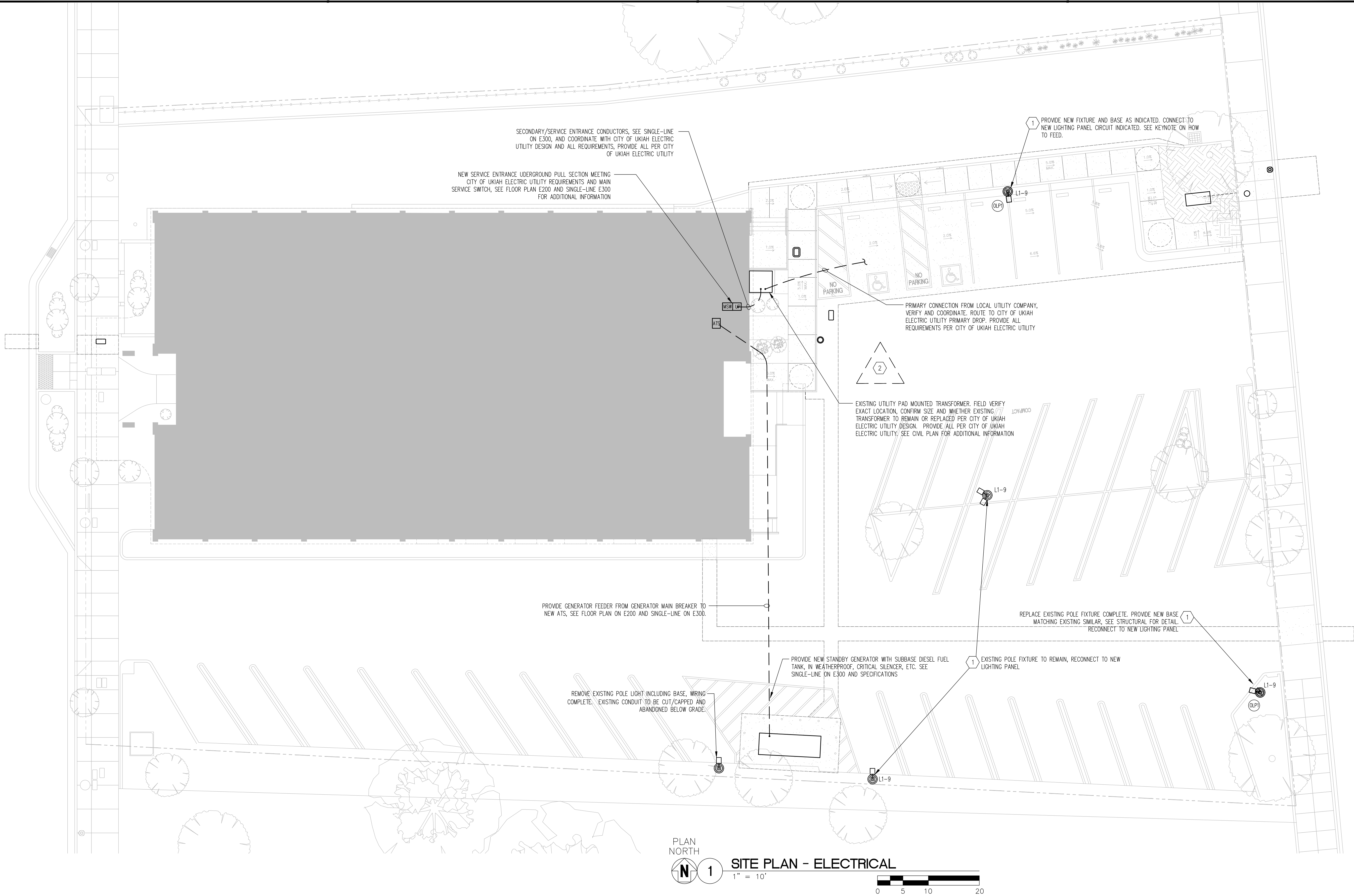
Sheet Title:

**SITE PLAN-
ELECTRICAL**

Sheet Number:

ES100

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE
FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".



GENERAL NOTES - SITE ELECTRICAL

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- SEE DRAWING E000 FOR ADDITIONAL NOTES AND FIXTURE SCHEDULE FOR NEW POLE LIGHTS.
- COORDINATE EXACT LOCATIONS OF ALL EQUIPMENT WITH EXISTING CONDITIONS, CIVIL PLAN, OTHER TRADES, UTILITIES-NEW AND EXISTING, ETC.
- SEE POLE BASE DETAIL THIS DRAWING ON STRUCTURAL, INTENT TO MATCH EXISTING.
- ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, 36" BELOW GRADE. ALL STUB-UPS/90'S SHALL TRANSITION TO BE SCHEDULE 80 PVC. COORDINATE WITH ALL OTHER UNDERGROUND UTILITIES, EXISTING CONDITIONS AND COORDINATION WITH CITY OF UKIAH ELECTRIC UTILITY DESIGN AND REQUIREMENTS. CITY OF UKIAH ELECTRIC UTILITY REQUIREMENTS TO SUPERCEDE ALL DESIGN INDICATED ON THESE PLANS. REUSE OF EXISTING CONDUITS TO POLE FIXTURE IS ACCEPTABLE.
- CONTRACTOR SHALL COORDINATE WITH CITY OF UKIAH ELECTRIC UTILITY AND PROVIDE ALL NECESSARY COMPONENTS FOR COMPLETE INSTALLATION PER THEIR RESPECTIVE REQUIREMENTS AND LATEST EDITIONS OF THEIR STANDARD INSTALLATION/ELECTRIC SERVICE HANDBOOKS AND DETAILS. UTILITY COMPANY SHALL MAKE FINAL DETERMINATION OF PAD MOUNTED TRANSFORMER DESIG, LOCATION OF PRIMARY CONNECTION, ETC. INTENT IS TO UTILIZE SERVICE UTILITY POLE EXISTING. COORDINATE WITH CITY OF UKIAH ELECTRIC UTILITY - CONTRACTOR SHALL FOLLOW ALL UTILITY REQUIREMENTS FOR FULL AND COMPLETE SYSTEM INSTALLATION MEETING LOCAL UTILITY AND ALL CEC REQUIREMENTS. CONTRACTOR SHALL COORDINATE ALL WITH ENGINEER.
- SEE DRAWING E300 FOR ADDITIONAL DETAILS.

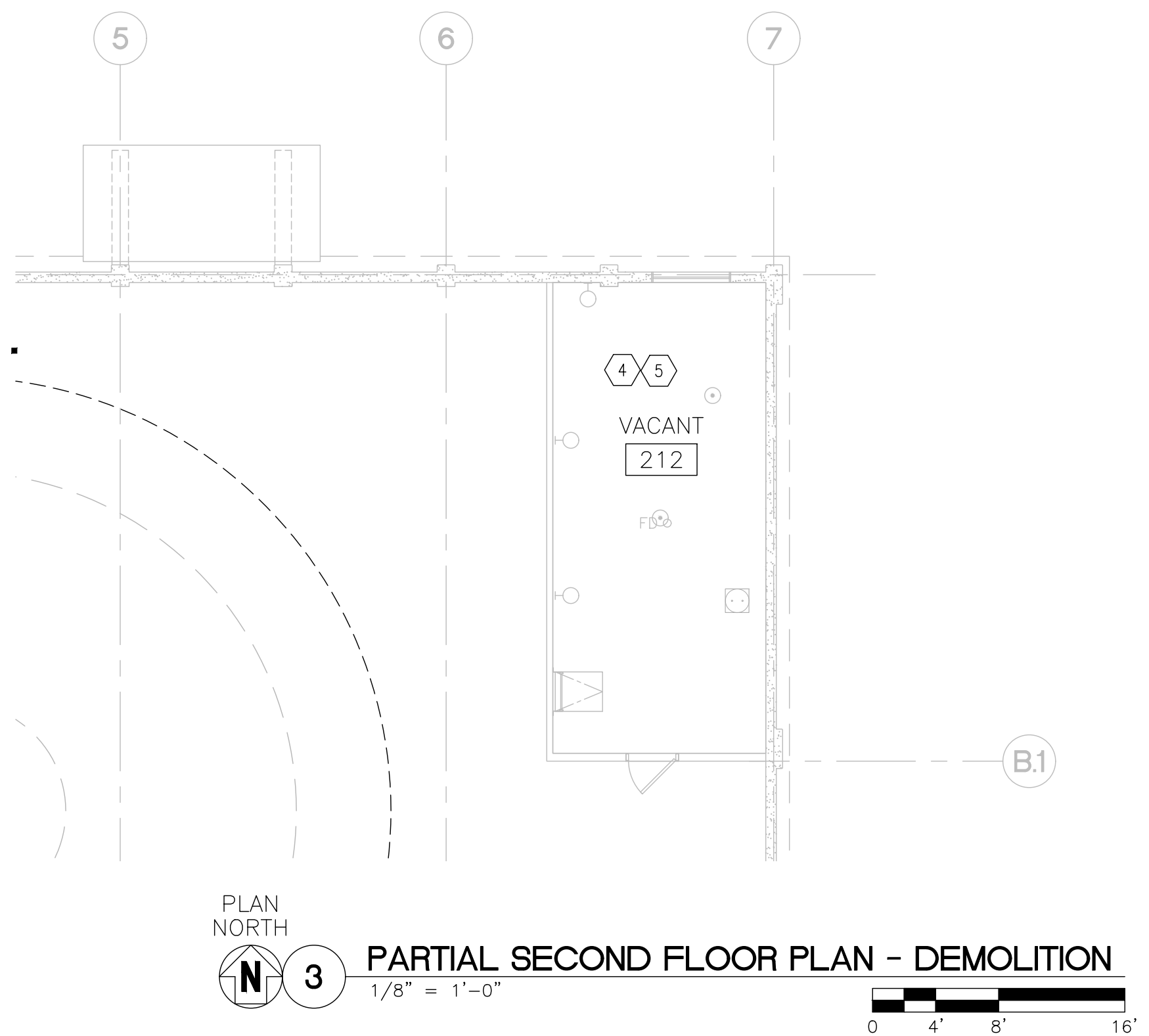
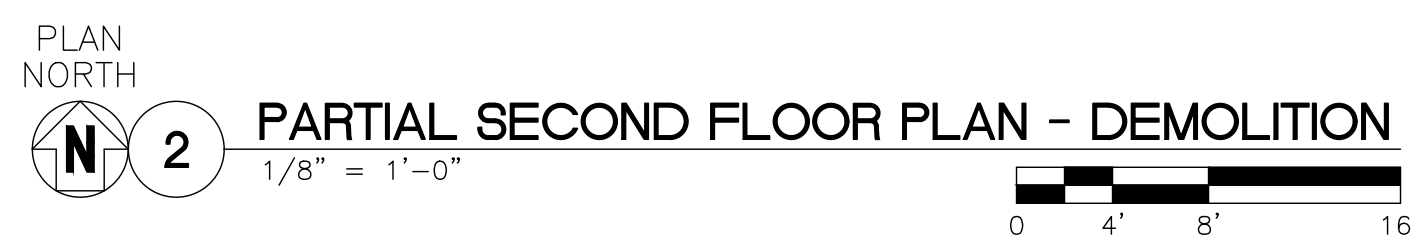
KEYNOTES - SITE ELECTRICAL

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- EXTERIOR FIXTURES INCLUDING SITE LIGHTING SHALL BE CONNECTED TO LIGHTING CONTROL SYSTEM VIA CIRCUIT INDICATED. SEE CONTROL DIAGRAM ON E300 FOR ADDITIONAL INFORMATION. EXISTING SITE LIGHTING FIXTURES TO REMAIN, EXISTING CONDUIT INTO STRUCTURE TO BE REUSED. ONE FIXTURE REPLACED AND ONE NEW FIXTURE PROVIDED AS INDICATED. CONNECT NEW FIXTURE TO SAME CIRCUIT(S) AS INDICATED, EITHER INTERCEPT EXISTING CONDUIT, OR RUN NEW CONDUIT INTO ELECTRICAL ROOM AND COMBINE WITH EXISTING FIXTURE CIRCUITING TO NEW LIGHTING PANEL CIRCUIT INDICATED. COORDINATE EXISTING CONDITIONS AND PROVIDE ALL. COORDINATE WITH MANUFACTURER.
- GENERAL LOCATION OF SERVICE GROUND COUNTERPOISE SYSTEM. FIELD COORDINATE EXACT LOCATION WITH ARCHITECT, CIVIL, EXISTING CONDITIONS, NEW WORK AND OTHER TRADES. SEE SINGLE-LINE AND DETAILS ON E300.

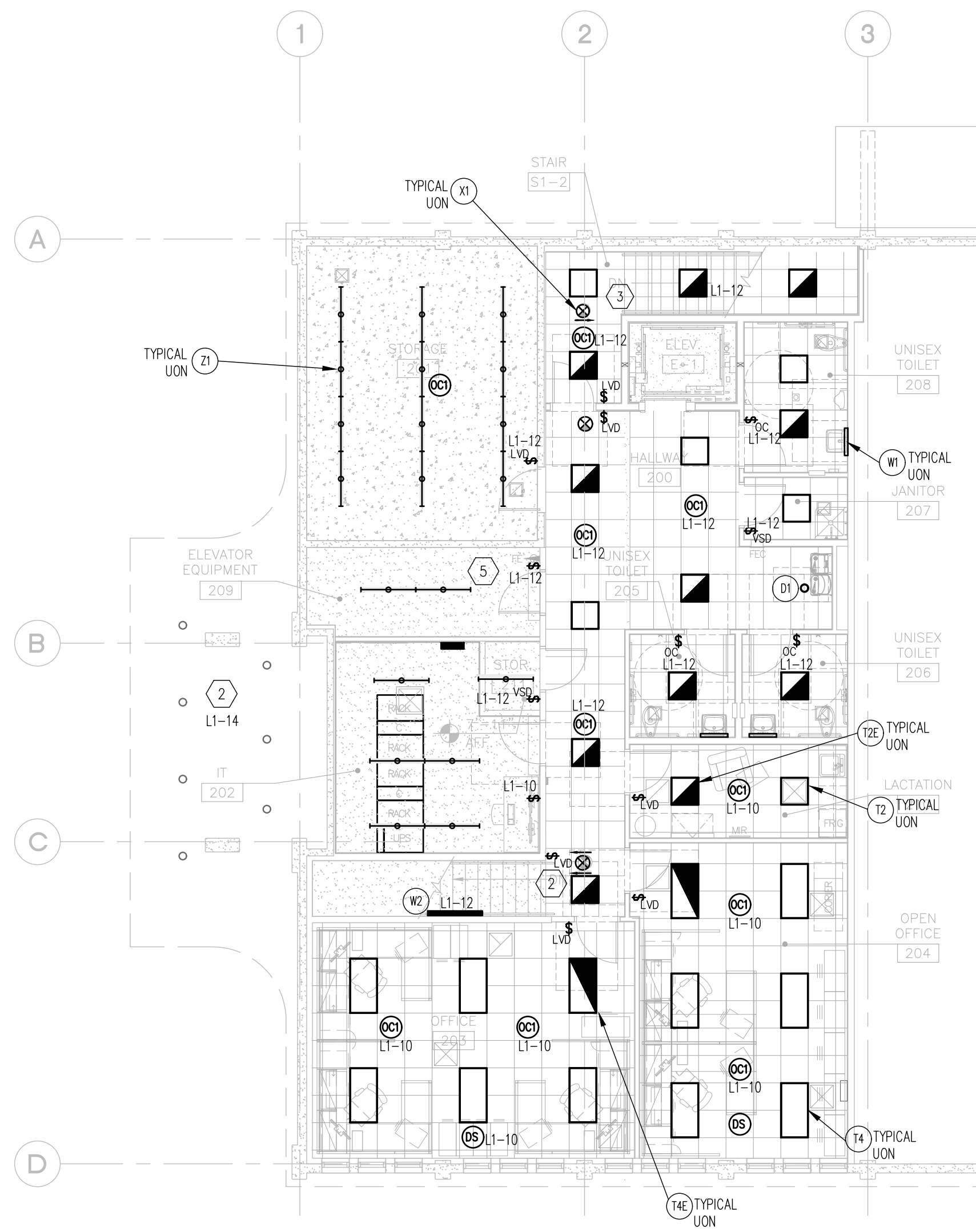


ED100

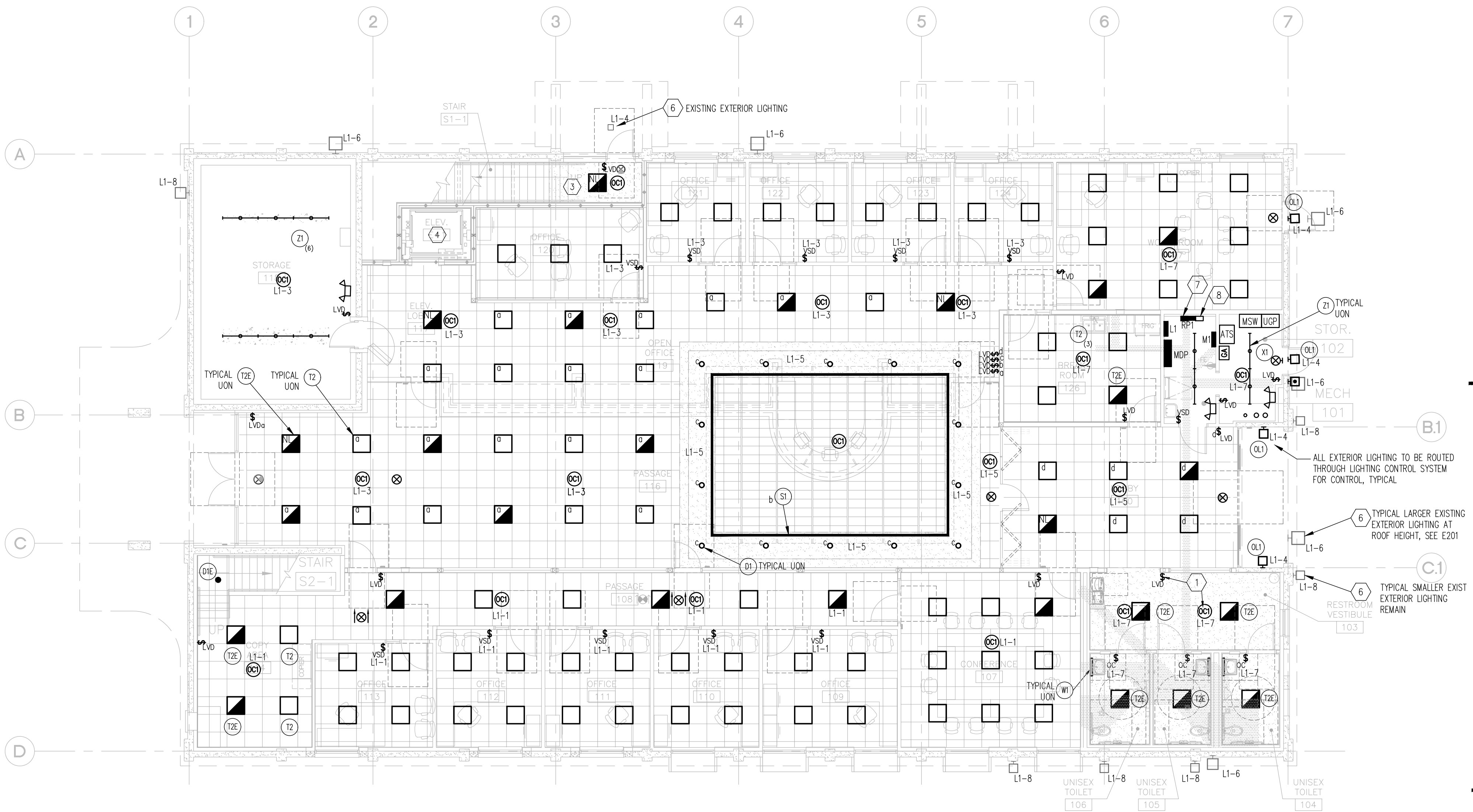


1. REMOVE EXISTING MAIN SWITCHBOARD COMPLETE. COORDINATE WITH CITY OF UTAH ELECTRIC UTILITY.
2. REMOVE BRANCH PANELBOARD COMPLETE. CIRCUIT TO EXISTING LOADS - FOR EXAMPLE EXTERIOR LIGHTING, ARE TO BE INTERCEPTED AT APPROPRIATE LOCATION (FIELD VERIFY) AND ROUTED TO NEW PANEL INDICATED ON NEW PLANS.
3. REMOVE EXISTING RELAY PANEL COMPLETE. NEW CONTROLS SHALL BE BY LIGHTING CONTROL SYSTEM INDICATED ON NEW PLANS.
4. EXISTING LIGHTING TO REMAIN IN ROOM, RECONNECT TO NEAREST LIGHTING CIRCUIT ON FIRST FLOOR BELOW.
5. REMOVE ALL ELECTRICAL TELECOM EQUIPMENT FIELD COORDINATE

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PLAN NORTH
N
2
SECOND FLOOR PLAN - LIGHTING
1/8" = 1'-0"
0 4' 8' 16'



PLAN NORTH
N
1
FIRST FLOOR PLAN- LIGHTING
1/8" = 1'-0"
0 4' 8' 16'

KEYNOTES - LIGHTING:

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- SEE VACANCY/OCCUPANCY CONTROL TYPICAL WIRING DIAGRAM IN DETAIL 03 THIS SHEET, TYPICAL. COORDINATE WITH ENGINEER. COORDINATE EXACT LOCATION OF CEILING MOUNTED SENSORS WITH MANUFACTURER, OTHER TRADES AND ENGINEER/CONTRACTOR/ARCHITECT PRIOR TO ROUGH-IN TO CONFIRM COVERAGE.
- EXISTING DOWNLIGHTS IN HIGH SOFFIT TO REMAIN, RELAMP ALL. CONNECT TO LIGHTING CIRCUIT INDICATED. FIXTURES TO BE CONTROLLED BY NEW BUILDING LIGHTING CONTROL SYSTEM VIA POWER PACK. SEE E300 FOR LIGHTING CONTROL SYSTEM DETAIL.
- LIGHTING CONTROL SENSORS IN STAIRWAYS SHALL REDUCE LIGHTING IN THE STAIRWAYS TO 50% WHEN UN-OCCUPIED, UPON OCCUPANCY LIGHTING SHALL INCREASE TO 100% BY PROGRAMMABILITY OF POWER PACKS, ETC. LIGHTING CONTROLS VENDOR SHALL DETAIL AS REQUIRED.
- SEE DRAWING E200, KEYNOTE #18 FOR LIGHTING IN ELEVATOR PIT AND REQUIREMENTS.
- SEE KEYNOTE #26 ON E200.
- EXISTING EXTERIOR LIGHTING TO REMAIN. RECONNECT TO NEW LIGHTING PANEL L1 WITH SAME NUMBER OF CIRCUITS AS EXISTING, FIELD COORDINATE AND MARK ON AS-BUILT DRAWINGS FOR INCLUSION. ROUTE THROUGH LIGHTING CONTROL SYSTEM POWER PACKS FOR PROGRAMMABLE CONTROL.
- LIGHTING CONTROL PANEL, SEE DIAGRAM ON E300.
- EMERGENCY ISOLITE IM250 OR EQUIVALENT. ROUTE FIXTURES S1 VIA THIS REMOTE EMERGENCY PACK FOR EGRESS LIGHTING IN AREA.

GENERAL NOTES - LIGHTING:

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- SEE DRAWING E000 FOR ADDITIONAL NOTES AND FIXTURE SCHEDULE.
- COORDINATE EXACT MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL ELEVATIONS, NEW WORK, AND ALL TRADES (MECHANICAL, PLUMBING EQUIPMENT, DUCTWORK, ETC.)
- ALL LIGHTING FIXTURES ARE TO BE SUPPORTED PER CURRENT NEC AND MEETING ALL SEISMIC REQUIREMENT FOR LOCALITY.
- ALL DEVICES AND WALL PLATES IN FINISHED AREAS TO BE OF COLOR BY ARCHITECT. COORDINATE WITH LIGHTING CONTROL DIAGRAM AND REQUIRED DEVICES.
- FOR CEILING MOUNTED OCCUPANCY SENSORS, PROVIDE CEILING MOUNTED LIGHTING CONTROL CONSISTING OF A SENSOR SWITCH, CIRCUIT AHEAD OF ANY WALL BOX CONTROLS OR SWITCHES, (SEE PLAN). COLOR PER ARCHITECT. SEE TYPICAL DIAGRAM THIS DRAWING.
- IN ALL AREAS WHERE NEW LIGHTING IS INDICATED, ALL EXISTING LIGHTING, RELATED SWITCHES, CONDUIT, BOXES, WIRING, ETC. SHALL BE REMOVED COMPLETE. SEE TYPICAL DEMOLITION NOTES ON E000.

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".

Revisions:

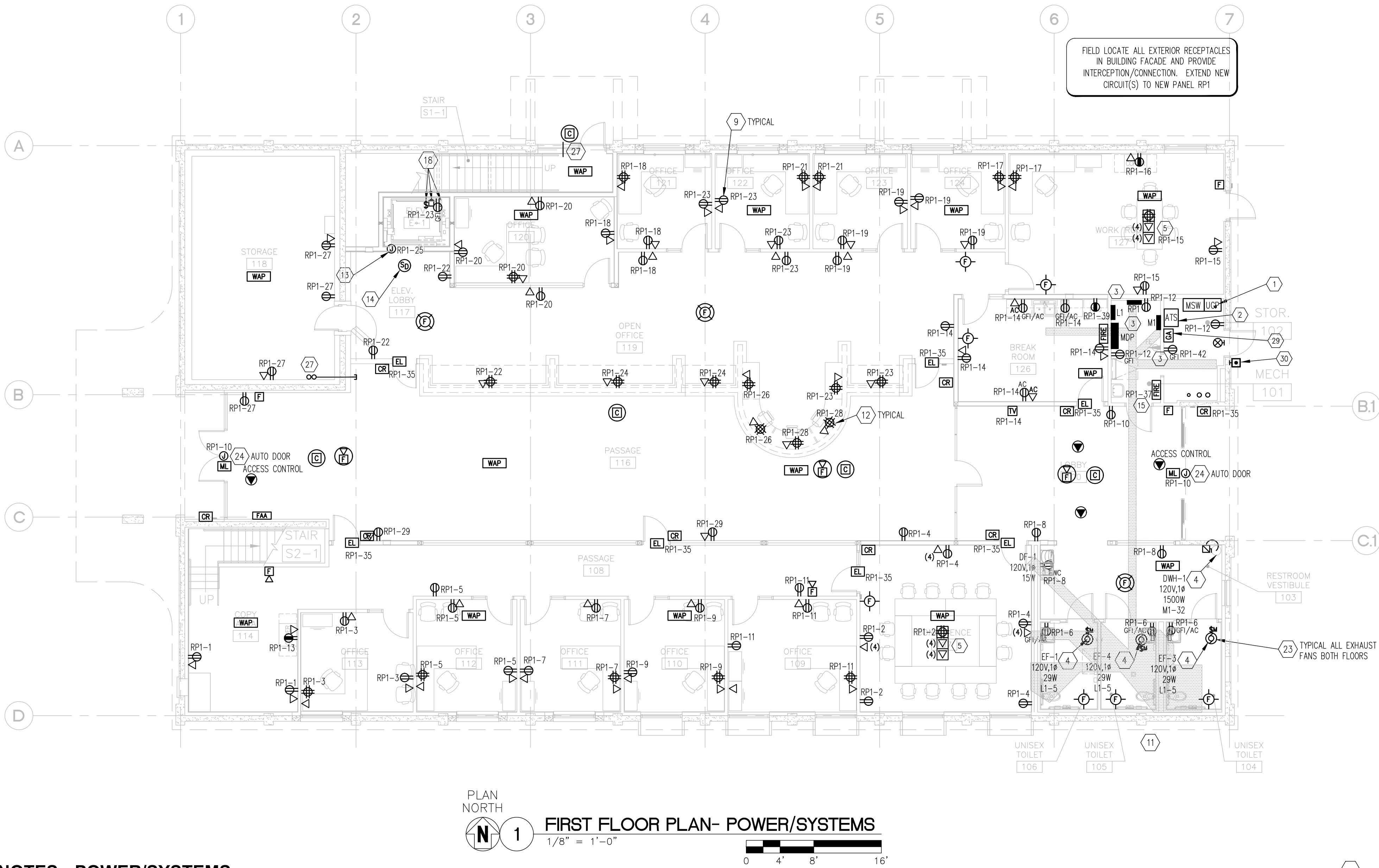
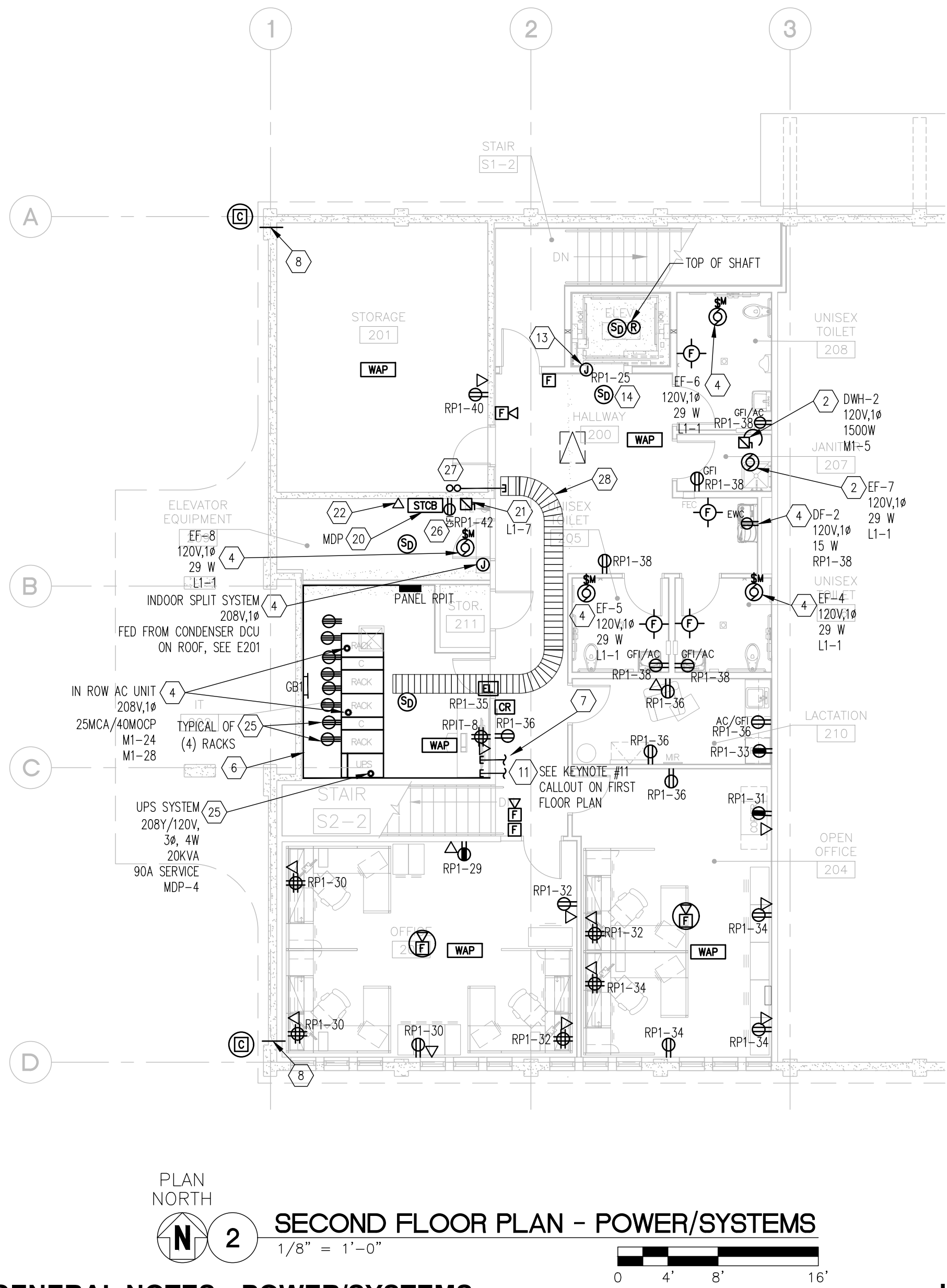
Client Project Number: 000
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Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

FIRST FLOOR PLAN -
LIGHTING

Sheet Number:

E100



GENERAL NOTES - POWER/SYSTEMS:

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- SEE DRAWING E000 FOR ADDITIONAL LEGEND, GENERAL NOTES, AND OTHER SCHEDULES.
- COORDINATE EXACT MOUNTING HEIGHTS AND LOCATIONS WITH EXISTING CONDITIONS, ARCHITECTURAL ELEVATIONS, NEW WORK, AND ALL TRADES. ALL DEVICES AND COVERPLATES TO BE COLOR PER ARCHITECT.
- PROVIDE FIRE STOP TO ALL CONDUITS AND DEVICES PENETRATING FIRE RATED WALLS, SMOKE WALLS AND FLOORS. ALL PENETRATIONS THROUGH FIRE WALLS SHALL BE BY UL LISTED FIRE PENETRATION METHODS/MATERIALS, ETC. SEE ARCHITECTURAL FOR RATED WALLS.
- COORDINATE WITH ALL SYSTEMS AND TRADES TO PROVIDE COMPLETE DISTRIBUTION SYSTEMS REQUIRED FOR COMPLETE AND OPERABLE SYSTEMS, INCLUDING BUT NOT LIMITED TO HVAC, PLUMBING, FIRE ALARM, SECURITY, DOOR ELECTRONICS, CCTV, CITY, MONITORING, INTERCOM, PAGING, VOICE/DATA, CABLE TELEVISION, ETC. AS APPLICABLE TO THIS PROJECT SCOPE.
- COORDINATE MOUNTING AND EXACT LOCATIONS OF ALL MECHANICAL AND PLUMBING EQUIPMENT DISCONNECTS, STARTERS, ETC. WITH ALL TRADES AND IN ACCORDANCE WITH ALL STATE, LOCAL, AND NATIONAL CODES. PROVIDE ALL LABOR AND MATERIALS TO CONNECT COMPLETE. PROVIDE SIZES PER UNIT NAME PLATE, FINAL CONNECTIONS WITH SEAL-TITE. FOR SERVICE TO ALL ROOF TOP MECHANICAL EQUIPMENT, CONTRACTOR SHALL COORDINATE FEEDER PENETRATION AND SHALL ADHERE TO DETAIL BY MECHANICAL IN ORDER TO GROUP ALL LINES/PIPING INTO WATERTIGHT PENETRATIONS PER MECHANICAL DETAIL.
- FOR ALL TELECOM DEVICES, DATA OUTLETS, WAPS, SECURITY CAMERAS, PROVIDE (2) CAT 6A FROM DEVICE LOCATION TO IT ROOM. TAG/LABEL EACH END PER IT REQUIREMENTS/DIRECTION. TERMINATION BY IT VENDOR/OWNER. SPOOL 20' CABLE IT ROOM END ABOVE RACKS, PROVIDE EXCESS AT ROOM FOR TERMINATION AS DIRECTED BY IT. PROVIDE J-HOOKS FOR ROUTING CABLING. ADHERE TO BICSI STANDARDS, PROVIDE FOR 25% SPARE FOR ALL UNITS/RUNS.
- REFER TO EQUIPMENT SCHEDULES ON ALL CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION FOR HVAC AND PLUMBING CONNECTIONS. PROVIDE ALL LABOR AND MATERIALS TO CONNECT COMPLETE.
- COORDINATE EXACT WALL BOX REQUIREMENTS PRIOR TO ROUGH-IN. NO SURFACE RACEWAY IS TO BE PROVIDED UNLESS DIRECT DOCUMENTED VARIANCE IS INDICATED OR GIVEN BY OWNER. IF GRANTED PERMISSION, PROVIDE SURFACE MOUNTED RACEWAY CONDUITS, BACK BOXES AND ALL ACCESSORIES EQUAL TO WIREMOLD SERIES #2000WH WHERE RACEWAYS AND BACK BOXES ARE EXPOSED. PROVIDE ALL LABOR AND MATERIALS TO CONNECT NEW EQUIPMENT, DEVICES, ETC. COMPLETE TO PANEL INDICATED, 20A/1P, UN.O.
- ALL RECEPTACLES NEAR SINKS AND OTHER SIMILAR LOCATIONS, EXTERIOR AND ROOFTOP AREAS SHALL BE PROTECTED BY GFCI PER NEC 210.8 (B). IN GENERAL, ALL DEVICES IN AREAS DESIGNATED IN NEC 210.8 SHALL BE GFCI PROTECTED WHETHER INDICATED OR NOT.
- ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, 36" BELOW GRADE. ALL STUB-UPS/90'S SHALL TRANSITION TO BE SCHEDULE 80 PVC. COORDINATE WITH ALL OTHER UNDERGROUND UTILITIES.
- IN ALL AREAS WHERE NEW WORK IS BEING DONE, ALL EXISTING ELECTRICAL DEVICES IN WALLS AND CEILINGS BEING REMOVED, SHALL BE REMOVED. REMOVE ALL ASSOCIATED BOXES, CONDUITS, RACEWAYS, WIRING, ETC. COMPLETE. SEE GENERAL DEMOLITION NOTES ON E000.
- COORDINATE ALL FIRE ALARM WORK WITH FIRE ALARM SYSTEM SUBCONTRACTOR/VENDOR REPRESENTATIVE BEFORE SUBMITTING BIDS. SYSTEM DESIGN SHALL BE COMPLETED BY SUCCESSFUL FIRE ALARM SUBCONTRACTOR'S NICET LEVEL IV TECHNICIAN AND THIS DESIGN SHALL BE SUBMITTED TO AHJ FOR APPROVAL. PROCESS BY CONTRACTOR AFTER REVIEW BY ELECTRICAL ENGINEER OF RECORD. PROVIDE ALL DEVICES, COMPONENTS, ETC. FOR FULLY NFPA COMPLIANT SYSTEM MEETING ALL LOCAL, STATE, AND NATIONAL CODES AND REGULATIONS. PROVIDE ALL CONNECTIONS TO FIRE PROTECTION SYSTEM - TAMPERS, FLOWS, RELAYS, MODULES, ETC. FOR FULLY COMPLIANT NFPA COMPLIANT SYSTEM. PROVIDE ELEVATOR RECALL FUNCTION AND ALL ASSOCIATED CONNECTIONS MEETING NFPA AND ELEVATOR CODES AND CHECKLISTS. PROVIDE ALL COMPONENTS AND ALL ASSOCIATED CONNECTIONS MEETING NFPA AND ELEVATOR CODES AND CHECKLISTS FOR ELEVATOR SHUNT TRIP. HEAT DETECTORS SHALL BE PLACED WITH 2' OF ALL SPRINKLER HEADS AS REQUIRED BY NFPA. PROVIDE DEDUCT ALTERNATE TO PROVIDE PLENUM RATED UL LISTED FIRE ALARM CABLING TO MEET ALL APPLICABLE CODES IN LIEU OF A FULLY CONDUITED SYSTEM. PROVIDE FOR FAN SHUTDOWN WITH DUCT SMOKE IN UNITS REQUIRED BY CODE. PROVIDE FIRE ALARM REMOTE ANNUNCIATOR(S) IN EXACT LOCATIONS AS DICTATED/DIRECTED BY FIRE MARSHALL.
- AT LEAST ONE CONTROLLED RECEPTACLE SHALL BE INSTALLED WITHIN 6 FEET OF EACH UNCONTROLLED RECEPTACLE, OR SPLIT-WIRED DUPLEX ARE INSTALLED (THAT HAVE ONE CONTROLLED AND ONE UNCONTROLLED RECEPTACLE) IN ALL OF THE FOLLOWING SPACES IF SPACES ARE AFFECTED IN THIS SOW (CONTRACTOR SHALL PROVIDE PERMANENT AND DURABLE MARKING TO DISTINGUISH BETWEEN CONTROLLED AND UNCONTROLLED):
 - M.A. PRIVATE OFFICES
 - M.B. RECEPTIONS AND LOBBIES
 - M.C. CONFERENCE ROOMS
 - M.D. KITCHENETTES IN OFFICE SPACES
 - M.E. COPY ROOM

KEYNOTES - POWER/SYSTEMS:

(ALL NOTES MAY NOT APPLY TO THIS SHEET)

- PROVIDE SERVICE ENTRANCE SWITCH WITH CITY OF UKIAH ELECTRIC UTILITY COMPLIANT UC PULL SECTION AND CITY OF UKIAH ELECTRIC UTILITY METERING SECTION. COORDINATE WITH CITY OF UKIAH ELECTRIC UTILITY. SEE SINGLE-LINE DIAGRAM ON E300 FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT LOCATIONS WITH OTHER TRADES, EXISTING STRUCTURE, ENGINEER, ETC. TO PROVIDE NEC REQUIRED WORKING CLEARANCE, ETC.
- PROVIDE AUTOMATIC TRANSFER SWITCH, SEE E300 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW ELECTRICAL PANELS, ETC. AS INDICATED. SEE SINGLE-LINE DIAGRAM ON E300 AND PANEL SCHEDULES ON E400 SERIES FOR ADDITIONAL INFORMATION.
- POWER CONNECTION FOR MECHANICAL/PLUMBING EQUIPMENT. COORDINATE EXACT LOCATION, CONTROLS, POWER AND REQUIREMENTS WITH EQUIPMENT MANUFACTURER AND ALL TRADES TO INSTALL COMPLETE. PROVIDE DISCONNECT RATED (NEMA 1 INTERIOR, NEMA 3R EXTERIOR) AND SIZED/FUSED PER MANUFACTURER RECOMMENDATIONS IF NOT FACTORY PROVIDED AS PART OF EQUIPMENT (SEE MECHANICAL FOR BASIS OF DESIGN MCA AND MOP, ACCESSORIES AND CONTROLS). PROVIDE CIRCUIT AS INDICATED. EXACT CIRCUIT BREAKER AND BRANCH CIRCUIT SIZE SHALL BE BASED ON ACTUAL EQUIPMENT PROVIDED TO MEET MANUFACTURER'S RECOMMENDATIONS. FINAL CONNECTION WITH SEAL-TITE.
- PROVIDE MULTIPLE SERVICE, FLUSH FLOOR OUTLET WIREMOLD TYPE #RFB2 2GANG (FOR DUPLEX AND DATA), #RFB4 SERIES 4GANG FLOOR BOX (FOR QUADRAPLEX AND DATA) OR #RFB6 6GANG (FOR QUADRAPLEX, DUAL DATA) AS INDICATED BY SYMBOLS ON DRAWING. PROVIDE FLOORPORT STYLE COVERPLATE (PROVIDE BLANK TOP FOR CONCRETE/TILE APPLICATION, OR CUTOFF TOP FOR CARPET INSTALLATIONS - COORDINATE FLOOR TYPE WITH ARCHITECTURAL. ALSO COORDINATE FINISH OF COVERPLATE WITH ARCHITECTURAL). PROVIDE FR-CTR FOR CONCRETE POUR APPLICATIONS TO ENSURE FINISHED COVERPLATE IS TOTALLY FLUSH WITH FINISH FLOOR. PROVIDE DUPLEX RECEPTACLE(S) AS INDICATED PER SPECIFICATIONS. COORDINATE DATA PORTS WITH IT IF DATA CABLING IS NOTED ON DRAWINGS. COORDINATE EXACT LOCATION, FLOORING TYPE AND MANUFACTURER INSTALLATION REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE ALL COMPONENTS FOR COMPLETE INSTALLATION. ALL OUTLETS SHALL HAVE CONDUIT RUN IN/UNDER FLOOR SLAB TO NEAREST WALL AND CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING (IF APPLICABLE) FOR CONTINUATION TO ELECTRICAL PANEL OR TELECOM BACKBOARD (ALL TELECOM CONDUIT WITH PULLSTRING). FIELD COORDINATE EXACT LOCATIONS AND FULL REQUIREMENTS WITH VENDOR AND OWNER FOR COMPLETE SYSTEM. FLOOR BOX COVERS MUST BE FLUSH WITH FINISHED FLOOR TO AVOID ANY TRIPPING HAZARD. PROVIDE (1) 1-1/4" WITH PULLSTRING UNDER SLAB STUB AND TURN ABOVE ACCESSIBLE CEILING.
- PROVIDE FIRE RETARDANT PLYWOOD BACKBOARD FOR DATA/TELECOM EQUIPMENT. PROVIDE DEDICATED 20A, 120V CIRCUITS TO QUADRAPLEX OUTLETS AS INDICATED. FIELD COORDINATE EXACT LOCATION OF OUTLETS WITH IT REPRESENTATIVE OR ARCHITECT/ENGINEER. TELECOM BOARD IN DATA ROOMS SHALL BE AROUND ROOM PERIMETER AS INDICATED. PROVIDE GROUND BAR GB-# AS INDICATED. SEE DETAIL ON E300. COORDINATE LOCATION OF RACKS WITH IT.
- PROVIDE (2) 3" FROM IT/COMM. ROOM OVERHEAD FROM IT ROOM TO OTHER SIDE OF BUILDING FOR WEATHERHEAD/OVERHEAD CONNECTION TO UTILITY POLE CONNECTION PER LOCAL UTILITY REQUIREMENT. SEE ROOF PLAN FOR APPROXIMATE LOCATION OF WEATHER HEAD (NOTE LOCATE AT EXISTING ENTRANCE). ALL ELLS SHALL BE SWEEPING TYPE. FIELD COORDINATE EXACT LOCATION OF ALL STUB UPS WITH ARCHITECT/ENGINEER/OWNER PRIOR TO ROUGH-IN.
- PROVIDE CORE DRILL AND 1" SLEEVE WITH BUSHINGS FOR ROUTING DATA CABLING FROM EXTERIOR CAMERA TO INTERIOR.
- SPLIT WIRE RECEPTACLES TO MEET TITLE 24. SEE OCCUPANCY/VACANCY SENSOR WIRING DIAGRAM ON DRAWING. E300.
- PROVIDE 120V. CIRCUIT TO ACCOMMODATE PLUMBING FIXTURE. COORDINATE EXACT LOCATION, CONNECTION, ETC. WITH MANUFACTURER.
- PROVIDE (2) 2" IN TRENCH TO TOILETS, TURN AND CAP BELOW GRADE FOR FUTURE EXPANSION TO MUSEUM. FIELD COORDINATE EXACT LOCATION WITH CIVIL/ARCHITECT. ROUTE CONDUITS UP TO ATTIC AND OVER TO IT ROOM. STUB INTO ROOM WITH BUSHINGS. SWEEP CONDUITS, PROVIDE NECESSARY PULLBOXES GIVEN EXACT ROUTING AND DISTANCE..
- PROVIDE (2) CIRCUITS TO EACH QUAD RECEPTACLE, (1) CIRCUIT THRU POWER PACK TO CONTROL RECEPTACLE (TO COMPLY WITH GENERAL NOTE K). SEE CONTROL DIAGRAM ON DRAWING E300.
- PROVIDE 120V, 1P CONNECTION TO M400 SMOKE GUARD JUNCTION BOX PER MANUFACTURER REQUIREMENTS. CONNECT AS INDICATED.
- PROVIDE WITH AUXILIARY CONTACT AND CONNECT TO SMOKE GUARD DOOR TO ACTIVATE SMOKE GUARD DOOR UPON SMOKE DETECTION. COORDINATE WITH MANUFACTURER, AND PROVIDE ALL CONTROL/FA WIRING IN 3/4" TO CONNECTION POINT ON SMOKE GUARD
- PROVIDE FIRE ALARM SYSTEM WITH DIGITAL DIALER FOR CONNECTION TO UL LISTED CENTRAL STATION MONITORING SERVICE AND REMOTE ANNUNCIATOR CONFORMING TO ALL LOCAL, STATE AND NATIONAL CODES. COORDINATE WITH LOCAL AHJ/FIRE MARSHALL FOR ALL REQUIREMENTS AND PROVIDE COMPLETE. COORDINATE EXACT LOCATION OF REMOTE ANNUNCIATOR WITH LOCAL AHJ. PROVIDE DUCT SMOKE DETECTION/FAN SHUTDOWN, SPRINKLER SUPERVISION, ELEVATOR RECALL, ETC. - INCLUDING ALL MONITOR MODULES, ETC. TO MEET APPLICABLE CODES.
- PROVIDE RECEPTACLE AND COMMUNICATION OUTLET FOR MONITOR/TV. FIELD COORDINATE HEIGHT AND EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN
- PROVIDE (4) RELAYS FOR ELEVATOR PRIMARY, SECONDARY RECALL, FIRE HAT AND ELEVATOR SHUNT TRIP IN ELEVATOR MACHINE ROOM 209. CONFIRM NUMBER OF RELAYS NECESSARY TO MEET CODE PER FIRE ALARM CODES, REGULATIONS, ELEVATOR CODES, CHECKLISTS, ETC.
- PROVIDE GFCI RECEPTACLE WITH COVER AND GUARD IN PIT. PROVIDE WET LOCATION LIGHT FIXTURE WITH GUARD IN PIT AND ASSOCIATED SWITCH LOCATED AT PIT/LADDER ENTRANCE PER CODE AND ELEVATOR MANUFACTURER'S CHECKLIST. PROVIDE DEDICATED 20A, 1P 120V CIRCUIT WITH 3 #12, 3/4" INCH CONDUIT TO CIRCUIT INDICATED. SERVICE TO RECEPTACLE AND

LIGHT - LIGHT SHALL NOT BE CONNECTED TO LOAD SIDE OF GFCI.

- PROVIDE DEDICATED 20A/1P, 120V RECEPTACLE FOR SUMP PUMP (SP-1). PROVIDE CORD AND PLUG IF NOT PROVIDED WITH SUMP PUMP UNIT, COORDINATE WITH SUMP PUMP MANUFACTURER. CIRCUIT AS INDICATED. MEET ALL APPLICABLE CODE ELEVATOR INSPECTION CHECKLIST REQUIREMENTS.
- PROVIDE 208V, 3A, 100A, 3P ENCLOSED SHUNT TRIP CIRCUIT BREAKER FOR ELEVATOR POWER (VERIFY EXACT SIZE WITH MANUFACTURER NAMEPLATE AND SIZE ACCORDINGLY). INSTALL PER MANUFACTURER'S RECOMMENDATIONS. BREAKER SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. SHUNT TRIP BREAKER SHALL BE CONNECTED AS REQUIRED SO THAT ACTIVATION OF ASSOCIATED HEAT DETECTORS SHALL CAUSE POWER TO BE DISCONNECTED PRIOR TO APPLICATION OF WATER BY SPRINKLER SYSTEM TO MEET ALL APPLICABLE CODES.
- PROVIDE 20A, 1P ENCLOSED BREAKER OR FUSED DISCONNECT FOR ELEVATOR CAB LIGHTS, CONTROL, ETC. DISCONNECT SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FIELD COORDINATE EXACT LOCATION.
- PROVIDE DEDICATED OUTSIDE TELEPHONE CONNECTION AS REQUIRED. FIELD COORDINATE EXACT LOCATION AND CONNECTION.
- CIRCUIT EXHAUST FANS FROM LIGHTING CIRCUIT, SEE E100 FOR LIGHTING.
- PROVIDE POWER, BACK BOXES, CONDUIT, PULL STRING, ETC. FOR CARD ACCESS SYSTEM. COORDINATE ALL REQUIREMENTS WITH OWNERS VENDOR.
- PROVIDE L21-20R AT CEILING BEHIND RACK AT EACH CORNER (2 RECEPTACLES PER RACK). SERVE ONE FROM UPS INTEGRAL PANEL AND OTHER FROM PANEL RP1T IN IT ROOM. COORDINATE WHICH OUTLET IS WHICH WITH IT DESIGN. CONNECT WITH 4#12, 1#12G, 3/4". IT EQUIPMENT VERTICAL PDU HAS L21-20P AND WILL BE PLUGGED INTO OUTLET.
- PROVIDE GFCI RECEPTACLE, LIGHT FIXTURE(S) AND ASSOCIATED SWITCH LOCATED PER CODE AND ELEVATOR MANUFACTURER'S CHECKLIST IN MACHINE ROOM. PROVIDE DEDICATED 20A, 1P 120V CIRCUIT WITH 3#12,3/4" TO CIRCUIT INDICATED FOR SERVICE TO RECEPTACLE AND LIGHT - LIGHT SHALL NOT BE CONNECTED TO LOAD SIDE OF GFCI. SEE E100 FOR LIGHTING INFORMATION.
- PROVIDE (2) 4" C SLEEVES/STUBS FROM ABOVE 2ND FLOOR CEILING DOWN (STUBBED TO CABLE TRAY) TO ABOVE 1ST FLOOR CEILING FOR ROUTING DATA CABLING FROM FIRST FLOOR UP TO IT ROOM, FIELD COORDINATE EXACT LOCATION. UTILIZE ONLY SWEEPING ELBOWS.
- 18" BASKET TRAY FOR ROUTING DATA CABLING INTO IT ROOM. OTHERWISE UTILIZE J-HOOKS PER GENERAL NOTES.
- PROVIDE NEW REMOTE ANNUNCIATOR TO MEET SPECIFICATION SECTION 26213. FIELD COORDINATE EXACT LOCATION AND ALL CABLING REQUIRED PER GENERATOR MANUFACTURER. ROUTE CABLING AND CONDUIT COMPLETE BETWEEN ANNUNCIATOR AND GENERATOR CONTROL PANEL. UTILIZE TRENCH INDICATED FROM ATS OUT TO GENERATOR, PROVIDE ALL CABLING AND CONDUIT TO GENERATOR AS REQUIRED BY RELEVANT CODES AND REGULATIONS.
- PROVIDE EMERGENCY STOP PUSHBUTTON TO SHUT DOWN PRIME MOVER MEETING REQUIREMENTS OF 445.18(B)(2). CED 445.18(C). FIELD VERIFY EXACT LOCATION.

Revisions:

Client Project Number: **000**
APN Number: **000-000-000**
KPA Project Number: **76100**
Date: **JUNE 6, 2025** **ISSUE FOR BID**

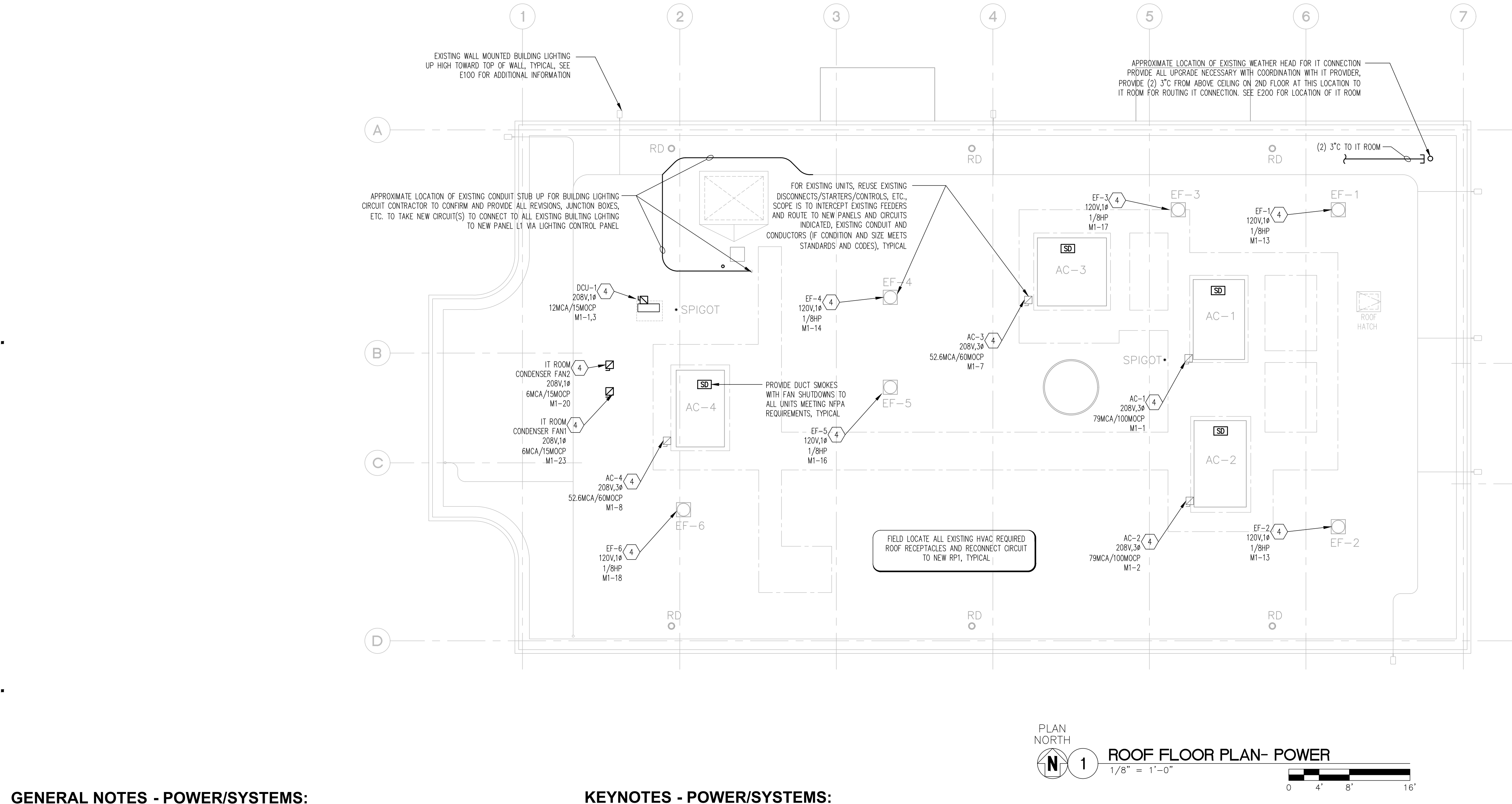
Sheet Title:

**FIRST FLOOR PLAN -
POWER/SYSTEMS**

Sheet Number:

E200

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE
FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".



GENERAL NOTES - POWER/SYSTEMS:

- (ALL NOTES MAY NOT APPLY TO THIS SHEET)
- A. SEE DRAWING E000 FOR ADDITIONAL LEGEND, GENERAL NOTES, AND OTHER SCHEDULES.
 - B. COORDINATE EXACT MOUNTING HEIGHTS AND LOCATIONS WITH EXISTING CONDITIONS, ARCHITECTURAL ELEVATIONS, NEW WORK, AND ALL TRADES. ALL DEVICES AND COVERPLATES TO BE COLOR PER ARCHITECT.
 - C. PROVIDE FIRE STOP TO ALL CONDUITS AND DEVICES PENETRATING FIRE RATED WALLS, SMOKE WALLS AND FLOORS. ALL PENETRATIONS THROUGH FIRE WALLS SHALL BE BY UL LISTED FIRE PENETRATION METHODS/MATERIALS, ETC. SEE ARCHITECTURAL FOR RATED WALLS.
 - D. COORDINATE WITH ALL SYSTEMS AND TRADES TO PROVIDE COMPLETE DISTRIBUTION SYSTEMS REQUIRED FOR COMPLETE AND OPERABLE SYSTEMS, INCLUDING BUT NOT LIMITED TO HVAC, PLUMBING, FIRE ALARM, SECURITY, DOOR ELECTRONICS, CCTV, MONITORING, INTERCOM, PAGING, VOICE/DATA, CABLE TELEVISION, ETC. AS APPLICABLE TO THIS PROJECT SCOPE.
 - E. COORDINATE MOUNTING AND EXACT LOCATIONS OF ALL MECHANICAL AND PLUMBING EQUIPMENT DISCONNECTS, STARTERS, ETC. WITH ALL TRADES AND IN ACCORDANCE WITH ALL STATE, LOCAL, AND NATIONAL CODES. PROVIDE ALL LABOR AND MATERIALS TO CONNECT COMPLETE. PROVIDE SIZES PER UNIT NAME PLATE, FINAL CONNECTIONS WITH SEAL-TITE. FOR SERVICE TO ALL ROOF TOP MECHANICAL EQUIPMENT, CONTRACTOR SHALL COORDINATE FEEDER PENETRATION AND SHALL ADHERE TO DETAIL BY MECHANICAL IN ORDER TO GROUP ALL LINES/PIPING INTO WATERTIGHT PENETRATIONS PER MECHANICAL DETAIL.
 - F. FOR ALL TELECOM DEVICES, DATA OUTLETS, WAPS, SECURITY CAMERAS, PROVIDE (2) CAT 6A FROM DEVICE LOCATION TO IT ROOM. TAG/LABEL EACH END PER IT REQUIREMENTS/DIRECTION. TERMINATION BY IT VENDOR/OWNER. SPOOL 20' CABLE IT ROOM END ABOVE RACKS, PROVIDE EXCESS AT DEVICE FOR TERMINATION AS DIRECTED BY IT. PROVIDE J-HOOKS FOR ROUTING CABLING. ADHERE TO BICSI STANDARDS. PROVIDE FOR 25% SPARE FOR ALL UNITS/RUNS.
 - G. REFER TO EQUIPMENT SCHEDULES ON ALL CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION FOR HVAC AND PLUMBING CONNECTIONS. PROVIDE ALL LABOR AND MATERIALS TO CONNECT COMPLETE.
 - H. COORDINATE EXACT WALL BOX REQUIREMENTS PRIOR TO ROUGH-IN. NO SURFACE RACEWAY IS TO BE PROVIDED UNLESS DIRECT DOCUMENTED VARIANCE IS INDICATED OR GIVEN BY OWNER. IF GRANTED PERMISSION, PROVIDE SURFACE MOUNTED RACEWAY CONDUITS, BACK BOXES AND ALL ACCESSORIES EQUAL TO WIREMOLD SERIES #220DOWN WHERE RACEWAYS AND BACK BOXES ARE EXPOSED. PROVIDE ALL LABOR AND MATERIALS TO CONNECT NEW EQUIPMENT, DEVICES, ETC. COMPLETE TO PANEL INDICATED, 20A/1P, U.N.O.
 - I. ALL RECEPTABLES NEAR SINKS AND OTHER SIMILAR LOCATIONS, EXTERIOR AND ROOFTOP AREAS SHALL BE PROTECTED BY GFCI PER NEC 210.8 (B). IN GENERAL, ALL DEVICES IN AREAS DESIGNATED IN NEC 210.8 SHALL BE GFCI PROTECTED WHETHER INDICATED OR NOT.
 - J. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, 36" BELOW GRADE. ALL STUB-UPS/90'S SHALL TRANSITION TO BE SCHEDULE 80 PVC. COORDINATE WITH ALL OTHER UNDERGROUND UTILITIES.
 - K. IN ALL AREAS WHERE NEW WORK IS BEING DONE, ALL EXISTING ELECTRICAL DEVICES IN WALLS AND CEILINGS BEING REMOVED, SHALL BE REMOVED. REMOVE ALL ASSOCIATED BOXES, CONDUITS, RACEWAYS, WIRING, ETC. COMPLETE. SEE GENERAL DEMOLITION NOTES ON E000.
 - L. COORDINATE ALL FIRE ALARM WORK WITH FIRE ALARM SYSTEM SUBCONTRACTOR/VENDOR REPRESENTATIVE BEFORE SUBMITTING BIDS. SYSTEM DESIGN SHALL BE COMPLETED BY SUCCESSFUL FIRE ALARM SUBCONTRACTOR'S NICET LEVEL IV TECHNICIAN AND THIS DESIGN SHALL BE SUBMITTED TO AHJ FOR APPROVAL. PROCESS BY CONTRACTOR AFTER REVIEW BY ELECTRICAL ENGINEER OF RECORD. PROVIDE ALL DEVICES, COMPONENTS, ETC. FOR FULLY NFPA COMPLIANT SYSTEM MEETING ALL LOCAL, STATE, AND NATIONAL CODES AND REGULATIONS. PROVIDE ALL CONNECTIONS TO FIRE PROTECTION SYSTEM - TAMPERS, FLOWS, RELAYS, MODULES, ETC. FOR FULLY FUNCTIONAL NFPA COMPLIANT SYSTEM. PROVIDE ELEVATOR RECALL FUNCTION AND ALL ASSOCIATED CONNECTIONS MEETING NFPA AND ELEVATOR CODES AND CHECKLISTS. PROVIDE ALL COMPONENTS AND ALL ASSOCIATED CONNECTIONS MEETING NFPA AND ELEVATOR CODES AND CHECKLISTS FOR ELEVATOR SHUNT TRIP. HEAT DETECTORS SHALL BE PLACED WITH 2' OF ALL SPRINKLER HEADS AS REQUIRED BY NFPA. PROVIDE DEDUCT ALTERNATE TO PROVIDE PLENUM RATED UL LISTED FIRE ALARM CABLING TO MEET ALL APPLICABLE CODES IN LIEU OF A FULLY CONDUITED SYSTEM. PROVIDE FOR FAN SHUTDOWN WITH DUCT SMOKE IN UNITS REQUIRED BY CODE. PROVIDE FIRE ALARM REMOTE ANNUNCIATOR(S) IN EXACT LOCATIONS AS DICTATED/DIRECTED BY FIRE MARSHALL.
 - M. AT LEAST ONE CONTROLLED RECEPTACLE SHALL BE INSTALLED WITHIN 6 FEET OF EACH UNCONTROLLED RECEPTACLE, OR SPLIT-WIRED DUPLEX ARE INSTALLED (THAT HAVE ONE CONTROLLED AND ONE UNCONTROLLED RECEPTACLE) IN ALL OF THE FOLLOWING SPACES IF SPACES ARE AFFECTED IN THIS SOW (CONTRACTOR SHALL PROVIDE PERMANENT AND DURABLE MARKING TO DISTINGUISH BETWEEN CONTROLLED AND UNCONTROLLED):
 - M.A. PRIVATE OFFICES
 - M.B. RECEPTIONS AND LOBBIES
 - M.C. CONFERENCE ROOMS
 - M.D. KITCHENETTES IN OFFICE SPACES
 - M.E. COPY ROOM

KEYNOTES - POWER/SYSTEMS:

- (ALL NOTES MAY NOT APPLY TO THIS SHEET)
1. PROVIDE SERVICE ENTRANCE SWITCH WITH CITY OF UKIAH ELECTRIC UTILITY COMPLIANT UC PULL SECTION AND CITY OF UKIAH ELECTRIC UTILITY METERING SECTION. COORDINATE WITH CITY OF UKIAH ELECTRIC UTILITY. SEE SINGLE-LINE DIAGRAM ON E300 FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT LOCATIONS WITH OTHER TRADES, EXISTING STRUCTURE, ENGINEER, ETC. TO PROVIDE NEC REQUIRED WORKING CLEARANCE, ETC.
 2. PROVIDE AUTOMATIC TRANSFER SWITCH, SEE E300 FOR ADDITIONAL INFORMATION.
 3. PROVIDE NEW ELECTRICAL PANELS, ETC. AS INDICATED. SEE SINGLE-LINE DIAGRAM ON E300 AND PANEL SCHEDULES ON E400 SERIES FOR ADDITIONAL INFORMATION.
 4. POWER CONNECTION FOR MECHANICAL/PLUMBING EQUIPMENT. COORDINATE EXACT LOCATION, CONTROLS, POWER AND REQUIREMENTS WITH EQUIPMENT MANUFACTURER AND ALL TRADES TO INSTALL COMPLETE. PROVIDE DISCONNECT RATED (NEMA 1 INTERIOR, NEMA 3R EXTERIOR) AND SIZED/FUSED PER MANUFACTURER RECOMMENDATIONS IF NOT FACTORY PROVIDED AS PART OF EQUIPMENT (SEE MECHANICAL FOR BASIS OF DESIGN MCA AND MOC, ACCESSORIES AND CONTROLS). PROVIDE CIRCUIT AS INDICATED. EXACT CIRCUIT BREAKER AND BRANCH CIRCUIT SIZE SHALL BE BASED ON ACTUAL EQUIPMENT PROVIDED TO MEET MANUFACTURER'S RECOMMENDATIONS. FINAL CONNECTION WITH SEAL-TITE.
 5. PROVIDE MULTIPLE SERVICE, FLUSH FLOOR OUTLET WIREMOLD TYPE #RFB2 2GANG (FOR DUPLEX AND DATA), #RFB4 SERIES 4GANG FLOOR BOX (FOR QUADRAPLEX AND DATA) OR #RFB6 6GANG (FOR QUADRAPLEX, DUAL DATA) AS INDICATED BY SYMBOLS ON DRAWING. PROVIDE FLOORPORT STYLE COVERPLATE (PROVIDE BLANK TOP FOR CONCRETE/TILE APPLICATION, OR CUTOFF TOP FOR CARPET INSTALLATIONS - COORDINATE FLOOR TYPE WITH ARCHITECTURAL). ALSO COORDINATE FINISH OF COVERPLATE WITH ARCHITECTURAL. PROVIDE FR-CTR FOR CONCRETE POUR APPLICATIONS TO ENSURE FINISHED COVERPLATE IS TOTALLY FLUSH WITH FINISH FLOOR. PROVIDE DUPLEX RECEPTACLE(S) AS INDICATED PER SPECIFICATIONS. COORDINATE DATA PORTS WITH IT IF DATA CABLING IS NOTED ON DRAWINGS. COORDINATE EXACT LOCATION, FLOORING TYPE AND MANUFACTURER INSTALLATION REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE ALL COMPONENTS FOR COMPLETE INSTALLATION. ALL OUTLETS SHALL HAVE CONDUIT RUN IN/UNDER FLOOR SLAB TO NEAREST WALL AND CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING (IF APPLICABLE) FOR CONTINUATION TO ELECTRICAL PANEL OR TELECOM BACKBOARD (ALL TELECOM CONDUIT WITH PULLSTRING). FIELD COORDINATE EXACT LOCATIONS AND FULL REQUIREMENTS WITH VENDOR AND OWNER FOR COMPLETE SYSTEM. FLOOR BOX COVERS MUST BE FLUSH WITH FINISHED FLOOR TO AVOID ANY TRIPPING HAZARD. PROVIDE (1) 1-1/4" WITH PULLSTRING UNDER SLAB STUB AND TURN ABOVE ACCESSIBLE CEILING.
 6. PROVIDE FIRE RETARDANT PLYWOOD BACKBOARD FOR DATA/TELECOM EQUIPMENT. PROVIDE DEDICATED 20A, 120V CIRCUITS TO QUADRAPLEX OUTLETS AS INDICATED. FIELD COORDINATE EXACT LOCATION OF OUTLETS WITH IT REPRESENTATIVE OR ARCHITECT/ENGINEER. TELECOM BOARD IN DATA ROOMS SHALL BE AROUND ROOM PERIMETER AS INDICATED. PROVIDE GROUND BAR GB-# AS INDICATED. SEE DETAIL ON E300. COORDINATE LOCATION OF RACKS WITH IT.
 7. PROVIDE (2) 3" FROM IT/COMM. ROOM OVERHEAD FROM IT ROOM TO OTHER SIDE OF BUILDING FOR WEATHERHEAD/OVERHEAD CONNECTION TO UTILITY POLE CONNECTION PER LOCAL UTILITY REQUIREMENT. SEE ROOF PLAN FOR APPROXIMATE LOCATION OF WEATHER HEAD (NOTE LOCATE AT EXISTING ENTRANCE). ALL ELLS SHALL BE SWEEPING TYPE. FIELD COORDINATE EXACT LOCATION OF ALL STUB UPS WITH ARCHITECT/ENGINEER/OWNER PRIOR TO ROUGH-IN.
 8. PROVIDE CORE DRILL AND 1" SLEEVE WITH BUSHINGS FOR ROUTING DATA CABLING FROM EXTERIOR CAMERA TO INTERIOR.
 9. SPLIT WIRE RECEPTABLES TO MEET TITLE 24. SEE OCCUPANCY/VACANCY SENSOR WIRING DIAGRAM ON DRAWING. E300.
 10. PROVIDE 120V. CIRCUIT TO ACCOMMODATE PLUMBING FIXTURE. COORDINATE EXACT LOCATION, CONNECTION, ETC. WITH MANUFACTURER.
 11. PROVIDE (2) 2" IN TRENCH TO TOILETS, TURN AND CAP BELOW GRADE FOR FUTURE EXPANSION TO MUSEUM. FIELD COORDINATE EXACT LOCATION WITH CIVIL/ARCHITECT. ROUTE CONDUITS UP TO ATTIC AND OVER TO IT ROOM. STUB INTO ROOM WITH BUSHINGS. SWEEP CONDUITS, PROVIDE NECESSARY PULLBOXES GIVEN EXACT ROUTING AND DISTANCE..
 12. PROVIDE (2) CIRCUITS TO EACH QUAD RECEPTACLE, (1) CIRCUIT THRU POWER PACK TO CONTROL RECEPTACLE (TO COMPLY WITH GENERAL NOTE K). SEE CONTROL DIAGRAM ON DRAWING E300.
 13. PROVIDE 120V, 1P CONNECTION TO M400 SMOKE GUARD JUNCTION BOX PER MANUFACTURER REQUIREMENTS. CONNECT AS INDICATED.
 14. PROVIDE WITH AUXILIARY CONTACT AND CONNECT TO SMOKE GUARD DOOR TO ACTIVATE SMOKE GUARD DOOR UPON SMOKE DETECTION. COORDINATE WITH MANUFACTURER, AND PROVIDE ALL CONTROL/FA WIRING IN 3/4" TO CONNECTION POINT ON SMOKE GUARD.
 15. PROVIDE FIRE ALARM SYSTEM WITH DIGITAL DIALER FOR CONNECTION TO UL LISTED CENTRAL STATION MONITORING SERVICE AND REMOTE ANNUNCIATOR CONFORMING TO ALL LOCAL, STATE AND NATIONAL CODES. COORDINATE WITH LOCAL AHJ/FIRE MARSHALL FOR ALL REQUIREMENTS AND PROVIDE COMPLETE. COORDINATE EXACT LOCATION OF REMOTE ANNUNCIATOR WITH LOCAL AHJ. PROVIDE DUCT SMOKE DETECTION/FAN SHUTDOWN, SPRINKLER SUPERVISION, ELEVATOR RECALL, ETC. - INCLUDING ALL MONITOR MODULES, ETC. TO MEET APPLICABLE CODES.
 16. PROVIDE RECEPTACLE AND COMMUNICATION OUTLET FOR MONITOR/TV. FIELD COORDINATE HEIGHT AND EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN
 17. PROVIDE (4) RELAYS FOR ELEVATOR PRIMARY, SECONDARY RECALL, FIRE HAT AND ELEVATOR SHUNT TRIP IN ELEVATOR MACHINE ROOM 209. CONFIRM NUMBER OF RELAYS NECESSARY TO MEET CODES PER FIRE ALARM CODES, REGULATIONS, ELEVATOR CODES, CHECKLISTS, ETC.
 18. PROVIDE GFCI RECEPTACLE WITH COVER AND GUARD IN PIT. PROVIDE WET LOCATION LIGHT FIXTURE WITH GUARD IN PIT AND ASSOCIATED SWITCH LOCATED AT PIT/LADDER ENTRANCE PER CODE AND ELEVATOR MANUFACTURER'S CHECKLIST. PROVIDE DEDICATED 20A, 1P 120V CIRCUIT WITH 3 #12, 3/4" INCH CONDUIT TO CIRCUIT INDICATED. SERVICE TO RECEPTACLE AND

- LIGHT - LIGHT SHALL NOT BE CONNECTED TO LOAD SIDE OF GFCI.
19. PROVIDE DEDICATED 20A/1P, 120V RECEPTACLE FOR SUMP PUMP (SP-1). PROVIDE CORD AND PLUG IF NOT PROVIDED WITH SUMP PUMP UNIT, COORDINATE WITH SUMP PUMP MANUFACTURER. CIRCUIT AS INDICATED. MEET ALL APPLICABLE CODE ELEVATOR INSPECTION CHECKLIST REQUIREMENTS.
 20. PROVIDE 208V, 3A, 100A, 3P ENCLOSED SHUNT TRIP CIRCUIT BREAKER FOR ELEVATOR POWER (VERIFY EXACT SIZE WITH MANUFACTURER NAMEPLATE AND SIZE ACCORDINGLY). INSTALL PER MANUFACTURER'S RECOMMENDATIONS. BREAKER SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. SHUNT TRIP BREAKER SHALL BE CONNECTED AS REQUIRED SO THAT ACTIVATION OF ASSOCIATED HEAT DETECTORS SHALL CAUSE POWER TO BE DISCONNECTED PRIOR TO APPLICATION OF WATER BY SPRINKLER SYSTEM TO MEET ALL APPLICABLE CODES.
 21. PROVIDE 20A, 1P ENCLOSED BREAKER OR FUSED DISCONNECT FOR ELEVATOR CAB LIGHTS, CONTROL, ETC. DISCONNECT SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FIELD COORDINATE EXACT LOCATION.
 22. PROVIDE DEDICATED OUTSIDE TELEPHONE CONNECTION AS REQUIRED. FIELD COORDINATE EXACT LOCATION AND CONNECTION.
 23. CIRCUIT EXHAUST FANS FROM LIGHTING CIRCUIT, SEE E100 FOR LIGHTING.
 24. PROVIDE POWER, BACK BOXES, CONDUIT, PULL STRING, ETC. FOR CARD ACCESS SYSTEM. COORDINATE ALL REQUIREMENTS WITH OWNERS VENDOR.
 25. PROVIDE L21-20R AT CEILING BEHIND RACK AT EACH CORNER (2 RECEPTABLES PER RACK). SERVE ONE FROM UPS INTEGRAL PANEL AND OTHER FROM PANEL RPI1 IN IT ROOM. COORDINATE WHICH OUTLET IS WHICH WITH IT DESIGN. CONNECT WITH 4#12, 1#12G, 3/4". IT EQUIPMENT VERTICAL PDU HAS L21-20P AND WILL BE PLUGGED INTO OUTLET.
 26. PROVIDE GFCI RECEPTACLE, LIGHT FIXTURE(S) AND ASSOCIATED SWITCH LOCATED PER CODE AND ELEVATOR MANUFACTURER'S CHECKLIST IN MACHINE ROOM. PROVIDE DEDICATED 20A, 1P 120V CIRCUIT WITH 3#12,3/4" TO CIRCUIT INDICATED FOR SERVICE TO RECEPTACLE AND LIGHT - LIGHT SHALL NOT BE CONNECTED TO LOAD SIDE OF GFCI. SEE E100 FOR LIGHTING INFORMATION.
 27. PROVIDE (2) 4" SLEEVES/STUBS FROM ABOVE 2ND FLOOR CEILING DOWN (STUBBED TO CABLE TRAY) TO ABOVE 1ST FLOOR CEILING FOR ROUTING DATA CABLING FROM FIRST FLOOR UP TO IT ROOM, FIELD COORDINATE EXACT LOCATION. UTILIZE ONLY SWEEPING ELBOWS.
 28. 18" BASKET TRAY FOR ROUTING DATA CABLING INTO IT ROOM. OTHERWISE UTILIZE J-HOOKS PER GENERAL NOTES.
 29. PROVIDE NEW REMOTE ANNUNCIATOR TO MEET SPECIFICATION SECTION 26213. FIELD COORDINATE EXACT LOCATION AND ALL CABLING REQUIRED PER GENERATOR MANUFACTURER. ROUTE CABLING AND CONDUIT COMPLETE BETWEEN ANNUNCIATOR AND GENERATOR CONTROL PANEL. UTILIZE TRENCH INDICATED FROM ATS OUT TO GENERATOR, PROVIDE ALL CABLING AND CONDUIT TO GENERATOR AS REQUIRED BY RELEVANT CODES AND REGULATIONS.
 30. PROVIDE EMERGENCY STOP PUSHBUTTON TO SHUT DOWN PRIME MOVER MEETING REQUIREMENTS OF 445.18(B)(2). CED 445.18(C). FIELD VERIFY EXACT LOCATION.

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".

Revisions:

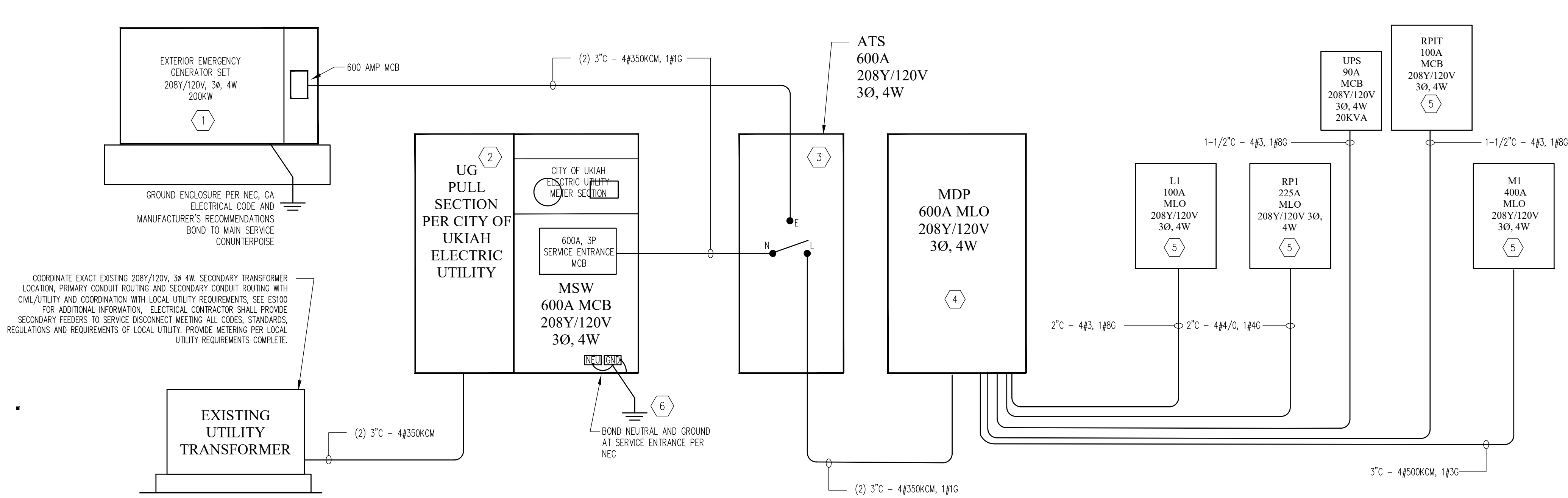
Client Project Number: **000**
APN Number: **000-000-000**
KPA Project Number: **76100**
Date: **JUNE 6, 2025** **ISSUE FOR BID**

Sheet Title:

ROOF PLAN - POWER

Sheet Number:

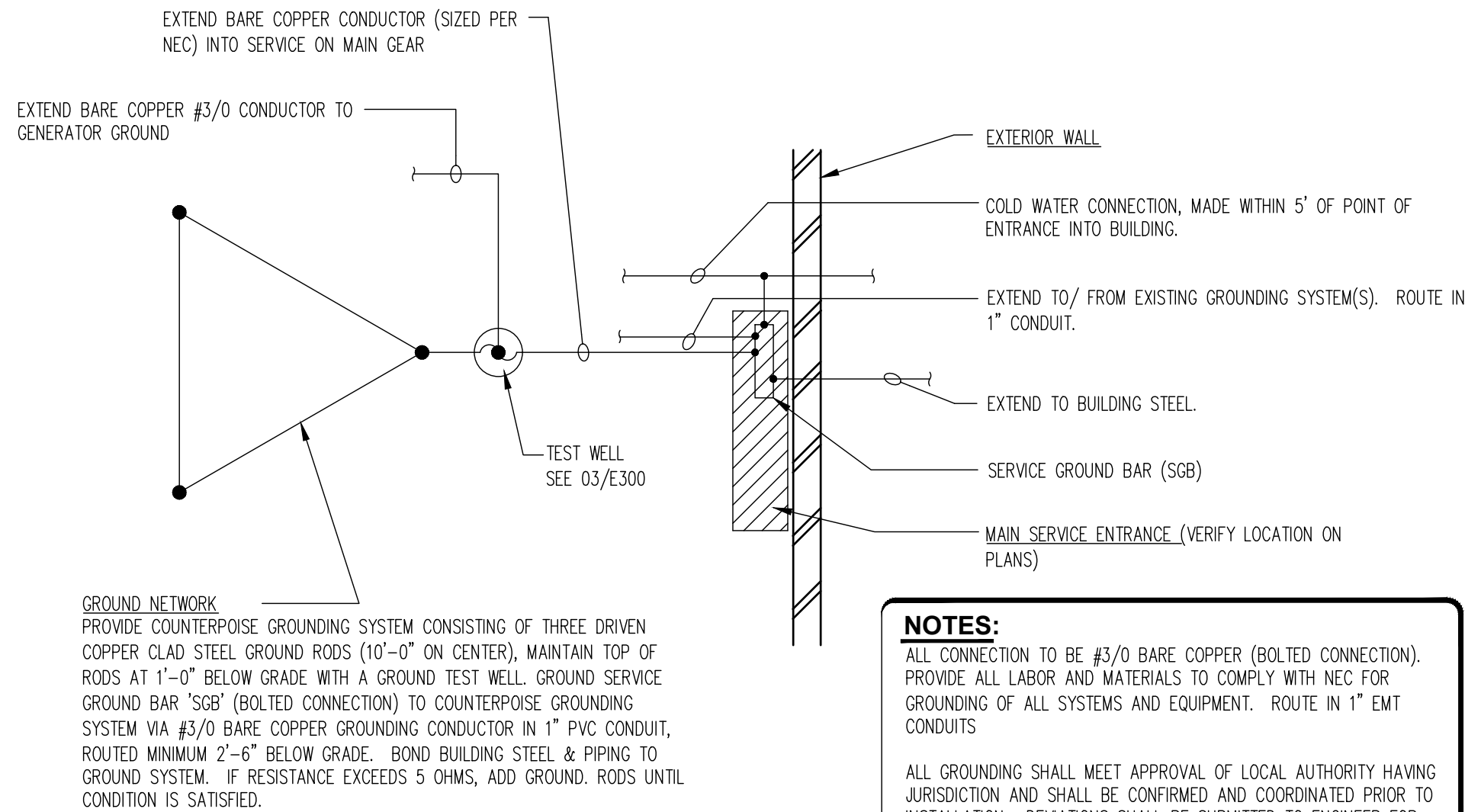
E201



ELECTRICAL SINGLE-LINE DIAGRAM

SCALE: NONE

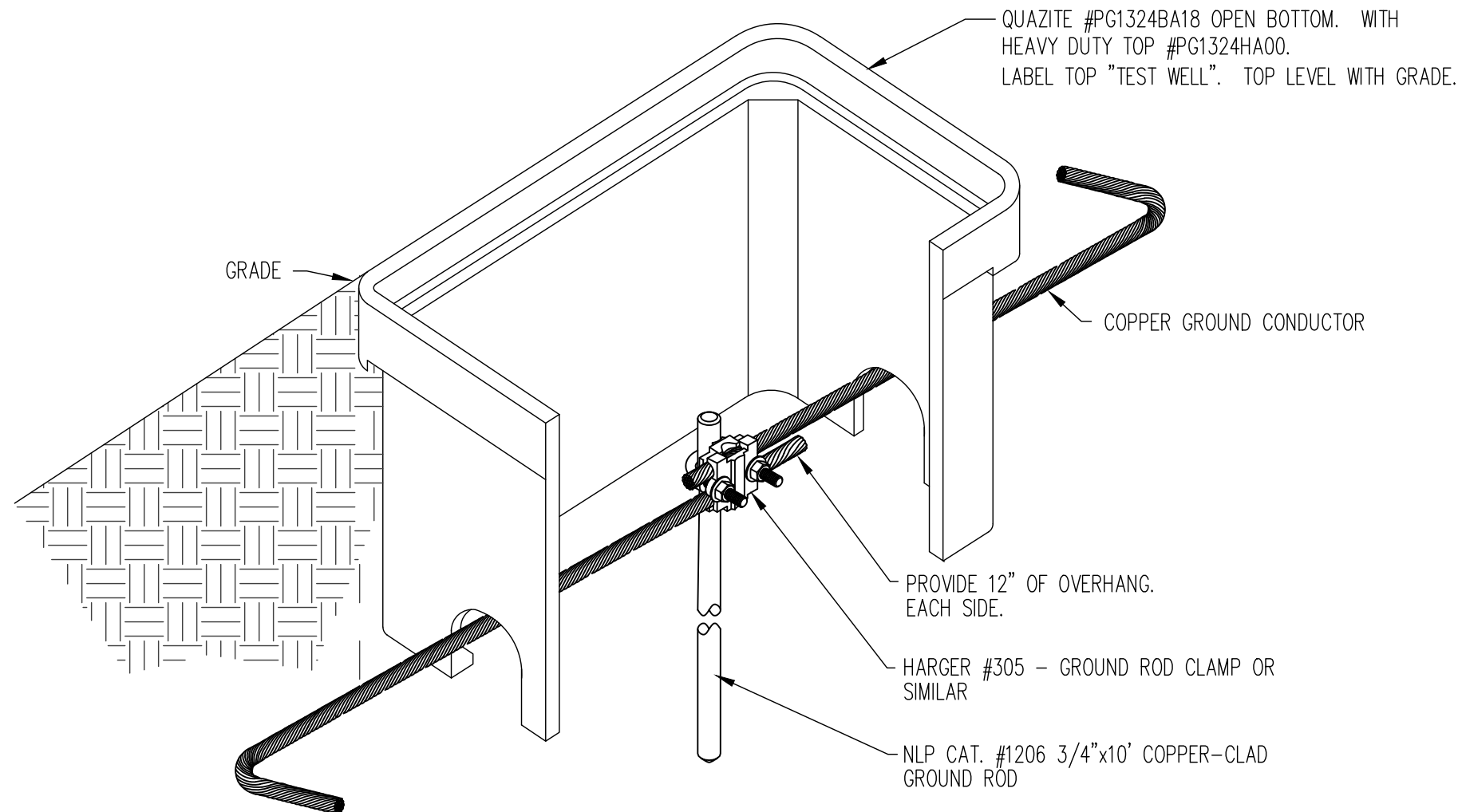
01



GROUND NETWORK DETAIL

SCALE: NONE

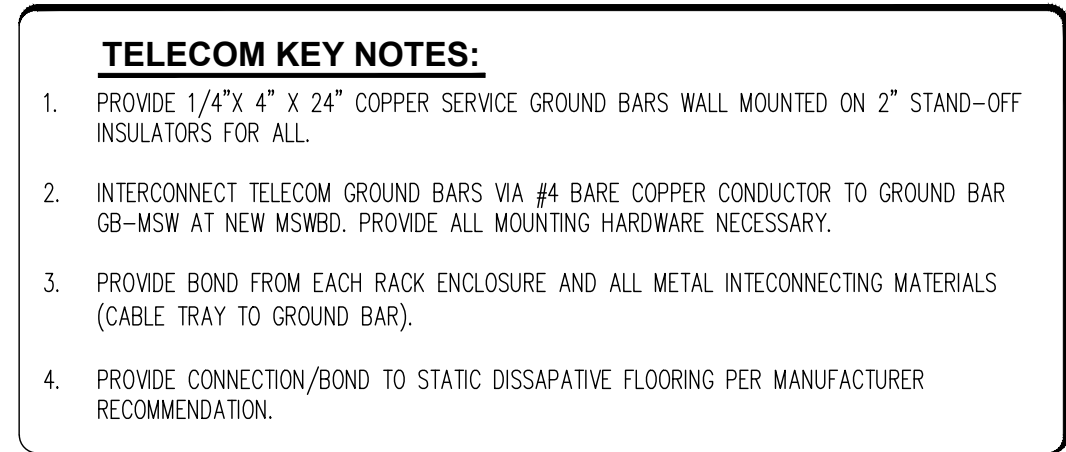
02



GROUND INSPECTION WELL (TEST WELL)

SCALE: NONE

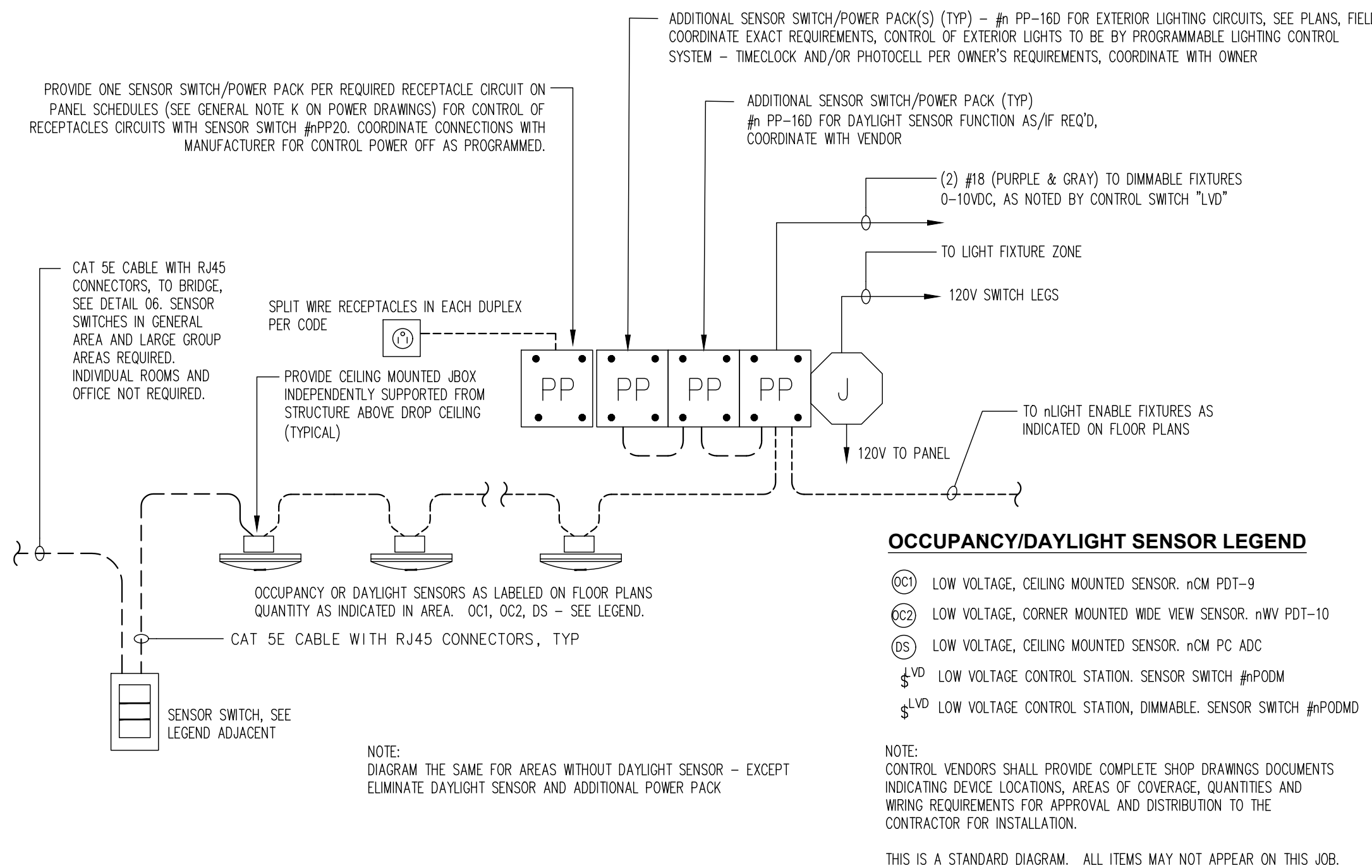
03



TELECOMMUNICATION GROUNDING SYSTEM DETAIL

SCALE: NONE

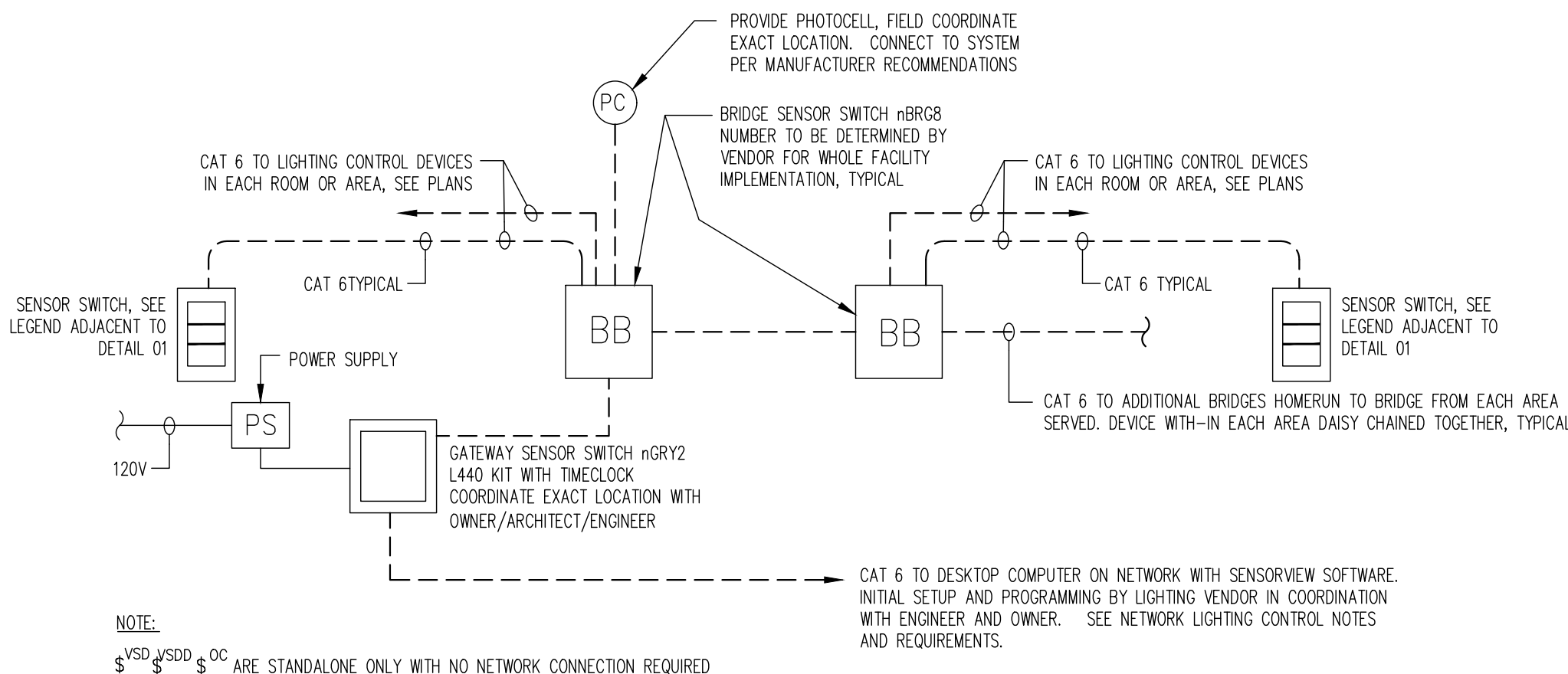
04



OCCUPANCY/VACANCY/DAYLIGHT SENSOR SYSTEM STANDARD TYPICAL WIRING DIAGRAM

SCALE: NONE

05



TYPICAL NETWORK LIGHTING CONTROL DIAGRAM

SCALE: NONE

04

-NOTE: THE COMPANY THAT PROVIDES ELECTRIC SERVICE FOR THIS PROJECT IS THE "CITY OF UKIAH ELECTRIC UTILITY".

Revisions:

Client Project Number: 000
APN Number: 000-000-000
KPA Project Number: 76100
Date: JUNE 6, 2025 ISSUE FOR BID

Sheet Title:

ELECTRICAL DETAILS

Sheet Number:

E300

MDP														BRANCH PANELBOARD			
NEMA 1				BOLT-ON BREAKERS						3 PHASE / 4 WIRE				800 AMP BUS			
SURFACE MOUNTED				22,000 AIC						208Y/120 VOLT				600 AMP MCB			
CT	DESCRIPTION	BKR	LF	A		B		C		LF	BKR	DESCRIPTION	CT				
1	M1	400/3	S	36376	6960	0				S	100/3	L1	2				
			S			33986	7800	0									
			S				37110	8615									
3	RP1	225A/3	S	8840	4720					S	100/3	RPIT	4				
			S			7900	4000										
			S				8880	4000									
5	UPS	90/3	S	4720						S	225/3	SPACE	6				
			S			4000											
			S				4000										
7	SPACE		S							S		SPACE	8				
			S														
			S														
9			S							S			10				
			S														
			S														
11			S							S			12				
			S														
			S														
13			S							S			14				
			S														
			S														
				61616		57686		62605									
CONNECTED		181907	VA	506	AMPS												
				SEE SINGLE-LINE FOR FEEDER SIZE													
				SEE TABLE THIS SHEET FOR SIZING OF CONDUCTORS BASED ON BREAKER SIZES LISTED													
NOTES:																	
1 SEE SINGLE-LINE FOR FEEDER SIZE																	
SEE TABLE THIS SHEET FOR SIZING OF CONDUCTORS BASED ON BREAKER SIZES LISTED																	

RP1												BRANCH PANELBOARD			
NEMA 1				BOLT-ON BREAKERS				3 PHASE / 4 WIRE				225 AMP BUS			
SURFACE MOUNTED				22,000 AIC				208Y/120 VOLT				225A MLO			
CKT	DESCRIPTION	BKR	LF	A		B		C		LF	BKR	DESCRIPTION	CKT		
1	RECEPTACLE	201/	R	360	480					R	201/	RECEPTACLE	2		
3	RECEPTACLE	201/	R			540	1260			R	201/	RECEPTACLE	4		
5	RECEPTACLE	201/	R					720	540	R	201/	RECEPTACLE	6		
7	RECEPTACLE	201/	R	360	540					R	201/	EWCR/RECEPTACLE	8		
9	RECEPTACLE	201/	R			480	480			N	201/	AUTO DOORS	10		
11	RECEPTACLE	201/	R					720	900	R	201/	RECEPTACLE	12		
13	RECEPTACLE COPIER	201/	N	1200	1260					R	201/	RECEPTACLE	14		
15	RECEPTACLE	201/	R			480	1200			N	201/	RECEPTACLE COPIER	16		
17	RECEPTACLE	201/	R					900	900	R	201/	RECEPTACLE	18		
19	RECEPTACLE	201/	R	480	900					R	201/	RECEPTACLE	20		
21	RECEPTACLE	201/	R			480	540			R	201/	RECEPTACLE	22		
23	RECEPTACLE	201/	R					1260	540	R	201/	RECEPTACLE	24		
25	RECEPTACLE	201/	R	480	540					R	201/	RECEPTACLE	26		
27	RECEPTACLE	201/	R			720	720			R	201/	RECEPTACLE	28		
29	RECEPTACLE	201/	R					900		R	201/	RECEPTACLE	30		
31	RECEPTACLE COPIER	201/	R	1200	540					R	201/	RECEPTACLE	32		
33	RECEPTACLE	201/	R							S	201/	SPARE	34		
35	DOOR CONTROLS	201/	N					1000	500	R	201/	SPARE	36		
37	FACP	201/	R	500							201/	SPARE	38		
39	REFRIDGERATOR	201/	C			1000					201/	SPARE	40		
41	SPARE	201/						0	0		201/	SPARE	42		
43	SPARE	201/		0	0						201/	SPARE	44		
45	SPARE	201/				0	0				201/	SPARE	46		
47	SPARE	201/						0	0		201/	SPARE	48		
49	SPARE	201/		0	0						201/	SPARE	50		
51	SPARE	201/				0	0				201/	SPARE	52		
53	SPARE	201/						0	0		201/	SPARE	54		
55	SPARE	201/		0	0						201/	SPARE	56		
57	SPARE	201/				0	0				201/	SPARE	58		
59	SPARE	201/						0	0		201/	SPARE	60		
				0	0								62		
						0	0						64		
								0	0				66		
				0	0								68		
						0	0						70		
								0	0				72		
				8840		7900		8880							
CONNECTED		25620		VA	71	AMPS									
DEMAND		20525		VA	57	AMPS									
LF = LOAD FACTOR				C = CONTINUOUS, L = LIGHTING, R = RECEPTACLE, H = HACR (PER NAMEPLATE)											
				S = SUB FEED, K = KITCHEN, N = NON-CONTINUOUS, U = USER											
NOTES:															
1	SEE SINGLE-LINE FOR FEEDER SIZE														
	SEE TABLE THIS SHEET FOR SIZING OF CONDUCTORS BASED ON BREAKER SIZES LISTED														

L1												BRANCH PANELBOARD		
NEMA 1				BOLT-ON BREAKERS				3 PHASE / 4 WIRE				100 AMP BUS		
SURFACE MOUNTED				22,000 AIC				208Y/120 VOLT				100A MLO		
CKT	DESCRIPTION	BKR	LF	A		B		C		LF	BKR	DESCRIPTION	CKT	
1	LIGHTING	201/1	L	990							201/1	SPARE	2	
3	LIGHTING	201/1	L			1260	1000				L	201/1	LIGHTING	4
5	LIGHTING	201/1	L					1265	1200		L	201/1	LIGHTING	6
7	LIGHTING	201/1	L	870	800						L	201/1	LIGHTING	8
9	LIGHTING EXTERIOR	201/1	L			980	420				L	201/1	LIGHTING	10
11	LIGHTING	201/1	L					720	930		L	201/1	LIGHTING	12
13	LIGHTING	201/1	L	1200	700						L	201/1	LIGHTING	14
15	SPARE	201/1				480	1200				L	201/1	LIGHTING	16
17	SPARE	201/1						900	900			201/1	SPARE	18
19	SPARE	201/1		480	900							201/1	SPARE	20
21	SPARE	201/1				480	540					201/1	SPARE	22
23	SPARE	201/1						1260	540			201/1	SPARE	24
25	SPARE	201/1		480	540							201/1	SPARE	26
27	SPARE	201/1				720	720					201/1	SPARE	28
29	SPARE	201/1						900				201/1	SPARE	30
				6960		7800		8615						
CONNECTED		16919		VA	47	AMPS								
DEMAND		17194		VA	48	AMPS								
LF = LOAD FACTOR				C = CONTINUOUS, L = LIGHTING, R = RECEPTACLE, H = HACR (PER NAMEPLATE)										
				S = SUB FEED, K = KITCHEN, N = NON-CONTINUOUS, U = USER										
NOTES:														
1	SEE SINGLE-LINE FOR FEEDER SIZE													
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CITY OF UKIAH
MENDOCINO COUNTY, CALIFORNIA

SPECIAL PROVISIONS
FOR
REMODEL OF 501 SOUTH STATE STREET
SPECIFICATION NO. 25-04

MANDATORY PRE-BID MEETING
TBD
501 SOUTH STATE STREET
UKIAH, CALIFORNIA 95482

CITY OF UKIAH
DEPARTMENT OF COMMUNITY DEVELOPMENT
300 Seminary Avenue
Ukiah, California 95482-5400

Bids Open: **TBD**
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
MARY HORGER – FINANCIAL SERVICES MANAGER
KRISTINE LAWLER – CITY CLERK
R. ALLEN CARTER - CITY TREASURER

CITY OF UKIAH
DEPARTMENT OF COMMUNITY DEVELOPMENT
TBD

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Draft

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, **TBD**. 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
ABI 1	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 2 :00 p.m., **TBD**, 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: _____

Kristine Lawler, City Clerk, City of Ukiah, California

PUBLISH ONE TIME: **TBD**

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.

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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 41)
 - Filled out completely per instruction
- **Worker's Compensation Certificate** (Page 42)
 - Filled out completely per instruction
- **Certification of Non-Discrimination in Employment** (Page 43)
 - Filled out completely per instruction
- **List of Proposed Subcontractors** (Page 44)
 - Filled out completely per instruction
- **Statement of Experience** (Page 45)
- **Signature of Bidder** (Page 46)
 - Filled out completely per instruction
 - Authorized signature provided
- **Bidder's Bond** (Page 47)
 - Filled out completely per instruction
- **Non-Collusion Affidavit** (Page 48)
 - 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.

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	\$ _____	\$ _____
ABI 1	New Transformer - including Demo of Existing Transformer & Site Work	LS	1	\$ _____	\$ _____
TOTAL BID ==>>					\$ _____

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:

Draft

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.)

Draft

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.

Draft

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 **TBD** 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.

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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 given; 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 obligee 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)

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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 ☐ _____

Page of September 1996
CSI Form 13.1A

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99 Canal Center Plaza, Suite 300 Alexandria, VA 22314

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=>).

- 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 +/- 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, Best6 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
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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: Flashing and Counter Flashing	Custom: Per Architect Selection 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

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-guage 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 1/2" – 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 1/2" – 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 1/2" – 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," "Brazed 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 (GFEPP) 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:

Project: Ukiah B of A Remodel		Client: City of Ukiah			
		City: Ukiah, CA			
Project No.:		Date: December 13, 2024			
Building Size:		9,201 SF			
CSI	DESCRIPTION	UNIT	PRICE	QTY	COST

	Division 2 - Site Construction				
	Temporary Controls, Fencing & Signage	ls	\$5,000.00	1	\$5,000
	Site demolition - Asphalt Pavement	sf	\$7.00	2400	\$16,800
	Site demolition - Ramp	sf	\$13.00	340	\$4,420
	Site demolition - Concrete Sidewalk	sf	\$12.00	390	\$4,680
	Site demolition - Utility trench	lf	\$40.00	300	\$12,000
	Site demolition - Landscape	ls	\$2,500.00	1	\$2,500
	Site demolition - Electrical Handhole	ls	\$1,000.00	1	\$1,000
	Site demolition - Subgrade water valve	ls	\$1,000.00	1	\$1,000
	Site demolition - ramp landing & stair	ls	\$3,500.00	1	\$3,500
	Site demolition - generator pad	sf	\$8.00	250	\$2,000
	Site demolition - Misc	ls	\$2,000.00	1	\$2,000
	SUBTOTAL				\$54,900

	Division 3 - Concrete				
	Concrete Reinforcement - Elevator Pit	ls	\$1,000.00	1	\$1,000
	Concrete Reinforcement - Slab-on-Gade	ls	\$12,500.00	1	\$12,500
	Concrete - Elevator Pit	sf	\$50.00	100	\$5,000
	SUBTOTAL				\$18,500

	Division 5 - Metals				
	Metal Fabrications - Misc.	ls	\$3,000.00	1	\$3,000
	Metal Fabrications - Stair Handrails	lf	\$110.00	76	\$8,360
	SUBTOTAL				\$11,360

	Division 6 - Wood & Plastics				
	Structural Framing - Posts 6x6	ea	\$500.00	9	\$4,500
	Structural Framing - PSL Headers	ls	\$15,000.00	1	\$15,000
	Structural Framing - Standard Headers	ls	\$3,000.00	1	\$3,000
	Structural Framing - Wall attachments	ea	\$1,850.00	12	\$22,200
	Rough & Finish Carpentry - Partitions/Framing	ls	\$13,500.00	1	\$13,500
	Rough & Finish Carpentry - Misc	ls	\$13,500.00	1	\$13,500
	Interior Architectural Woodwork - Counter	lf	\$725.00	94	\$68,150
	Interior Architectural Woodwork - Lactation Rm	ls	\$3,500.00	1	\$3,500
	Interior Architectural Woodwork - Break Rm	ls	\$7,500.00	1	\$7,500
	SUBTOTAL				\$150,850

	Division 7 - Thermal & Moisture Protection				
	Roof Patch - penthouse	ls	\$7,500.00	1	\$7,500
	Interior Acoustical Insulation	sf	\$3.75	9201	\$34,504
	Roof and Deck Insulation	ls	\$1,250.00	1	\$1,250
	Sealants	ls	\$5,000.00	1	\$5,000
	SUBTOTAL				\$48,254

Project: Ukiah B of A Remodel		Client: City of Ukiah			
Project No.:		City: Ukiah, CA			
Building Size:		Date: December 13, 2024			
9,201		SF			
CSI	DESCRIPTION	UNIT	PRICE	QTY	COST
	Division 8 - Doors & Windows				
	Wood Door & HM Frame & Hardware	ea	\$3,800.00	18	\$68,400
	Wood Door & Aluminum Frame & Hardware	ea	\$4,250.00	13	\$55,250
	HM Door & HM Frame & Hardware	ea	\$3,300.00	3	\$9,900
	Wood Door & Other Frame & Hardware	ea	\$4,000.00	4	\$16,000
	Storefront Misc - Interior	ls	\$5,000.00	1	\$5,000
	Storefront Misc - Exterior	ls	\$2,500.00	1	\$2,500
	Access Doors and Frames	ea	\$3,800.00	3	\$11,400
	Aluminum Door & Frame & Hardware	ea	\$5,000.00	3	\$15,000
	Windows	ea	\$8,000.00	7	\$56,000
	Sliding Automatic Entrances	ea	\$17,500.00	1	\$17,500
	Fiberglass Sandwich Panel Skylights	sf	\$140.00	400	\$56,000
	SUBTOTAL				\$312,950

	Division 9 - Finishes				
	Non-Structural Metal Framing - Misc.	ls	\$10,000.00	1	\$10,000
	New partitions - Gyp board	lf	\$330.00	275	\$90,750
	New partitions - Insulation	lf	\$24.00	275	\$6,600
	Gypsum Board - interior outside walls	lf	\$40.00	160	\$6,400
	Gypsum Board - Ceilings	sf	\$14.00	1440	\$20,160
	Porcelain Tile - Unisex Tlts & Vestibule	sf	\$36.00	3360	\$120,960
	Acoustical Ceilings	sf	\$17.00	6981	\$118,677
	Resilient Flooring	sf	\$13.00	4100	\$53,300
	Resilient Base	lf	\$3.50	1800	\$6,300
	Static Dissipative Resilient Flooring - IT Room	sf	\$28.00	207	\$5,796
	Carpet Tile	sf	\$15.00	2680	\$40,200
	Painting, Interior Walls	sf	\$6.50	8000	\$52,000
	Painting, Doors and Frames	ea	\$225.00	38	\$8,550
	Painting, Misc	ls	\$2,500.00	1	\$2,500
	SUBTOTAL				\$542,193

	Division 10 - Specialties				
	Signage Interior	ls	\$17,500.00	1	\$17,500
	Signage Exterior	ls	\$4,000.00	1	\$4,000
	Folding Glass Partitions	ls	\$60,000.00	1	\$60,000
	Wall Protection - Corner Guards	ls	\$2,500.00	1	\$2,500
	Fire Extinguisher Cabinet w/Extinguisher	ea	\$1,500.00	6	\$9,000
	Grab Bars	ea	\$400.00	12	\$4,800
	Mirrors	ea	\$750.00	6	\$4,500
	Soap Dispenser	ea	\$300.00	6	\$1,800
	Sanitary Napkin Disposal	ea	\$300.00	6	\$1,800
	Toilet Seat Cover Dispenser	ea	\$300.00	6	\$1,800
	Toilet Tissue Dispenser	ea	\$300.00	6	\$1,800
	Towel dispenser waste receptacle	ea	\$350.00	6	\$2,100
	Robe Hook	ea	\$100.00	6	\$600
	Diaper Changing Station	ea	\$3,500.00	2	\$7,000
	SUBTOTAL				\$119,200

Project: Ukiah B of A Remodel		Client: City of Ukiah			
		City: Ukiah, CA			
Project No.:		Date: December 13, 2024			
Building Size:		9,201 SF			
CSI	DESCRIPTION	UNIT	PRICE	QTY	COST
	Division 13 - Special Construction				
	Seismic Restraint for Piping and Equipment	sf	\$3.00	9201	\$27,603
	SUBTOTAL				\$27,603

	Division 14 - Conveying Systems				
	Hydraulic Elevator	ls	\$410,000.00	1	\$410,000
	Elevator penthouse	ls	\$12,500.00	1	\$12,500
	SUBTOTAL				\$410,000

	Division 21 - Fire Suppression				
	Fire Riser	ls	\$13,500.00	1	\$13,500
	Wet-Pipe Sprinkler Systems	sf	\$10.00	9201	\$92,010
	Total				\$105,510

	Division 22 - Plumbing				
	General Requirements of Plumbing and HVAC	ls	\$10,000.00	1	\$10,000
	Siesmic Controls	ls	\$5,000.00	1	\$5,000
	Demo - Existing plumbing fixtures	ls	\$8,500.00	1	\$8,500
	Sanitary Sewer - Floor trench	ls	\$9,000.00	1	\$9,000
	3" Sanitary Line	lf	\$130.00	50	\$6,500
	2" Sanitary line	lf	\$110.00	128	\$14,080
	4" Sanitary line	lf	\$150.00	110	\$16,500
	Plumbing Valves	ls	\$9,000.00	1	\$9,000
	Domestic Water Piping	lf	\$75.00	780	\$58,500
	Vent piping	ls	\$17,500.00	1	\$17,500
	Water Closets	ea	\$2,800.00	6	\$16,800
	Lavatories	ea	\$1,695.00	6	\$10,170
	Lactation Rm Sinks (Single)	ea	\$1,375.00	1	\$1,375
	Break Room Sinks (Double)	ea	\$1,375.00	1	\$1,375
	Drinking Fountain (Dual Height Bottle Fill)	ea	\$2,000.00	2	\$4,000
	Floor Drains at Toilets	ea	\$800.00	6	\$4,800
	Mop Sink	ea	\$1,770.00	1	\$1,770
	Urinals	ea	\$2,800.00	2	\$5,600
	SUBTOTAL				\$200,470

	Division 23 - Mechanical				
	Testing & Balancing	ls	\$10,000.00	1	\$10,000
	Ductwork - large	lf	\$95.00	445	\$42,275
	Ductwork - small	lf	\$68.00	830	\$56,440
	Refrigerant Piping	ls	\$6,500.00	1	\$6,500
	New ductless condenser unit	ls	\$7,000.00	1	\$7,000
	Minisplit unit at IT	ls	\$8,500.00	1	\$8,500
	Air Duct Accessories	ls	\$7,500.00	1	\$7,500
	Grilles, Registers and Diffusers	ls	\$15,000.00	1	\$15,000
	SUBTOTAL				\$153,215

Project: Ukiah B of A Remodel		Client: City of Ukiah			
Project No.:		City: Ukiah, CA			
Building Size:		Date: December 13, 2024			
		9,201 SF			
CSI	DESCRIPTION	UNIT	PRICE	QTY	COST
	Division 26 - Electrical				
	Common Work Results for Electrical	ls	\$15,000.00	1	\$15,000
	Low Voltage	ls	\$5,000.00	1	\$5,000
	Grounding & Bonding	ls	\$8,000.00	1	\$8,000
	Hangers & Supports	ls	\$12,500.00	1	\$12,500
	Raceways & Boxes	sf	\$3.50	9201	\$32,204
	HVAC and Control Wiring	ls	\$25,000.00	1	\$25,000
	Wiring - general	ls	\$60,000.00	1	\$60,000
	Lighting Controls	ls	\$15,000.00	1	\$15,000
	Panelboards - New	ea	\$4,000.00	3	\$12,000
	Automatic Transfer Switch	ls	\$40,000.00	1	\$40,000
	Interior Lighting	sf	\$17.00	9201	\$156,417
	Exterior Lighting	ls	\$5,000.00	1	\$5,000
	SUBTOTAL				\$386,121

	Division 28 - Electronic Safety and Security				
	Physical Access Control System	ls	\$35,000.00	1	\$35,000
	Access Control - Card Readers	ea	\$2,000.00	10	\$20,000
	Access Control - System wiring	ls	\$55,000.00	1	\$55,000
	SUBTOTAL				\$110,000

	Division 31 - Earthwork				
	Site Grading	ls	\$8,500.00	1	\$8,500
	SUBTOTAL				\$8,500

	Division 32 - Exterior Improvements				
	Site Improvements - Concrete Curbs	lf	\$90.00	200	\$18,000
	Handrails/Guardrails	lf	\$115.00	81	\$9,315
	Sign Posts	ea	\$3,000.00	3	\$9,000
	Signage	ls	\$1,500.00	1	\$1,500
	Truncated Domes	ls	\$1,000.00	1	\$1,000
	Site Improvements - Generator Pad	sf	\$15.00	250	\$3,750
	Site Improvements - Concrete ADA Stalls	sf	\$50.00	470	\$23,500
	Site Improvements - Concrete - Sidewalk	sf	\$50.00	981	\$49,050
	Site Improvements - Asphalt Paving	sf	\$15.00	760	\$11,400
	Site Improvements - Asphalt Utility Trench	sf	\$15.00	800	\$12,000
	Site Improvements - Wheel Stops	ea	\$1,500.00	6	\$9,000
	Site Improvements - Pavement Markings	ls	\$2,000.00	1	\$2,000
	Site Improvements - Landscape	ls	\$2,000.00	1	\$2,000
	SUBTOTAL				\$151,515

Project: Ukiah B of A Remodel		Client: City of Ukiah			
		City: Ukiah, CA			
Project No.:		Date: December 13, 2024			
Building Size:		9,201 SF			
CSI	DESCRIPTION	UNIT	PRICE	QTY	COST
	Division 33 - Utility				
	Utility Trench - New Handhole	ea	\$5,000.00	1	\$5,000
	Demo - Light and Pole	ea	\$2,500.00	1	\$2,500
	Exterior Site Lighting - replace	ea	\$3,000.00	2	\$6,000
	Exterior Site Lighting - new with pole	ea	\$18,500.00	1	\$18,500
	Exterior Site Lighting - new with pole at ADA	ea	\$11,500.00	1	\$11,500
	Utility Trench	lf	\$125.00	300	\$37,500
	Utility Trench - Sanitary Sewer pipe	lf	\$105.00	200	\$21,000
	Primary service connection	ls	\$40,000.00	1	\$40,000
	Generator	ls	\$125,000.00	1	\$125,000
	Generator feeder	lf	\$120.00	100	\$12,000
	Utilities - Sewer - Coupling & Fittings	ls	\$5,000.00	1	\$5,000
	SUBTOTAL				\$284,000
	Construction Cost Subtotal				\$3,095,140
	Division 1 - General Requirements & Fees				
	General Conditions	%		10.00%	\$309,514
	Bond, Insurance & Permit	%		2.00%	\$61,903
	Contingency	%		10.00%	\$309,514
	SUBTOTAL				\$680,931
	Construction Cost Total				\$3,776,071

Summary	Subtotal	
Division 1 - General Requirements & Fees	\$680,931	74.01
Division 2 - Site Construction	\$54,900	5.97
Division 3 - Concrete	\$18,500	2.01
Division 5 - Metals	\$11,360	1.23
Division 6 - Wood & Plastics	\$150,850	16.39
Division 7 - Thermal & Moisture Protection	\$48,254	5.24
Division 8 - Doors & Windows	\$312,950	34.01
Division 9 - Finishes	\$542,193	58.93
Division 10 - Specialties	\$119,200	12.96
Division 13 - Special Construction	\$27,603	3.00
Division 14 - Conveying Systems	\$410,000	44.56
Division 21 - Fire Suppression	\$105,510	11.47
Division 22 - Plumbing	\$200,470	21.79
Division 23 - Mechanical	\$153,215	16.65
Division 26 - Electrical	\$386,121	41.97
Division 28 - Electronic Safety and Security	\$110,000	11.96
Division 31 - Earthwork	\$8,500	0.92
Division 32 - Exterior Improvements	\$151,515	16.47
Division 33 - Utility	\$284,000	30.87
TOTAL	\$3,776,071	\$ 410.40 per SF



AGENDA SUMMARY REPORT

SUBJECT: Adoption of a Resolution Authorizing an Application to the California Climate Investments and Proposition 4 Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention Program.

DEPARTMENT: City Manager /
Admin

PREPARED BY: Traci Boyl, Senior Management Analyst

PRESENTER: Traci Boyl, Sr. Management Analyst

ATTACHMENTS:

1. FY 2526 Wildfire Prevention Grants GUIDELINES CCI-Prop4
2. Resolution Cal Fire Wildfire Prevention Program

Summary: The City Council will consider authorizing a grant application to the California Climate Investments and Proposition 4 Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention Grant Program for hazardous fuels reduction work within the Ukiah Valley Fire District.

Background: The CAL FIRE Community Wildfire Defense Grant (Attachment 1) provides funding to help communities plan for and mitigate wildfire risks. The grant offers up to \$950,000 with no local match requirement and includes a three-year period of performance. The application deadline is August 6, 2025.

This grant complements the existing USDA grant that funded the hiring of a dedicated fuels crew by providing the additional necessary equipment, planning documents to prioritize and coordinate ongoing projects, related CEQA, and providing important education and outreach pieces.

Discussion: This funding will allow the City to maintain and expand wildfire hazard mitigation efforts. Priority activities include maintaining the existing fire break in the western hills area now within city limits, supporting work beyond the original scope of the fuels crew grant, and filling operational gaps. The grant will also fund the purchase of a masticator, truck, trailer, and additional crew equipment. Planning efforts will include updates to the Community Wildfire Protection Plan (CWPP), necessary CEQA compliance, and community education and outreach initiatives.

Staff recommends Council adopt the resolution (Attachment 2) to participate in the Community Wildfire Defense Grant application. This is a competitive grant application, but it requires no matching funds. Therefore, there is no fiscal impact from the application, and the Council would have an opportunity to provide direction before accepting any potential grant award.

Recommended Action: Adopt a resolution authorizing an application to the California Climate Investments and Proposition 4 Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention Program.

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: Doug Hutchison, Fire Chief; Justin Buckingham, Battalion Chief; Jim Robbins, Housing and Grants Manager

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): 10a – Protect from dangerous emission by preventing fires.

GENERAL PLAN ELEMENTS (GP): GP-A6 - Safety Element

Approved: 
Sage Sangiacomo, City Manager

California Climate Investments
And Proposition 4
Department of Forestry and Fire Protection
(CAL FIRE)
Wildfire Prevention Program
Grant Guidelines

FY 2025-2026

June 25, 2025



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I. INTRODUCTION

This grant guideline includes information about the California Department of Forestry and Fire Protection (CAL FIRE) Wildfire Prevention (WP) Grants Program. The Program is funded by Cap-and-Trade auction proceeds appropriated by the California Legislature to agencies that administer California Climate Investments (CCI).

Up to \$135 million is being allocated to CAL FIRE's WP Grants Program in Fiscal Year 2025-2026 from the CCI Greenhouse Gas Reduction Fund (GGRF) and the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024 (Proposition 4). For information about CAL FIRE's other CCI programs, please visit [CAL FIRE Grants](#).

WILDFIRE PREVENTION GRANTS PROGRAM SUMMARY

CAL FIRE's WP Grants Program provides funding for wildfire prevention projects and activities in and near wildfire-threatened communities that focus on increasing the protection of people, structures, and communities. Funded activities include Hazardous Fuels Reduction, Wildfire Prevention Planning, and Wildfire Prevention Education with an emphasis on improving public health and safety while reducing greenhouse gas emissions.

California's Strategic Fire Plan serves as a roadmap for project development. Projects are evaluated based on the overall benefit to reduce the threat of wildfires to people, structures, and communities. CAL FIRE will consider the wildfire hazards and risks to an area, the geographic balance of projects, and whether the project is complementary to other wildfire prevention or forest health activities when awarding grants. Projects benefiting **disadvantaged communities or low-income communities**, as defined by Health and Safety Code section 39713, projects that demonstrate a carbon benefit by reducing greenhouse gas emissions, and **projects that contain matching funds will receive additional priority**. Projects are selected on a competitive basis, and consecutive awards are not guaranteed. **Disadvantaged and low-income communities** can be determined using the process in **Appendix F**. Projects that demonstrate that they are providing **maintenance of existing fuels reduction projects** paid for by CAL FIRE or any other funding sources (i.e., other state funds, federal funds, or private funds) will also receive priority. Projects conducted by any local governmental entity qualified to perform defensible space assessments pursuant to Section 4291.5 in very high and high fire hazard severity zones, as identified by the State Fire Marshal pursuant to Section 51178 of the Government Code or Article 9 (commencing with Section 4201) of this chapter or by a local agency pursuant to Section 51179 of the Government Code, will receive priority if they utilize the common reporting platform created pursuant to subdivision (c) of Section 4291.5 to report that information.

CAL FIRE will provide technical expertise and management oversight of grants but may not be the primary agency or applicant for a project. CAL FIRE reserves the right to fund projects in

total or in part, whichever best serves the objectives of the Wildfire Prevention Grants Program. Project applicants that are selected to receive partial funding will be provided with additional information on their revised funding amount, project performance period, and any other changes to their application, as needed.

PROPOSITION 4 BACKGROUND

In November of 2024, California voters approved Proposition 4, a law proposed by Senate Bill 867, to fund water, climate, wildfire, and natural resource projects across the state of California. Proposition 4, among other things, will allocate \$1.5 billion for wildfire prevention, including reducing community wildfire risk and restoring the health and resilience of forests and landscapes. (Pub. Resources Code, section 91500, et seq.) Of this amount, \$185 million was made available to CAL FIRE Wildfire Prevention Grants as follows: “for projects that prevent wildfires, increase resilience, maintain existing wildfire risk reduction projects, reduce the risk of wildfires to communities, or increase home or community hardening.” (Pub. Resources Code, section 91520, subd. (h).) Projects shall benefit disadvantaged communities, severely disadvantaged communities, or vulnerable populations. To the extent feasible, a project whose application includes the use of services of the California Conservation Corps or certified community conservation corps, as defined in Section 14507.5, shall be given preference for receipt of a grant under this division (Pub. Resources Code, section 91500, et seq.). In addition, projects that leverage private, federal, and local funding or produce the greatest public benefit will also receive priority (Pub. Resources Code, section 90050, et seq.). Proposition 4 requires that at least 40 percent of the total funds available shall be allocated for projects that provide meaningful and direct benefits to vulnerable populations or disadvantaged communities. Of this 40 percent, at least 10 percent of the total funds available shall be allocated for projects that provide meaningful and direct benefits to severely disadvantaged communities.

GOVERNOR’S EXECUTIVE ORDER N-25-25

In addition, on March 1, 2025, Governor Newsom signed Executive Order N-25-25 to ensure that wildfire-safety projects funded under Assembly Bill 100 benefit from streamlining under the [Statewide Fuels Reduction Environmental Protection Plan \(EPP\)](#) created in response to the [Emergency Proclamation issued on March 1, 2025](#). The Governor’s Forest Management Task Force identified these priorities in [California’s Wildfire and Forest Resilience Action Plan](#).

QUALIFYING PROJECT TYPES AND ACTIVITIES FOR PROPOSITION 4

The WP Grants Program can only fund Hazardous Fuels Reduction projects for Proposition 4. Please see the Hazardous Fuels Reduction project and activities below for examples.

QUALIFYING PROJECT TYPES AND ACTIVITIES FOR CCI

The WP Grants Program funds three types of activities: Hazardous Fuels Reduction, Wildfire Prevention Planning, and Wildfire Prevention Education. Below are some examples of qualifying projects and activities:

HAZARDOUS FUELS REDUCTION

- Vegetation clearance in critical locations to reduce wildfire intensity and rate of spread.
- Creation or maintenance of fuel breaks in strategic locations, as identified in CAL FIRE Unit Fire Plans, a Community Wildfire Protection Plan, or similar strategic planning document.
- Maintenance of existing fuels reduction projects paid for by CAL FIRE or any other funding sources (i.e., other state funds, federal funds, or private funds).
- Removal of ladder fuels to reduce the risk of crown fires.
- Creation of community-level wildfire prevention programs, such as community chipping days, roadside chipping, and green waste bin programs.
- Selective tree removal (thinning) to improve forest health to withstand wildfire.
- Modification of vegetation adjacent to roads to improve public safety for egress of evacuating residents and ingress of responding emergency personnel.
- Reduction of fuel loading around critical infrastructure to maintain continuity of government and other critical services.
- Projects to improve compliance with defensible space requirements as required by Public Resources Code Section 4291 (Projects eligible for CCI funds are low-income, disabled, or elderly households per CA requirements).
- Seasonal and temporary prescribed grazing using temporary infrastructure consistent with increasing the protection of people, structures, and communities.

WILDFIRE PREVENTION PLANNING

- Wildfire risk or related mapping
- Creation or update of strategic wildfire planning documents, such as:
 - Evacuation plans
 - Community Wildfire Protection Plans (CWPP)
 - Local Hazard Mitigation Plans
 - Safety Elements
 - Wildfire Prevention or Mitigation Plans

WILDFIRE PREVENTION EDUCATION

- Development and implementation of public education and outreach programs.

- Workshops, meetings, materials creation, and other educational activities with the purpose of increasing knowledge and awareness of information that could be used to reduce the total number of wildfires, acres burned, and structures lost.
- To educate the public on making homes and communities more wildfire resilient, including defensible space training.

Activities are subject to CAL FIRE approval.

II. ELIGIBILITY, CONDITIONS, AND IMPORTANT POINTS

ELIGIBILITY FOR PROPOSITION 4

- State Agencies
- Native American Tribes
- Joint Powers Authorities (JPAs) if the entities involved are eligible applicants.
- Special districts
 - Fire protection districts.
 - Community services districts
 - Water districts
 - Resource conservation districts
- Local agencies, including:
 - City, county, or city and county
- Fire Safe Councils with a 501(c)(3) designation.
- Other qualified non-profit organizations with a 501(c)(3) designation

ELIGIBILITY FOR CCI FUNDS

- State Agencies
- Federal Agencies
- Native American Tribes
- Joint Powers Authorities (JPAs) if the entities involved are eligible applicants.
- Special districts
 - Fire protection districts.
 - Community services districts
 - Water districts
 - Resource conservation districts
- Local agencies, including:
 - City, county, or city and county
- Certified local conservation corps

- Fire Safe Councils with a 501(c)(3) designation.
- Other qualified non-profit organizations with a 501(c)(3) designation

In situations where a local government has contracted with CAL FIRE for fire protection services, CAL FIRE is considered a local government for purposes of this grant program.

If an applicant has applied for a 501(c)(3) status at the time of application, that is sufficient. Applicants will have to provide the official 501(c)(3) status prior to execution of the grant agreement.

LIMITED WAIVERS OF SOVEREIGN IMMUNITY FOR NATIVE AMERICAN TRIBES

Federally recognized tribes are sovereign nations with special legal status. These projects may require limited waivers of sovereign immunity when the primary grantee (who signs the grant agreement contract) is a federally recognized tribe. This will be determined on a case-by-case basis and dependent on the type and scope of the project. The grant agreement will identify these important terms and conditions, including the potential limited waiver of sovereign immunity, to ensure the grant agreement may be enforced in case of default.

CAL FIRE will avoid seeking a limited waiver of sovereign immunity when possible and will strive to notify applicants early in the grant application review process if it is anticipated a limited waiver of sovereign immunity will be necessary. CAL FIRE is committed to working collaboratively with California Native American tribes on tailoring limited waiver of sovereign immunity terms to support tribal priorities while also meeting the state's legal obligations.

CAL FIRE will conduct a risk analysis of all projects that may involve limited waivers of sovereign immunity. In general, limited waivers of sovereign immunity will be required for projects with:

- Advance funds
- High-risk implementation projects, which may include fuels reduction, prescribed burning, cultural burning, ceremonial or other use of fire
- Organizations without demonstrated reliability in sound financial management

For questions regarding sovereign immunity, please reach out to program by emailing WPGrants@fire.ca.gov, who may refer you to discuss specifics with the appropriate person at CAL FIRE Legal.

Applicants may **not** be one of the following:

- A privately held for-profit company or corporation.
- Individual or private landowners.
- Homeowners' associations or other associations unless they have 501(c)(3) non-profit status.

ELIGIBLE COSTS INCLUDE, BUT ARE NOT LIMITED TO:

- Removal of dead, dying, diseased, or otherwise hazardous trees posing an imminent threat to public rights-of-way and public infrastructure, which may include trees on private property.
- Contracted tree removal, transportation, holding site fees, and disposal.
- Costs that are necessary and prudent to the accomplishment of the project, e.g.,
 - Project equipment not to exceed a cumulative total of \$750,000.
 - Project supplies (supplies include items under \$5,000 per unit cost). Chainsaws are an example of a supply item and are **not** considered equipment.
 - Fuel and Maintenance
 - CEQA/NEPA Costs
- All equipment purchases must be pre-approved. All pre-approved equipment purchases are owned by the grantee. Equipment cannot be purchased by subcontractors and billed to the grantee for reimbursement.

INELIGIBLE COSTS INCLUDE, BUT ARE NOT LIMITED TO:

- Removal of non-hazardous trees that do not pose an imminent threat to public health and safety.
- Costs associated with the improvement of landscaping, including planting.
- Costs that are not directly associated with the project.
- Costs already funded or budgeted through another source (i.e., supplanting)
- Income, fees, revenues, or wages lost or voluntarily waived by a local agency.
- Activities or costs associated with permanent infrastructure.
- Costs incurred before or after the project performance period.
- Cost of preparing a grant and application.
- Late fees, penalties, and bank fees.
- Gifts or gift cards. If uncertain, contact your Region.

NON-QUALIFYING PROJECT TYPES AND ACTIVITIES INCLUDE, BUT ARE NOT LIMITED TO:

- Purchase of capital equipment with a cumulative total of more than \$750,000
- Purchase of capital equipment without demonstrating how the equipment will be utilized. All equipment purchases must be pre-approved. All pre-approved equipment purchases are owned by the grantee. Equipment cannot be purchased by subcontractors and billed to the grantee for reimbursement.
- Installation, creation, upgrade, or maintenance of fire protection features, such as roads, bridges, structures, water storage facilities, or other permanent infrastructure.
- Projects or activities utilizing CAL FIRE staff without corresponding reimbursements or requests seeking funding for services already provided by CAL FIRE.

CONDITIONS AND IMPORTANT POINTS

1. The recommended funding amount is \$950,000 or less.
2. Grants can be made only to “eligible” applicants.
3. Projects must provide benefits to habitable structures and people in and near wildfire threatened communities.
4. Projects utilizing partners must provide a letter of commitment from the partner entity as proof that they have contacted the entity, the entity has the required resources (if needed) to commit toward the project, and the entity supports the project.
5. Qualifying projects and activities are limited to those where the proposed project or activity addresses the hazards and risks to wildfire threatened communities that focus on increasing the protection of people, structures, and communities.
6. Applicants must consider greenhouse gas emissions of project activities and plan to reduce emissions as much as possible during project activities.
7. Grantees must have and demonstrate to CAL FIRE the ability to plan, administer, and complete the grant project.
8. For some projects, the grantee may be required to prepare a California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA) document. Projects requiring CEQA/NEPA review are required to provide documented compliance within 12 months from the grant execution. CEQA/NEPA compliance must begin immediately after grant execution. **Documented CEQA/NEPA compliance is required prior to commencing any ground disturbing activity.**
9. A Registered Professional Forester (RPF) must design and oversee any fuel “forestry” projects, as defined in Public Resources Code (PRC) § 753, proposed on a “forested landscape,” as defined in PRC § 754. The RPF must conduct at least one site visit during active project operations to ensure vegetation removal is being conducted according to the prescription. An RPF is not required to provide the general project information required in the Scope of Work during the grant application phase, but the applicant must explain how CEQA or NEPA compliance will be met and describe RPF involvement in the Project Scope of Work and include this cost in the budget, if applicable.
 - a) *PRC §753 - “Forestry,” as used in this article, refers to the science and practice of managing forested landscapes and the treatment of the forest cover in general, and includes, among other things, the application of scientific knowledge and forestry principles in the fields of fuels management and forest protection, timber growing and utilization, forest inventories, forest economics, forest valuation and*

finance, and the evaluation and mitigation of impacts from forestry activities on watershed and scenic values, to achieve the purposes of this article. The practice of forestry applies only to those activities undertaken on forested landscapes. The professions specified in Section 772 are not practicing forestry when mitigating or recommending mitigation of impacts from previous forestry activities on related watershed or ecological values within their area of professional expertise or when recommending those mitigations for proposed timber operations. However, public, and private foresters are required to be licensed pursuant to this article when making evaluations and determinations of the appropriate overall combination of mitigations of impacts from forestry activities necessary to protect all forest resources.

b) PRC §754 - "Forested landscapes" means those trees dominated landscapes and their associated vegetation types on which there is growing a significant stand of tree species, or which are naturally capable of growing a significant stand of native trees in perpetuity, and is not otherwise devoted to non-forestry commercial, urban, or farming uses.

10. Projects outside of a "forested landscape" should consider the use of a professional ecologist, biologist, certified rangeland manager, arborist, RPF, or other professional with knowledge of local ecosystem processes to develop an appropriate fuel hazard reduction removal project.
11. CAL FIRE has the discretion to specify an earlier project completion date at the time of award based on the funds associated with the grant award. CAL FIRE will work with the grantees to ensure projects will still be achievable within the earlier timeframe.
12. Fuel reduction vegetation treatment prescriptions shall focus on increasing safety for the public and first responders, as well as reducing fire hazards to improve the protection of lives, structures, and communities. Treatments shall eliminate the vertical and horizontal continuity of vegetative fuels for the purpose of reducing the rate of fire spread, duration and intensity of fire, fuel ignitability, and the ignition of tree crowns or structures.
13. Required project deliverables to be included in the Project Scope of Work:
 - a) Pre- and post-treatment description of: (1) site conditions and project results relative to hazardous tree or vegetative conditions; (2) wildfire hazard reduction goal accomplishments, or (3) another measurable metric for evaluation of the project. This includes, but is not limited to, number of acres treated, number of parcels treated for fuel reduction for defensible space compliance, number of prevention plans created, and number of people reached in a public education project. CAL FIRE reserves the right to retain copies of these descriptions and publicly disseminate the information for its own purposes.
 - b) GIS data files supporting the project map to allow CAL FIRE to accurately document the spatial extent of the project for the duration of the grant.

- For projects and activities involving on-the-groundwork, CAL FIRE requires shapefiles to be submitted with the signed agreement and on a quarterly basis throughout the duration of the grant. (See Progress report quarterly calendar, pg. XX).

c) Documented CEQA or NEPA compliance within 12 months of grant execution, unless a longer period of time is approved by CAL FIRE. This includes the approval of a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report, or the filing of a Notice of Exemption. If compliance is not achieved or if reasonable articulation of non-compliance is not made, the grant could be subject to termination. Documented CEQA/NEPA compliance must be completed before commencing any ground disturbing activity.

14. Financial reports are required for reimbursement. Please see Appendix C for guidelines for the invoice that must be submitted with the financial report. The invoice template is found on the CAL FIRE website.

15. A Quarterly Progress Report form must be submitted under the Pending tasks “Activities report request” in the Grants Portal utilizing the required CAL FIRE Wildfire Prevention Grants Template. Grantee shall provide data reporting to CAL FIRE, including but not limited to, number of acres treated, number of parcels treated for fuel reduction for defensible space compliance, number of prevention plans created, and number of people reached in a public education project. CAL FIRE will provide grantees with the specific metrics and the reporting process. The quarterly progress report is due within 30 days of the end of every calendar quarter, even if no fiscal activity has occurred:

Quarter	Progress Report Covering	Due Date
1 st Quarter	January 1 – March 31	April 30
2 nd Quarter	April 1 – June 30	July 31
3 rd Quarter	July 1 – September 30	October 31
4 th Quarter	October 1 – December 31	January 31

16. For all Proposition 4 funded grant projects, grantees will provide CAL FIRE with updated cash flow projections. Cash flow projections will be utilized aggregately for monthly projections and semi-annually for individual projects.

17. Final financial reports for grant-related work must be submitted to CAL FIRE no later than 30 days after the project completion date.

18. A Wildfire Prevention Grants Program Final report (found on the CAL FIRE website) must be submitted *simultaneously* with the final financial report.
 - a) *Pre-implementation and post-implementation pictures must be submitted with the Final Report, along with updated GIS data files.*
19. Projects must demonstrate all efforts to reduce greenhouse gas emissions. Projects that demonstrate significant greenhouse gas emissions reductions will be favored.
20. All Wildfire Prevention Grants projects must clearly display, identify, and label themselves as being funded by CAL FIRE. Acknowledgments must contain the CAL FIRE logo as well as the following statement: Funding for this project provided by CAL FIRE's Wildfire Prevention Grants Program. Grantees must include the California Climate Investments (CCI) funding boilerplate and logo, available in the CCI [Media & Communications Style Guide](#), or the Proposition 4 logo and boilerplate language (link to be added here), along with the CAL FIRE logo on all outreach and public-facing materials including but not limited to press releases, media advisories, printed collateral, event invitations, signs, and project/program websites.
21. Each application should focus on *one or more* of the following major activities:
 - a) *Hazardous Fuels Reduction*
 - b) *Wildfire Prevention Planning*
 - c) *Wildfire Prevention Education*

Entities with more than one application should consider consolidating into just one application, especially if proposed project(s) are similar or share geographic locations. For additional assistance work with your local CAL FIRE Unit coordinator or your region representatives.

22. **Applications must be submitted in the CAL FIRE Grants Portal by August 06, 2025, at 3:00 PM Pacific Time.** It is highly recommended you submit your application before the deadline as CAL FIRE will not accept any late applications due to technical issues.
23. No reimbursable work on proposed Wildfire Prevention Grants projects may commence until there is a fully executed agreement between CAL FIRE and the grantee. An agreement is considered fully executed upon signature and approval by the State Fire Marshal or designee.
24. All project and activity work related to grants must be completed by final expiration date located in the executed Grant Agreement.
25. **No ground disturbing work** may commence until the requirements of CEQA or NEPA have been satisfied. For more details see Appendix A: Environmental Compliance for CAL FIRE Projects (CEQA).

26. Agreements must be executed by the date specified in the Agreement.
27. Reimbursement payments are expected to be issued 45 calendar days from the time of an undisputed financial report. Payments are sent via U.S. Mail; electronic payment is not available. The financial report approval process is as follows:
- a) Financial report submitted to the Region for review and approval using Grants Portal.
 - b) Unit reviews the financial report and performs a project site inspection, if applicable, to verify that invoiced work has been satisfactorily completed according to the deliverable items described in the grant documentation.
 - c) Grants Management Unit reviews and submits the financial report to the Business Service Office for payment.
28. When a Contract County is the grantee, the Contract County must contact the CAL FIRE Administrative Unit to conduct an inspection of the modification efforts prior to submitting a Financial Report in Grants Portal for completed work. The CAL FIRE Administrative Unit or designee will conduct an inspection to verify that work to be invoiced has been satisfactorily completed according to the deliverable items described in the grant documentation.
29. A resolution or attesting document may be requested for Wildfire Prevention Grants. The attestee cannot be the same individual designated to sign the agreement. Please refer to the sample resolution (Appendix B). A board resolution template is available on the CAL FIRE WP Grants website.
- Note: Where the line indicates ‘whereas the Board designates (designee’s title)’, it is recommended the applicant list the *title* rather than an individual’s name. In the event the individual retires or leaves the organization, a new resolution designating a replacement will be required if a name is listed rather than the working title. The resolution should name the designee for entering into agreements on behalf of the board and the authorized signatory for financial reports.
30. Wildfire Prevention Grants are neither designed nor intended to create or substantially support ongoing administrative positions.
31. The inclusion of indirect costs is acceptable for Wildfire Prevention Grants funded by CCI projects up to 12% of the total amount of direct grant funds provided to the grantee, minus equipment. Applicants may request from CAL FIRE a higher indirect cost rate by providing additional justification as to why a higher indirect rate is needed as well as including appropriate documentation substantiating the basis of the higher indirect rate (e.g. a copy of a federally approved Negotiated Indirect Cost Rate Agreement, etc.). In no instances may the request exceed 20%. This shall apply to all entities, including University of California (UC) and California State University (CSU) entities. Grantee must retain documentation related to the determination of the

grantee's indirect cost rate for audit purposes. Approval of the higher indirect rate is solely at CAL FIRE's discretion. Please refer to Appendix H.

32. The inclusion of indirect costs is acceptable for Wildfire Prevention Grants funded by Proposition 4 projects. The grantee may request one of the following indirect cost rates:
- a) The grantee's federal negotiated indirect cost rate, pursuant to its Negotiated Indirect Cost Rate Agreement (NICRA).
 - b) The 15 percent de minimis indirect cost rate specified in Part 200 of Title 2 of the Code of Federal Regulations.
 - c) A rate negotiated by the grantee with another state agency within the last five years.
 - d) A rate proposed by the grantee in the grantee's program application with the administering state agency if the grantee does not have an existing state rate.
 - e) Grantee can request an indirect cost rate of 12% to 20%.
 - f) up to 12% of the total amount of direct grant funds provided to the grantee, minus equipment. Applicants may request from CAL FIRE a higher indirect cost rate by providing additional justification as to why a higher indirect rate is needed as well as including appropriate documentation substantiating the basis of the higher indirect rate (e.g. a copy of a federally approved Negotiated Indirect Cost Rate Agreement, etc.). In no instances may the request exceed 20%. This shall apply to all entities, including University of California (UC) and California State University (CSU) entities. Grantee must retain documentation related to the determination of the grantee's indirect cost rate for audit purposes. Approval of the higher indirect rate is solely at CAL FIRE's discretion. Please refer to Appendix H
33. All educational materials and planning documents created and used for a Wildfire Prevention Grant project must be submitted to CAL FIRE. CAL FIRE may retain copies of these materials and utilize them for CAL FIRE's own purposes. Similarly, any Wildfire Prevention Grant project photos, videos, testimonials, or other similar information submitted to CAL FIRE throughout the performance of the project may be retained by CAL FIRE and utilized for CAL FIRE's own purposes.
34. Records in CAL FIRE's possession, including but not limited to application packages, Agreements, and grant project financial records, may be subject to public inspection or disclosure pursuant to the California Public Records Act.
35. Grantees should note that CAL FIRE will only serve in a lead agency capacity for activities related to its discretionary approval (i.e., grant-funded activities). In the circumstance where another public agency subsequently seeks to use a CAL FIRE-led Project Specific Analysis under the California Vegetation Treatment Program for CEQA compliance and there is no related discretionary approval required of CAL

FIRE, CAL FIRE would have no involvement, oversight, or other obligation in the approval, implementation, or documentation of that agency's actions.

PREVAILING WAGE REQUIREMENTS

CAL FIRE provides no opinion as to whether projects may be subject to prevailing wages. For determination for prevailing wages, please contact the Department of Industrial Relations (DIR) at [DIR Prevailing Wage](#). It is the applicant's responsibility to budget for prevailing wages in their project cost when applicable.

Please Note: Beginning July 1, 2026, certain fuel reduction work, including but not limited to residential chipping, rural road fuel breaks, and fire breaks funded by the State will be subject to prevailing wage, record keeping, and registration requirements. (California Public Resources Code section 80200 et seq.). While the requirements do not apply to any contract, subcontract, or grant agreement that is fully executed before July 1, 2026, the requirements will apply if a contract, subcontract, or grant agreement is renewed and/or amended after July 1, 2026.

GREENHOUSE GAS (GHG) EMISSIONS REQUIREMENTS

California Climate Investments (CCI) administered by CAL FIRE through the Forest Health, Wildfire Prevention, and Urban and Community Forestry Programs contribute to California's climate goals by reducing GHG emissions from wildfires, stabilizing long-term storage of carbon in biomass, and improving carbon sequestration in California's natural and working forests.

In terms of direct emissions benefits, the objectives of the WP Grants Program are to:

- Reduce GHG emissions from wildfire and prevent the need for cleanup and rebuilding of communities following destructive wildfire events
- Provide fire personnel with more opportunities to access the fire perimeter to extinguish fires more quickly, thereby reducing GHG emissions
- Encourage projects that result in smaller scale fires to reduce GHG emissions and reduce the carbon impact
- Improve health and resilience of treated areas for increased carbon sequestration
- Improve public awareness and reduce human caused wildfire ignitions
- Promote orderly growth and development through land use planning which helps to reduce GHG emissions

Eliminating wildfire starts, mitigating wildfires before they progress into wildland areas and communities, and facilitating firefighting efforts and safety all contribute to reduced wildfire emissions over time. The WP Grants Program also includes support for planning, such as

development of Community Wildfire Protection Plans, and education programs that promote fire- safe communities to capture the benefits and synergy of collective, community-wide efforts.

However, fuel reduction activities also release GHG emissions at the time of treatment, and CAL FIRE must balance emissions costs and benefits of the Wildfire Prevention and Forest Health Programs to comply with the law. Minimizing emissions of fuel treatment activities, using disposal methods other than open burning, and optimizing vegetation health options in the development of treatment prescriptions are important steps in project development to achieve balanced emissions costs and benefits.

Grantees must submit information about project size, vegetation type, location, and treatment area so that CAL FIRE staff may complete emissions calculations for the project. Calculations will be completed using an existing methodology produced by CAL FIRE and the California Air Resources Board for the Wildfire Prevention Grants Program. Emissions effects of activities that do not fit the existing methodology will be described in detail. The grant application review process will include consideration of project activities with emissions benefits.

PROPOSITION 4 REPORTING REQUIREMENTS

Wildfire Prevention Grants are funded by Proposition 4 from the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024. The funds are appropriated by the California Legislature to CAL FIRE, who is responsible for administering the funds.

Accountability and transparency are essential elements for Proposition 4. Full public disclosure is required to provide information on how administering agencies are investing appropriations and what benefits are being achieved from those investments. CAL FIRE is responsible for collecting project information and reporting.

For each grant project, grantees must submit reporting data to CAL FIRE on a quarterly basis.

Wildfire Prevention Grants are funded in whole or part by Cap-and-Trade auction proceeds appropriated by the California Legislature to CAL FIRE, who is responsible for administering funds allocated from the CCI Program.

Accountability and transparency are essential elements for CCI. Full public disclosure is required to provide information on how administering agencies are investing appropriations from the GGRF and what benefits are being achieved from those investments. CAL FIRE is responsible for collecting project information and reporting.

For each grant project with a total project cost of greater than \$1,000,000.00, grantees must submit jobs reporting data to CAL FIRE on a semi-annual basis in June and December. The reporting cycles cover information for the following periods: December 1 – May 31, June 1 – November 30. All grant projects meeting that criteria will be notified of the reporting dates and the data requirements.

III. GRANT APPLICATION REVIEW AND EVALUATION FACTORS

REVIEW PROCESS

Applications will be reviewed by CAL FIRE. The application review involves three levels:

- Local – CAL FIRE Units and Contract Counties
- Regional – CAL FIRE Northern and Southern Regional Offices
- Statewide – Statewide review team. The statewide review team will prepare a list of recommended projects and activities for consideration by the Director of CAL FIRE. The Director will make decisions on approved projects and activities taking into consideration the recommendations of the statewide review team.

Emphasis at each level will be placed on projects and activities that address hazards that reduce potential risk from wildfire in and near communities. The department shall consider the fire risk of an area, the geographic balance of projects, and whether the project is complementary to other wildfire prevention or forest health activities when awarding local assistance grants. Additionally, to the extent possible, a project or activity will not be selected if it conflicts or competes with another proposed or approved project.

EVALUATION FACTORS (RANKING CRITERIA)

In evaluating applications, CAL FIRE is seeking information that allows it to consider the following factors:

1. The grant application clearly identifies the focus of the grant as Hazardous Fuels Reduction, Wildfire Prevention Planning, or Wildfire Prevention Education.
2. The project addresses hazards and risks from wildfire.
 - a. The project includes Fire Hazard Severity Zone rankings and indicates areas and their relative proportion of Very High, High, and Moderate Fire Hazard Severity Zones as adopted by the State Fire Marshal and identified in the CAL FIRE map located at [Fire Hazard Severity Zones](#).
 - b. The proposed project is in or near a wildfire threatened community and adequately describes how it will address the hazards and risks from wildfire.
 - c. The project protects other assets of wildfire threatened communities to maintain continuity of government operations and critical services. This includes, but is not limited to, fire, police, power, water, sewer, roads, or other critical facilities. If the project involves community infrastructure, it must explain how it will address the hazards and risks from wildfire to these assets.
3. The project is related to or part of one or more strategic plans or tree removal plan:
 - a. The project is included in or consistent with one or more of the following plans:
 - i. CAL FIRE Unit Fire Plan, Contract County Fire Plan, Local Fire Plan, a CWPP, Community Evacuation Plan, tree removal plan, Fire Safe Council Action Plan, Firewise USA Community Wildfire Risk Assessment, Local Hazard Mitigation Plan, Safety Element plan, or other local plan (identified in Scope of Work) that addresses the hazards and risks from wildfire.
 - b. The project proposes to create, or update, a long-term fire hazard reduction planning document affecting or involving wildfire threatened communities, such as, but not limited to, a CWPP or Community Evacuation Plan. A strategic planning document would include a Safety Element of a General Plan and a Local Hazard Mitigation Plan with elements for increasing safety for the public and first responders.
 - c. The project removes hazardous trees in collaboration with other entities, other funding sources, or as part of a larger tree mortality project.
 - d. The project considers other projects, pending or past, in the Unit/Contract County.
 - e. The project strategically advances the protection and preparedness of wildfire threatened communities across a region or the state, while increasing safety for the public and first responders.
4. The applicant has taken steps to reduce GHG emissions as much as possible, such as chipping or mulching removed vegetation, or disposing of material through biomass

markets. The applicant is willing and able to provide project data as requested to calculate project emissions.

5. Community support/ meaningful and direct benefits exists.
 - a. The project includes **plans for external communications**, such as planned press releases, project signage, community meetings or field tours that all, or in part, reach owners and residents in the project area.
 - b. Letters of Support have been obtained.
 - c. Letters of Commitment from partnering entities are submitted with the application. Letters of commitment are required if grantee is utilizing the California or Certified Community Conservation Corps.
 - d. Please note that although matching funds are not required, the existence of matching funds is a positive factor for CCI funds.
 - e. The degree to which a project provides in-kind services and/or secured federal, state, private, or local cost share funding. Have non-monetary and/or funding resources of agencies and organizations that have been identified and secured.
6. There is an implementation plan in place.
 - a. The project includes a detailed timeline that addresses potential limitations and includes specific tasks and milestones to measure progress during implementation of the project.
 - b. The project includes an accurate set of deliverables that are measurable and attainable.
 - c. The project is fully defined with metrics to measure progress and completion. This includes, but is not limited to, number of acres treated, number of parcels treated for fuel reduction for defensible space compliance, number of prevention plans created, or number of people reached in a public education project.
7. The project budget and narrative are clear and reasonable.
 - a. The proposed budget shows how grant funds will be spent by category.
 - b. Indirect costs are reasonable for the project proposed and should generally not exceed 12% of the total direct grant request, minus equipment costs, unless a higher indirect rate is approved by CAL FIRE for CCI funds.
 - c. Costs and indirect costs are reasonable for the size, scope, and anticipated benefit of the proposed project.
 - d. For hazardous fuel reduction projects, the actual number of acres being treated is clearly defined.
8. There is demonstrated capacity to administer the grant.
 - a. The applicant shows an acceptable amount of experience in administering grants. This is largely based on successfully administering other grant-funded projects/activities over the past five years. Project proponents having no previous experience with similar projects should discuss any past experiences that may help show capacity to successfully complete the proposed project. This may include partnering with a more experienced organization that can provide project support.

- b. Discuss successes and administration of previously awarded CAL FIRE grants or grants administered by the applicant for other granting entities.
- 9. Fire Risk Reduction Community List per [Public Resources Code 4290.1](#)
 - a. [Public Resources Code 4124.7](#) requires CAL FIRE to “prioritize local assistance grant funding applications” from local agencies based on the “Fire Risk Reduction Community List.”
 - b. The prioritization required in subdivision (a) of [Public Resources Code 4124.7](#) shall not affect applications from entities that are not local agencies.
 - c. Wildfire Prevention Grant applicants will receive priority for utilizing the funding to meet the List eligibility requirements.
 - d. Wildfire Prevention Grant applicants will also receive priority if the applicant is already on the List.
 - e. Projects are selected on a competitive basis and consecutive awards are not guaranteed.
 - f. Applicants not eligible for the List are not precluded from receiving grant funds.

For more information about the Fire Risk Reduction Community List, please visit the [Board of Forestry website](#)

APPLICATION PROCESS AND PROJECT ADMINISTRATION

Applicants should work with the local CAL FIRE Unit for guidance in developing project plans for your application. Find your [local CAL FIRE Unit contact](#) as listed by county. Building a relationship with the local CAL FIRE Unit enhances the potential for a successful application and grant award.

Applications not received by the deadline, not submitted in the CAL FIRE Grants Portal, or that do not adhere to the procedures in this guide, will not be accepted or considered.

STAGE 1 - PROJECT APPLICATION

Due August 06, 2025, at 3:00 PM Pacific Time

ELECTRONIC APPLICATION SUBMISSION IN THE CAL FIRE GRANTS PORTAL SOLICITATION LINK ON THE [WP GRANTS WEBSITE](#) AND IN THE WP GRANTS MAPPING CENTER [PROJECT MAPPING PROGRAM](#):

The Grants Portal WP Grants solicitation link and a Grants Portal user guide can be found on the [Wildfire Prevention Grants website](#).

Entities with more than one application should consider consolidating into just one application, especially if proposed project(s) are similar or share geographic locations. For additional assistance, work with your local CAL FIRE Unit coordinator or your region representatives.

Upload all documents related to your application to the Grants Portal no later than **3:00 PM Pacific Time on August 06, 2025**. Instructions on how to apply through the Grants Portal can be found in the [Grants Portal Application Submittal User Guide](#).

The Grants Portal will issue a Project Tracking Number for each application.

Please use this file naming structure (Project Tracking Number plus document name) for attachments (if you have multiples of one file, please make it into a zip file) uploaded in the Grants Portal. Below is an example (the Grants Portal will assign the actual Project Tracking number that you will use):

- 25-WP-UUU-XXXXXXXX-STD 204.pdf
- 25-WP-UUU- XXXXXXXX-Letter of Support.pdf
- 25-WP-UUU- XXXXXXXX-Letter of Commitment.pdf

PROJECT MAPPING PROGRAM

In addition to the CAL FIRE Grants Portal application package, each applicant must submit online mapping in our WP Grants Mapping Center [Project Mapping Program](#) database. Submit your application in the Grants Portal first to obtain the auto-generated Project Tracking Number, which you will need for the mapping program. The online mapping submission consists of submitting a Geopoint for all project types. For Hazardous Fuels Reduction projects, you also will need to submit treatment area polygon(s). The instructions on how to draw and submit a Geopoint and Polygon in the [Project Mapping Program](#) can also be found at [CAL FIRE WP Grants](#). There is a video and a quick reference guide with screenshots of the online mapping program.

- **Applications for Hazardous Fuel Reduction that do not include Treatment Area Polygon(s) in the Project Mapping Program will not be accepted.**
- **Applications for Wildfire Prevention Planning and Wildfire Prevention Education projects will submit a Geopoint only.**

Complete all documents accurately to avoid delays due to corrections and revisions prior to final approval. If revisions are necessary during Stage 2, then the revised documents will be used in the final grant agreement between the State and the grantee.

- Late submissions will be rejected. No exceptions. Late is defined as: after 3:00 PM Pacific Time on the due date according to the date stamp on the CAL FIRE Grants Portal. To avoid possible issues with the Grants Portal (such as internet connectivity and internet speed), applicants are highly encouraged to apply as early as possible.

- Please retain a copy of all documents uploaded to the CAL FIRE Grants Portal for your own records.

DISQUALIFICATION OF APPLICATION

CAL FIRE may consider an application inadequate and, therefore, disqualified from the selection process for several reasons. These may include, but are not limited to, the following:

- Application is not complete.
- Application contains significant inconsistencies with spatial data or project acres proposed for treatment.
- The application is not submitted by an eligible applicant in the Grants Portal.
- The project does not meet any of the other eligibility criteria outlined in the Grant Guidelines.

STAGE 2 - GRANT APPLICATION REVIEW AND SELECTION

Sacramento staff will review the project application packages for completeness and determine if the project meets the objectives of the program. Applications found to meet the initial criteria will continue in the multi-level review and selection process.

Incomplete applications will be disqualified.

Notification of grants selected for funding will be sent to the applicant. The grant agreement package for successful grant applicants will be emailed after selection and will include any required grant agreement forms and instructions to proceed to Stage 3. The grant agreement template can be found online, but may be subject to change prior to the execution of a final agreement.

[2024 Standard Grant Terms and Conditions](#)

STAGE 3 - GRANTS AWARDED

Awarded grant applicants shall review and return original signed agreements, and any additional information required, following the instructions provided in the correspondence. Grant agreement packages not completed or received by the agreement deadline may not be eligible for funding.

STAGE 4 – COMPLETED GRANT AGREEMENTS

Once the grant agreement is received and signed by the State Fire Marshal or designee, the approval process is complete. All agreements must be signed and submitted per deadlines established by CAL FIRE.

A CAL FIRE designee will be named as the designated contact. The CAL FIRE designee will work with the Region Program Manager on any grant project issues.

The CAL FIRE designee will conduct periodic and final inspections to ensure compliance with the project plan and environmental rules and regulations. All project messaging and documents must be approved by CAL FIRE.

CAL FIRE may perform an audit at any time during or upon completion of the project as described in this guide under “State Audit.”

Grant Termination Date: All project and activity work related to the grant must be completed by the project completion date identified in the executed grant agreement.

PROJECT AMENDMENTS, MODIFICATIONS, AND TERMINATIONS

Before work on the project begins, a Grant Agreement may be terminated by CAL FIRE or the grantee upon 30 days advanced written notice to the other party. After work begins on the Project, termination may occur: (1) if CAL FIRE and the grantee mutually agree to terminate the agreement; (2) if the State determines Grantee has made a material misrepresentation, violated this Agreement, failed to fulfill its obligations under this Agreement, or otherwise determines there is cause to do so; or (3) if the State gives 30-days written notice of termination to Grantee.

Once a Grant Agreement has been signed, it may only be amended with advanced written consent of both CAL FIRE and the grantee. Any amendment requests including the ability to extend the project timeline, where permissible, must be submitted to CAL FIRE sixty (60) days before the agreement end date using the Grants Portal system. CAL FIRE reserves the right to waive the sixty (60) days in extenuating circumstances.

A grantee wishing to change the scope or budget of an approved project at any stage shall submit the proposed change in writing, on entity letterhead, to CAL FIRE for review. Any change must be consistent with the need cited in the original application and authorizing legislation. Any modification or alteration to the grant agreement on file must be submitted to the State for review and may require a new signed amended agreement. Any reduction in the actual number of acres being treated in a hazardous fuel reduction grant may result in a corresponding reduction of the grant award.

ACCOUNTING REQUIREMENTS

The grantee shall maintain an accounting system that follows Generally Accepted Accounting Principles. The accounting system must accurately reflect fiscal transactions, using the necessary controls and safeguards. This system shall provide an adequate audit trail, including original source documents such as receipts, progress payments, invoices, purchase orders, timecards, canceled checks, etc. Please redact account numbers and personal identifying information before submitting invoices. The system shall also provide accounting data so the total cost of each individual project can be readily determined. CAL FIRE may request records and documentation at any time. These records shall be retained by the grantee for a period of three years after final payment is made by the State or one year after final disposition of any disputed audit findings, whichever occurs later, unless it is the grantee's policy to retain records for a longer duration. **Avoid audit exceptions – keep accurate records.**

LOSS OF FUNDING

The following are examples of actions that may result in a grantee's loss of funding:

- Grantee withdraws from or fails to complete the funded project (in substantial conformance with the Agreement).
- Grantee fails to submit all required documentation within the time periods specified in the grant agreement.
- Grantee fails to submit evidence of CEQA or NEPA compliance within 12 months of the execution of the agreement as specified by the grant agreement.
- Grantee changes the project scope without the approval of the State.
- Grantee or the State terminates the project in accordance with the terms and conditions in the grant agreement.
- Grantee engages in activities that would lead to the project not achieving GHG emissions reductions.
- Grantee or anyone acting on behalf of Grantee shall not engage in fraud, waste, or the abuse of Grant Funds in violation of California Penal Code section 424 et seq. Grantee shall cooperate in any investigation of such activities that are suspected in connection with this Agreement.
- Recipients of Grant Funds shall receive no more than the fair market value of an arm's length transaction for any goods or services provided under this Agreement. Grantee shall provide evidence to the State upon request of compliance with this Section 11.e. Violation of this Section 11.e. will result in a violation of California Penal Code section 424, subd. a.

PROPOSITION 4 INDIRECT COST RATES

For grants awarded for projects under Proposition 4, Wildfire Prevention Grants will reimburse the grantee's indirect costs. The grantee may request one of the following indirect cost rates:

- The grantee's federal negotiated indirect cost rate, pursuant to its Negotiated Indirect Cost Rate Agreement (NICRA).
- The 15 percent de minimis indirect cost rate specified in Part 200 of Title 2 of the Code of Federal Regulations.
- A rate negotiated by the grantee with another state agency within the last five years.
- A rate proposed by the grantee in the grantee's program application with the administering state agency if the grantee does not have an existing state rate.
- Grantee can request an indirect cost rate of 12% to 20%.

In the event of an audit, projects with budgets that include administrative costs must be able to document the appropriateness of these expenses. If the applicant does not have an existing NICRA, a typical method for documentation of administrative overhead expenses is a Cost Allocation Plan (CAP). A CAP is a formal accounting plan used to calculate and document the method for recovering overhead costs. The CAL FIRE strongly recommends that grantees consult with an accounting professional to develop an appropriate method for calculating the overhead rate and prepare a CAP.

PROJECT COSTS

Project costs must be consistent with the approved project and incurred during the performance period as specified in the grant agreement.

Budget Item	Eligible Cost	Required Documentation
Salaries and Wages (Grantee Only)	Salaries and wages of employees employed by the grantee who are DIRECTLY engaged in the execution of the grant project. Limited to actual time spent on the grant project. Leave benefits (i.e., sick leave, vacation, etc.) that are consistent with the grantee's leave benefit policy may be charged to the grant in proportion to the percentage of time worked on the grant within the pay period. Examples of expenditures include time-related to site visits and project monitoring and completion of reporting related to the grant project. Staff time related to accounting, business services, etc. are allowed only if those functions are not included in the grantee's overhead cost.	A payroll summary of all employees' time spent on the project must be provided with invoices requesting salary/wage reimbursement. Payroll documentation should show a nexus between time worked on the project and wages paid to the employee after the fact. Timesheets or similar documentation detailing days and hours worked on the project must be maintained and retained by the grantee for audit purposes but should not be submitted to CAL FIRE unless otherwise instructed. Any leave charged to the grant must reflect the calculation of time spent on the grant compared to overall time worked. A statement certifying that leave charged to the grant is in proportion to employee's time spent must be included as part of the supporting documentation. All salary and wages charged to the grant must tie back to the grantee's accounting records.
Benefits (Grantee Only)	Employer contribution share of fringe benefits associated with employees (paid from salaries and wages Budget Item) who are directly engaged in the execution of the grant project. This will include Social Security, Medicare, Health Insurance, Pension Plan costs, Payroll taxes, etc. as applicable for the specific employee.	Same documentation as Salaries and Wages. Payroll summary documentation showing wages and hours paid to employee and associated fringe benefits. Back-up documentation to be retained by grantee for audit records.
Contractual	Direct consultant and contractual services necessary to achieve the objectives of the grant. Examples of contractual costs will be RPF supervision/certification, professional/consultant services (the costs of consultant services necessary for project planning and implementation), Wildfire Prevention contractor, etc. Procurement of contractual services should be documented to ensure selection on a competitive basis and documentation of price analysis.	Invoices from Consultant/Contractor identifying expenditure, services performed, and period of services. When reporting acres, contractor invoices must identify when and where the acres were treated. Documents related to consultant/contractor selection analysis must be kept by the grantee and made available for audit purposes, upon request. Use of California Conservation Corps or certified community conservation corps is exempt from competitive selection.
Travel (Grantee Only)	Travel costs associated with travel to and from project sites, meetings, etc. directly related to the grant project and must be considered reasonable and necessary for the completion of the project. Absent a written policy, per diem shall not exceed the California Standard Per Diem Rate allowable by the U.S. General Services Administration . Mileage rates shall not exceed the rates allowable by the IRS. If not using the per diem rate by the U.S. General Services, the Grantees' travel policy must be submitted and approved by CAL FIRE and must be submitted with the application.	Receipts identifying travel costs (i.e., lodging, rental cars). Mileage must be documented by either employee travel claims that are signed by the employee or vehicle mileage logs for vehicles owned by the grantee. Per Diem must be documented by employee travel claims.

Budget Item	Eligible Cost	Required Documentation
Supplies (Grantee Only)	Supplies that are used in the direct support of the project are allowable. Supplies exceeding \$500 per unit cost shall be documented to ensure procurement of supplies on a competitive basis and documentation of price analysis. Any technology must be identified and pre-approved by CAL FIRE. Supplies include items under \$5,000 per unit cost. (e.g., chainsaws etc.) All food costs must be pre-approved and explicitly listed in the Scope of Work, Budget, and Budget narrative in order to be considered an eligible cost.	Receipts identifying item purchased, cost, and date of purchase. Documentation related to price analysis of procurement of supplies exceeding \$500 must be kept by the grantee and made available for audit purposes upon request.
Equipment (Grantee Only)	Equipment is an item of \$5,000 or more per unit cost and has a tangible useful life of more than one year. Purchase of equipment may not exceed \$750,000 and must be owned by the grantee. The cost to lease equipment to use in the grant project may be charged to the grant but listed under the 'Other' budget category. A cost-benefit analysis to justify the cost of purchasing equipment versus leasing, must be identified in the scope of work. Procurement of equipment must be done on a competitive basis and include documentation of price analysis. The grantee must include in the application package the proposed use and maintenance plans for equipment after the performance period of the grant. Disposition of equipment beyond the project performance period is subject to CAL FIRE approval. If grantee fails to complete grant or dissolves during grant, grantee must dispose of the equipment in accordance with an equipment disposition plan that is approved by CAL FIRE in advance. Equipment purchased using grant funds can not be used as collateral, financed, or sold without written approval from the State at its discretion.	Cost of equipment purchased shall be substantiated by purchase receipt and a bid quote worksheet at the time of invoicing. All documentation related to price analysis of procurement of equipment must be kept by the grantee and made available for audit purposes, upon request. Disposition of the equipment must be submitted and approved by CAL FIRE every two years upon completion of the project until notified in writing by CAL FIRE that reporting is no longer required.
Other (Grantee Only)	Other costs that do not fit in any of the above categories. The cost must be directly related to the grant project. A cost (such as rent, utilities, phones, general office supplies, etc.) that must be apportioned to the grant is considered indirect cost unless written justification is submitted and approved by CAL FIRE. Use of equipment owned by the grantee may be charged to the grant at a rate set by the California Department of Transportation Labor Surcharge and Equipment Rental Rate Guide. Example, grantee has a rental rate in Other for equipment and Fuel in Supplies for said equipment. As per the Cal-Trans guideline, fuel is calculated and accounted for in the rate.	Invoices or receipts identifying the item and cost charged to the grant. Cost of leased equipment charged to the grant must be substantiated with receipts identifying equipment leased, dates equipment was leased, lease rate and total cost. Use of grantee equipment must be substantiated with an equipment usage log that identifies the equipment used, rate, and total rental cost.

Budget Item	Eligible Cost	Required Documentation
Indirect Costs (Grantee Only)	Indirect Costs are costs associated with doing business that are of a general nature and are incurred to benefit two or more functions within the grantee organization. These costs are not usually identified specifically in the grant agreement, project, or activity, but are necessary for the general operation of the organization. Examples include salaries and benefits of employees not directly assigned to a project; functions such as personnel, accounting, budgeting, audits, business services, information technology, janitorial, and rent, utilities, supplies, etc. Functions included as direct versus indirect costs must be applied consistently for all activities within the Grantee organization, regardless of fund source. The maximum allowable indirect charge for this grant program for all entities including UC's and CSUs should generally not exceed 12%, unless an exemption is approved by CAL FIRE (see Indirect Rate Exemption). For grants awarded for projects under Proposition 4, Wildfire Prevention Grants will reimburse the grantee's indirect costs. The grantee may request one of the following indirect cost rates: The grantee's federal negotiated indirect cost rate, pursuant to its Negotiated Indirect Cost Rate Agreement (NICRA). • The 15 percent de minimis indirect cost rate specified in Part 200 of Title 2 of the Code of Federal Regulations. • A rate negotiated by the grantee with another state agency within the last five years. • A rate proposed by the grantee in the grantee's program application with the administering state agency if the grantee does not have an existing state rate. • Grantee can request an indirect cost rate of 12% to 20%.	Applied on a percentage (%) basis on direct costs except for equipment. Documentation related to the determination of the grantee's indirect cost rate must be retained by the grantee and made available upon request for audit purposes.

Funds will be disbursed only when there is a fully executed grant agreement between CAL FIRE and the grantee. An agreement is considered fully executed upon signature and approval by the State Fire Marshal or designee. All payments are made on a reimbursement basis, except in cases where CAL FIRE authorizes advance payments. (i.e., the grantee is invoiced for services, products, or supplies; invoices CAL FIRE for same; and is reimbursed by the State upon approval of the invoice). **No work prior to or after the grant period will be reimbursable.**

CAL FIRE has the legal right to conduct a spot inspection to verify that work invoiced has been satisfactorily completed. If a financial report is incomplete or non-reimbursable, it will be returned to the grantee.

STATE CONFLICT OF INTEREST LAWS

All applicants, individuals who participate in the review of submitted Project Proposals, and grantees are subject to state and federal conflict-of-interest laws. Applicable statutes include, but are not limited to, California Government Code section 1090 and Public Contract Code sections 10365.5, 10410, and 10411. These statutes include, but are not limited to, prohibitions on the following conduct:

1. **Current State Officers or Employees:** No State officer or employee shall engage in any employment, activity, or enterprise from which the officer or employee receives compensation or has a financial interest, and which is sponsored or funded by any State agency, unless the employment, activity, or enterprise is required as a condition of regular State employment. No State officer or employee shall contract on his or her own behalf as an independent contractor with any State agency to provide goods or services.
2. **Former State Officers or Employees:** For the two-year period from the date he or she left State employment, no former State officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements, or any part of the decision-making process relevant to the contract while employed in any capacity by any State agency. For the twelve-month period from the date he or she left State employment, no former State officer or employee may enter into a contract with any State agency if he or she was employed by that State agency in a policy-making position in the same general subject area as the proposed contract within the twelve-month period prior to his or her leaving State service.

Any individual who has participated in planning or setting priorities for a specific grant solicitation over and above the public comment process or who will participate in any part of the grant development and negotiation process on behalf of the State is ineligible to receive funds or personally benefit from funds through that solicitation. Failure to comply with conflict-of-interest laws, including business and financial disclosure provisions, will result in the Project Proposal being rejected or any grant agreement made in violation of the conflict-of-interest laws being

declared void. CAL FIRE may request additional documentation during the performance of the grant, including review of financial progress reporting, or during State Audit to verify that a conflict of interest does not exist. Other legal actions may also be taken.

If an applicant has any questions about compliance with conflicts of interest laws, the applicant should consult the California Fair Political Practices Commission or a qualified attorney.

CAL FIRE may require Grantee to establish conflict-of-interest policies and procedures and maintain adequate controls to ensure that the grantee or anyone acting on behalf of the grantee does not have any conflicting personal or financial interest associated with activities funded by the grant project. CAL FIRE may request additional documentation during the performance of the grant, including during review of financial or progress reporting, or during State Audit to verify that a conflict of interest does not exist.

Private Benefit Prohibited

Grantee will not be reimbursed for any costs that exceed the fair market value of an “arm’s length” transaction for goods or services rendered in furtherance of the grant project.

An “arm’s length” transaction exists where the parties have an adverse (or opposing) interest. For example, a seller wants to sell his goods at the highest possible price, while a buyer wants to buy at the lowest possible price. These are adverse interests. In negotiating with a person, an adverse interest is assumed if that person is otherwise unrelated to you in the sense of not being in a position to exercise substantial influence over you or your affairs. If the person is in a position to exercise substantial influence over your affairs, then an arm’s length standard requires additional precautions to eliminate the effect of the relationship. Using a conflict-of-interest policy, information about comparable transactions between unrelated parties, and reliable methods for evaluating the transaction, are examples of precautions that would help make the negotiation process equivalent to one between unrelated persons.

Fair market value is the price at which goods, services, or property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy, sell, or transfer the goods, services, or property, and both having reasonable knowledge of relevant facts.

Grant recipients must avoid or scrutinize transactions that exhibit signs of actual or possible conflicts-of-interests and should avoid even the appearance of conflicts. The appearance of a conflict of interest occurs when a person in a position of authority over an organization, such as a director, officer, or manager, may benefit personally from a decision he or she could make. Conflict-of-interest red flags may also include organizations that engage in transactions that are less than “arm’s length” indicating there may be a bargain or gift element, such as transactions with friends and relatives, or receiving gifts from contractors. In addition, transactions with organizations that have several employees or Board members who are personally or professionally related should be highly scrutinized.

ADVANCE PAYMENTS

In accordance with Public Resources Code section 4124.5, or other applicable statutory authority, advance payments may be considered for non-profit organizations, local agencies, Resource Conservation Districts, special districts, and Native American tribes. Advance payments are solely at CAL FIRE's discretion and eligibility and may be subject to change. An advance request form must be submitted identifying how funds may be used over a six-month period.

Advance payments must be deposited into a federally insured, interest-bearing account that provides the ability to track interest earned and withdrawals. Any interest earned on advance payment funds must be accounted for as project income and used toward offsetting the project cost or returned to the STATE. Refer to Appendix K on calculations and supporting documentation for interest income. All other advance payment requests shall not exceed 25% of the total grant award.

Advances must be fully utilized within a six-month period unless additional time has been requested and is approved by CAL FIRE. Any Advance Payment, or portion thereof, that is not spent within the later of six months or the spending timeline approved by the CAL FIRE must be returned to the State and will be returned to the grant balance.

Additional advances may not be requested until acceptable documentation is received that the previous advance has been fully liquidated on eligible expenses. In addition, an accountability report must be submitted to CAL FIRE every four months upon receipt of funds until funds have been fully liquidated.

CAL FIRE processes for approving and managing grant advances are subject to change.

STATE AUDIT

Projects may be subject to an audit at any time during the Project Performance Period and for three years following Project completion. The purpose of the audit is to verify that project expenditures were properly documented.

If your project is selected for audit, you should include all books, papers, accounts, documents, or other records of the grantee, as they relate to the project for which state funds were granted.

- To expedite the audit, the grantee must have the project records readily available, including the source documents, and canceled warrants. The grantee must also make an employee who has knowledge of the project and the accounting procedure or system available to assist the state auditor. The grantee must provide a copy of any document, paper, record, or the like as requested by the auditor.
- Projects may be suspended if the audit reveals discrepancies, or if CAL FIRE believes there are improprieties or issues with the project.

Grantees must keep source documents for all expenditures related to each grant for at least three (3) years following project completion or one year following an audit, whichever occurs later, unless the grantee has a longer retention policy.

EXPLANATION OF TERMS

TERM	EXPLANATION
Agreement	A legally binding agreement between the State and another entity.
Amendment	A formal modification or a material change of the Agreement, such as terms, cost, budget, or scope of work.
Applicant	The entity who has applied, requesting grant funds.
Application	The form identified by CAL FIRE as the document to be submitted by an applicant requesting grant funds, and its required supporting attachments, as required by the enabling legislation or program.
Appropriation	A Legislative budget authorization from a specific fund to a specific agency or program to make expenditures or incur obligations for a specific purpose and period.
Authorized Representative	The designated person or position identified by the Grantee as the agent to sign all required grant documents including, but not limited to, grant agreements, Application forms, and payment requests.
CEQA	The California Environmental Quality Act as stated in the PRC § 21000 et seq.; Title 14 California Code of Regulations (CCR) §15000 et seq. CEQA is a law establishing policies and procedures that require agencies to identify, disclose to decision makers and the public, and attempt to lessen significant impacts to environmental and historical resources that may occur because of the agency's proposed Project.
Consultant Services	Services which provide a recommended course of action or personal expertise, such as accounting or a Registered Professional Forester (RPF).
Contractor	An entity contracting with the grantee for services and generally receives a form 1099 for tax purposes.
Direct Costs	Expenses of doing business that are directly attributable to the Project. Examples of direct costs are salaries and benefits of employees directly associated with a Project or expenses of items used directly by the Project.
Employee	Individuals employed directly by the grantee and who generally receive a W-2 for tax purposes.
Encumbrance	A commitment of funds guaranteeing a source of payment for a specific Agreement.

Execution of an Agreement	The act of signing an Agreement, which provides a legal basis for required performance by parties to the Agreement.
Grantee	The entity that has an executed grant agreement for the award of grant funds.
Indirect Costs	Expenses of doing business that are of a general nature and are incurred to benefit at least two or more functions within an organization. These costs are not usually identified specifically with a grant, grant agreement, Project, or activity, but are necessary for the general operation of the organization. Examples of Indirect Costs include salaries and benefits of employees not directly assigned to a Project; functions, such as personnel, business services, information technology, janitorial; and rent, utilities, supplies, etc. Indirect Costs may be referred to as overhead or administrative costs.
Modification	An agreement modification is an informal agreement that moves dollars in the line item and task budgets not to exceed 10% of total grant amount; changes deliverable due dates or makes a minor change in the work in accordance with the intent of the legislation. It does not require a formal amendment of the grant agreement. See the modifications section for further requirements.
Non-profit Organization	Any California corporation organized under Sections 501(c)(3) of the Federal Internal Revenue Code. A letter of determination certifying non-profit status will be required prior to Project approval.
Operating Expenses (Direct Costs)	Any cost that can be specifically identified as generated by and in accordance with the provisions or activity requirements of the grant agreement.
Payee Data Record (Std. 204)	Form Std. 204, "Payee Data Record" is required for all grant recipients. The form must be submitted to establish a vendor number for payment and to have funds encumbered.
Personnel Services	This budgeted amount includes salaries and benefits for wage-earning personnel employed by the grantee/contractor (not a subcontractor) and working on the Project.
Program Income	Income that is generated directly by Grantee's performance of the Project, including any interest earned on Advance Payments.
Project Performance Period	The period during which the Project Scope of Work costs may be incurred, and the work described in the Project Scope of Work must be completed, billed, and paid for by the State. Only eligible costs incurred during the Project Performance Period will be paid.
Project	The term "Project" means the activity or work to be accomplished utilizing grant funds and match (if applicable).
Project Scope of Work	The term "Project Scope of Work" defines the individual scope of work or activity describing in detail the proposed tasks identified, as described in enabling legislation and in the grant agreement.
Project Budget Narrative	The term "Project Budget Narrative" defines the proposed detailed budget plan.

Resolution	The purpose of a resolution by a grantee's governing body is to allow the entity to sign Agreements and amendments for a specific project, i.e., it allows the designated entity to enter into an agreement with the State of California, and it designates someone to sign on behalf of the grantee's governing board. A signed resolution can be submitted at the time the signed grant agreements are returned to CAL FIRE's Grants Management Unit, Sacramento Headquarters.
Severely disadvantaged community	A community with a median household income of less than 60 percent of the area average or less than 60 percent of statewide median household income.
Vulnerable population	A subgroup of the population within a region or community that faces a disproportionately heightened risk or increased sensitivity to the impacts of climate change and that lacks adequate resources to cope with, adapt to, or recover from such impacts.

Appendix A: Environmental Compliance for CAL FIRE Projects (CEQA)

Appendix B: Sample Resolution (not required)

Appendix C: Invoice

Appendix D: State of California Standard Required Forms

Appendix E: CalMAPPER (Awarded Grants Only)

Appendix F: Low-Income and Disadvantaged Communities

Appendix G: PDF Project Map

Appendix H: Justification for indirect rate above 12% and supporting documentation

Appendix I: Application Package

Appendix J: Additional Resources

NOTE: Grantee must submit proof of California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA) compliance within **one year** of the execution of the grant agreement, unless a longer period is approved by CAL FIRE. To ensure this occurs in a timely manner, the grantee should contact the Department of Forestry and Fire Protection (CAL FIRE) Local Unit Contact as soon as possible after receiving the executed Grant Agreement.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

Project work involving Federal actions must comply with NEPA.

Regardless of jurisdiction, CEQA Compliance is required when using Wildfire Prevention grant funds. For Federal jurisdictions that meet the requirements of Public Resources Code (PRC) section 4799.05(d)(1), a CEQA notice of exemption will need to be filed. This means that prescribed fire, reforestation, habitat restoration, thinning, or fuel reduction projects undertaken, in whole or in part, on federal lands to reduce the risk of high-severity wildfire that have been reviewed under NEPA may not need additional analysis and would be statutorily exempt from CEQA. See Item #5 below.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Within one year of the execution of the grant agreement and prior to commencing any work that could impact the environment, CAL FIRE requires proof of adequate compliance with CEQA. This may be accomplished by one or more of the following methods:

1. Notice of exemption filed with the State Clearinghouse and the county clerk in the manner specified in subdivisions (b) and (c) of Section 21108 or subdivisions (b) and (c) of Section 21152.
2. Initial study and negative declaration or mitigated negative declaration and all associated noticing documents filed with the State Clearinghouse and the county clerk.
3. Draft and final environmental impact report and all associated noticing documents filed with the State Clearinghouse and the county clerk.
4. *Including shapefiles identifying the “treatment” area surveyed where activities will be conducted during the grant period.*
5. Timber harvesting permit or notice in compliance with the California Forest Practice Act and Rules for projects that undertake timber operations per PRC § 4527. Note that use of timber harvest documents for CEQA compliance in the absence of timber operations is not appropriate, as the Forest Practice Act and Rules do not apply in these circumstances. Applicants that will be utilizing timber harvest documents for CEQA compliance should identify within the harvest documents that they are receiving CAL FIRE grant funding.
6. Finding of no significant impact-decision notice, categorical exclusion- decision memo, or environmental impact statement-record of decision prepared in compliance with the

NEPA for projects that are exempt from CEQA pursuant to PRC § 4799.05(d)(1). When using a NEPA document, per PRC § 4799.05(d)(4)(A), a CEQA notice of exemption needs to be filed with the State Clearinghouse and with the county clerk in the county in which the project will be located in the manner specified in subdivisions (b) and (c) of Section 21108 or subdivisions (b) and (c) of Section 21152. The lead agency will also need to post the notice of exemption on its internet website together with a description of where the documents analyzing the environmental impacts of the project under the federal National Environmental Policy Act of 1969 are available for public review.

7. Completed and accepted project-specific analysis under the CalVTP ([California Vegetation Treatment Program](#)) and all associated noticing documents filed with the State Clearinghouse and the county clerk.

1

For exempt projects where the grantee is a public agency¹, the grantee must prepare and file the notice of exemption for an exempt project. For exempt projects where the grantee is not a public agency (e.g., Fire Safe Council), CAL FIRE or another public agency will be responsible for preparing and filing the notice of exemption.

For non-exempt projects where the grantee is a public agency, the grantee will assume the role of lead agency. For non-exempt projects where the grantee is not a public agency (e.g., fire safe council), CAL FIRE or another public agency will need to assume the role of lead agency. The lead agency is responsible for: (a) performing the necessary environmental effects analysis; (b) preparing environmental documents; and (c) filing associated notices.

The lead agency may require the grantee to prepare, or retain a consultant to prepare, the environmental documents required for demonstrating adequate compliance with CEQA. When CAL FIRE is the lead agency, the grantee must work closely with CAL FIRE staff to ensure the environmental documents reflect CAL FIRE's independent judgement.

¹ "Public agency" includes the following:

PRC § 21062. "Local agency" means any public agency other than a state agency, board, or commission. For purposes of this division a

Grantees should ensure they ask for adequate funds for environmental work when applying for grants. When preparing their budgets, grantees should consider the need to contract with appropriate resource professionals to do the necessary environmental effects assessment and document preparation work. This may include biologists, professional archaeologists, air quality experts, registered professional foresters, environmental planners, etc.

For all environmental documents where CAL FIRE is the lead agency, except timber harvesting permits or notices, cultural resources must be assessed per the procedures outlined in *Cultural Resources Review Procedures for CAL FIRE Projects*. This may require the grantee to consult with the appropriate CAL FIRE archaeologist to determine if impacts to cultural resources are possible and what, if any, assessment or mitigation work will have to be done. This consultation should be done as early in the planning process as possible.

CAL FIRE must review all environmental documents and associated notices for adequate compliance with applicable procedures and CEQA.

redevelopment agency and a local agency formation commission are local agencies, and neither is a state agency, board, or commission.

PRC § 21063. "Public agency" includes any state agency, board, or commission, any county, city and county, city, regional agency, public district, redevelopment agency, or other political subdivision.

14 CCR § 15368 "Local agency" means any public agency other than a state agency, board, or commission. Local agency includes but is not limited to cities, counties, charter cities and counties, districts, school districts, special districts, redevelopment agencies, local agency formation commissions, and any board, commission, or organizational subdivision of a local agency when so designated by order or resolution of the governing legislative body of the local agency.

14 CCR § 15379 "Public agency" includes any state agency, board, or commission and any local or regional agency, as defined in these Guidelines. It does not include the courts of the state. This term does not include agencies of the federal government.

**RESOLUTION OF THE (TITLE OF GOVERNING BODY/CITY
COUNCIL/BOARD OF SUPERVISOR/BOARD OF DIRECTORS) OF
(CITY/COUNTY/DISTRICT), STATE OF CALIFORNIA**

Resolution Number: _____

WHEREAS, the Governor of the State of California in cooperation with the California State Legislature has enacted State of California **Climate Investment**, which provides funds to the State of California and its political subdivisions for **fire prevention programs**; and

WHEREAS, the State Department of Forestry and Fire Protection (CAL FIRE) has been delegated the responsibility for the administration of the program within the State, setting up necessary procedures governing application by local agencies, non-profit organizations, and others under the program, and

WHEREAS, the applicant will enter into an agreement with the State of California to carry out **(PROJECT TITLE)** project;

NOW, THEREFORE, BE IT RESOLVED that the **(GOVERNING BODY)**:

1. Approved the filing of an application for **"California Climate Investments Wildfire Prevention Grants Program"**; and
2. Certifies that said applicant has or will have sufficient funds to operate and maintain the project; and,
3. Certifies that funds under the jurisdiction of **(GOVERNING BODY)** are available to begin the project.
4. Certifies that said applicant will expend grant funds prior to **(GRANT DEADLINE)**.
5. Appoints **(POSITION TITLE)** or a designee, to conduct all negotiations, execute and submit all documents including, but not limited to applications, agreements, amendments, payment requests and so on, which may be necessary for the completion of the aforementioned project.

The foregoing resolution was approved and adopted the ____ day of _____, 20__ by the following vote:

AYES:

NOES:

ABSENTS:

Signature

Title

---CERTIFICATION OF RESOLUTION---

Please note the person attesting cannot be the person(s) appointed in (5.)

ATTEST:

I _____, **(POSITION TITLE)** of the **(GOVERNING BODY)**, witness my hand or the seal of the **(GOVERNING BODY)** on the ____ day of _____, 20__.

Signature

Title

OFFICIAL SEAL OR
NOTARY CERTIFICATION
(If Applicable)

INVOICE GUIDELINES

It is preferred, but is not required, that grantees use the [invoice template](#) posted on the CAL FIRE Grants website. Due to differences in accounting systems used by the grantee, the grantee must include the following elements when submitting a payment request, either on the grantee's invoice or as an attachment to the invoice. If a grantee chooses to use their invoice in lieu of the invoice template provided, the invoice must be put on grantee's official letterhead.

1. The word "Invoice" shall appear at the top of the page.
2. Grantee Information – Includes the grantee name and address which shall match the Std. 204 - Payee Data Record submitted with the grant agreement. Payment will be submitted to this address after the financial report has been approved. Grantee shall notify CAL FIRE in writing regarding address changes and effective dates.
3. Invoice Date and Number – Date invoice was issued and unique invoice number to be determined by the grantee for reference.
4. Grant Identification – Grant Number, Grant Performance Period, and Project Name as identified in the Grant Agreement.
5. Invoice reporting period – Performance start and end dates for which grantee is invoicing CAL FIRE. Under no circumstances will an invoice period outside of the grant performance period be accepted.
6. Payment Type – Indicate whether the invoice is to request an advance payment, interim payment, or final payment.
7. Cost breakdown – Grantee costs must be broken down by the budget item consistent with the approved budget in the Grant Agreement. The grantee must identify the amount for which CAL FIRE is being billed in the invoice period and the total amount spent and match (if applicable) from the beginning of the grant performance period through the invoice period. Advance requests should still include a breakdown of the budget items for which the grantee is planning to expend the funds.
8. Offset to current cost – Include the balance of advance funds given to grantee as well as program income earned from the grant if applicable.
9. The total amount for which grantee is requesting reimbursement from CAL FIRE.
10. Grantee contact name, phone number, and email address for questions related to the invoice.
11. All backup documentation to support the invoice (see Project Costs section).
12. Certification and signature of authorized representative - Please see sample invoice for certification language.

APPENDIX D – STATE OF CALIFORNIA STANDARD REQUIRED FORMS

THESE STANDARD FORMS MUST BE SUBMITTED IN THE GRANTS PORTAL WITH THE PROJECT APPLICATION. THE STANDARD FORMS BELOW ARE ALSO LINKED IN THE GRANTS PORTAL.

Payee Data Record form (STD. 204) – CAL FIRE utilizes this form internally for all grantees. This form is required for all applicants, including local governments, despite the language on the form. [Payee Data Record STD. 204](#)

APPENDIX E – CALMAPPER (AWARDED GRANTS ONLY)

All California Climate Investments (CCI) and Prop 4 funded projects will be recorded in CAL FIRE’s Management Activity Project Planning & Event Reporter (CalMAPPER). To achieve this, grantees must provide spatial information via shapefiles about where the project occurs on the landscape, identify treatments for their project, and identify what activities occurred. Submission of all activities completed must be submitted with invoices or other methods identified by the Grants Program. This may be requested as often as ground-disturbing work is performed.

APPENDIX F – LOW-INCOME AND DISADVANTAGED COMMUNITIES

California Climate Investments must meet minimum levels of investments to projects that benefit residents of disadvantaged communities, low-income communities, and low-income households collectively referred to as “priority populations” and defined by Health and Safety Code section 39713.

CAL FIRE’s Wildfire Prevention Grants Program and Forest Health Program has a goal of funding a percentage of projects that benefit Low-Income Communities or Households. This is not a requirement for eligibility, but preference will be given to projects that benefit a priority population.

Achieving “Low-Income Community or Household” designation requires three steps:

Step 1: Identify the Priority Population(s). Located within a census tract identified as a disadvantaged community or low-income community, or directly benefit residents of a low-income household. [California Air Resource Board’s Community Investments](#) webpage may be used to identify the census tract.

Step 2: Address a Need. Meaningfully address an important community or household need for priority populations; and

Step 3: Provide a Benefit. Using the evaluation criteria, identify at least one direct, meaningful, and assured benefit that the project provides to priority populations.

The following tables will assist you in achieving the designation and can be found on the California Air Resources Board [CCI Quantification, Benefits, and Reporting Materials](#) webpage.

Evaluation Criteria for Providing Benefits To Priority Populations
LAND RESTORATION AND FOREST HEALTH

Project Type: Projects will increase carbon storage through restoration and management of natural lands.
<i>Projects must satisfy the applicable criteria through Step 3 to be considered to provide direct, meaningful, and assured benefits to priority populations and count toward statutory investment minimums.</i>
Step 1 – Identify the Priority Population(s). ¹ Evaluate the project against each of the following criteria. Check all boxes that apply.
<u>Note:</u> For this project type, the majority of the project must be located within a disadvantaged or low-income community census tract. ☐ A. Is the project located within the boundaries of a disadvantaged community census tract? ☐ B. Is the project located within the boundaries of a low-income community census tract? ☐ C. Is the project located outside of a disadvantaged community, but within ½-mile of a disadvantaged community and within a low-income community census tract? ☐ D. Is the project located within the boundaries of a low-income household?
<i>If a project does not meet at least one of the qualifying criteria in Step 1, the project does not count toward statutory investment minimums and no further evaluation is needed. If the project meets at least one Step 1 criterion, continue the evaluation in Step 2.</i>
Step 2 – Address a Need. Identify an important community or household need and evaluate whether the project provides a benefit that meaningfully addresses that need.
To identify a need that the project will address, agencies and/or applicants can use a variety of approaches: ☐ A. Recommended Approach: Host community meetings, workshops, outreach efforts, or public meetings as part of the planning process to engage local residents and community groups for input on community or household needs, and document how the received input was considered in the design and/or selection of projects to address those needs; ☐ B. Recommended Approach: Receive documentation of support from local community-based organizations and/or residents (e.g., letters, emails) identifying a need that the project addresses and demonstrating that the project has broad community support;

Evaluation Criteria for Providing Benefits To Priority Populations
LAND RESTORATION AND FOREST HEALTH

Step 2 – Address a Need (continued). *Identify an important community or household need and evaluate whether the project provides a benefit that meaningfully addresses that need.*

- ☐ C. **Alternative Approach:** Where direct engagement is infeasible, look at the individual factors in CalEnviroScreen that are most impacting an identified disadvantaged or low-income community (i.e., factors that score above the 75th percentile), and confirm that the project will reduce the impacts of at least one of those factors; or
- ☐ D. **Alternative Approach:** Where direct engagement is infeasible, refer to the list of common needs for priority populations in CARB's Funding Guidelines Table 5 and confirm that the project addresses at least one listed need.

Describe identified community or household need(s):

If the project addresses a community or household need as described in Step 2, proceed to Step 3. If the project does not address a community or household need, it will not count toward statutory investment minimums and no further evaluation is needed.

Step 3 – Provide a Benefit. *Evaluate the project against each of the following criteria to determine if it provides direct, meaningful, and assured benefits to priority populations. The benefit provided must directly address the identified need.*

Project must meet at least one of the following benefit criteria:

- ☐ A. Project restores a site that allows public access;
- ☐ B. Project significantly reduces flood risk to households within one or more disadvantaged or low-income communities;
- ☐ C. Project significantly reduces fire risk to households within one or more disadvantaged or low-income communities;
- ☐ D. Project provides regular and ongoing educational opportunities through partnerships with schools or non-profit organizations located in disadvantaged or low-income communities and site access to residents of these communities.

If the project meets the criteria in Steps 1, 2, and 3, it will be considered as providing direct, meaningful, and assured benefits to priority populations and will be counted toward statutory investment minimums.

In addition to the online WP Grants Mapping Center project mapping program Geopoint and polygons, include a pdf map(s) of the project with the project application. The map(s) shall meet the following requirements:

- Electronic format of PDF.
- Printed format(s) should measure 8 ½ by 11 inches.
- The scale should be 1:24,000 scale or finer. The maps should show enough of the surrounding area so that the application review team can get a sense of the relationship of the project to the surrounding area.
- The map(s) should clearly show:
 - Project boundaries
 - Treatment area(s) by type
 - Roads
 - Watercourses
 - Parcels
 - City/County/Unit
 - Proximity to wildfire threatened communities
 - Other necessary information
- Legend: Include a map legend that identifies:
 - The features on the map
 - The project tracking number
 - Project name
 - Project proponent

APPENDIX H – JUSTIFICATION FOR INDIRECT COST RATE ABOVE 12%

Applicants that utilize a higher indirect rate on non-CAL FIRE grants and agreements ***may request to apply an indirect cost rate in excess of 12% as part of their application. The request shall include a detailed justification as a separate attachment to the grant application indicating why a higher rate is needed for the grant project along with supporting documentation as to how the higher indirect rate is determined. Supporting documentation may include, but is not limited to, the entity's Federally approved Negotiated Indirect Cost Rate Proposal. Under no circumstances will CAL FIRE approve an indirect rate exceeding 20% for CCI funded projects. Submittal of the justification and supporting documentation does not guarantee approval of the higher rate which is solely at CAL FIRE's discretion.***

Applicants requesting the higher rate may include the higher rate within the total application request and within the budget breakdown. CAL FIRE will evaluate the request for a higher indirect rate concurrently with the grant application. If the project is approved, but the higher indirect rate is not, CAL FIRE will notify the Grantee of the reduced award amount and request changes to the budget, if needed.

For grants awarded for projects under Proposition 4, Wildfire Prevention Grants will reimburse the grantee's indirect costs. The grantee may request one of the following indirect cost rates:

- The grantee's federal negotiated indirect cost rate, pursuant to its Negotiated Indirect Cost Rate Agreement (NICRA).
- The 15 percent de minimis indirect cost rate specified in Part 200 of Title 2 of the Code of Federal Regulations.
- A rate negotiated by the grantee with another state agency within the last five years.
- A rate proposed by the grantee in the grantee's program application with the administering state agency if the grantee does not have an existing state rate.
- Grantee can request an indirect cost rate of 12% to 20%.

APPENDIX I – APPLICATION PACKAGE

A COMPLETE APPLICATION PACKAGE INCLUDES AND IS REQUIRED TO BE CONSIDERED:

Grants Portal (Solicitation Link on [WP Grants website](#)):

- Application
- Scope of Work
- Budget
- Goals
- File Uploads*
- Online submission of Geopoint or polygons in the [Project Mapping Program](#)

*File uploads to Grants Portal:

- PDF version of Project Map(s) (formatted to 8 ½" x 11")
- Articles of Incorporation, including document w/seal from Secretary of State (non- profit applicants)
- State of California Payee Data Record form (Std. 204) – see Appendix D
- Letter(s) of Commitment if matching funds or services are included
- Letter(s) of Support (not required)
- UC/CSU Model Agreement Template (Required for UC/CSU and associated auxiliary entities)

Board Resolution granting authority to sign if non-profit or local government, a signed resolution may be requested if necessary.

ZIP MULTIPLE FILES OF ONE TYPE, I.E., MULTIPLE LETTERS OF SUPPORT, TRAVEL POLICY (IF TRAVEL IS INCLUDED), FOR FUELS REDUCTION WORK; SHAPE FILES ARE REQUIRED, AND UPLOAD AS A SINGLE ZIP FILE.

[Local CAL FIRE Unit](#) (Vegetation Management Foresters and Local Wildfire Prevention Grants Resources)

SouthernRegionGrants@fire.ca.gov (Southern Region Contact)

CNRgrants@fire.ca.gov (Northern Region Contact)

WPGrants@fire.ca.gov (Wildfire Prevention Grants Program Analysts)

CALFIRE.Grants@fire.ca.gov (Grants Administration)

[Subscribe](#) to CAL FIRE grant email notifications to be notified when our workshops are scheduled and to receive solicitation announcements.

Interest on Advance Payments must be reported on invoices as Program Income no less frequently than quarterly, unless otherwise waived by CAL FIRE. Documentation to be provided with the invoice should include a copy of the statement showing the grantee's name, initial deposit of the advance funds into the account and the interest rate earned for each statement period associated with the invoice period reported until the advance funds have been fully liquidated. It is advised that the account number and other sensitive information be redacted from the bank statement.

Separate Account for Advance Payments: Advance funds deposited in a separate interest-bearing account that is not comingled with any other funds should provide a copy of the statement showing the interest earned for each statement period. The amount reflected as interest earned on each statement should tie to the Program Income reported on the invoice, unless there is additional program income earned.

Co-mingled Advance Payments: Advance funds that are co-mingled with other funds shall include a copy of the statement for each statement period associated with the advance funds. The calculation for the invoice period must be included and the total interest should tie to the Program Income reported on the invoice, unless there is additional program income earned. The interest earned can be calculated as:

Formula:

Remaining advance funds x interest rate % = Annual Interest.

Annual Interest/365 days = Daily Rate.

Daily Rate x number of days = Interest/Program Income

Use of an alternative calculation method based on the grantee's accounting process may be accepted at CAL FIRE's discretion.

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH AUTHORIZING AN APPLICATION TO THE CALIFORNIA CLIMATE INVESTMENTS AND PROPOSITION 4 DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE) WILDFIRE PREVENTION PROGRAM**

WHEREAS, the CAL FIRE Community Wildfire Defense Grant provides funding up to \$950,000 for a three-year period of performance with no local match requirement to help communities plan for and mitigate wildfire risks; and

WHEREAS, this grant complements the existing USDA grant that funded the hiring of a dedicated fuels crew by providing the additional necessary equipment, planning documents to prioritize and coordinate ongoing projects, related CEQA, and providing important education and outreach pieces; and

WHEREAS, this funding will allow the City to maintain and expand wildfire hazard mitigation efforts within the Ukiah Valley Fire District; and

WHEREAS, priority activities include maintaining the existing fire break in the western hills area now within city limits; supporting work beyond the original scope of the fuels crew grant; filling operational gaps; planning efforts, and community education and outreach initiatives.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Ukiah hereby:

1. Approves the filing of an application for the Community Wildfire Defense Grant; and
2. Certifies that applicant understands the assurances and certification in the application; and
3. Certifies that applicant or title holder will have sufficient funds to operate and maintain the project consistent with the grant requirements; or will secure the resources to do so; and
4. If applicable, certifies that the project will comply with any laws and regulations including, but not limited to, legal requirements for building codes, health and safety codes, disabled access laws, environmental laws; and
5. Certifies that applicant will work towards the Wildfire Prevention Program Grant Guidelines and Priorities intended to increase protection of people, structures, and communities through hazardous fuels reductions, wildfire prevention planning and education, and improving public health and safety while reducing greenhouse gas emissions; and
6. Appoints the City Manager, or designee, as agent to conduct all negotiations, execute and submit all documents including, but not limited to applications, agreements, payment requests and so on, which may be necessary for the completion of the aforementioned project(s).

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Adoption of Resolution Reappointing Gregory Andronaco to the Airport Commission.

DEPARTMENT: City Clerk

PREPARED BY: Araceli Sandoval, Deputy City Clerk

PRESENTER: Consent Calendar

ATTACHMENTS:

1. Resolution 2014-48
2. Andronaco - Application and Nomination
3. Proposed Resolution

Summary: The City Council will consider adopting a resolution reappointing Gregory Andronaco to the Airport Commission in the 'County Resident' position, term ending July 16, 2028.

Background: The Airport Commission serves in an advisory capacity to the City Council on all matters pertaining to the operations of the municipal airport. The commission aids and advises the City Manager in the selection of personnel for the operation of the municipal airport in accordance with the civil service ordinance.

Pursuant to Resolution 2014-48 (Attachment 1), the Airport Commission has had a vacancy that has been noticed since May 2025, following the expiration of Gregory Andronaco's term. As no applications were received for the position, Mr. Andronaco expressed interest in reapplying for the "County Resident" seat (Attachment 2 – Application and Nomination).

In accordance with Resolution 2014-48, the right to nominate a candidate rotates among the Councilmembers. Councilmember Criss, as the next Councilmember eligible to nominate, has nominated Mr. Andronaco for reappointment to the Airport Commission (Attachment 2).

Discussion: Staff recommends Council adopt the resolution (Attachment 3) reappointing Gregory Andronaco to 'County Resident' position on the Airport Commission, term ending July 16, 2028.

Recommended Action: Adopt resolution reappointing Gregory Andronaco to the 'County Resident' position on the Airport Commission, term to expire July 16, 2028.

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

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

300 Seminary Avenue
Ukiah, CA 95482

NAME: Gregory Andronaco
First Last

STREET ADDRESS: [REDACTED]

CITY: Redwood Valley STATE: CA ZIP CODE: 95470

PHONE: Home na Work/Cell [REDACTED] Email: [REDACTED]

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

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

7. Do you have any known projects or conflict of interest related to this Commission (business and/or personal)?

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

9. Are there any other City of Ukiah Committees/Commissions in which you are interested and on which you would be willing to serve?

10. 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?

11. Is there anything you would like to add?

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.*

Gregory A. Hironaka | 2014-2025 | 11-24-2025

Signature of Applicant

6.27.2025

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.*

CITY OF UKIAH
AIRPORT COMMISSION APPLICATION FOR APPOINTMENT

A. General Information

Full Name	Gregory Andronaco				Date	16February2022	
Residence Address (Physical Address, not PO)	Redwood Valley, CA 95470						
Mailing Address (if different from above)							
Home Phone	()			Work Phone	()		
Email				Cell Phone	()		
Employer	AeroComposites LLC						
Job Title/Position	Owner			Employed Since	2January2018		
How long have you resided in:	Ukiah?	3 years	Mendocino County?	14 years	California?	31 years	
Please list community groups or organizations you are affiliated with and list any offices held.							

B. Please answer the following on a separate sheet(s) of paper and attach.

- 1. Why are you applying to serve on the City of Ukiah's Airport Commission?
- 2. What is your understanding of the purpose, role, and responsibility of the Airport Commission?
- 3. What do you believe are the three most important Airport related issues facing our community and why?
- 4. In your opinion, what type of Airport programs or Airport development should the City encourage?
- 5. In your opinion, what type of Airport programs or Airport development should the City discourage?
- 6. What kind of ideal community do you envision for Ukiah?
- 7. Do you have any known projects or conflict of interest related to this Commission (business and/or personal)?
- 8. How do you believe your own skills, experience, expertise and perspectives will be beneficial to the work of the Airport Commission?
- 9. Are there any other City of Ukiah Committees/Commissions in which you are interested and on which you would be willing to serve?

Signature of Applicant

2/16/2022

Date

Thank you for your interest in serving your community and the City of Ukiah. This position is open until Filled.

Please return this application and attachments to the City Clerk's office at 300 Seminary Avenue, Ukiah, CA 95482. If you have any questions, please contact the City Clerk's office at (707) 463-6217.

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

I have a business at KUKI on the flight line just north of FedEx. I would like to get more involved with the airport and help with planning.

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

I am assuming it is an advisory roll to help the BOS and City Council.

3. What do you believe are the three most important Airport related issues facing our community and why?

- 1) Calfire – They saved my farm during the Mendo Complex fire
- 2) Reach/Calstar - Moving helicopters away from other work areas
- 3) More hangar space

4. In your opinion, what type of Airport programs or Airport development should the City encourage?

I'd like to see more involvement with younger people in high school and community college. It is sad the programs at Mendocino College have been canceled. I currently have an intern from South Valley. I guess because of the pandemic, the airport day we used to have needed to be canceled. I would like to see this happen again when feasible. More community outreach to let folks know that KUKI is not like a golf course. It is a viable city asset.

5. In your opinion, what type of Airport programs or Airport development should the City discourage?

Homeless encampments.

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

Ukiah is pretty ideal. This is why I moved here from the bay area. I do worry about her getting gentrified. I am glad to see more housing being built. We own three house rentals in the city. Housing prices and rent are unreal. We keep a small studio in one of the houses to have a place to stay without driving back out to RWV, after dinner out or a concert in the park.

7. Do you have any known projects or conflict of interest related to this Commission (business and/or personal)?

I do have a business at KUKI, yet I don't see that as a conflict. Also, I have a private pilot's license and love to fly. I don't see this as a conflict either. I view these as enhancements to perspective. I learned about this area from hang gliding. This is how I started out flying. As I got older, and don't heal as well, I transitioned to airplanes.

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

I have lived many places and worked at many different occupations. I have a pretty broad perspective and experience with many different people and ideas. I like people and like working together to accomplish common goals and have fun at the same time. I like the whole aviation community. Below is a link to a portfolio of work and resumes of previous occupations.

https://www.dropbox.com/sh/hyipbd7hq74gzv4/AAAGHadqg75J_5W8B6eATu5Ia?dl=0

9. Are there any other City of Ukiah Committees/Commissions in which you are interested and on which you would be willing to serve?

Give me a chance to serve on this one first...

MEMORANDUM



Date: July 7, 2025
To: Kristine Lawler, City Clerk
From: Heather Criss, Councilmember
Subject: Nomination for Airport Commission

I nominate Gregory Andronaco for the Airport Commission as County Resident Representative, to be considered at the July 16, 2025, Regular City Council meeting.

Signature 
[Heather Criss \(Jul 7, 2025 15:38 PDT\)](#)

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH REAPPOINTING GREGORY ANDRONACO TO THE AIRPORT COMMISSION**

WHEREAS, a list of current vacancies along with the full roster of Boards and Commissions is updated with each appointment and posted throughout the year online, in the glass case in front of Civic Hall, and at the County Library; and

WHEREAS, there is currently a vacant seat designated for either a City or County Resident Representative due to a term expiration, which has been noticed since May of 2025; and

WHEREAS, an application has been received from Gregory Andronaco seeking reappointment, with no other applications having been received; and

WHEREAS, in respect to the Airport Commission, Resolution 2014-48, which amends the procedures for filling vacancies on City Boards and Commissions, states that the right to nominate a candidate from the available pool shall rotate among the Councilmembers; and

WHEREAS, Councilmember Criss, being next in line to make nominations to the Airport Commission, has nominated Gregory Andronaco to the County Resident position; and

WHEREAS, the City Council met on July 16, 2025, and reviewed the application.

NOW, THEREFORE, BE IT RESOLVED, that the Ukiah City Council approves the nomination, and does hereby appoint the following individual and term:

BOARD/ COMMISSION	NAME	POSITION	NOMINATED BY COUNCILMEMBER	TERM EXPIRATION
Airport Commission	Gregory Andronaco	County Resident	Criss	July 16, 2028

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Authorize the City Manager to Negotiate and Execute a One-Year Extension to the Cooperative Agreement for Dispatch Services with the California Department of Forestry and Fire Protection.

DEPARTMENT: Fire

PREPARED BY: Traci Boyl, Senior Management Analyst

PRESENTER: Doug Hutchison, Fire Chief

ATTACHMENTS:

1. Current Dispatch Agreement
2. Ukiah last agreement Calculator (003)

Summary: Council will consider authorizing the City Manager to negotiate and execute a one-year extension to the cooperative agreement for dispatch services with the California Department of Forestry and Fire Protection.

Background: Since 2012, the City of Ukiah has contracted with the California Department of Forestry and Fire Protection (CAL FIRE) for dispatching fire and emergency medical services within the city. The current cooperative agreement (Attachment 1) expired June 30, 2025.

Discussion: Dispatch services for fire and emergency medical response are currently provided by the California Department of Forestry and Fire Protection (CAL FIRE). City staff are actively working with CAL FIRE to finalize a one-year extension of the existing agreement. The goal is to align the City's contract with the County's dispatch agreement, promoting a more coordinated and efficient emergency response countywide.

The draft agreement is expected within the next few weeks and will reflect updated salary and benefit rates for two Communications Operators (Attachment 2). Actual expenses for the two Communications Operators in FY 25 were \$287,474. Funding for this agreement has been included in the proposed FY26 budget as follows: 10521210.52100: \$210,000; 71021100.52100: \$241,000.00; 71021150.52100: \$30,000

Staff requests Council authorize the City Manager to negotiate and execute a one-year extension to the cooperative agreement for dispatch services with the California Department of Forestry and Fire Protection.

Recommended Action: Authorize the City Manager to negotiate and execute a one-year extension to the agreement for dispatch services with the California Department of Forestry and Fire Protection.

BUDGET AMENDMENT REQUIRED: No.

CURRENT BUDGET AMOUNT: 10521210.52100: \$210,000; 71021100.52100: \$241,000.00; 71021150.52100: \$30,000

PROPOSED BUDGET AMOUNT: N/A

FINANCING SOURCE: Cost share with Ukiah Valley Fire District.

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

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Doug Hutchison- Fire Chief; Justin Buckingham, Battalion Chief

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):

GENERAL PLAN ELEMENTS (GP): GP-A6 - Safety Element

Approved:


Sage Sangiacomo, City Manager

**COOPERATIVE FIRE PROGRAMS
FIRE PROTECTION REIMBURSEMENT AGREEMENT**

LG-1 REV. 11/2020

AGREEMENT NUMBER **1CA05265**

REGISTRATION NUMBER:

1. This Agreement is entered into between the State Agency and the Local Agency named below:

STATE AGENCY'S NAME

California Department of Forestry and Fire Protection – (CAL FIRE)

LOCAL AGENCY'S NAME

City of Ukiah

2. The term of this Agreement is: July 1, 2021 through June 30, 2025

3. The maximum amount of this Agreement is: \$ 1,540,822.00
One million, five hundred forty thousand, eight hundred twenty two dollars and zero cents

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.

Exhibit A – Scope of Work – Includes page 2 (contact page) in count for Exhibit A	4	pages
Exhibit B – Budget Detail and Payment Provisions	2	pages
Exhibit C – General Terms and Conditions	7	pages
Exhibit D – Additional Provisions	5	pages
Exhibit E – Description of Other Services	3	pages

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.**LOCAL AGENCY**

LOCAL AGENCY'S NAME

City of Ukiah

BY (Authorized Signature)



DATE SIGNED(Do not type)

PRINTED NAME AND TITLE OF PERSON SIGNING

Sage Sangiacomo, City Manager

ADDRESS

300 Seminary Avenue, Ukiah, CA 95482

STATE OF CALIFORNIA

AGENCY NAME

California Department of Forestry and Fire Protection

BY (Authorized Signature)



DATE SIGNED(Do not type)

PRINTED NAME AND TITLE OF PERSON SIGNING

Chris Anthony, Assistant Deputy Director, Cooperative Fire Protection, Training & Safety

ADDRESS P.O. Box 944246, Sacramento, CA 94244-2460

**California Department of General
Services Use Only**

EXHIBIT A
COOPERATIVE FIRE PROGRAMS
FIRE PROTECTION REIMBURSEMENT AGREEMENT

The project representatives during the term of this agreement will be:

CAL FIRE Unit Chief:	Mendocino Unit	Local Agency:	City of Ukiah
Name:	George Gonzalez	Name:	Doug Hutchinson
Phone:	(707) 459-7400	Phone:	(707) 462-7921
Fax:	(707) 459-3041	Fax:	(707) 462-2938

All required correspondence shall be sent through U.S. Postal Service by certified mail and directed to:

CAL FIRE Unit Chief:	George Gonzalez	Local Agency:	City of Ukiah
Section/Unit:	Mendocino Unit	Section/Unit:	City of Ukiah
Attention:	Brandon Gunn	Attention:	Sage Sangiacomo
Address:	17501 N. Hwy 101 Willits, CA 95490	Address:	300 Seminary Ave Ukiah, CA 95482
Phone:	(707) 459-7402	Phone:	(707) 463-6221
Fax:	(707) 459-3041	Fax:	

Send an additional copy of all correspondence to:

CAL FIRE
Cooperative Fire Services
P.O. Box 944246
Sacramento, CA 94244-2460

AUTHORIZATION

As used herein, Director shall mean Director of CAL FIRE. This agreement, its terms and conditions are authorized under the Public Resources Code Sections 4141, 4142, 4143 and 4144, as applicable.

EXHIBIT A

SCOPE OF WORK

Under Public Resources Code Section 4114 and other provisions of law, STATE maintains fire prevention and fire suppression forces including the necessary equipment, personnel, and facilities required to prevent and extinguish forest fires.

The purpose of this agreement is to provide mutually advantageous fire and emergency services through an effective consolidated organization, wherein the STATE is primarily financially responsible for protecting natural resources from vegetation fires and the LOCAL AGENCY is primarily financially responsible for protecting life and property from fires and other emergencies. The LOCAL AGENCY shall have sole authority to establish the fire protection organization and structure needed to meet the determined level of service. This level of service may be based on the LOCAL AGENCY governing board's established fiscal parameters and assessment of risks and hazards. LOCAL AGENCY personnel providing services under this agreement may include any one or a combination of the following: regular employees, persons temporarily employed and commonly known as volunteers, paid-call firefighters, or others temporarily employed to perform any emergency work or emergency service including, but not limited to fire prevention, fire suppression and emergency medical response.

To comply with the STATE's mandate for full cost recovery of goods and services provided for others, the LOCAL AGENCY shall be responsible for all STATE costs, both direct and indirect, required to execute the terms of this agreement. These costs shall include, but not be limited to: required training and associated post coverage, employee uniform and Personal Protective Equipment (PPE) costs.

1. FIRE PROTECTION SERVICES TO BE PROVIDED BY THE STATE

STATE provides a modern, full service fire protection and emergency incident management agency that provides comprehensive fire protection and other emergency incident response. STATE designs regional fire protection solutions for urban and rural communities by efficiently utilizing all emergency protection resources. Regional solutions provide the most effective method of protecting the citizens of California at local, county and state levels.

Fire protection services to be provided by STATE under this agreement shall include the following: (check boxes below that apply)

☐ 1) Emergency Fire Protection, Medical and Rescue Response: services include commercial, residential, and wildland fire protection, prevention and investigation; hazardous materials incident response; emergency vehicle extrication; hazardous conditions response (flooding, downed power lines, earthquake, terrorist incident, etc.); emergency medical and rescue response; and public service assistance. Also included are management support services that include fire department administration, training and safety, personnel, finance and logistical support.

☐ 2) Basic Life Support Services: emergency medical technician (EMT) level emergency medical response providing first aid, basic life support (BLS), airway management, administration of oxygen, bleeding control, and life support system stabilization until patients are transported to the nearest emergency care facility.

☐ 3) Advanced Life Support Services: paramedic level emergency medical response providing early advanced airway management, intravenous drug therapy, and life support system stabilization until patients are transported to the nearest emergency care facility.

☒ 4) Dispatch Services: provide fire department 9-1-1 emergency dispatch by CAL FIRE Fire/Emergency Command Center (ECC). CAL FIRE will be responsible for fire/emergency

dispatching emergency resource units covered under this agreement. The CAL FIRE ECC is staffed with a Battalion Chief, three or more Fire Captains and Communications Operators to provide 24/7 year-round coverage. There is always an officer of Captain rank or higher to serve as the shift supervisor and command officer. CAL FIRE uses an integrated Computer Aided Dispatch (CAD) system using the latest technology, to direct the closest available resources to all emergency incidents.

☐ 5) Fire Code Inspection, Prevention and Enforcement Services: CAL FIRE has staff Fire Inspectors serving under the direction of the LOCAL AGENCY Fire Marshal to provide services to the area covered by this agreement. Fire Code Enforcement will normally be available five days per week, with emergency or scheduled enforcement inspections available seven days per week. Fire Prevention and Investigation services will be provided by CAL FIRE Prevention Officers trained in arson, commercial, and wildland fire investigation. Officers are available by appointment for site visits and consultations. Officers are trained at CAL FIRE's Peace Officer Standard Training (POST) certified law enforcement training academy and they cooperate effectively with all local, state and federal law enforcement agencies.

☐ 6) Land Use/ Pre-Fire Planning Services – CAL FIRE staff will provide community land use planning, administration of Pre-Fire project work, including community outreach, development of community education programs, project quality control, maintenance of project records and submittal of progress reports, completion of required environmental documentation, acquisition of required permits and completion of other associated administrative duties.

☐ 7) Disaster planning services (listed in Exhibit E, Description of Other Services, attached hereto and made a part of this agreement)

☐ 8) Specific service descriptions and staffing coverage, by station (listed in Exhibit E, Description of Other Services, attached hereto and made a part of this agreement)

☐ 9) Extended Fire Protection Service Availability (Amador)

2. ADMINISTRATION

Under the requirements of California Public Resources Code Section 4114 and other provisions of law, STATE maintains fire prevention and firefighting services as outlined in Exhibit D, Schedule B of this agreement.

- A. Director shall select and employ a Region Chief who shall, under the direction of the Director/Chief Deputy Director, manage all aspects of fire prevention and fire protection services and forestry-related programs.
- B. Director will select and employ a Unit Chief who shall, under the supervision and direction of Director/Region Chief or a lawful representative, have charge of the organization described in Exhibit D, Schedules A, B and C included hereto and made a part of this agreement.
- C. LOCAL AGENCY shall appoint the Unit Chief as the LOCAL AGENCY Fire Chief for all Emergency Fire Protection, Medical and Rescue Response Agreements, pursuant to applicable statutory authority. The Unit Chief may delegate this responsibility to qualified staff.
- D. The Unit Chief may dispatch personnel and equipment listed in Exhibit D, Schedules A, B and C from the assigned station or location under guidelines established by LOCAL AGENCY and approved by STATE. Personnel and/or equipment listed in Exhibit D, Schedule B may be dispatched at the sole discretion of STATE.

- E. The Unit Chief shall exercise professional judgment consistent with STATE policy and his or her employment by STATE in authorizing or making any assignments to emergencies and other responses, including assignments made in response to requests for mutual aid.
- F. Except as may be otherwise provided for in this agreement, STATE shall not incur any obligation on the part of LOCAL AGENCY to pay for any labor, materials, supplies or services beyond the total set forth in the respective Exhibit D, Schedules A and C, as to the services to be rendered pursuant to each Schedule.
- G. Nothing herein shall alter or amend or be construed to alter or amend any Collective Bargaining Agreement or Memorandum of Understanding between the State of California and its employees under the State Employer-Employee Relations Act.

3. SUPPRESSION COST RECOVERY

As provided in Health and Safety Code (H&SC) Section 13009, STATE may bring an action for collection of suppression costs of any fire caused by negligence, violation of law, or failure to correct noticed fire safety violations. When using LOCAL AGENCY equipment and personnel under the terms of this agreement, STATE may, at the request of LOCAL AGENCY, bring such an action for collection of costs incurred by LOCAL AGENCY. In such a case LOCAL AGENCY appoints and designates STATE as its agent in said collection proceedings. In the event of recovery, STATE shall deduct fees and litigation costs in a proportional percentage amount based on verifiable and justifiable suppression costs for the fire at issue. These recovery costs are for services provided which are beyond the scope of those covered by the local government administrative fee.

In all such instances, STATE shall give timely notice of the possible application of H&SC Section 13009 to the representative designated by LOCAL AGENCY.

4. MUTUAL AID

When rendering mutual aid or assistance as authorized in H&SC Sections 13050 and 13054, STATE may, at the request of LOCAL AGENCY, demand payment of charges and seek reimbursement of LOCAL AGENCY costs for personnel, equipment and operating expenses as funded herein, under authority given by H&SC Sections 13051 and 13054. STATE, in seeking said reimbursement pursuant to such request of LOCAL AGENCY, shall represent LOCAL AGENCY by following the procedures set forth in H&SC Section 13052. Any recovery of LOCAL AGENCY costs, less expenses, shall be paid or credited to LOCAL AGENCY, as directed by LOCAL AGENCY.

In all such instances, STATE shall give timely notice of the possible application of H&SC Sections 13051 and 13054 to the officer designated by LOCAL AGENCY.

5. PROPERTY PURCHASE AND ACCOUNTING

LOCAL AGENCY shall be responsible for all costs associated with property required by personnel to carry out this agreement. Employee uniform costs will be assessed to the LOCAL AGENCY through the agreement billing process. Personal Protective Equipment (PPE) costs shall be the responsibility of the LOCAL AGENCY. By mutual agreement, PPE meeting the minimum specifications established by the STATE may be purchased directly by the LOCAL AGENCY. Alternately, the STATE will supply all PPE and the LOCAL AGENCY will be billed for costs incurred.

All property provided by LOCAL AGENCY and by STATE for the purpose of providing fire protection services shall be marked and accounted for by the Unit Chief in such a manner as to conform to the regulations, if any, established by the parties for the segregation, care, and use of the respective properties.

EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS

1. PAYMENT FOR SERVICES

- A. LOCAL AGENCY shall pay STATE actual cost for fire protection services pursuant to this agreement an amount not to exceed that set forth in Exhibit D, Schedule A for each fiscal year. STATE shall prepare an Exhibit D, Schedule A each year, which shall be the basis for payment for the entire fiscal year for which services are provided.
- B. Any other funds designated by LOCAL AGENCY to be expended under the supervision of or for use by a Unit Chief for fire protection services shall be set forth in Exhibit D, Schedule C. This clause shall not limit the right of LOCAL AGENCY to make additional expenditures, whether under Exhibit D, Schedule C or otherwise.
- C. STATE shall invoice LOCAL AGENCY for the cost of fire protection services on a quarterly basis as follows:
 - 1) For actual services rendered by STATE during the period of July 1 through September 30, by an invoice filed with LOCAL AGENCY on or after December 10.
 - 2) For actual services rendered by STATE during the period October 1 through December 31, by an invoice filed with LOCAL AGENCY on or after December 31.
 - 3) For actual services rendered by STATE during the period January 1 through March 31, by an invoice filed with LOCAL AGENCY on or after March 31.
 - 4) For the estimated cost of services during the period April 1 through June 30, by an invoice filed in advance with LOCAL AGENCY on or after March 1.
 - 5) A final statement shall be filed with LOCAL AGENCY by October 1 following the close of the fiscal year, reconciling the payments made by LOCAL AGENCY with the cost of the actual services rendered by STATE and including any other costs as provided herein, giving credit for all payments made by LOCAL AGENCY and claiming the balance due to STATE, if any, or refunding to LOCAL AGENCY the amount of any overpayment.
 - 6) All payments by LOCAL AGENCY shall be made within thirty (30) days of receipt of invoice from STATE, or within thirty (30) days after the filing dates specified above, whichever is later.
 - 7) The STATE reserves the right to adjust the frequency of billing and payment to a monthly cycle with a thirty (30) day written notice to the LOCAL AGENCY when:
 - a. The Director predicts a cash flow shortage, or
 - b. When determined by the Region Chief, after consulting with the Unit Chief and the LOCAL AGENCY Contract Administrator, that the LOCAL AGENCY may not have the financial ability to support the contract at the contract level.
- D. Invoices shall include actual or estimated costs as provided herein of salaries and employee benefits for those personnel employed, charges for operating expenses and equipment and the administrative charge in accordance with Exhibit D, Schedule A. When "contractual rates" are indicated, the rate shall be based on an average salary plus all benefits. "Contractual rates" means an all-inclusive rate established in Exhibit D, Schedule A for total costs to STATE, per specified position, for 24-hour fire protection services during the period covered.

- E. STATE shall credit the LOCAL AGENCY, or cover behind at no cost, for the costs of Non-post (e.g. Fire Marshal, Training Officer, etc.) positions and equipment assigned to STATE responsibility fires or other STATE funded emergency incidents. The STATE shall notify the LOCAL AGENCY when this occurs.

2. COST OF OPERATING AND MAINTAINING EQUIPMENT AND PROPERTY

The cost of maintaining, operating, and replacing any and all property and equipment, real or personal, furnished by the parties hereto for fire protection purposes, shall be borne by the party owning or furnishing such property or equipment unless otherwise provided for herein or by separate written agreement.

3. BUDGET CONTINGENCY CLAUSE

- A. If the LOCAL AGENCY's governing authority does not appropriate sufficient funds for the current year or any subsequent years covered under this Agreement, which results in an inability to pay the STATE for the services specified in this Agreement, the LOCAL AGENCY shall promptly notify the STATE and this Agreement will terminate pursuant to the notice periods required herein.
- B. If funding for any fiscal year is reduced or deleted by the LOCAL AGENCY for purposes of this program, the LOCAL AGENCY shall promptly notify the STATE, and the STATE shall have the option to either cancel this Agreement with no liability occurring to the STATE, or offer an agreement amendment to LOCAL AGENCY to reflect the reduced amount, pursuant to the notice terms herein.
- C. If the STATE Budget Act does not appropriate sufficient funds to provide the services for the current year or any subsequent years covered under this Agreement, which results in an inability to provide the services specified in this Agreement to the LOCAL AGENCY, the STATE shall promptly notify the LOCAL AGENCY, and this Agreement will terminate pursuant to the notice periods required herein.
- D. If funding for any fiscal year is reduced or deleted by the STATE Budget Act for purposes of this program, the STATE shall promptly notify the LOCAL AGENCY, and the LOCAL AGENCY shall have the option to either cancel this Agreement with no liability occurring to the LOCAL AGENCY, or offer an agreement amendment to LOCAL AGENCY to reflect the reduced services, pursuant to the notice terms herein.
- E. Notwithstanding the foregoing provisions in paragraphs A and B above, the LOCAL AGENCY shall remain responsible for payment for all services actually rendered by the STATE under this Agreement regardless of LOCAL AGENCY funding being reduced, deleted or not otherwise appropriated for this program. The LOCAL AGENCY shall promptly notify the STATE in writing of any budgetary changes that would impact this Agreement.
- F. LOCAL AGENCY and STATE agree that this Budget Contingency Clause shall not relieve or excuse either party from its obligation(s) to provide timely notice as may be required elsewhere in this Agreement.

EXHIBIT C
GENERAL TERMS AND CONDITIONS

1. **APPROVAL**: This Agreement is of no force or effect until signed by both parties and approved by the Department of General Services, if required. STATE will not commence performance until such approval has been obtained.
2. **AMENDMENT**: This agreement may be amended by mutual consent of LOCAL AGENCY and STATE. No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties.

If during the term of this agreement LOCAL AGENCY shall desire a reduction in STATE civil service employees assigned to the organization provided for in Exhibit D, Schedule A, LOCAL AGENCY shall provide 120 days written notice of the requested reduction. Notification shall include the following: (1) The total amount of reduction; (2) The firm effective date of the reduction; and (3) The number of employees, by classification, affected by a reduction. If such notice is not provided, LOCAL AGENCY shall reimburse STATE for relocation costs incurred by STATE as a result of the reduction. Personnel reductions resulting solely from an increase in STATE employee salaries or STATE expenses occurring after signing this agreement and set forth in Exhibit D, Schedule A to this agreement shall not be subject to relocation expense reimbursement by LOCAL AGENCY.

If during the term of this agreement costs to LOCAL AGENCY set forth in any Exhibit D, Schedule A to this agreement increase and LOCAL AGENCY, in its sole discretion, determines it cannot meet such increase without reducing services provided by STATE, LOCAL AGENCY shall within one hundred twenty (120) days of receipt of such Schedule notify STATE and designate which adjustments shall be made to bring costs to the necessary level. If such designation is not received by STATE within the period specified, STATE shall reduce services in its sole discretion to permit continued operation within available funds.

3. **ASSIGNMENT**: This Agreement is not assignable by the LOCAL AGENCY either in whole or in part, without the consent of the STATE in the form of a formal written amendment.
4. **EXTENSION OF AGREEMENT**:
 - A. One year prior to the date of expiration of this agreement, LOCAL AGENCY shall give STATE written notice of whether LOCAL AGENCY will extend or enter into a new agreement with STATE for fire protection services and, if so, whether LOCAL AGENCY intends to change the level of fire protection services from that provided by this agreement. If this agreement is executed with less than one year remaining on the term of the agreement, LOCAL AGENCY shall provide this written notice at the time it signs the agreement and the one year notice requirement shall not apply.
 - B. If LOCAL AGENCY fails to provide the notice, as defined above in (A), STATE shall have the option to extend this agreement for a period of up to one year from the original termination date and to continue providing services at the same or reduced level as STATE determines would be appropriate during the extended period of this agreement. Six months prior to the date of expiration of this agreement, or any extension hereof, STATE shall give written notice to LOCAL AGENCY of any extension of this agreement and any change in the level of fire protection services STATE will provide during the extended period of this agreement. Services provided and obligations incurred by STATE during an extended period shall be accepted by LOCAL AGENCY as services and obligations under the terms of this agreement.

- C. The cost of services provided by STATE during the extended period shall be based upon the amounts that would have been charged LOCAL AGENCY during the fiscal year in which the extended period falls had the agreement been extended pursuant hereto. Payment by LOCAL AGENCY for services rendered by STATE during the extended period shall be as provided in Exhibit B, Section 1, B of this agreement.
5. **AUDIT**: STATE, including the Department of General Services and the Bureau of State Audits, and LOCAL AGENCY agree that their designated representative shall have the right to review and to copy any records and supporting documentation of the other party hereto, pertaining to the performance of this agreement. STATE and LOCAL AGENCY agree to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated, and to allow the auditor(s) of the other party access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. STATE and LOCAL AGENCY agree to a similar right to audit records and interview staff in any subcontract related to performance of this Agreement. (Gov. Code §8546.7, Pub. Contract Code §10115 et seq., CCR Title 2, Section 1896).
6. **INDEMNIFICATION**: Each party, to the extent permitted by law, agrees to indemnify, defend and save harmless the other party, its officers, agents and employees from (1) any and all claims for economic losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers and any other person, firm, or corporation furnishing or supplying work services, materials or supplies to that party and (2) from any and all claims and losses accruing or resulting to any person, firm or corporation who may be injured or damaged by that party, in the performance of any activities of that party under this agreement, except where such injury or damage arose from the sole negligence or willful misconduct attributable to the other party or from acts not within the scope of duties to be performed pursuant to this agreement; and (3) each party shall be responsible for any and all claims that may arise from the behavior and/or performance of its respective employees during and in the course of their employment to this cooperative agreement.
7. **DISPUTES**: LOCAL AGENCY shall select and appoint a "Contract Administrator" who shall, under the supervision and direction of LOCAL AGENCY, be available for contract resolution or policy intervention with the STATE's Region Chief when, upon determination by the designated STATE representative, the Unit Chief acting as LOCAL AGENCY's Fire Chief under this agreement faces a situation in which a decision to serve the interest of LOCAL AGENCY has the potential to conflict with STATE interest or policy. Any dispute concerning a question of fact arising under the terms of this agreement which is not disposed of within a reasonable period of time by the LOCAL AGENCY and STATE employees normally responsible for the administration of this agreement shall be brought to the attention of the CAL FIRE Director or designee and the Chief Executive Officer (or designated representative) of the LOCAL AGENCY for joint resolution. For purposes of this provision, a "reasonable period of time" shall be ten (10) calendar days or less. STATE and LOCAL AGENCY agree to continue with the responsibilities under this Agreement during any dispute.
8. **TERMINATION FOR CAUSE/CANCELLATION**:
- A. If LOCAL AGENCY fails to remit payments in accordance with any part of this agreement, STATE may terminate this agreement and all related services upon 60 days written notice to LOCAL AGENCY. Termination of this agreement does not relieve LOCAL AGENCY from providing STATE full compensation in accordance with terms of this agreement for services actually rendered by STATE pursuant to this agreement.

- B. This agreement may be cancelled at the option of either STATE or LOCAL AGENCY at any time during its term, with or without cause, on giving one year's written notice to the other party. Either LOCAL AGENCY or STATE electing to cancel this agreement shall give one year's written notice to the other party prior to cancellation.
9. **INDEPENDENT CONTRACTOR**: Unless otherwise provided in this agreement LOCAL AGENCY and the agents and employees of LOCAL AGENCY, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of the STATE.
10. **NON-DISCRIMINATION CLAUSE**: During the performance of this agreement, LOCAL AGENCY shall be an equal opportunity employer and shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS) mental disability, medical condition (e.g.cancer), age (over 40), marital status, denial of family care leave, veteran status, sexual orientation, and sexual identity. LOCAL AGENCY shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. LOCAL AGENCY shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. LOCAL AGENCY shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.
- In addition, LOCAL AGENCY acknowledges that it has obligations relating to ethics, Equal Employment Opportunity (EEO), the Fire Fighter's Bill of Rights Act (FFBOR), and the Peace Officer's Bill of Rights Act (POBOR). LOCAL AGENCY shall ensure that its employees comply with all the legal obligations relating to these areas. LOCAL AGENCY shall ensure that its employees are provided appropriate training.
11. **TIMELINESS**: Time is of the essence in the performance of this agreement.
12. **COMPENSATION**: The consideration to be paid STATE, as provided herein, shall be in compensation for all of STATE's expenses incurred in the performance hereof, including travel, per Diem, and taxes, unless otherwise expressly so provided.
13. **GOVERNING LAW**: This agreement is governed by and shall be interpreted in accordance with the laws of the State of California.
14. **CHILD SUPPORT COMPLIANCE ACT**: "For any Agreement in excess of \$100,000, the LOCAL AGENCY acknowledges in accordance with Public Contract Code 7110, that:
- A. The LOCAL AGENCY recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and
- B. The LOCAL AGENCY, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department."

15. **UNENFORCEABLE PROVISION**: In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.

16. **COMPLIANCE WITH THE HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT (HIPAA)**

The STATE and LOCAL AGENCY have a responsibility to comply with the provisions of the 1996 Federal Health Insurance Portability and Accountability Act (HIPAA) and the 2001 State Health Insurance Portability and Accountability Implementation Act. HIPAA provisions become applicable once the association and relationships of the health care providers are determined by the LOCAL AGENCY. It is the LOCAL AGENCY'S responsibility to determine their status as a "covered entity" and the relationships of personnel as "health care providers", "health care clearinghouse", "hybrid entities", business associates", or "trading partners". STATE personnel assigned to fill the LOCAL AGENCY'S positions within this Agreement, and their supervisors, may fall under the requirements of HIPAA based on the LOCAL AGENCY'S status. It is the LOCAL AGENCY'S responsibility to identify, notify, train, and provide all necessary policy and procedures to the STATE personnel that fall under HIPAA requirements so that they can comply with the required security and privacy standards of the act.

17. **LIABILITY INSURANCE**

The STATE and LOCAL AGENCY shall each provide proof of insurance in a form acceptable to the other party at no cost one to the other, to cover all services provided and use of local government facilities covered by this agreement. If LOCAL AGENCY is insured and/or self-insured in whole or in part for any losses, LOCAL AGENCY shall provide a completed Certification of Self Insurance (Exhibit D, Schedule E) or certificate of insurance, executed by a duly authorized officer of LOCAL AGENCY. Upon request of LOCAL AGENCY the STATE shall provide a letter from DGS, Office Risk and Insurance Management executed by a duly authorized officer of STATE. If commercially insured in whole or in part, a certificate of such coverage executed by the insurer or its authorized representative shall be provided.

Said commercial insurance or self-insurance coverage of the LOCAL AGENCY shall include the following:

- A. Fire protection and emergency services - Any commercial insurance shall provide at least general liability for \$5,000,000 combined single limit per occurrence.
- B. Dispatch services – Any commercial insurance shall provide at least general liability for \$1,000,000 combined single limit per occurrence.
- C. The CAL FIRE, State of California, its officers, agents, employees, and servants are included as additional insured's for purposes of this contract.
- D. The STATE shall receive thirty (30) days prior written notice of any cancellation or change to the policy at the addresses listed on page 2 of this agreement.

18. **WORKERS COMPENSATION**: (only applies where local government employees/volunteers are supervised by CAL FIRE, as listed in Exhibit D Schedule C. STATE contract employees' workers compensation is included as part of the contract personnel benefit rate).

- A. Workers' Compensation and related benefits for those persons, whose use or employment is contemplated herein, shall be provided in the manner prescribed by California Labor Codes, State Interagency Agreements and other related laws, rules, insurance policies, collective bargaining agreements, and memorandums of understanding.

- B. The STATE Unit Chief administering the organization provided for in this agreement shall not use, dispatch or direct any non STATE employees, on any work which is deemed to be the responsibility of LOCAL AGENCY, unless and until LOCAL AGENCY provides for Workers' Compensation benefits at no cost to STATE. In the event STATE is held liable, in whole or in part, for the payment of any Worker's Compensation claim or award arising from the injury or death of any such worker, LOCAL AGENCY agrees to compensate STATE for the full amount of such liability.
- C. The STATE /LOCAL AGENCY shall receive proof of Worker's Compensation coverage and shall be notified of any cancellation and change of coverage at the addresses listed in Section 1.

19. **CONFLICT OF INTEREST**: LOCAL AGENCY needs to be aware of the following provisions regarding current or former state employees. If LOCAL AGENCY has any questions on the status of any person rendering services or involved with the Agreement, the STATE must be contacted immediately for clarification.

Current State Employees (Public Contract Code §10410):

- 1) No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.
- 2) No officer or employee shall contract on his or her own behalf as an independent contractor with any state agency to provide goods or services.

Former State Employees (Public Contract Code §10411):

- 1) For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.
- 2) For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

If LOCAL AGENCY violates any provisions of above paragraphs, such action by LOCAL AGENCY shall render this Agreement void. (Public Contract Code §10420)

Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (Public Contract Code §10430 (e))

20. **LABOR CODE/WORKERS' COMPENSATION**: LOCAL AGENCY needs to be aware of the provisions which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions, and LOCAL AGENCY affirms to comply with such provisions before commencing the performance of the work of this Agreement. (Labor Code Section 3700)
21. **AMERICANS WITH DISABILITIES ACT**: LOCAL AGENCY assures the State that it complies with the Americans with Disabilities Act (ADA) of 1990, which prohibits discrimination on the basis

of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA. (42 U.S.C. 12101 et seq.)

22. **LOCAL AGENCY NAME CHANGE**: An amendment is required to change the LOCAL AGENCY'S name as listed on this Agreement. Upon receipt of legal documentation of the name change the STATE will process the amendment. Payment of invoices presented with a new name cannot be paid prior to approval of said amendment.
23. **RESOLUTION**: A county, city, district, or other local public body must provide the STATE with a copy of a resolution, order, motion, or ordinance of the local governing body which by law has authority to enter into an agreement, authorizing execution of the agreement.
24. **AIR OR WATER POLLUTION VIOLATION**: Under the State laws, the LOCAL AGENCY shall not be: (1) in violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district; (2) subject to cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or (3) finally determined to be in violation of provisions of federal law relating to air or water pollution.
25. **AFFIRMATIVE ACTION**. STATE certifies its compliance with applicable federal and State hiring requirements for persons with disabilities, and is deemed by LOCAL AGENCY to be in compliance with the provisions of LOCAL AGENCY'S Affirmative Action Program for Vendors.
26. **DRUG AND ALCOHOL-FREE WORKPLACE**. As a material condition of this Agreement, STATE agrees that it and its employees, while performing service for LOCAL AGENCY, on LOCAL AGENCY property, or while using LOCAL AGENCY equipment, shall comply with STATE's Employee Rules of Conduct as they relate to the possession, use, or consumption of drugs and alcohol.
27. **ZERO TOLERANCE FOR FRAUDULENT CONDUCT IN LOCAL AGENCY SERVICES**. STATE shall comply with any applicable "Zero Tolerance for Fraudulent Conduct in LOCAL AGENCY Services." There shall be "Zero Tolerance" for fraud committed by contractors in the administration of LOCAL AGENCY programs and the provision of LOCAL AGENCY services. Upon proven instances of fraud committed by the STATE in connection with performance under the Agreement, the Agreement may be terminated consistent with the termination for cause/cancellation term, Exhibit C, section 8, subsection B, of Cooperative Fire Programs Fire Protection Reimbursement Agreement, LG-1, between the California Department of Forestry and Fire Protection (CAL FIRE) and the LOCAL AGENCY.
28. **CONFIDENTIAL INFORMATION**. "Confidential information" means information designated by CAL FIRE and/or the LOCAL AGENCY disclosure of which is restricted, prohibited or privileged by State and federal law. Confidential Information includes, but is not limited to, information exempt from disclosure under the California Public Records Act (Government Code Sections 6250 et seq.) Confidential Information includes but is not limited to all records as defined in Government Code section 6252 as well as verbal communication of Confidential Information. Any exchange of Confidential Information between parties shall not constitute a "waiver" of any exemption pursuant to Government Code section 6254.5

CAL FIRE and LOCAL AGENCY personnel allowed access to information designated as Confidential Information shall be limited to those persons with a demonstrable business need for such access. CAL FIRE and LOCAL AGENCY agree to provide a list of authorized personnel in writing as required by Government Code section 6254.5(e). CAL FIRE and the LOCAL

AGENCY agree to take all necessary measures to protect Confidential Information and shall impose all the requirements of this Agreement on all of their respective officers, employees and agents with regards to access to the Confidential Information. A Party to this Contract who experiences a security breach involving Confidential Information covered by this Contract, agrees to promptly notify the other Party of such breach

29. **ENTIRE AGREEMENT**: This agreement contains the whole agreement between the Parties. It cancels and supersedes any previous agreement for the same or similar services.

EXHIBIT D
ADDITIONAL PROVISIONS

EXCISE TAX: State of California is exempt from federal excise taxes, and no payment will be made for any taxes levied on employees' wages. STATE will pay any applicable State of California or local sales or use taxes on the services rendered or equipment or parts supplied pursuant to this agreement. The STATE may pay any applicable sales and use tax imposed by another state.

Schedules

The following Schedules are included as part of this agreement (check boxes if they apply):

- ☒ **A. Fiscal Display, PRC 4142 AND/OR PRC 4144** - STATE provided LOCAL AGENCY funded fire protection services. STATE-owned vehicles shall be operated and maintained in accordance with policies of STATE at rates listed in Exhibit D, Schedule A.
- ☐ **B. STATE Funded Resource** - A listing of personnel, crews and major facilities of the STATE overlapping or adjacent to the local agency area that may form a reciprocal part of this agreement.
- ☐ **C. LOCAL AGENCY Provided Local Funded Resources** - A listing of services, personnel, equipment and expenses, which are paid directly by the local agency, but which are under the supervision of the Unit Chief.
- ☐ **D. LOCAL AGENCY Owned STATE Maintained Vehicles** - Vehicle information pertaining to maintenance responsibilities and procedures for local agency-owned vehicles that may be a part of the agreement.

LOCAL AGENCY-owned firefighting vehicles shall meet and be maintained to meet minimum safety standards set forth in Title 49, Code of Federal Regulations; and Titles 8 and 13, California Code of Regulations.

LOCAL AGENCY-owned vehicles that are furnished to the STATE shall be maintained and operated in accordance to LOCAL AGENCY policies. In the event LOCAL AGENCY does not have such policies, LOCAL AGENCY-owned vehicles shall be maintained and operated in accordance with STATE policies. The cost of said vehicle maintenance and operation shall be at actual cost or at rates listed in Exhibit D, Schedule D.

Exhibit D, Schedule D is incorporated into this section if LOCAL AGENCY-owned vehicles listed in Exhibit D, Schedule D are to be operated, maintained, and repaired by STATE.

LOCAL AGENCY assumes full responsibility for all liabilities associated therewith in accordance with California Vehicle Code Sections 17000, 17001 et seq. STATE employees operating LOCAL AGENCY-owned vehicles shall be deemed employees of LOCAL AGENCY, as defined in Vehicle Code Section 17000. Except where LOCAL AGENCY would have no duty to indemnify STATE under Exhibit C, Section 6 for all LOCAL AGENCY-owned vehicles operated or used by employees of STATE under this agreement.

LOCAL AGENCY employees, who are under the supervision of the Unit Chief and operating STATE-owned motor vehicles, as a part of the duties and in connection with fire protection and other emergency services, shall be deemed employees of STATE, as defined in Vehicle Code Section 17000 for acts or omissions in the use of such vehicles. Except where STATE would have no duty to indemnify LOCAL AGENCY under Exhibit C, Section 6.

- E. Certification of Insurance** - Provider Insurance Certification and/or proof of self-insurance.

Unit: Mendocino

Agreement Total	\$1,540,822
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Contract Name: City Of Ukiah

Contract No.: 1CA05265

Page No.: 17

Fiscal Year 21/22	
PS Total	\$329,755
OE Total	\$27,734

TOTAL	\$357,489
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Fiscal Year 22/23 (+5%)	
PS Total	\$346,243
OE Total	\$29,120

TOTAL	\$375,363
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Fiscal Year 23/24 (+5%)	
PS Total	\$363,555
OE Total	\$30,576

TOTAL	\$394,132
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Fiscal Year 24/25 (+5%)	
PS Total	\$381,733
OE Total	\$32,105

TOTAL	\$413,838
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Fiscal Year: 2021 Index: 1100 PCA 17101 PRC: 4142 Comments Dispatch Agreement					Unit: Mendocino		Sub Total Admin Total		\$294,398 \$35,357 \$329,755		Contract Name: City Of Ukiah Contract No.: 1CA05265 Page No.: 18				
This is a Schedule A - 4142 of the Cooperative Agreement, dated July 1, 2021 between "City of Ukiah" and The California Department of Forestry and Fire Protection (CAL FIRE)					Overtime Total:		\$71,015								
					CAL FIRE Unit Chief		George Gonzalez								
					CAL FIRE Region Chief		Mike Bradley								
Number of Positions	Classification/ad-ons (Pick From List)	RET.	Period	Salary Months	Salary Rate	Total Salary	EDWC Rate	EDWC Periods	Total EDWC	Salary Benefits	FFI UI	EDWC Benefits	Total Salary & EDWC	Total Position Cost	
2	Communications Operator, Range B	SAF		12	\$6,081	\$145,944	\$0	0	\$0	\$74,300	\$0	\$0	\$220,244	\$294,398	
1	Night-Shift Pay Differential	SAF		12	\$173	\$2,080			\$0	\$1,059		\$0	\$3,139		
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
1	Overtime	SAF				\$70,000			\$0	\$1,015		\$0	\$71,015		
					\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	
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	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		
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	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	
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	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		
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	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
					\$0	\$0			\$0	\$0		\$0	\$0		
	Overtime				\$0	\$0			\$0	\$0		\$0	\$0		

Fiscal Year: 2021			Uniform Benefits		\$0		Contract Name:			
Index: 1100			Sub Total		\$24,760		City Of Ukiah			
PCA: 17101			Admin		\$2,974		Contract No.: 1CA05265			
PRC: 4142			Total		\$27,734		Page No.: 19			
Comments										
This is a Schedule A - 4142 of the Cooperative Agreement, dated July 1, 2021 between "City of Ukiah" and The California Department of Forestry and Fire Protection (CAL FIRE)										
					1.45%					
Category (Pick from List)	Details	Number	Months	Rate	Sub-Total	Uniform Benefits	Total			
UNIFORM ALLOWANCE FOR COMM OP		2.00	12.00	\$104	\$ 2,500		\$ 2,500			
GENERAL EXPENSE	Maintenance, Utlities, EMD	1.00	12.00	\$455	\$ 5,460		\$ 5,460			
TRAINING	Employees	2.00	12.00	\$700	\$ 16,800		\$ 16,800			
			</							

Exhibit E

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION MENDOCINO UNIT

Service Description for
Fire and Emergency Medical Dispatch Services
To
City of Ukiah

Within current California Department of Forestry and Fire Protection (CAL FIRE) policy and in addition to the elements of the FIRE SERVICE COMMUNICATION SYSTEM – Memorandum of Understanding – Standard Operational Procedures for the Mendocino County Operational Area (Office of Fire Warden, Mendocino County Fire Chiefs Association, November 1994); the following serves to describe the scope of work to be performed by the CAL FIRE Howard Forest Emergency Command Center (ECC) for the City of Ukiah:

Service

Fire and Emergency Medical Services (EMS) dispatch services will be provided to those Local Fire Service Agencies and Ambulance providers of Mendocino County who are signatory to the Operational Memorandum of Understanding (MOU) of November 1994. Coastal Valley Emergency Medical Services (CVEMS) has designated the Howard Forest ECC (HFECC) as Mendocino County's Air Ambulance Coordination Center. The HFECC is the secondary Public Safety Answering Point (PSAP) for Mendocino County. CAL FIRE is the Cal OES Fire and Rescue Coordination Center for Mendocino County.

Dispatch services will be provided 24-hours per day, seven days per week, throughout the contract period.

CAL FIRE will provide Emergency Medical Dispatching (EMD) for medical dispatch and call priority determination (when appropriate). EMD provides for a caller to respond to a standardized question format to help determine the type of resources required to appropriately assist the caller. EMD also directs the dispatcher to provide pre-arrival instructions to assist with patient care, once the emergency response has been dispatched.

Generally, all emergency calls will be dispatched within sixty (60) seconds of the call. This time frame is a general target; it is recognized that verification of location information and directions to the location of the emergency as well as completion of the EMD process will sometimes require more than the 60-second time frame. Priority is placed on clear and reliable dispatch information for responding resources.

All emergency, non-emergency and administrative calls for service are logging into the Altaris Computer Added Dispatch program (CAD). All key entries are automatically time stamped by the CAD program for accuracy. All entries that require a field response of any type are logged as incidents and administrative functions (such as Fire Department announcements) are logged in as events and do not generate an incident number.

All CAD data is available on a web-based program that is accessible by a password protected program available to any agency or cooperator who does business with the dispatch center. The program used to retrieve this data is Crystal Reports, a CAL FIRE standard program for CAD data retrieval. All users of this service will be restricted to access records that originate in the Mendocino Unit. This program has pre-built reports that the user can access. Any news reports must be requested through the ECC Manager with specifics of the information requested. No call data or other CAD information will be released to the public.

Staffing

CAL FIRE provides a dispatch center 24 hours per day, seven days a week. Staffing levels for the ECC are a minimum of 1 fully qualified Fire Captain, and 2 fully qualified Communications Operator. During Fire Season, when CAL FIRE fixed wing aircraft are on Contract (normally, 6/15 through 10/15), the ECC is staffed with a minimum of 2 qualified Fire Captains and 2 qualified Communications Operators during the day.

The ECC Manager is a CAL FIRE Battalion Chief. This person is responsible for all ECC operations, personnel, and coordination with the Mendocino County Dispatch contract. He/She is the primary contact for the Coastal Valley EMS coordinator for any changes in EMS dispatch policy, procedures, or information requests.

Facilities

The CAL FIRE ECC infrastructure consists of two buildings that house the ECC and Expanded Dispatch along with all of the radio and telephone equipment. These two buildings together allow handling of all the normal daily activities and, if necessary, open an expanded dispatch to handle larger incidents. A 125 KW generator is also on-site to automatically provide emergency power if necessary.

The ECC is capable of providing all dispatching services on multiple frequencies. Fire and EMS are being dispatched at the same time using the Mendocino County Dispatching frequencies. CAL FIRE has Altaris Computer Aided Dispatch program (CAD) in a laptop computer and CAL FIRE can use another location's phone service along with a Mobile radio for a short duration. If this is not possible CAL FIRE has the ability to use a mobile location with Cellular phone service. CAL FIRE has access to a Mobile Communications Center for a backup Emergency Command Center, if needed for a long duration event, which is usually available within four hours.

Radio Frequencies

The ECC will use the following frequencies, which are licensed to Mendocino County, to dispatch and support local government and CAL FIRE resources on any incident that requires use of these frequencies:

Mendocino County Red	TX 154.3850	RX 153.9500
Mendocino County Blue	TX 156.1950	RX 151.0850
Mendocino County Green	TX 155.4300	RX 151.1150

The ECC will use the following frequencies, which are licensed to CAL FIRE, to support CAL FIRE or local government on any incident that requires use of these frequencies:

CAL FIRE Mendocino Local	TX 159.2700	RX 153.3850
CAL FIRE Command 8	TX 159.3450	RX 151.4450
CAL FIRE Command 1	TX 159.3000	RX 151.3550
CAL FIRE Command 2	TX 159.3300	RX 151.2650

Additional Agencies/Resources dispatched all or in part, Pursuant to this Contract:

- CALSTAR 4 Air Ambulance
- REACH 18 Air Ambulance
- Anderson Valley Ambulance
- Fort Bragg Ambulance
- MEDSTAR Ambulance
- Redwood Empire Hazardous Materials Response Team (REHIT)

The ECC has a Cooperative Agreement to provide dispatching services to the County of Mendocino fire agencies.

CAL FIRE – Cooperative Fire
Local Government Program
2024/2025 Dispatch Agreement Costing Guide

2024/2025 New Dispatch Agreement Recommended Cost Calculator

SUGGESTED AGREEMENT TOTAL - Included: Direct Costs (Salary, Uniforms, Training) and Indirect Costs (Hardware, Software, and support)

Agency Call Volume	
2020	4,057
2021	4,381
2022	5,657
2023	6,405
2024	7,928
5-Year Total	28,428
Average	5,686

2024/2025 Per Call	\$ 77.88
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Suggested Number of Communication Operators	
Communication Operators	2.3

Suggested Agreement Cost	
Suggested Total Annual Agreement Total	\$ 442,794.53

Methodology Standards
NFPA 1061, NFPA 1221, and NFPA 1225, and Statewide Call Volume were utilized in the development.
NFPA 1061: Standard for Public Safety Telecommunications Personnel Professional Qualifications
NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems
NFPA 1225: Standard for Emergency Services Communications
NFPA 1221: 7.3.1 There shall be a minimum of two telecommunication on duty and present in the communication center at all times.
NFPA 1221: 7.4.2.2 (listed below), 90 percent of [fire] alarm processing shall be completed within 64 seconds and 95 percent of [fire] alarm processing shall be completed within 106 seconds.
Exceptions: (1) Joint responses with law enforcement (involving weapons) (2) Hazardous materials incidents (3) Technical rescue
Methodology Supporting Links
https://emsa.ca.gov/cemsis-dashboards/
https://www.calhr.ca.gov/labor-relations/Documents/MOU%2020190701-20230701-bu07.pdf
https://nasemso.org/wp-content/uploads/2020-National-EMS-Assessment_Reduced-File-Size.pdf

INSTRUCTION: Enter the annual call volume into the yellow cells above. The call volume will be averaged to allow for a forecasted agreement total. The 5-year average will be multiplied by the per-call cost for an agreement total. This agreement total does not include the administrative fee. This will be included in the quarterly billing.

*The Per Call suggested rate is based on BU07 negotiated rates along with annual hardware costs, which are subject to change.



AGENDA SUMMARY REPORT

SUBJECT: Authorize City Manager to Award Contract for the Fairgrounds Storm Drain Replacement Project, Specification 25-02, to Ghilotti Construction Company Inc, as the Apparent Low Bidder in the Amount of \$591,204, Upon the City Manager Completing Negotiation of a Satisfactory Agreement with the Redwood Empire Fairgrounds ("Fairgrounds") Sharing Costs of Construction and Other Matters Concerning the Ongoing Use and Maintenance of the Storm Drain and Related Facilities, and Approve All Necessary Budget Amendments.

DEPARTMENT: Public Works

PREPARED BY: Myles Fisette, Purchasing Manager

PRESENTER: Tim Eriksen, Public Works Director/City Engineer

ATTACHMENTS:

1. Bid Tabulation Spec 25-02 Fairgrounds Storm Drain Replacement
2. Ghilotti Bid

Summary: Council will consider authorizing the City Manager to award a contract to Ghilotti Construction Company Inc. in the amount of \$591,204 for the Fairgrounds Storm Drain Replacement Project, Specification 25-02 upon completing negotiation of a satisfactory agreement with the Ukiah Fair Grounds sharing costs of construction and other matters concerning the ongoing use and maintenance of the storm drain and related facilities, and approval of all necessary budget amendments.

Background: In March 2014, City Staff presented an item to the City Council concerning the storm drain that runs through and services the Fairgrounds. The storm drain system was originally installed as a joint effort between the City of Ukiah and the Fairgrounds, with construction occurring in or shortly after 1962.

Since its installation, the storm drain has reached the end of its expected service life and is now exhibiting deterioration typical of infrastructure of this age. At the time the issue was brought to City Staff in 2014, a small sinkhole had developed in the western upper dirt parking lot near State Street. Following extensive discussions regarding maintenance responsibility, the City took the lead and hired a professional civil engineer to design a replacement system for the aging storm drain infrastructure. Design efforts continued for several years; however, the engineer was ultimately unable to complete the project due to impending development by the Fairgrounds. There was a proposed project on the upper parking lot that was important to avoid storm drain pipe realignment. The exact location was undetermined and the final pipe alignment was never determined.

Recently, the Fairgrounds staff have raised concerns with the deterioration of the pipe. Given that the proposed development still had not occurred, City Staff agreed to revisit and complete the design plans that had been initiated nearly a decade earlier.

Discussion: On June 4, 2025, Council instructed Staff to proceed with a Request for Bid. The Request for Bid was released on June 5, 2025, and was advertised in the Ukiah Daily Journal and posted to Bidnet Direct and the City website.

The City received nine (9) construction bids for this project (Attachment 1). Ghilotti Construction Company Inc. was the lowest responsible bidder with a bid amount of \$591,204. A copy of Ghilotti Construction Company

Inc.'s bid is provided (Attachment 2).

Staff recommends that pursuant to Public Contract Code Section 22034(c) the City Council authorize the City Manager to award the contract to Ghilotti Construction Company Inc. upon the City Manager completing negotiation of a satisfactory agreement with the Ukiah Fairgrounds sharing costs of construction and other matters concerning the ongoing use and maintenance of the storm drain and related facilities.

Funding for the project is anticipated to come from a combination of CalTrans Local Partnership Program (LPP) formulaic funds, contributions from the Fairgrounds, and City Special Project Reserve resources. Staff further requests Council authorization to process any necessary budget amendments based on the negotiated cost-sharing agreement, calculated from the low bid amount plus a 10% contingency, without the need to return to Council for additional approval.

Recommended Action: Authorize the City Manager to award a contract for the Fairgrounds Storm Drain Replacement Project, Specification 25-02, to Ghilotti Construction Company Inc., as the apparent low bidder in the amount of \$591,204, upon completion of a satisfactory agreement with the Fairgrounds regarding cost-sharing and ongoing maintenance of the storm drain and related facilities; and authorize the City Manager to execute all necessary budget amendments based on the negotiated cost-sharing arrangement, including a 10% contingency, without the need for further Council approval.

BUDGET AMENDMENT REQUIRED: Yes

CURRENT BUDGET AMOUNT: \$0

PROPOSED BUDGET AMOUNT: \$0

FINANCING SOURCE: City Special Project Reserve Fund/CalTrans LPP Formulaic Funds/Fairground Funds

REVENUE: No GRANT: No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: N/A

COORDINATED WITH: Andrew Stricklin, Senior Engineer; Seth Strader, Management Analyst II – Public Works

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):

GENERAL PLAN ELEMENTS (GP):

Approved:


Sage Sangiacomo, City Manager

BID RESULTS - SPEC 25-02 FAIRGROUNDS STORM DRAIN REPLACEMENT
BID OPENING: 2 PM, JULY 1, 2025

				GHILOTTI CONSTRUCTION COMPANY SANTA ROSA, CA		JD GENERAL ENGINEERING UKIAH, CA		TERRACON CONSTRUCTION HEALDSBURG, CA		MARZ ENGINEERING REDWOOD VALLEY, CA		VALLEY PAVING REDWOOD VALLEY, CA		STIMPEL WIEBELHAUS ASSOCIATES REDDING, CA		WESTPAC CONSTRUCTION WINDSOR, CA		GRANITE UKIAH, CA		MERCER FRASER COMPANY EUREKA, 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	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
1	MOBILIZATION	LS	1	\$14,500.00	\$14,500.00	\$30,000.00	\$30,000.00	\$13,000.00	\$13,000.00	\$7,300.00	\$7,300.00	\$17,398.15	\$17,398.15	\$75,000.00	\$75,000.00	\$32,400.00	\$32,400.00	\$20,000.00	\$20,000.00	\$124,000.00	\$124,000.00
2	TRAFFIC CONTROL	LS	1	\$15,200.00	\$15,200.00	\$10,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$12,555.00	\$12,555.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$12,237.00	\$12,237.00	\$8,000.00	\$8,000.00	\$10,000.00	\$10,000.00
3	POTHOLING	LS	1	\$17,000.00	\$17,000.00	\$8,000.00	\$8,000.00	\$20,000.00	\$20,000.00	\$7,360.00	\$7,360.00	\$20,000.45	\$20,000.45	\$12,000.00	\$12,000.00	\$23,310.00	\$23,310.00	\$18,000.00	\$18,000.00	\$13,000.00	\$13,000.00
4	TEMPORARY REMOVE/REINSTALL FENCING	LS	1	\$16,000.00	\$16,000.00	\$10,000.00	\$10,000.00	\$7,500.00	\$7,500.00	\$3,880.00	\$3,880.00	\$15,000.50	\$15,000.50	\$25,000.00	\$25,000.00	\$17,650.00	\$17,650.00	\$4,000.00	\$4,000.00	\$12,000.00	\$12,000.00
5	24" ADS N12 STORM DRAIN	LF	462	\$126.00	\$58,212.00	\$90.00	\$41,580.00	\$135.00	\$62,370.00	\$150.00	\$69,300.00	\$145.95	\$67,428.90	\$110.00	\$50,820.00	\$153.00	\$70,686.00	\$250.00	\$115,500.00	\$345.00	\$159,390.00
6	24" RCP STORM DRAIN (CLASS IV)	LF	100	\$246.00	\$24,600.00	\$300.00	\$30,000.00	\$305.00	\$30,500.00	\$250.00	\$25,000.00	\$450.50	\$45,050.00	\$300.00	\$30,000.00	\$435.00	\$43,500.00	\$390.00	\$39,000.00	\$530.00	\$53,000.00
7	30" ADS N12 STORM DRAIN	LF	177	\$187.00	\$33,099.00	\$254.00	\$44,958.00	\$170.00	\$30,090.00	\$200.00	\$35,400.00	\$161.45	\$28,576.65	\$135.00	\$23,895.00	\$270.00	\$47,790.00	\$230.00	\$40,710.00	\$284.00	\$50,268.00
8	36" ADS N12 STORM DRAIN	LF	1098	\$211.00	\$231,678.00	\$100.00	\$109,800.00	\$182.00	\$199,836.00	\$250.00	\$274,500.00	\$184.50	\$202,581.00	\$140.00	\$153,720.00	\$119.00	\$130,662.00	\$230.00	\$252,540.00	\$340.00	\$373,320.00
9	36"X36" JUNCTION BOX	EA	1	\$4,900.00	\$4,900.00	\$17,800.00	\$17,800.00	\$8,500.00	\$8,500.00	\$7,620.00	\$7,620.00	\$4,407.35	\$4,407.35	\$11,000.00	\$11,000.00	\$10,939.00	\$10,939.00	\$11,100.00	\$11,100.00	\$13,000.00	\$13,000.00
10	48"X48" JUNCTION BOX	EA	3	\$9,000.00	\$27,000.00	\$8,000.00	\$24,000.00	\$9,000.00	\$27,000.00	\$9,611.00	\$28,833.00	\$6,590.75	\$19,772.25	\$14,000.00	\$42,000.00	\$11,000.00	\$33,000.00	\$14,000.00	\$42,000.00	\$13,000.00	\$39,000.00
11	48" STORM DRAIN MANHOLE	EA	1	\$8,375.00	\$8,375.00	\$20,000.00	\$20,000.00	\$10,000.00	\$10,000.00	\$7,456.00	\$7,456.00	\$4,226.60	\$4,226.60	\$13,000.00	\$13,000.00	\$19,602.00	\$19,602.00	\$15,000.00	\$15,000.00	\$14,500.00	\$14,500.00
12	4"X6" JUNCTION BOX	EA	2	\$15,500.00	\$31,000.00	\$5,500.00	\$11,000.00	\$12,000.00	\$24,000.00	\$13,971.00	\$27,942.00	\$11,865.75	\$23,731.50	\$24,000.00	\$48,000.00	\$10,885.00	\$21,770.00	\$27,000.00	\$54,000.00	\$13,500.00	\$27,000.00
13	CONNECT EXISTING 8"-18" SD TO NEW JUNCTION BOX	EA	3	\$2,600.00	\$7,800.00	\$2,840.00	\$8,520.00	\$1,500.00	\$4,500.00	\$3,400.00	\$10,200.00	\$5,063.05	\$15,189.15	\$12,000.00	\$36,000.00	\$2,767.00	\$8,301.00	\$3,300.00	\$9,900.00	\$10,000.00	\$30,000.00
14	CONNECT NEW 24" TO EXISTING JUNCTION BOX	EA	2	\$1,200.00	\$2,400.00	\$7,500.00	\$15,000.00	\$3,500.00	\$7,000.00	\$4,200.00	\$8,400.00	\$10,119.05	\$20,238.10	\$12,000.00	\$24,000.00	\$3,900.00	\$7,800.00	\$4,000.00	\$8,000.00	\$10,000.00	\$20,000.00
15	CONNECT NEW 30" SD TO EXISTING MANHOLE	EA	1	\$2,200.00	\$2,200.00	\$8,500.00	\$8,500.00	\$5,500.00	\$5,500.00	\$5,300.00	\$5,300.00	\$16,759.20	\$16,759.20	\$13,000.00	\$13,000.00	\$5,330.00	\$5,330.00	\$11,000.00	\$11,000.00	\$11,000.00	\$11,000.00
16	CONNECT EXISTING 12" SD TO NEW 24" RCP PIPE	EA	1	\$1,200.00	\$1,200.00	\$13,000.00	\$13,000.00	\$2,143.00	\$2,143.00	\$3,400.00	\$3,400.00	\$17,474.15	\$17,474.15	\$11,000.00	\$11,000.00	\$4,500.00	\$4,500.00	\$7,000.00	\$7,000.00	\$11,000.00	\$11,000.00
17	SLURRY FILL AND ABANDON STORM DRAIN	LS	1	\$15,000.00	\$15,000.00	\$13,500.00	\$13,500.00	\$23,037.00	\$23,037.00	\$7,300.00	\$7,300.00	\$19,488.60	\$19,488.60	\$9,500.00	\$9,500.00	\$13,145.00	\$13,145.00	\$8,500.00	\$8,500.00	\$13,000.00	\$13,000.00
18	REMOVE EXISTING STORM DRAIN AND JUNCTION BOXES	LS	1	\$7,500.00	\$7,500.00	\$65,000.00	\$65,000.00	\$11,092.00	\$11,092.00	\$11,000.00	\$11,000.00	\$29,916.55	\$29,916.55	\$12,500.00	\$12,500.00	\$26,789.00	\$26,789.00	\$25,000.00	\$25,000.00	\$11,000.00	\$11,000.00
19	REMOVE AND DISPOSE REDWOOD TREE (APPROX. DBH 60 INCHES)	EA	2	\$4,180.00	\$8,360.00	\$7,500.00	\$15,000.00	\$9,881.00	\$19,762.00	\$20,000.00	\$40,000.00	\$9,547.50	\$19,095.00	\$9,000.00	\$18,000.00	\$44,800.00	\$89,600.00	\$3,400.00	\$6,800.00	\$12,000.00	\$24,000.00
20	CLEAR & GRUBB EX. BRUSH IN PIPELINE ROUTE AND DITCH	LS	1	\$17,500.00	\$17,500.00	\$16,142.00	\$16,142.00	\$8,427.00	\$8,427.00	\$6,000.00	\$6,000.00	\$18,082.15	\$18,082.15	\$60,000.00	\$60,000.00	\$36,704.00	\$36,704.00	\$8,000.00	\$8,000.00	\$22,000.00	\$22,000.00
21	GRADING AND SOIL REMOVAL	CY	1,200	\$23.00	\$27,600.00	\$46.00	\$55,200.00	\$38.00	\$45,600.00	\$45.00	\$54,000.00	\$34.25	\$41,100.00	\$50.00	\$60,000.00	\$96.00	\$115,200.00	\$74.00	\$88,800.00	\$117.00	\$140,400.00
22	RUBBER DUCKBILL CHECK VALVE 36"	EA	1	\$15,000.00	\$15,000.00	\$16,000.00	\$16,000.00	\$18,678.00	\$18,678.00	\$19,056.50	\$19,056.50	\$26,517.50	\$26,517.50	\$17,000.00	\$17,000.00	\$20,218.00	\$20,218.00	\$20,000.00	\$20,000.00	\$25,000.00	\$25,000.00
23	TRENCH PAVING HMA 3"	TON	4	\$420.00	\$1,680.00	\$1,875.00	\$7,500.00	\$1,301.00	\$5,204.00	\$800.00	\$3,200.00	\$1,095.70	\$4,382.80	\$3,500.00	\$14,000.00	\$1,670.00	\$6,680.00	\$2,600.00	\$10,400.00	\$6,000.00	\$24,000.00
24	RELOCATE EXISTING 1" WATER SERVICE	EA	2	\$1,700.00	\$3,400.00	\$2,500.00	\$5,000.00	\$4,501.00	\$9,002.00	\$5,000.00	\$10,000.00	\$375.00	\$750.00	\$5,000.00	\$10,000.00	\$4,316.00	\$8,632.00	\$6,300.00	\$12,600.00	\$12,000.00	\$24,000.00
TOTAL BID:				\$591,204.00		\$595,500.00		\$597,741.00		\$685,002.50		\$702,166.55		\$794,435.00		\$806,445.00		\$835,850.00		\$1,243,878.00	
Sub:		Work:		Sub:		Work:		Sub:		Work:		Sub:		Work:		Sub:		Work:		Sub:	
FAMILY TREE SERVICE		CLEAR + GRUB		JOHNSON'S QUALITY TREE CARE		TREE REMOVAL		CELL-CRETE CORP		STORM DRAIN ABANDONMENT		TRAFFIC MANAGEMENT INTERNATIONAL		JOHNSON'S QUALITY TREE CARE		TREE REMOVAL		DAVEY		TREE DEMO	
ABLE FENCE COMPANY		FENCING		WJPF CONSTRUCTION		TRUCKING		MOUNTAIN F ENTERPRISES		TREE REMOVAL											
								GINQUINI & PASSARINO		STAKING/SURVEY											

NAME OF BIDDER: Ghilotti Construction Company, Inc.
 SPEC #: 25-02
 PROJECT NAME: FAIRGROUNDS STORM DRAIN REPLACEMENT

Item No.	Description	Unit of Measure	Quantity	Unit Price	Total
1	MOBILIZATION	LS	1	\$ <u>14 500</u>	\$ <u>14 500</u>
2	TRAFFIC CONTROL	LS	1	\$ <u>15 200</u>	\$ <u>15 200</u>
3	POTHOLING	LS	1	\$ <u>17 000</u>	\$ <u>17 000</u>
4	TEMPORARY REMOVE/REINSTALL FENCING	LS	1	\$ <u>16 000</u>	\$ <u>16 000</u>
5	24" ADS N12 STORM DRAIN	LF	462	\$ <u>126</u>	\$ <u>58 212</u>
6	24" RCP STORM DRAIN (CLASS IV)	LF	100	\$ <u>246</u>	\$ <u>24 600</u>
7	30" ADS N12 STORM DRAIN	LF	177	\$ <u>187</u>	\$ <u>33 099</u>
8	36" ADS N12 STORM DRAIN	LF	1098	\$ <u>211</u>	\$ <u>231 678</u>
9	36"X36" JUNCTION BOX	EA	1	\$ <u>4 900</u>	\$ <u>4 900</u>
10	48"X48" JUNCTION BOX	EA	3	\$ <u>9 000</u>	\$ <u>27 000</u>
11	48" STORM DRAIN MANHOLE	EA	1	\$ <u>8 375</u>	\$ <u>8 375</u>
12	4'X6' JUNCTION BOX	EA	2	\$ <u>15 500</u>	\$ <u>31 000</u>
13	CONNECT EXISTING 8"-18" SD TO NEW JUNCTION BOX	EA	3	\$ <u>2 600</u>	\$ <u>7 800</u>
14	CONNECT NEW 24" TO EXISTING JUNCTION BOX	EA	2	\$ <u>1 200</u>	\$ <u>2 400</u>
15	CONNECT NEW 30" SD TO EXISTING MANHOLE	EA	1	\$ <u>2 200</u>	\$ <u>2 200</u>
16	CONNECT EXISTING 12" SD TO NEW 24" RCP PIPE	EA	1	\$ <u>1 200</u>	\$ <u>1 200</u>
17	SLURRY FILL AND ABANDON STORM DRAIN	LS	1	\$ <u>15 000</u>	\$ <u>15 000</u>
18	REMOVE EXISTING STORM DRAIN AND JUNCTION BOXES	LS	1	\$ <u>7 500</u>	\$ <u>7 500</u>
19	REMOVE AND DISPOSE REDWOOD TREE (APPROX. DBH 60 INCHES)	EA	2	\$ <u>4 180</u>	\$ <u>8 360</u>

20	CLEAR & GRUBB EX. BRUSH IN PIPELINE ROUTE AND DITCH	LS	1	^{17 500} \$ 23 000	^{17 500} \$ 23 600 (13)
21	GRADING AND SOIL REMOVAL	CY	1200	\$ 23	\$ 27 600
22	RUBBER DUCKBILL CHECK VALVE 36"	EA	1	\$ 15 000	\$ 15 000
23	TRENCH PAVING HMA 3"	TON	4	\$ 420	\$ 1 680
24	RELOCATE EXISTING 1" WATER SERVICE	EA	2	\$ 1 700	\$ 3 400
TOTAL BASE BID→				\$ <u>591 204</u>	

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 July 1, 2025.

Licensed in accordance with an act providing for the registration of California Contractors License No. 644515, expiration date 5/31/26.

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: 1000003044

Signature of bidder or bidders, with business name, address, phone number and fax number:

Ghilotti Construction Company, Inc.

246 Ghilotti Avenue, Santa Rosa, CA 95407

Ph: 707-585-1221 / Fx: 707-585-1601

Thomas Smith, Vice President of Estimating

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.

Ghilotti Construction Company, Inc.

246 Ghilotti Avenue, Santa Rosa, CA 95407

Brian Ongaro - President/Secretary

I Terence Huie - CFO/Treasurer



GHILOTTI CONSTRUCTION COMPANY, INC.

CORPORATE RESOLUTION TO EXECUTE PROPOSALS

WHEREAS, the Board of Directors (the "Board") of Ghilotti Construction Company, Inc., a California corporation (the "Corporation") deem it desirable and in the best interests of the Corporation to authorize the following Officers of the Corporation as authorized signers on the Corporation's behalf on any and all bid documents and Bidder's Bonds: Richard W. Ghilotti, Chief Executive Officer; Brian W. Ongaro, President and Secretary; Ali Yazdi, Executive Vice President of Public Works and Chief Operating Officer; Irving T. Huie, Chief Financial Officer and Treasurer; and Thomas Smith, Vice President of Estimating.

NOW, THEREFORE, BE IT RESOLVED, that the Directors hereby approve and appoint Richard W. Ghilotti, Chief Executive Officer; Brian W. Ongaro, President and Secretary; Ali Yazdi, Executive Vice President of Public Works and Chief Operating Officer; Irving T. Huie, Chief Financial Officer and Treasurer; and Thomas Smith, Vice President of Estimating for the purpose of executing in the name of the Corporation, any and all bid documents and Bidder's Bonds.

RESOLVED FURTHER, that any and all actions taken by Richard W. Ghilotti, Brian W. Ongaro, Ali Yazdi, Irving T. Huie and Thomas Smith in executing said bid documents and Bidder's Bonds be, and they hereby are, ratified and approved, and all such Proposals and bonds and documents are hereby adopted as binding obligations of the Corporation.

Secretary's Certification

The Secretary of the Corporation hereby certifies that he is the duly elected and qualified Secretary of the Corporation and certifies that the above is a true and correct record of a Board resolution that was duly adopted by the Corporation's Board of Directors at a special meeting, which was duly and regularly called and held in all respects as required by law and by the Corporation's bylaws, and which was held on July 15, 2021.

IN WITNESS WHEREOF, I have hereto set my hand as such Secretary and affixed the corporate seal of the said Corporation, this 1st day of May, 2025.

By: 
Brian W. Ongaro, Secretary

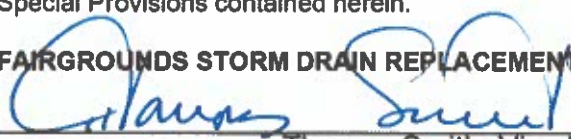
— Engineering Contractor —

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.

FAIRGROUNDS STORM DRAIN REPLACEMENT


(Signature of Bidder) Thomas Smith, Vice President of Estimating

Business Mailing Address:

Ghilotti Construction Company, Inc.

246 Ghilotti Avenue

Santa Rosa, CA 95407

Business Location:

246 Ghilotti Avenue

Santa Rosa, CA 95407

(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.

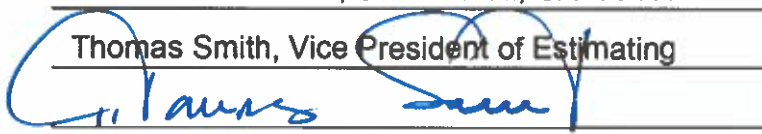
Witness my hand this 1st day of July, 20025

Signature of Bidder, with Business Address:

Ghilotti Construction Company, Inc.

246 Ghilotti Avenue, Santa Rosa, CA 95407

Thomas Smith, Vice President of Estimating



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:

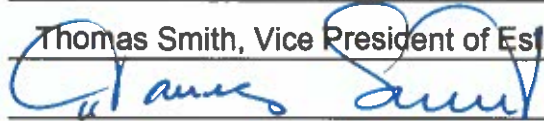
Ghilotti Construction Company, Inc.

Date

7/1/25

246 Ghilotti Avenue, Santa Rosa, CA 95407

Thomas Smith, Vice President of Estimating



(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
Family Tree Service, Inc.	640013	1000886697	PO Box 1325 Laytonville, CA 95454 PO Box 1325 (TS)	Clear + Grub
Able Fence Company Inc. Able Fence (TS)	409607	1000005997	PO Box 219 Petaluma, CA 94931	Fencing

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.

See attached listing

GHILOTTI CONSTRUCTION COMPANY



COMPLETED UNDERGROUND PROJECTS (LAST 5 YEARS)					6/24/2025
Type of Work	Project Name / Location	For Whom Performed	Value	Job #	Est. Completion Date
UNDERGROUND	BINFORD ROAD SELF STORAGE WATER LINE (Novato)	TREVOR HAM PH: 415-328-3014 E-MAIL: trevor415@gmail.com	\$357,220.00	6052	1/24
UNDERGROUND	NORTH STATE STREET 8" GRAVITY SEWER LINE (Ukiah)	CITY OF UKIAH 300 SEMINARY AVENUE UKIAH, CA 95482 CONTACT: MARY HORGER PH: 707/463-6233 FX: 707/313-3621 E-MAIL: mhorger@cityofukiah.com	\$225,715.00	6042	2/23
UNDERGROUND	EMERGENCY FORCE MAIN REPLACEMENT - ORCHARD AVENUE (GUERNEVILLE)	RUSSIAN RIVER COUNTY SANITATION DISTRICT (RRCSD) 404 AVIATION BLVD SANTA ROSA, CA 95403 CONTACT: GRETCHEN MARTINEZ PH: 707/528-5370 E-MAIL: gretchen.martinez@scwa.ca.gov	T & M NTE \$1,370,400.00	6037	1/23
UNDERGROUND	EMERGENCY SEBASTOPOL ROAD WELL ACTIVATION (Santa Rosa)	SONOMA COUNTY WATER AGENCY 404 AVIATION BLVD SANTA ROSA, CA 95403 CONTACT: GRETCHEN MARTINEZ PH: 707/528-5370 E-MAIL: gretchen.martinez@scwa.ca.gov	T & M NTE \$1,000,000.00	6023	7/23
UNDERGROUND	DORA STREET UTILITY IMPROVEMENT PROJECT (Ukiah)	CITY OF UKIAH 300 SEMINARY AVENUE UKIAH, CA 95482 CONTACT: MARY HORGER PH: 707/463-6233 FX: 707/313-3621 E-MAIL: mhorger@cityofukiah.com	\$4,376,766.45	6019	5/23
UNDERGROUND	NORTH TEXAS STREET WATER MAIN REPLACEMENT & OVERLAY (Fairfield)	CITY OF FAIRFIELD 1000 WEBSTER STREET FAIRFIELD, CA 94533 CONTACT: DAVID VONG PH: 707/428-7784 e-mail: dvong@fairfield.ca.gov	\$7,131,731.00	6004	7/23
UNDERGROUND	2021 SEWER MAIN REHABILITATION PROJECT (Lakeport)	CITY OF LAKEPORT 225 PARK STREET LAKEPORT, CA 95453 CONTACT: OLIVIA GRUPP PH: 707/263-5615 X 406 E-MAIL: ogrupp@cityoflakeport.com	\$650,316.00	5976	11/21
UNDERGROUND	ST. HELENA RD EMERGENCY CULVERT REPLACEMENT (2020 GLASS FIRE DISASTER) (Sonoma County)	COUNTY OF SONOMA DPW/DOT 2300 COUNTY CTR DR, STE B-100 SANTA ROSA, CA 95403 PH: 707/565-2231 FX: 707/565-2620	T & M NTE \$300,000.00	5954	2/21

UNDERGROUND	LOS ALAMOS RD EMERGENCY CULVERT REPLACEMENT (2020 GLASS FIRE DISASTER) (Sonoma County)	COUNTY OF SONOMA DPW/DOT 2300 COUNTY CTR DR, STE B-100 SANTA ROSA, CA 95403 PH: 707/565-2231 FX: 707/565-2620	T & M NTE \$500,000.00	5953	2/21
UNDERGROUND	WILFRED AVE BIORETENTION REHABILITATION (Rohnert Park)	CITY OF ROHNERT PARK 130 AVRAM AVENUE, 2ND FLR ROHNERT PARK, CA 94928 CONTACT: JUSTIN BRANT, P.E. PH: 707/239-8840 E-MAIL: jbrandt@rpcity.org	\$605,138.80	5938	3/21
UNDERGROUND	PARK LANE UNIT #3 WATER REPLACEMENT (Dixon)	BROOKFIELD HOMES 500 LA GONDA WAY, STE 100 DANVILLE, CA 94526 CONTACT: RICHIE MONTGOMERY PH: 916/960-8801 FX: 925/743-8052 E-mail: richie.montgomery@brookfieldrp.com	\$103,121.00	5935	12/20
UNDERGROUND	REDWOOD VALLEY WATER INFRASTRUCTURE RETROFIT PROJECT (Mendocino County)	COUNTY OF MENDOCINO 340 LAKE MENDOCINO DRIVE UKIAH, CA 95482-9432 CONTACT: HOWARD N. DASHIELL PH: 707/463-4363 FX: 707/463-5474 E-MAIL: dashielh@mendocinocounty.org	\$2,646,509.60	5923	3/22
UNDERGROUND	KAWANA SPRINGS ELEMENTARY SCHOOL SEWER REPLACEMENT (Santa Rosa)	BELLEVUE USD C/O RGM KRAMER 1101 COLLEGE AVENUE, SUITE 215 SANTA ROSA, CA 95404 CONTACT: ANDREA NOBLE CELL: 510/908-3309 e-mail: andrea@rgmassociates.com	\$305,000.00	5913	1/21
UNDERGROUND	PERK POND LEVEE REPAIR (Ukiah)	CITY OF UKIAH 300 SEMINARY AVENUE UKIAH, CA 95482 CONTACT: MARY HORGER PH: 707/463-6233	\$318,620.00	5901	4/20
UNDERGROUND	BURGUNDY ROAD STORM DRAIN REPAIR (Healdsburg)	CITY OF HEALDSBURG 401 GROVE STREET HEALDSBURG, CA 95448 CONTACT: CLAY THISTLE PH: 707/431-3346 E-MAIL: cthistle@ci.healdsburg.ca.us	\$50,280.00	5900	5/20
UNDERGROUND	REPLACEMENT OF PIPING & RELOCATION OF WATER METER AT DOWNTOWN BERKELEY	S.F. BART 300 LAKESIDE DRIVE, 9TH FLR OAKLAND, CA 94612 CONTACT: MICHAEL GERBRACHT PH: 510/987-5294 E-MAIL: mgerbra@bart.gov	\$196,701.80	5891	7/20
UNDERGROUND	DOWNTOWN INFRASTRUCTURE IMPROVEMENTS - PROJECTS 2018-40 + 2018-43 (Rohnert Park)	CITY OF ROHNERT PARK 130 AVRAM AVE. ROHNERT PARK, CA 94928 CONTACT: MARY GRACE PAWSON PH: 707/588-2232 E-MAIL: mpawson@rpcity.org	\$3,447,140.00	5886	4/20
UNDERGROUND	BROOKLYN BASIN OFFSITE JOINT TRENCH Oakland	ZARISON OHP I LLC. 2335 BROADWAY, STE 200 OAKLAND, CA 94612 PH: 510/817-2729 E-MAIL: fflores@signaturedevelopment.com	\$2,299,019.50	5867	5/20

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.

Ghilotti Construction Company, Inc.

Brian Ongaro - President/Secretary

I Terence Huie - CFO/Treasurer

Ali Yazdi - General Mgr.

Licensed in accordance with an act providing for the registration of Contractors:

License No. 644516 License Expiration Date 5/31/26

Signature(s) of Bidder: 

Thomas Smith

Vice President of Estimating

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:

Ghilotti Construction Comapny, Inc.

246 Ghilotti Avenue, Santa Rosa, CA 95407

Place of residence:

San Rafael, CA (President)

Dated:

7/1/25

CITY OF UKIAH

Mendocino County, California

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, Ghilotti Construction Company, Inc.

_____, as PRINCIPAL and

Liberty Mutual 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 Total Amount Bid--

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 JULY 1, 2025 for FAIRGROUNDS STORM DRAIN REPLACEMENT.

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 27th day of June, A.D. 2025.

Ghilotti Construction Company, Inc.

(Seal)

Thomas Smith (Seal)

Thomas Smith

(Seal)

Principal

Vice President of Estimating

Liberty Mutual Insurance Company

(Seal)

Ashley White (Seal)

Ashley White, Attorney-In-Fact

(Seal)

Surety

Address: 175 Berkeley Street, Boston, MA 02116

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 Placer)

On June 27, 2025 before me, Joselynn Campbell, Notary Public
(insert name and title of the officer)

personally appeared Ashley White,
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.

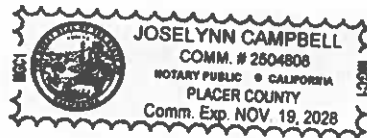
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)





POWER OF ATTORNEY

Certificate No: 8213388-977442

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Maggie Bender-Johnson; Dona Lisa Buschmann; Jocelynn Campbell; Edward D. Johnson; Robert D. Laux; Kathy Rangel; Julie A. Shiroma; Ashley White

all of the city of Roseville state of CA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 18th day of March, 2025.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: Nathan J. Zangerle
Nathan J. Zangerle, Assistant Secretary

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 18th day of March, 2025, before me personally appeared Nathan J. Zangerle, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2029
Commission number 1126044
Member Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes Nathan J. Zangerle, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 27th day of June, 2025.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

LMS-12873 LMIC OCIC WAIC Multi Co 02/24

NON-COLLUSION AFFIDAVIT

Note: Bidder shall execute the affidavit on this page prior to submitting his or her bid.

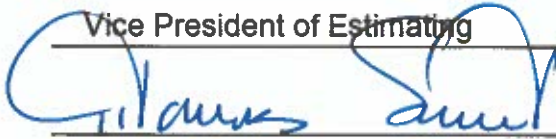
To City Council, City of Ukiah:

The undersigned in submitting a bid for performing FAIRGROUNDS STORM DRAIN REPLACEMENT 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.

Thomas Smith

Vice President of Estimating


Signature(s) of Bidder

Business Address: Ghilotti Construction Company, Inc.

246 Ghilotti Avenue

Santa Rosa, CA 95407

Place of Residence: San Rafael, CA (President)

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____.

CALIFORNIA JURAT WITH AFFIANT STATEMENT

GOVERNMENT CODE § 8202

- ☒ See Attached Document (Notary to cross out lines 1-6 below)
☐ See Statement Below (Lines 1-6 to be completed only by document signer[s], not Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1 Signature of Document Signer No. 2 (if any)

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

Subscribed and ~~sworn to~~ (or affirmed) before me

on this 30th day of June, 2025,
 by Date Month Year

(1) Thomas Loren Smith

(and (2) _____),
 Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Signature A Conley
 Signature of Notary Public



Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 1

**Request for Bid (RFB)
for
Spec 25-02 Fairgrounds Storm Drain Replacement
June 16, 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: RE: Item 19 - Which two trees are to be removed? Which plan sheet is this shown on?

A1: Approximate locations of trees are now shown in revised attachment. City Engineer will mark the tree with the contractor for removal. Approximate DBH=60". Contractor is advised to inspect the site and trees before bid to prepare bid cost response. Please discard the original version and replace with the attached revision provided with the addendum.

Q2: Please confirm that the 36" RCP elliptical pipe shown on sheet 7 (U-201) is supposed to be 36" ADS (HDPE) pipe as part of bid item 8.

A2: Disregard the "elliptical pipe" on sheet 7 and proceed with 36" ADS N12 storm drain pipe per bid item. Please discard the original version and replace with the attached revision provided with the addendum.

Q3: Also please clarify the size of the 4'x8' junction box noted on sheet 7, and what item that is part of?

A3: Correction made. This box is a match to the other 4'x6' junction box per bid item #12. See attached sheet 7. Please discard the original version and replace with the attached revision provided with the addendum.

Q4: RE: Section 12-1.01 J

Are four PCMS and four arrow boards really required for the duration of this project?

A4: Changeable message boards will only be required on this job as part of the traffic control plan if or when the contractor to interrupt traffic on State Street and when closing traffic access on Mazzoni Street to the fairgrounds. Contractor will submit their traffic control plan and any alternative sign or flagging controls will be considered and must be approved by the City Engineer.

Q5: At the outfall we need the topo survey with the existing grades for the 2,039 SY. This will determine my cut/fills for this area. If the area cannot be topo'ed then clarify bid item #21; Grading & Soil Removal is all export dirt

A5: Due to existing vegetation, no full topo of the retention area is available. Contractor will assume the entire outfall area shown on plan will be soil removal at the depth and slope shown.

Q6: Plan sheet U-101 indicates 36" HDPE pipe through the Trailer Park. Plan Sheet U-201 notes to use 36" RCP Elliptical Pipe?? Please clarify what you want.

A6: Answered in A2.

Q7: The plans do not indicate the tree removal 60" trees; What trees do you think will be removed?
Not on the plans

A7: Answered in A1.

Q8: U-201 notes to relocate (2) water meters? What size are the water meters and a detail for relocating and where is the main for these services?

A8: Revised page shows location of existing 8" water main and 1" water services that are to be located out of the storm drain alignment. This work including all parts and labor will be a new bid item #24. Please discard the original version bid item lists on pages x and 54 and replace with the attached revision provided with the addendum.

Q9: In the specials the instructions to bidders (pg 12) is 30 working days and the agreement (pg. 75) says 120 working days.

A9: This project is to be completed within 30 working days. This number has been updated in the agreement, bid document page number 65. Please discard the original version and replace with the attached revision provided with the addendum.

Q10: Please confirm that native is acceptable as trench backfill above the pipe bedding, and below the new AB. How deep must pipe bedding (sand) be over new culvert?

A10: Per trench detail on sheet U-202, the contractor may use native material to backfill the storm drain pipe with a minimum 12" Class II AB to finish grade in unimproved areas and additionally 3" HMA in roadway areas. Contractor must achieve 95% compaction in roadway areas and may adjust depth of AB if approved by City Engineer.

All other terms and conditions remain in full force and effect.

Myles Fisette

Myles Fisette
Purchasing Manager

**CITY OF UKIAH, MENDOCINO COUNTY, CALIFORNIA
NOTICE TO BIDDERS FOR
FAIRGROUNDS STORM DRAIN REPLACEMENT
SPECIFICATION NO. 25-02**

NOTICE IS HEREBY GIVEN that sealed standard proposals for FAIRGROUNDS STORM DRAIN REPLACEMENT PROJECT will be received at the Office of the City Clerk, Ukiah Civic Center, 300 Seminary Avenue, Ukiah California until 2:00 p.m. Tuesday, July 1, 2025. Bids shall be addressed to the City Clerk and shall be endorsed "FAIRGROUNDS STORM DRAIN REPLACEMENT PROJECT." 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#	DESCRIPTION	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	TRAFFIC CONTROL	1	LS
3	POTHOLING	1	LS
4	TEMPORARY REMOVE/REINSTALL FENCING	1	LS
5	24" ADS N12 STORM DRAIN	462	LF
6	24" RCP STORM DRAIN (CLASS IV)	100	LF
7	30" ADS N12 STORM DRAIN	177	LF
8	36" ADS N12 STORM DRAIN	1098	LF
9	36"X36" JUNCTION BOX	1	EA
10	48"X48" JUNCTION BOX	3	EA
11	48" STORM DRAIN MANHOLE	1	EA
12	4'X6' JUNCTION BOX	2	EA
13	CONNECT EXISTING 8"-18" SD TO NEW JUNCTION BOX	3	EA
14	CONNECT NEW 24" TO EXISTING JUNCTION BOX	2	EA
15	CONNECT NEW 30" SD TO EXISTING MANHOLE	1	EA
16	CONNECT EXISTING 12" SD TO NEW 24" RCP PIPE	1	EA
17	SLURRY FILL AND ABANDON STORM DRAIN	1	LS
18	REMOVE EXISTING STORM DRAIN AND JUNCTION BOXES	1	LS
19	REMOVE AND DISPOSE REDWOOD TREE (APPROX. DBH 60 INCHES)	2	EA
20	CLEAR & GRUBB EX. BRUSH IN PIPELINE ROUTE AND DITCH	1	LS
21	GRADING AND SOIL REMOVAL	1200	CY
22	RUBBER DUCKBILL CHECK VALVE 36"	1	EA
23	TRENCH PAVING HMA 3"	4	TON

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.

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.

NAME OF BIDDER:
SPEC #:
PROJECT NAME:

Ghilotti Construction Company, Inc.
25-02
FAIRGROUNDS STORM DRAIN REPLACEMENT

Item No.	Description	Unit of Measure	Quantity	Unit Price	Total
1	MOBILIZATION	LS	1	\$ _____	\$ _____
2	TRAFFIC CONTROL	LS	1	\$ _____	\$ _____
3	POTHOLING	LS	1	\$ _____	\$ _____
4	TEMPORARY REMOVE/REINSTALL FENCING	LS	1	\$ _____	\$ _____
5	24" ADS N12 STORM DRAIN	LF	462	\$ _____	\$ _____
6	24" RCP STORM DRAIN (CLASS IV)	LF	100	\$ _____	\$ _____
7	30" ADS N12 STORM DRAIN	LF	177	\$ _____	\$ _____
8	36" ADS N12 STORM DRAIN	LF	1098	\$ _____	\$ _____
9	36"X36" JUNCTION BOX	EA	1	\$ _____	\$ _____
10	48"X48" JUNCTION BOX	EA	3	\$ _____	\$ _____
11	48" STORM DRAIN MANHOLE	EA	1	\$ _____	\$ _____
12	4'X6' JUNCTION BOX	EA	2	\$ _____	\$ _____
13	CONNECT EXISTING 8"-18" SD TO NEW JUNCTION BOX	EA	3	\$ _____	\$ _____
14	CONNECT NEW 24" TO EXISTING JUNCTION BOX	EA	2	\$ _____	\$ _____
15	CONNECT NEW 30" SD TO EXISTING MANHOLE	EA	1	\$ _____	\$ _____
16	CONNECT EXISTING 12" SD TO NEW 24" RCP PIPE	EA	1	\$ _____	\$ _____
17	SLURRY FILL AND ABANDON STORM DRAIN	LS	1	\$ _____	\$ _____
18	REMOVE EXISTING STORM DRAIN AND JUNCTION BOXES	LS	1	\$ _____	\$ _____
19	REMOVE AND DISPOSE REDWOOD TREE (APPROX. DBH 60 INCHES)	EA	2	\$ _____	\$ _____

20	CLEAR & GRUBB EX. BRUSH IN PIPELINE ROUTE AND DITCH	LS	1	\$ _____	\$ _____
21	GRADING AND SOIL REMOVAL	CY	1200	\$ _____	\$ _____
22	RUBBER DUCKBILL CHECK VALVE 36"	EA	1	\$ _____	\$ _____
22	TRENCH PAVING HMA 3"	TON	4	\$ _____	\$ _____
TOTAL BASE BID →				\$ _____	

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. 644515, expiration date 5/31/26.

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: 1000003044

Signature of bidder or bidders, with business name, address, phone number and fax number:

Ghilotti Construction Company, Inc.
246 Ghilotti Avenue, Santa Rosa, CA 95407
Ph: 707-585-1221 / Fx: 707-585-1601
Thomas Smith, Vice President of Estimating

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.

Ghilotti Construction Company, Inc.
246 Ghilotti Avenue, Santa Rosa, CA 95407
Brian Ongaro - President/Secretary I Terenec Huie - Treasurer/CFO

CITY OF UKIAH
Mendocino County, California

AGREEMENT

FOR

**FAIRGROUNDS STORM DRAIN REPLACEMENT
SPECIFICATION NO. 25-02**

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 30 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

PURCHASING DEPARTMENT
411 West Clay Street, Ukiah CA 95482
(707) 463-6225
mfisette@cityofukiah.com



Addendum No. 2

**Request for Bid (RFB)
for
Spec 25-02 Fairgrounds Storm Drain Replacement
June 26, 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: You may want to add a bid item for Erosion Control.

A1: All erosion control and BMPs will be included as part of the total project and no additional separate payment will be made.

Q2: Plan Sheet U-201 – Shows a 4'x6' and 4'x8' Junction Box two different sizes?? Bid schedule calls for 4'x6' JB. The more important issue is the depths of these structures will not accommodate the 36" pipe. The 36" Pipe OD is 43" and the opening in the structure will need to be minimum of 44". The top slabs for these structures are 12" thick. Therefore, there is not enough depth in these structures to accommodate these pipes entering and exiting. The structure will need an additional 14" in depth to fit the pipes entering and exiting. Please clarify.

A2: Both junction boxes at Mazzoni Drive are indeed 4'x6'. These boxes may be poured in place or precast as approved through submittal. The RIM elevation is subject to adjustment as it is not in the roadway. The INV out needs to be maintained as site conditions leave minimal fall to the eastern outfall. The 36" pipe shown on plans is indeed ADS N-12 and not RCP.

Q3: Where the tie-ins are to be made to existing manhole/ DI is there an outlet already or is new hole to be made? If hole is already there what is the existing size

A3: There are indeed existing outlets to both structures on State Street and the contractor can either investigate the existing outlet size or assume the outlet will need to be enlarged to the pipe size shown on plan.

Q4: On page "xi" in the specs, paragraph 1, document states that there will be a DBE goal for this project. However, no further information is provided including the parameters of the goal. Will there be a DBE goal for this project? If so, what is the goal, and will good faith effort forms be provided?

A4: No, there is no imposed DBE goal for this project.

Q5: Addendum #1 plans did not identify the relocate water services per your Q&A 8

A5: Addendum #1 indeed identified the location of the existing 8" water main with two water service connections in conflict with the new storm drain. Both services need to be adjusted slightly south along with any necessary adjustments on the domestic customer side of the water service connection to allow for construction of the new storm drain.

Q6: Questions about the plans. Page D-101 there is no legend to confirm which storm drains are getting replaced and which ones stay.

A6: The storm drains marked with a cross hatch are noted on the plans as "REMOVE (E) STORM DRAIN". There is a portion of storm drain under a building that is marked to be abandoned with slurry on U-101. Other storm drains shown on D-101 without the hatching and call-outs are to be preserved.

Q7: Will there be required saw cutting?

A7: The contractor will be required to sawcut the asphalt at the double 24" RCP crossing between junction boxes across the driveway gate entrance on U-201. Alternatively the contractor can use a grinding asphalt zipper.

Q8: On the existing conditions plan, the 30" storm drain pipe is not labeled for removal but in the proposed plan, it is shown a new pipe should be installed. Can we receive updated information on this specific detail indicating what needs to be done?

A8: Answered in A6.

Q9: End of run 36" pipe called out on two separate pages as two separate materials. Can we receive updated information on the correct type of pipe required?

A9: All 36" storm drain will be ADS N12 pipe.

Q10: Items on the engineer's estimate of quantities do not reflect the items specified in the proposed storm alignment plan. Our bid will include items not included in the engineer's estimate to fulfill the project requirements. Can we get a more accurate engineer's estimate reflecting all the required items? The 4'x8' JB detail on sheet U-201 of the Fairgrounds Storm Drain Alignment plans shows "install (N) 4'x8' junction box with MH lid" however the Engineer's Estimate of Quantities does not reflect this item. Can we get information regarding this specific item, as it is not included in the Engineer's Estimate.

A10: This discrepancy of 4x8 junction box is addressed in A2.

Q11: Do the stumps need to be ground out for the 2 tree removals.

A11: The stump must be ground down to a maximum height of 12 inches above existing grade and roots removed that are in conflict with the installation of the new storm drain.

Q12: What is the anticipated start date for the project?

A12: The project is scheduled to be awarded at City Council July 16th followed by contract completion with the contractor. Work will begin immediately after contracts and following the closing of the Redwood Empire Fair on August 3rd.

Q13: Can the city waive the requirement that each insurance policy include an endorsement stating coverage shall not be Canceled without thirty(30) days' prior written notice?

A13: No, the City will not be waiving any of the insurance requirements on this project.

All other terms and conditions remain in full force and effect.

Myles Fisette

Myles Fisette
Purchasing Manger

Initial (1) response from Community Development Department, Planning Division Staff – “There would be nothing needed to transfer to new location and to add a small thrift store” **False information**

Agreed to sign a lease and pay a deposit based on this information.

Second (2) response – “I might need to get clearance from the police department to operate a secondhand store.” **False information**

Third (3) response – “I would need to get a major use permit.” **False information**

Fourth (4) response - Jesse Davis looked up the address on the front desk computer (in front of two female staff) and found the location to be general urban. He also found a thrift store to need a minor use permit for this location. After a brief discussion he left to eat his lunch. **Incomplete**

Planning Permit was submitted and rejected.

I was asked to have a meeting with Jesse Davis. I tried several times; he finally ended up discussing the project at the front counter for several minutes. Again, he left me with the front desk staff to accept my application and **deposit**. The front counter staff explained the particulars of the process as charges would be deducted from my deposit as the work is completed.

Agreed under these conditions and paid the \$1,000 deposit.

Fifth (5) response – letter, dated June 12, 2024, with application status: **Incomplete and “Staff would encourage the consideration of a more limited use of the subject structure...or evaluation of a more appropriate structure for the requested use elsewhere in the City.”**

Submitted my response (July 5, 2024) – “With all the work and cost involved in obtaining a minor use permit, I would like to avoid the application if at all possible” citing the **2040 General Plan #s 1, 3, 6, 7, 8, 9, 10, and 11**. “Lets meet and discuss further.”

Sixth (6) response – email, dated July 19, 2024, “the zoning code requires evaluation of this activity on a **discretionary basis**”

Submitted a letter to withdraw the application (July 23, 2024)

Seventh (7) response – email, dated July 29, 2024, “Staff will process the request accordingly.”

Submitted an email response, dated July 29, 2024, “There is no change in use from the previous occupant.” Proposed uses are not detrimental to the public, health, safety, or welfare. Anything over and above this [to what was already submitted] is deemed by be to be excessive.”

“I never once felt the planning office and its staff were trying to be supportive of our proposed plan. I am sure they are not in line with the goals of the city as I presented in a previous email.”

Eighth (8) response – “Your comments have been received and will be reviewed.”

Submitted an email, dated 10/4/24, "I still have not received the refund of the \$1,000 deposit I placed with the city on 6-5-24...two months since your acknowledgment of the withdrawal of the application."

Ninth (9) response – email, dated 10/4/24, "It should be noted that the \$1,000 was not conveyed as a deposit"

"Staff recognize that recent changes to **State law may restrict the ability of municipalities to regulate particular forms of retail by requiring discretionary review**...if no changes to the structure's footprint are facilitated than your request could proceed with appropriate building, fire and sign permits."

Submitted an email, dated 10/11/24, "Jesse Davis said there is no difference for a nonprofit and a for profit business. This is unfortunate...Elizabeth Frausto said "a deposit of one thousand dollars and an application will be required. She further explained charges will be deducted from the deposit as the various services are conducted. Jesse Davis and Katherine Schaefer [I think this is her name; I was never introduced] were present and never corrected Elizabeth Frausto on what she was telling me....I stated the building is the same; will be used the same as previously with no changes; I don't see why one is needed...Mr. Davis told Elizabeth to accept the application and to collect my deposit...This is the third time I am requesting the return of the deposit of \$1,000...The withdrawal was requested before any work was conducted like inspections, for example...The deposit was called a deposit and was explained as cost recovery. No work was done and hence the full deposit needs to be returned...I will leave you with a choice. You can refund the money (the right and just thing) or you can provide me with the information and all associated forms to file an appeal and complaint.

Tenth (10) response – email, dated 10/14/24, "no longer managed by the Community Development Department...For this reason,...the Planning Division of the Community Development Department is unable to provide a refund for the Minor Use Permit that you withdrew on July 29, 2024."

"as requested, the **Citizen Request Portal** is available at the following link:"

Submitted First Appeal to City Council with Complaint (10/25/24) - 753769805

"City Code Related to Licenses:...The fee shall not be refunded if the application is denied. If the applicant notifies the Finance Department of a withdrawal of the application before any field inspection or investigation has taken place, all fees paid exceeding the ten dollars (\$10) shall be refunded."

"I see no mention of a deposit (or fee) not being refundable either in the City's resolution of adoption of updated fees (or deposits) for 2024 or in the city code."

No response

Submitted Second Appeal to City Council/Complaint (02/28/2025) - 781237934

Response (3/3/25) – "Your application for an appeal has been received by the City Clerk's office as of February 28th. Staff will reach out to you with more information shortly."

In summary,...



AGENDA SUMMARY REPORT

SUBJECT: 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.

DEPARTMENT: City Manager /
Admin

PREPARED BY: Traci Boyl, Senior Management Analyst

PRESENTER: Traci Boyl, Sr. Management Analyst to the City
Manager's Office

ATTACHMENTS:

1. Resolution 2025-07 - Ratify Proclamation
2. CC Reso 2025-26 - Ratification of Proclamation of Local Emergency
3. Continuing Atmospheric River State of Emergency July 16 2025

Summary: The City Council will consider the adoption of a Resolution affirming that the local emergency remains in effect.

Background: On February 19, 2025, the Director of Emergency Services proclaimed a local emergency pursuant to Ukiah City Code Section 5125 (Ordinance No. 995, Section 1) due to ongoing atmospheric rivers that threatened and damaged local infrastructure. And, on February 19, 2025, the Ukiah City Council approved Resolution No. 2025-07 ratifying the proclamation of a local emergency affecting the City (Attachment 1). California Government Code section 8630(c) requires the Local Emergency Proclamation be reviewed and renewed no more than every 60 days. On June 4th, 2025, the City Council adopted Resolution 2025-26 affirming the proclamation of the continuing local emergency (Attachment 2).

Discussion: To ensure compliance with applicable law, and due to the fact that the effect of saturated soil conditions from the previous storm season continue to threaten public infrastructure, Staff recommends the City Council reaffirm that the local emergency remains in effect. Though the rainy season has ended and there is no longer a present threat of severe storms, the conditions caused by the storm events that necessitated a declaration of a local emergency are still present and must be mitigated.

Therefore, Staff recommends Council adopt a Resolution (Attachment 3) affirming that the local emergency remains in effect.

Recommended Action: Adopt a resolution affirming that the declaration of a local emergency remains in effect.

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT:

FINANCING SOURCE:

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

PREVIOUS CONTRACT/PURCHASE ORDER NO.:

COORDINATED WITH: Darcy Vaughn, City Attorney's Office

STRATEGIC PLAN (SP):

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved:


Sage Sangiacomo, City Manager

RESOLUTION NO. 2025-07**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH RATIFYING FEBRUARY 19, 2025 PROCLAMATION OF A LOCAL EMERGENCY****WHEREAS:**

1. On February 19, 2025, under the authority in Ukiah City Code Section 5125 (Ordinance No. 995, §1), the Director of Emergency Services proclaimed the existence of a local emergency as a result of conditions created by ongoing Atmospheric Rivers affecting the City of Ukiah ("City") beginning February 5th, and conditions still exists. A true and correct copy of the Resolution Proclaiming Existence of a Local Emergency is attached hereto as Exhibit A and incorporated herein by this reference; and

2. While heavy rainfall has stopped, soils are saturated, and heavy run-off continues threatening additional damage to PZ1-N water tank and the newly acquired Western Hills road system, all of which threaten to continue or create local emergency conditions; and

3. The City Council has reviewed Exhibit A and concurs with the findings in the Proclamation; and

4. The City Council will review this declaration at its next regular meeting, occurring not more than 14 days from the date the Resolution Proclaiming Existence of a Local Emergency is ratified by this resolution;

NOW, THEREFORE, BE IT RESOLVED that the City Council hereby ratifies the proclamation of a "local emergency" by the Director of Emergency Services and proclaims and orders that said local emergency shall be deemed to continue to exist until its termination is proclaimed by the City Council. The City Council shall review the need for continuing the local emergency at least once every 14 days until its termination is proclaimed by the City Council.

BE IT FURTHER RESOLVED that the City Council hereby proclaims and orders that during the existence of a local emergency, the powers, functions, and duties of the Director of Emergency Services and the emergency organization of the City shall be those prescribed by (1) state law, (2) City ordinances and resolutions adopted by the City Council and (3) the City Operational Area Emergency Plan, as approved by the City Council.

BE IT FURTHER RESOLVED that a copy of this declaration shall be forwarded to the County of Mendocino Office of Emergency Services (OES) with a request that OES forward the Resolution to California Office of Emergency Services for concurrence of a local emergency.

PASSED AND ADOPTED this 19th day of February, 2025, by the following roll call vote:

AYES: Councilmembers Rodin, Criss, Orozco, Sher, and Mayor Crane

NOES: None

ABSENT: None

ABSTAIN: None


 Douglas F. Crane, Mayor

ATTEST:


 Kristine Lawler, City Clerk

A RESOLUTION PROCLAIMING EXISTENCE OF A LOCAL EMERGENCY DUE TO ONGOING ATMOSPHERIC RIVERS CAUSING DAMAGE TO PUBLIC INFRASTRUCTURE

WHEREAS, Ukiah City Code Section 5125 (Ordinance No. 995, Section 1) empowers the Director of Emergency services to proclaim the existence or threatened existence of a local emergency when said city is affected or likely to be affected by a public calamity; and

WHEREAS, on Friday, February 4, 2025, the City of Ukiah experienced another Atmospheric River event, resulting in localized flooding within the city and surrounding areas; and

WHEREAS, the Director of Emergency Services of the City of Ukiah does hereby find that conditions of extreme peril to the safety of persons and property arose within the City, caused by severe winter storms; and

WHEREAS, although the City took immediate action to prepare for and respond to the storm, including monitoring streets and clearing storm drains, repositioning public safety resources as necessary, providing the public with preparedness communication, and attending Mendocino County's operational call, the conditions caused damage beyond the control and resources of City personnel; and

WHEREAS, while the storm was short-lived, it brought significant heavy rain to already saturated soil, leading to severe damage to public infrastructure, including a landslide near Pressure Zone 1 North (PZ1-N) water tank located above the City's golf course, requiring emergency repair to prevent additional damage to the tank and caused additional slides on the newly-acquired Western Hills property damaging roads and culverts there; and

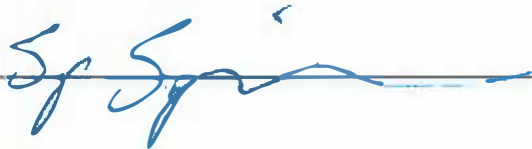
WHEREAS, while the County did not experience significant damage, the City's reported damage meets the State's required threshold for requesting financial support; and.

WHEREAS, declaring a local emergency enables the City to pursue State and Federal assistance, including reimbursement for eligible emergency response costs under the California Disaster Assistance Act and potential Federal Emergency Management Agency aid if a federal disaster is declared.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED that a local emergency now exists throughout the City of Ukiah.

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said local emergency the powers, functions, and duties of the emergency organization of this City shall be those prescribed by state law and ordinances and resolutions of this City, and that this emergency proclamation shall expire in 7 days after issuance unless confirmed and ratified by City Council of the City of Ukiah.

DATED: 2-19-25

By: 

RESOLUTION NO. 2025-26

A RESOLUTION CONTINUING THE RATIFICATION OF A PROCLAMATION OF A LOCAL EMERGENCY DUE TO ONGOING ATMOSPHERIC RIVERS CAUSING DAMAGE TO PUBLIC INFRASTRUCTURE AND AFFIRMING THAT THE LOCAL EMERGENCY REMAINS IN EFFECT

WHEREAS, on February 19, 2025, the Director of Emergency Services proclaimed a local emergency pursuant to Ukiah City Code Section 5125 (Ordinance No. 995, Section 1) due to ongoing atmospheric rivers which threatened and damaged local infrastructure; and

WHEREAS, on February 19, 2025, the Ukiah City Council approved Resolution No. 2025-07 ratifying the proclamation of a local emergency affecting the City; and

WHEREAS, on April 16, 2025, the Ukiah City Council approved Resolution No. 2025-15 continuing ratification of the proclamation of a local emergency affecting the City; and

WHEREAS, Government Code section 8630(c) requires the Local Emergency Proclamation be reviewed every 60 days; and

WHEREAS, the local emergency remains in effect due to the fact that saturated soils continue to threaten public infrastructure.

NOW THEREFORE BE IT RESOLVED by the City Council of the City of Ukiah reaffirms that a local emergency remains in effect due to the previous atmospheric rivers and continuing associated damage to public infrastructure.

BE IT FURTHER RESOLVED that a copy of this declaration shall be forwarded to the County of Mendocino Office of Emergency Services (OES) with a request that OES forward the Resolution to California Office of Emergency Services.

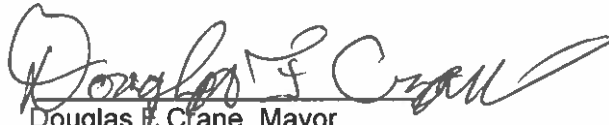
PASSED AND ADOPTED this 4th day of June, 2025, by the following roll call vote:

AYES: Councilmembers Rodin, Criss, Orozco, Sher, and Mayor Crane.

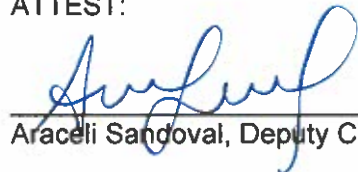
NOES: None.

ABSENT: None.

ABSTAIN: None.


Douglas F. Crane, Mayor

ATTEST:


Araceli Sandoval, Deputy City Clerk

RESOLUTION NO. 2025-**A RESOLUTION CONTINUING THE RATIFICATION OF A PROCLAMATION OF A LOCAL EMERGENCY DUE TO CONDITIONS CAUSED BY ATMOSPHERIC RIVERS CAUSING DAMAGE TO PUBLIC INFRASTRUCTURE AND AFFIRMING THAT THE LOCAL EMERGENCY REMAINS IN EFFECT**

WHEREAS, on February 19, 2025, the Director of Emergency Services proclaimed a local emergency pursuant to Ukiah City Code Section 5125 (Ordinance No. 995, Section 1) due to ongoing atmospheric rivers which threatened and damaged local infrastructure; and

WHEREAS, on February 19, 2025, the Ukiah City Council approved Resolution No. 2025-07 ratifying the proclamation of a local emergency affecting the City; and

WHEREAS, on April 16, 2025, the Ukiah City Council approved Resolution No. 2025-15 continuing ratification of the proclamation of a local emergency affecting the City; and

WHEREAS, on June 4, 2025, the Ukiah City Council approved Resolution No. 2025-26 continuing ratification of the proclamation of a local emergency affecting the City; and

WHEREAS, Government Code section 8630(c) requires the Local Emergency Proclamation be reviewed every 60 days; and

WHEREAS, the local emergency remains in effect due to the fact that saturated soils and associated conditions caused by atmospheric rivers during the past storm season continue to threaten public infrastructure.

NOW THEREFORE BE IT RESOLVED by the City Council of the City of Ukiah reaffirms that a local emergency remains in effect due to the previous atmospheric rivers and continuing associated damage to public infrastructure.

BE IT FURTHER RESOLVED that a copy of this declaration shall be forwarded to the County of Mendocino Office of Emergency Services (OES) with a request that OES forward the Resolution to California Office of Emergency Services.

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Status Report on Emergency Contract with Diamond D Construction, LLC for the Emergency Repair of the Western Hills Mudslide at the City Water Tank (Pressure Zone 1-North, or PZ1-N) and Request for Authorization to Continue Work Under This Emergency Contract.

DEPARTMENT: Water Resources

PREPARED BY: Sean White, Water Resources Director

PRESENTER: Sage Sangiacomo, City Manager

ATTACHMENTS:

1. Resolution 2025-08 - Emergency Procurement for Mudslide at PZ1
2. Diamond D Estimate for PZ1
3. Purchase Order for Diamond D Slide
4. Slide Pictures

Summary: Council will receive a status report on the contract with Diamond D Construction for the emergency repair of the Western Hills mudslide at the City water tank and consider approving continued work.

Background: During the major rain event on February 4-5, a mudslide occurred in the western hills, settling at the base of a City water tank referred to as Pressure Zone 1-North (PZ1-N). Due to the muddy conditions, slope of the hillside, and specialized nature of the repairs, City crews determined that a professional contractor would be required to perform the work. Additionally, significant rain was forecast for the following days, causing concern that the water tank and hillside would potentially be compromised if emergency repairs did not commence immediately.

On February 19, 2025, City Council approved a Resolution approving the procurement without public bidding of construction services to repair the mudslide at the City water tank in the western hills (Attachment 1).

Discussion: Staff worked with the Procurement Department to assess availability and obtain proposals from local contractors. Diamond D Construction was available to begin immediately and was determined to be qualified to do the work (Attachments 2 and 3).

Work to temporarily remediate the site began on February 7th and was completed on February 12th. Work involved removing material at the toe of the slope that had built up against the tank and removing material perched immediately above the tank. Due to the extremely wet condition of the site, only material within the reach of an excavator could be graded or removed. A small ditch was also cut in the hillside above the tank to redirect runoff.

The slide area was then tarped to protect it from rainfall. City Staff also added jute netting to other portions of the site to further protect the hillside. See Attachment 4 for pictures of remediation efforts.

Once the area has dried, further grading will be required. To fully stabilize, this site will require a geotechnical investigation and plan, followed by extensive earthwork.

Staff is requesting the Council's approval to continue using the emergency contract with Diamond D Construction, LLC.

Recommended Action: Receive report and approve the continued work on the emergency contract with Diamond D Construction for the emergency repair of the Western Hills mudslide at the City water tank PZ1-N.

BUDGET AMENDMENT REQUIRED: TBD

CURRENT BUDGET AMOUNT:

PROPOSED BUDGET AMOUNT:

FINANCING SOURCE: Water Fund; 82027113-80230-18234

REVENUE: YES / No GRANT: YES / No

PREVIOUS CONTRACT/PURCHASE ORDER NO.: PO 48757-00

COORDINATED WITH: Sage Sangiacomo, City Manager; Sean White, Water Resources Director

STRATEGIC PLAN (SP):

CLIMATE INITIATIVES (CI):

GENERAL PLAN ELEMENTS (GP):

Approved:


Sage Sangiacomo, City Manager

RESOLUTION NO. 2025-08

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH APPROVING PURSUANT TO PUBLIC CONTRACT CODE SECTION 22050 THE EMERGENCY PROCUREMENT WITHOUT PUBLIC BIDDING OF CONSTRUCTION SERVICES TO REPAIR THE MUDSLIDE AT THE CITY WATER TANK (PZ1) IN THE WESTERN HILLS

WHEREAS:

1. During a winter storm event on about February 5, 2025, a portion of the hillside in the Western Hills slid out, settling against the City water tank referred to as PZ1, or Pressure Zone 1; and
2. Concerned about possible damage to the City water tank, both from this slide and the possibility of future slides, City Staff determined that emergency repairs were required; and
3. With damage caused to public property; and
4. Under Public Contract Code Section 22050(a)(1) in the case of an emergency, the City, pursuant to a four-fifths vote of the City Council, may repair or replace a public facility and procure the necessary equipment, services, and supplies for those purposes, without giving notice for bids to let contracts; and
5. Under Public Contract Code Section 22050(a)(2) before the City Council takes such action, it must make a finding, based on substantial evidence set forth in the minutes of its meeting, that the emergency will not permit a delay resulting from a competitive solicitation for bids, and that the action is necessary to respond to the emergency;

NOW, THEREFORE, BE IT RESOLVED that:

1. Based on the foregoing recitals and information, the City Council finds that an emergency condition exists that must be repaired to avoid public health hazards that could result, if the repair work was put out for competitive bids in compliance with the procedures required by the Uniform Construction Cost Accounting Act.
2. The City Council authorizes the procurement of construction services to repair the mudslide in the Western Hills and damaged public without providing notice inviting bids.
3. The City Council authorizes the City Procurement Officer to contract with Diamond DConstruction to repair the mudslide in the Western Hills in the amount of \$30,042.

4. Awarding a contract to repair the water main and damaged public and private property is categorically exempt from environmental review under the California Environmental Quality Act as a Class 2 categorical exemption, because it involves the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity. (14 CCR §15302.)
5. The emergency action taken by this resolution shall terminate upon the City Council's approval of a certificate of completion for the mudslide and public property repair work.

PASSED AND ADOPTED this 19th day of February, 2025, by the following roll call vote:

AYES: Councilmembers Rodin, Criss, Orozco, Sher, and Mayor Crane

NOES: None

ABSENT: None

ABSTAIN: None


Douglas F. Crane, Mayor

ATTEST:


Kristine Lawler, City Clerk

Customer Info:

City Of Ukiah

Contractor Submitting Bid:

Diamond D Construction, LLC

PO Box 595

Talmage, CA 95481

Lic. 1027104

(707)953-4484

Job Location:

Golf Course Water Tanks

Date: 2/6/2025**Work to be performed:**

Diamond D Construction, LLC will provide all labor and material necessary to perform the following work.

Clear The Bottom

Includes a cost to clear all slide debris off the water tank and everything that can be reached by our excavator from the bottom. Once materials are cleaned up we will reroute a drainage ditch above the slide area to drain away from the slide area. We are also including covering the entire slide area in plastic and anchor the plastic with sandbags and rope.

Total \$30,042.00

PLEASE ALLOWED w/ THIS TASK

Clear the Entire Slide

Includes clearing all sliding material from top of the slip plain to the bottom. Will include rerouting the ditch, and covering in plastic as well.

This will depend on the timing of when this is done and if the material is suitable to set an excavator or dozer on.

Total \$71,650.00

K Rail Guard

Includes a cost to set up 40 lineal foot of concrete K rail at the bottom of the slide to protect falling rocks from hitting the tank. Price also includes the K rail rental for 3 months.

Total \$5,995.00

Conditions

Dump site provided by city

Exclusions

No bonding is included in this price.

Payment Terms:

All payments will be made within 21 days of the invoice being sent to the customer.

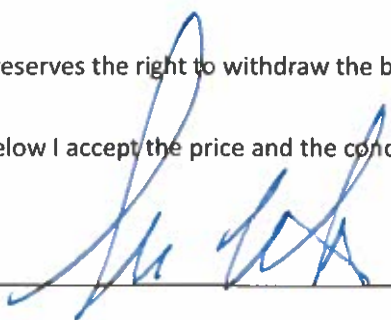
After 21 days an additional 1.5% of the amount invoiced will be added to the total amount owed and every month after until amount is paid in full.

This bid price is good for 60 days. If a signed acceptance is not received within 60 days

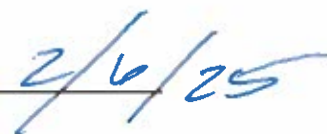
Diamond D reserves the right to withdraw the bid.

By signing below I accept the price and the conditions of this bid.

Signature:

A handwritten signature in blue ink, appearing to be "H. H. H.", written over a horizontal line.

Date:

A handwritten date in blue ink, "2/6/25", written over a horizontal line.



Purchase Order

Fiscal Year 2025

Page 1 of 2

THIS NUMBER MUST APPEAR ON ALL INVOICES,
PACKAGES AND SHIPPING PAPERS.Purchase
Order #**48757-00**Delivery must be made within
doors of specified destination.B
I
L
L
T
OCITY OF UKIAH
ATTN: ACCOUNTS PAYABLE
300 SEMINARY AVENUE
UKIAH, CA 95482V
E
N
D
O
RDIAMOND D CONSTRUCTION
650 BLUE OAK DR
UKIAH CA 95482S
H
I
P
T
OCITY OF UKIAH - ANNEX
411 W CLAY STREET
UKIAH CA 95482

Vendor Phone Number		Vendor Fax Number	Buyer		Date Ordered	Date Required
			Myles Fisette		02/06/2025	
Delivery Reference		Freight Method/Terms		Department/Location		Sales Tax Rate
		FOB UKIAH/N30		WATER/SEWER		0.000
Item#	Description/Part No.	Qty	UOM	Unit Price	Extended Price	
1	The Above Purchase Order Number Must Appear On All Correspondence - Packing Sheets And Bills Of Lading CLEAR BOTTOM OF SLIDE-CLEAR ALL SLIDE DEBRIS. REROUTE A DRAINAGE DITCH ABOVE SLIDE AREA. COVER SLIDE AREA IN PLASTIC AND ANCHOR WITH SAND BAGS. 82027113 - 80230 - 18234 \$30,042.00 EMERGENCY WORK PER CM OFFICE PER ESTIAMTE DATED 2/6/25	1.0	EACH	\$30,042.000	\$30,042.00	

By

Purchasing Supervisor

VENDOR COPY

Total Ext. Price	\$30,042.00
Total Sales Tax	
Total Discount	
Total Credit	
Total Freight	
PO Total	\$30,042.00

Page 1177 of 1257

1. **GENERALLY.** These Terms and Conditions of Sale ("Terms and Conditions") apply to all purchases by City of Ukiah. (Referred to as "Buyer"). The supplier of goods and services under this transaction is herein referred to as "Seller". The goods or service purchased are referred to as the "Purchase."

2. **TERMS EXCLUSIVE.** Buyer will order the goods or services described herein only upon the terms and conditions contained herein. Seller's acceptance of this order shall occur either through commencement of performance under this order or acknowledgment of this order. By accepting this order, Seller waives all terms and conditions contained in its quotation, acknowledgment, invoice or other documents which are different from or additional to those contained herein and all such different or additional terms and conditions shall be null and void. **SELLER MAY NOT CHANGE MATERIAL OF MANUFACTURE, SOURCES OF SUPPLY, MANUFACTURING PROCESS OR LOCATION WITHOUT THE PRIOR WRITTEN CONSENT OF BUYER.**

3. **INSPECTION.** All goods shall be received subject to Buyer's inspection and rejection. Defective goods and goods otherwise not conforming to this order shall be held for Seller's instruction and at Seller's risk, and if Seller so directs, shall be returned at Seller's expense. No defective goods shall be replaced without a new purchase order. Payment by Buyer shall not be construed as an acceptance of goods. Buyer may return to Seller any non-defective, excess goods within thirty (30) days of receiving them.

4. **CHANGES.** City may make changes within the general scope of this order in drawings and specifications for specially manufactured supplies, place of delivery, method of shipment or packing of the order by giving notice to Seller and subsequently confirming such changes in writing. If such changes affect the cost of or the time required for performance of this order, an equitable adjustment in the price or delivery or both must be made. No change by Seller is allowed without City's written approval. Any claim by Seller for an adjustment under this section must be made in writing within thirty (30) days from the date of receipt by Seller of notification of such change unless City waives this condition in writing. Nothing in this section excuses Seller from proceeding with performance of the order as changed.

5. **TERMINATION.** City may terminate this order at any time, either verbally or in writing, with or without cause. Should termination occur, City will pay Seller as full performance until such termination the unit or pro rata order price for the performed and accepted portion of the Purchase. City may provide written notice of termination for Seller's default if Seller refuses or fails to comply with this order. If Seller does not cure such failure within a reasonable time period, or fails to perform the Purchase within the time specified (or allowed by extension), Seller will be liable to City for any excess costs incurred by City.

6. **TIME EXTENSION.** Time is of the essence. City may extend the time for completion if, in City's sole determination, Seller was delayed because of causes beyond Seller's control and without Seller's fault or negligence. In the event delay was caused by City, Seller's sole remedy is limited to recovering money actually and necessarily expended by Seller because of the delay; there is no right to recover anticipated profit.

7. **REMEDIES CUMULATIVE.** City's rights and remedies under this order are not exclusive and are in addition to any rights and remedies provided by law.

8. **TITLE.** Title to materials and supplies purchased under this order pass directly from Seller to City upon City's written acceptance following an actual inspection and City's opportunity to reject.

9. **PAYMENT.** City will pay Seller after receiving acceptable invoices for materials and supplies delivered and accepted or services rendered and accepted. City will not pay cartage, shipping, packaging or boxing expenses unless specified in this order.

10. **INDEMNIFICATION.** Seller agrees to indemnify and hold harmless from and against any claim, action, damages, costs (including, without limitation, attorney's fees), injuries, or liability, arising out of the Purchase or the order, or their performance. Should City be named in any suit, or should any claim be brought against it by suit or otherwise, whether the same be groundless or not, arising out of the Purchase or order, or their performance, Seller will defend City (at City's request and with counsel satisfactory to City) and indemnify City for any judgment rendered against it or any sums paid out in settlement or otherwise. For purposes of this section "City" includes City's officers, elected officials, and employees. This paragraph 9 will survive termination of this order. The requirements as to the types and limits of insurance coverage to be maintained by Seller, and any approval of such insurance by City, are not intended to and will not in any manner limit or qualify the liabilities and obligations otherwise assumed by Seller pursuant to this order, including, without limitation, to the provisions concerning indemnification.

11. **WARRANTY.** Seller agrees that the Purchase is covered by the most favorable commercial warranties the Seller gives to any customer for the same or substantially similar supplies or services, or such other more favorable warranties as is specified in this order. Warranties will be effective notwithstanding any inspection or acceptance of the Purchase by City.

12. **ASSIGNMENT.** City may assign this order. Except as to any payment due under this order, Seller may not assign or subcontract the order without City's written approval. Should City give consent, it will not relieve Seller from any obligations under this order and any transferee or subcontractor will be considered Seller's agent.

13. **INSURANCE.** Seller must provide the insurance indicated on the face sheet of this order.

14. **PERMITS.** Seller must procure all necessary permits and licenses, and abide by all federal, state, and local laws, for performing this order.

15. **INDEPENDENT CONTRACTOR.** City and Seller agree that Seller will act as an independent contractor and will have control of all work and the manner in which it is performed. Seller will be free to contract for similar service to be performed for other employers while under contract with City. Seller is not an agent or employee of City and is not entitled to participate in any pension plan, insurance, bonus or similar benefits City provides for its employees. Any provision in this order that may appear to give City the right to direct Seller as to the details of doing the work or to exercise a measure of control over the work means the Seller will follow the direction of the City as to end results of the work only.

16. **WAIVER.** City's review or acceptance of, or payment for, work product prepared by Seller under this order will not be construed to operate as a waiver of any rights City may have under this Agreement or of any cause of action arising from Seller's performance. A waiver by City of any breach of any term, covenant, or condition contained in this order will not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained in this order, whether of the same or different character.

17. **INTERPRETATION.** This Agreement was drafted in, and will be construed in accordance with the laws of the State of California, and exclusive venue for any action involving this agreement will be in Mendocino County.









AGENDA SUMMARY REPORT

SUBJECT: Adopt Resolution Initiating Proposition 218 Process to Adjust Sewer Service Rates and Receive Presentation of 2025 Sewer Utility Financial Plan (Anticipated to be Heard at the Start of the Meeting) .

DEPARTMENT: Finance

PREPARED BY: Dan Buffalo, Finance Director

PRESENTER: Mark Hildebrand, Hildebrand Consulting

ATTACHMENTS:

1. City of Ukiah 2025 Sewer Rate Study Presentation, 7-16-25
2. City of Ukiah 2025 Sewer Financial Plan draft 7.10.25 (002)
3. Resolution - 218 Initiation
4. City Prop 218 Notice 7-16-25 - final

Summary:

The City's sewer utility has undergone a comprehensive financial review by Hildebrand Consulting to evaluate its current and projected financial position. The study recommends a series of rate adjustments to build financial reserves, fund ongoing operations, address new cost allocations, and maintain infrastructure. Mark Hildebrand, with Hildebrand Consulting, will present the findings and recommendations of the 2025 Sewer Rate Study. Staff requests Council authorization to begin the Proposition 218 process by mailing the required notices and scheduling a public hearing for September 17, 2025.

Background: The City of Ukiah is responsible for the operation and maintenance of its sewer utility, which is funded entirely through service charges paid by customers. As a self-supporting enterprise fund, the sewer utility must generate sufficient revenue to cover operational costs, system maintenance, debt service, and capital improvements, while maintaining adequate reserves.

Over the past several years, the sewer fund has experienced increased pressure due to unanticipated capital costs, higher insurance premiums, lower-than-expected connection fee revenues, and higher operating costs resulting from significant inflationary pressures. In response, the City engaged Hildebrand Consulting to prepare a financial plan and rate study to ensure the continued fiscal sustainability of the sewer enterprise, as well as to align with best practices of reviewing and adjusting rates every five years. The City is currently in year five of the last review and adjustment schedule.

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 a \$2.0 million internal loan to stabilize reserves;
- 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 rate adjustments phased in over the next five years.

The consultant's presentation (Attachment 1) will provide details of the 2025 Sewer Financial Plan report (Attachment 2), cost drivers, and proposed rate adjustments. Staff recommends initiating the Proposition 218 process by adopting the attached resolution (Attachment 3) and noticing rate payers, which includes mailing notices to all affected customers and property owners at least 45 days prior to the public hearing scheduled for September 17, 2025. A draft of this notice is attached as Attachment 4. The notice will be provided in Spanish as well.

If no majority protest is received, Staff will return to Council in September with a recommendation to adopt the proposed rates, with the first increase taking effect on October 1, 2025.

Recommended Action: Adopt a resolution initiating the Proposition 218 process for proposed adjustments to sewer service rates, including authorizing the mailing of notice to affected property owners and customers, and setting a public hearing date for September 17, 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; 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



2025 Sewer Financial Plan Study

Final Recommendation

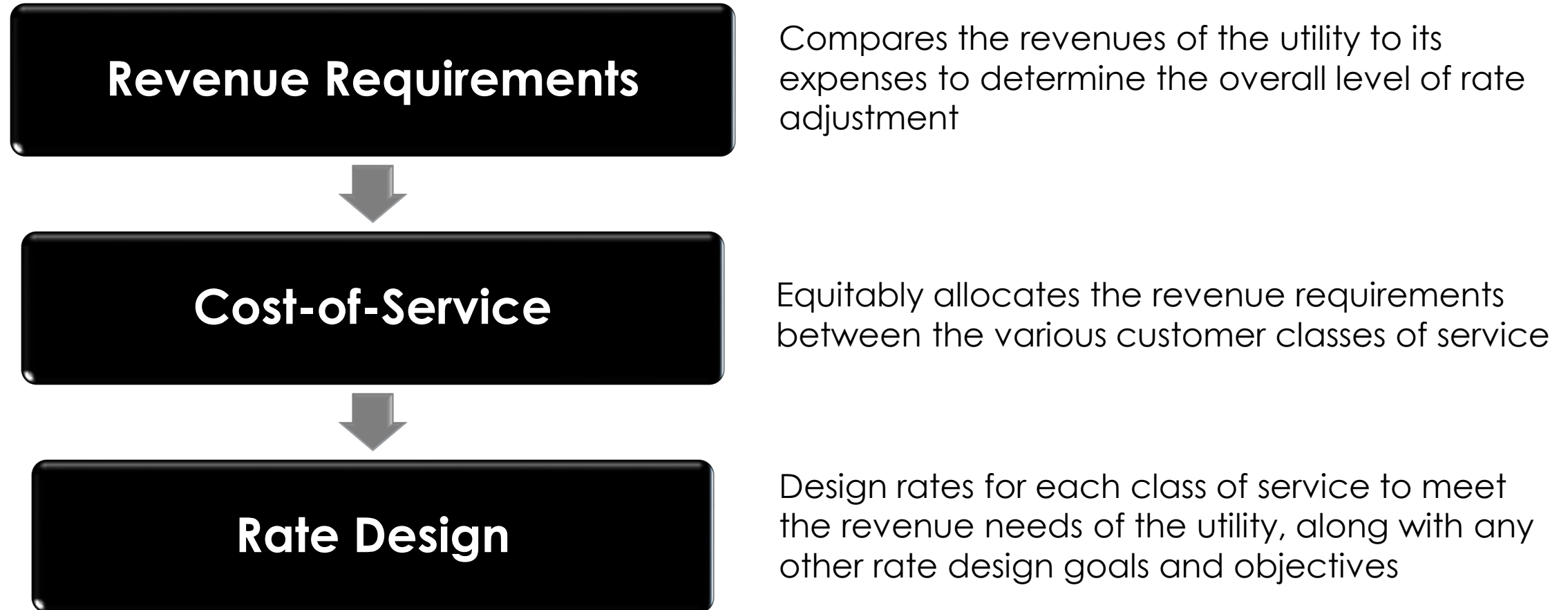
July 16, 2025



Agenda

1. General Utility Rate Setting
2. Sewer Enterprise Financial Plan
3. Proposed Rate Adjustments
4. Project Schedule

The Rate Setting Process



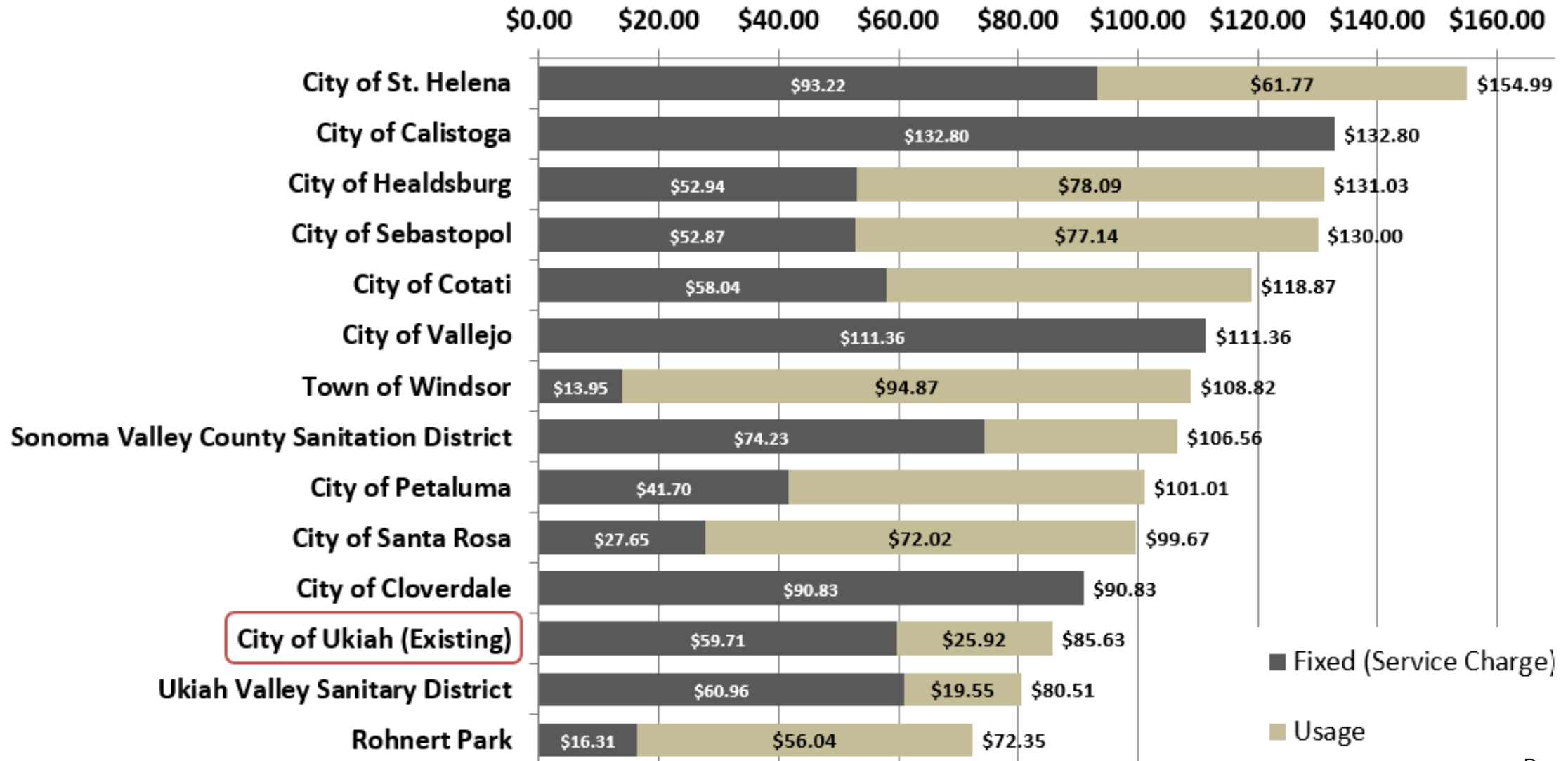
Legal Requirements for Setting Water Rates In California

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.

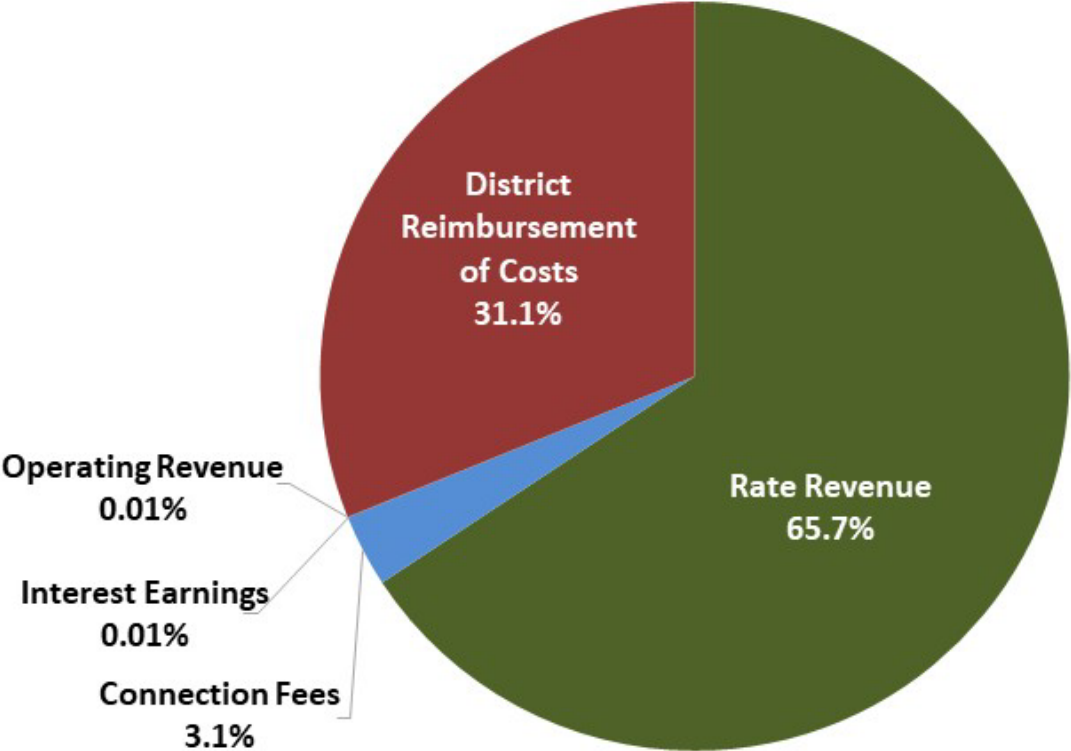
The City's Operating Reserve policy requires the sewer utility to maintain cash reserves of at least 25 percent of operating expenses (currently equal to about **\$1.8 million**).

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

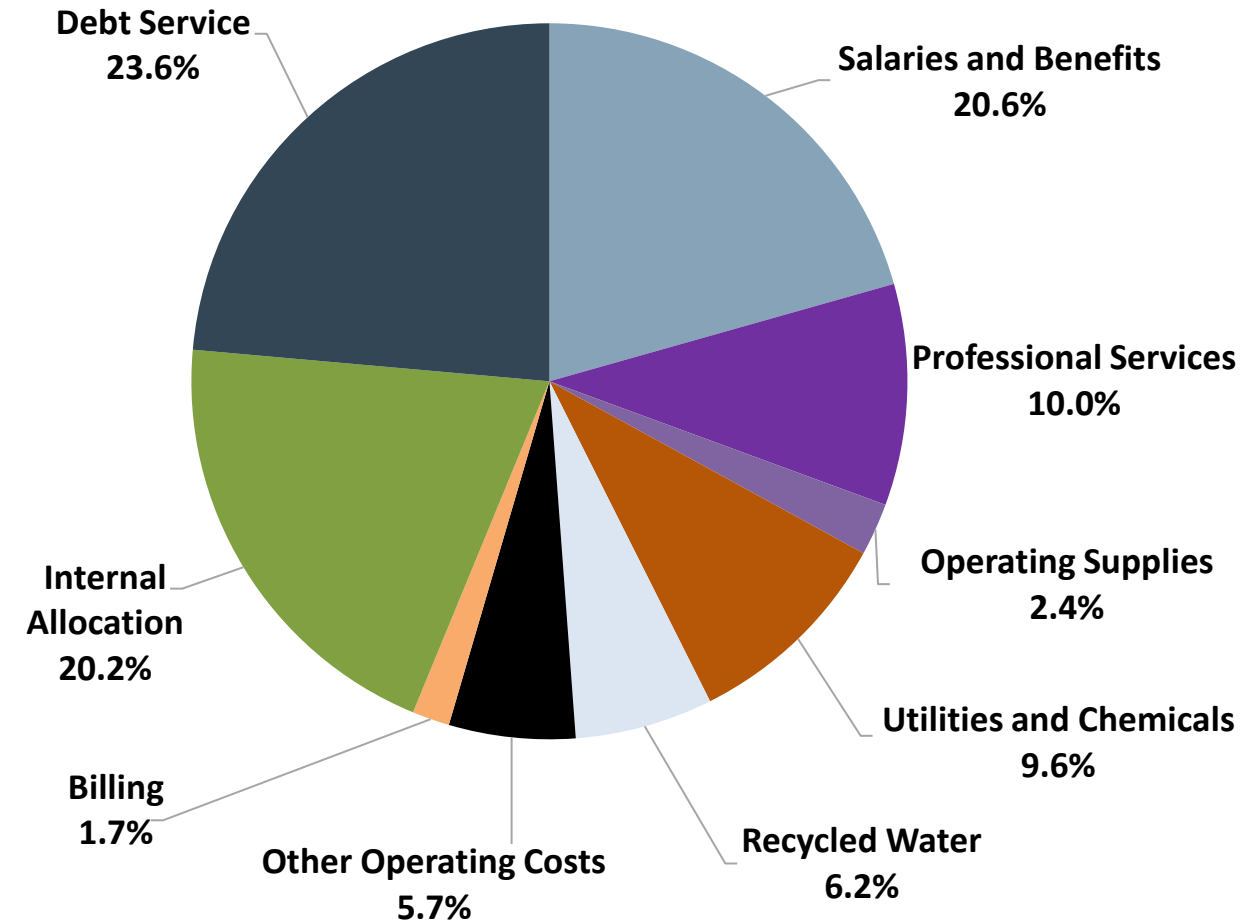


Operating and Debt Expenses

FY2025/26 Budget

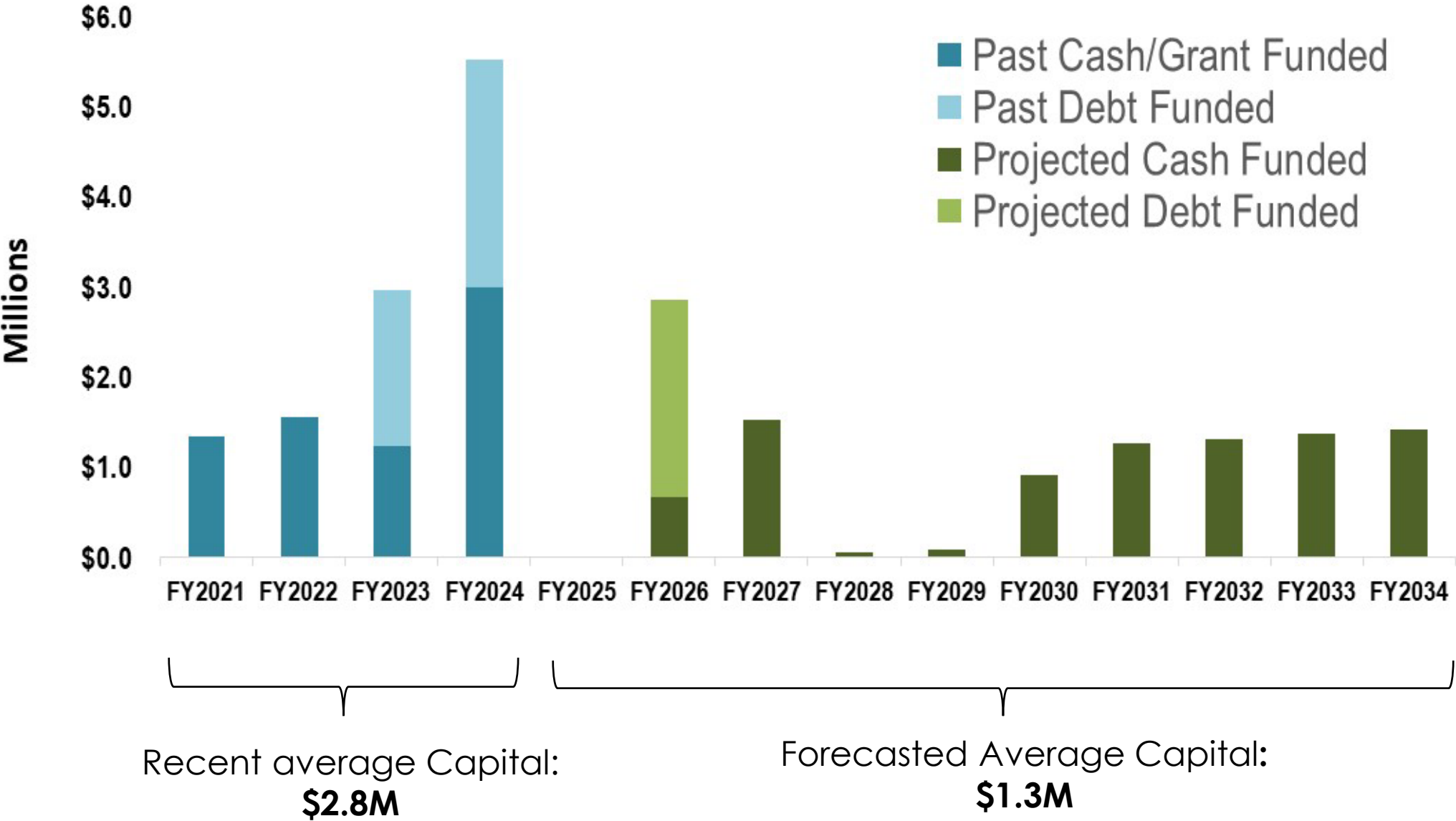
Salaries and Benefits	\$2,160,000
Professional Services	\$1,047,000
Operating Supplies	\$248,000
Utilities and Chemicals	\$1,008,000
Recycled Water	\$653,000
Other Operating Costs	\$598,000
Billing	\$177,000
Internal Allocation	\$2,115,000
Debt Service	\$2,472,000

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

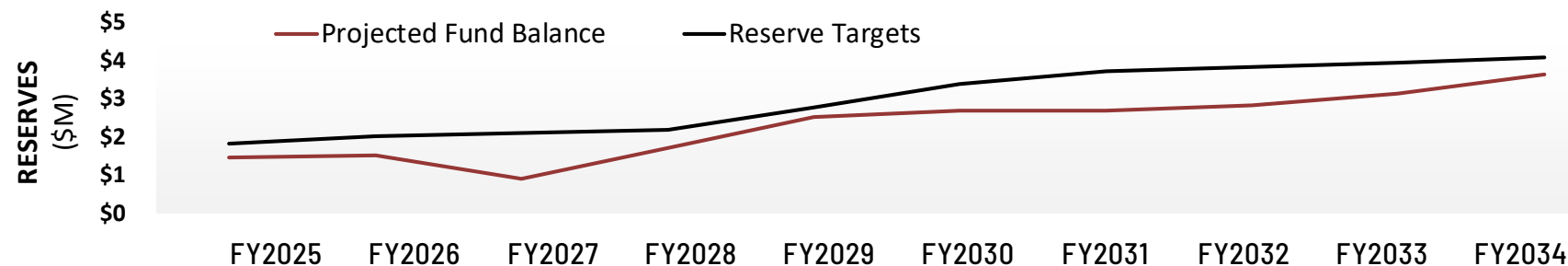
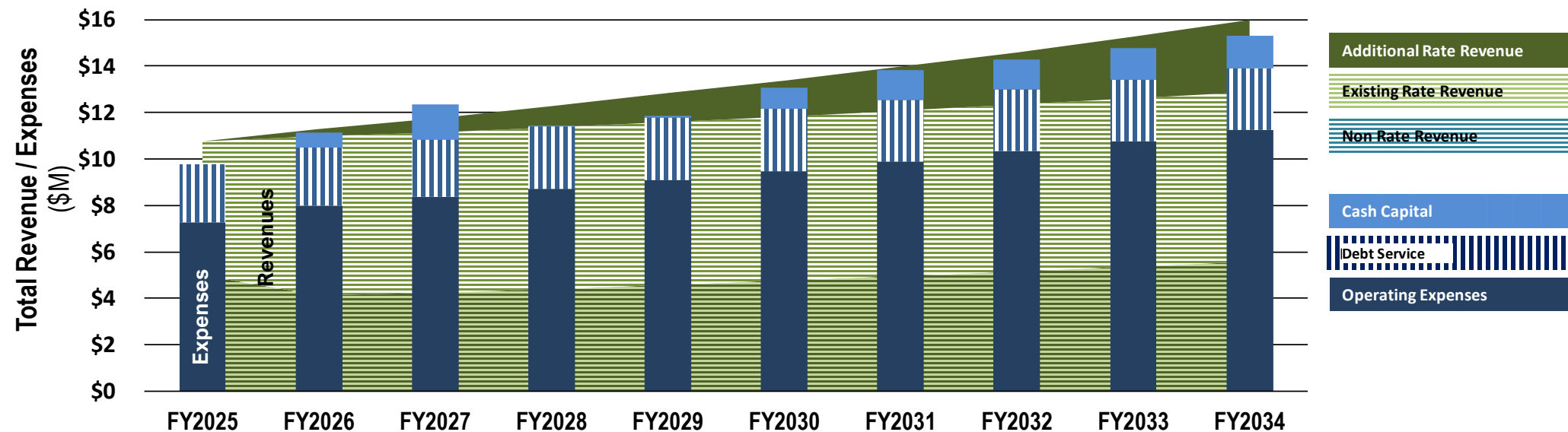
Rate Increase Drivers

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

Attachment 1



	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

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

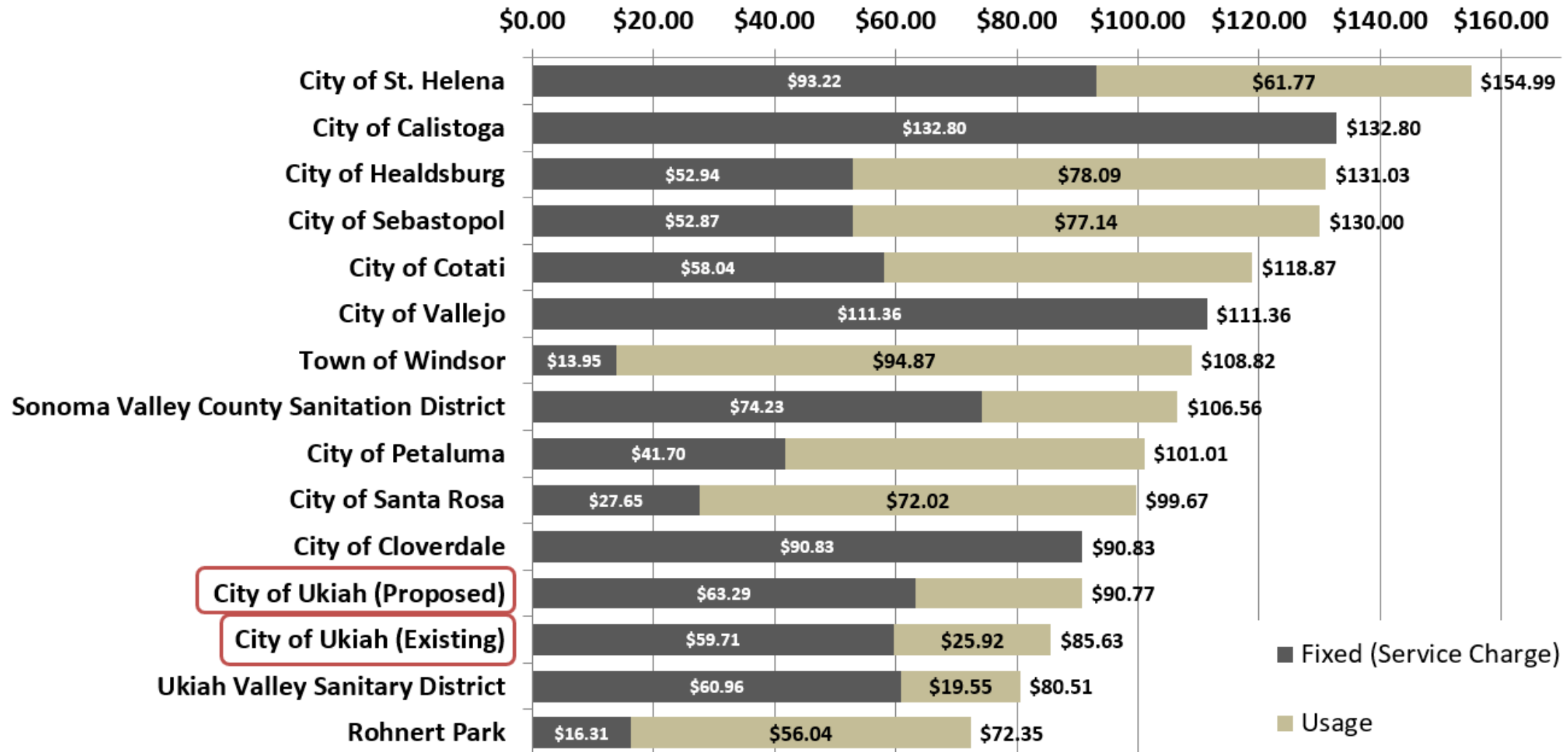
* Service Charge is per dwelling unit for residential and per ESSFU for commercial accounts (with a minimum charge of 1 ESSFU)

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



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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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**.

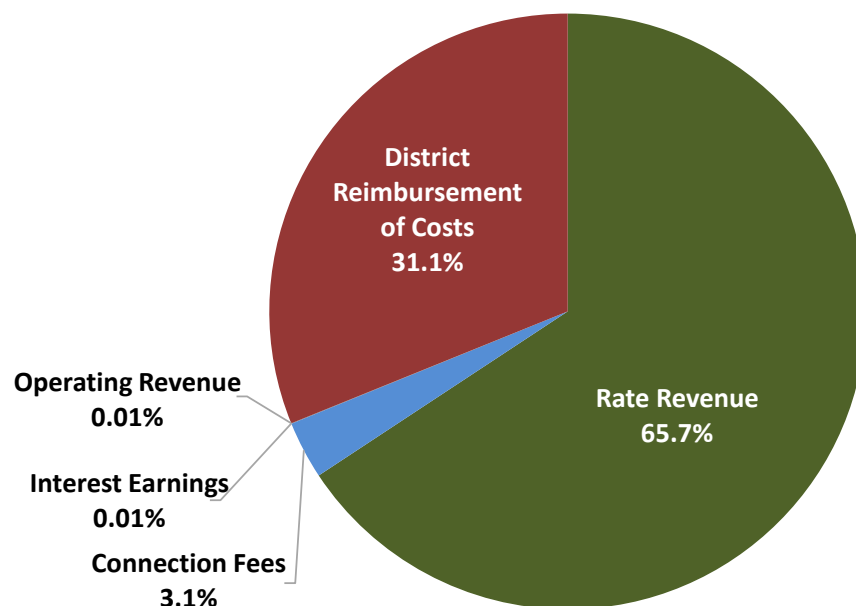


Figure 1: Sewer Enterprise Revenue Categories (Budget FY 2024/25)

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**.

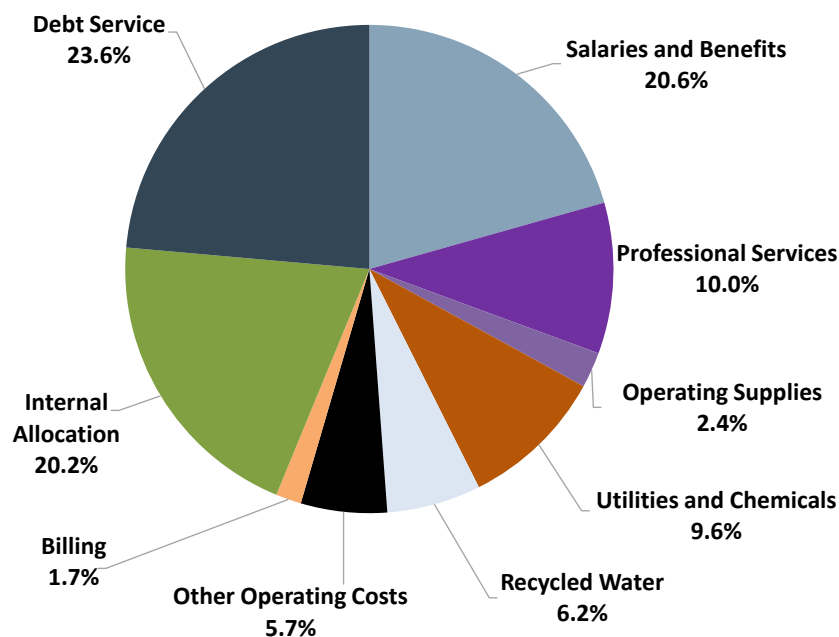


Figure 2: Sewer Enterprise Operating & Debt Expenses (Budget FY 2025/26)

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).

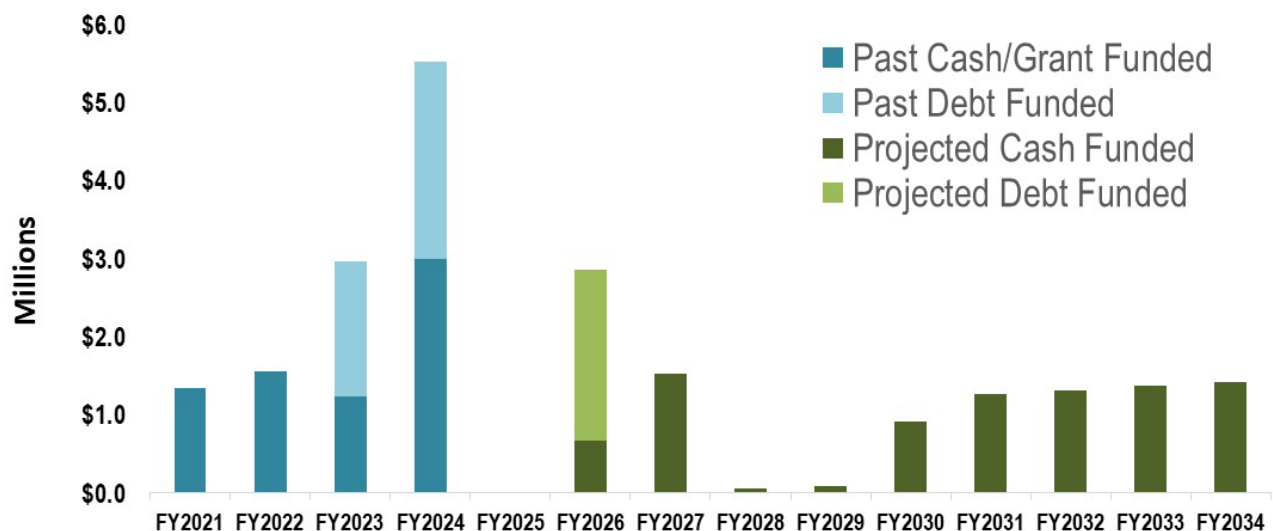


Figure 3: Sewer Enterprise Historical and Forecasted Capital Spending

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.

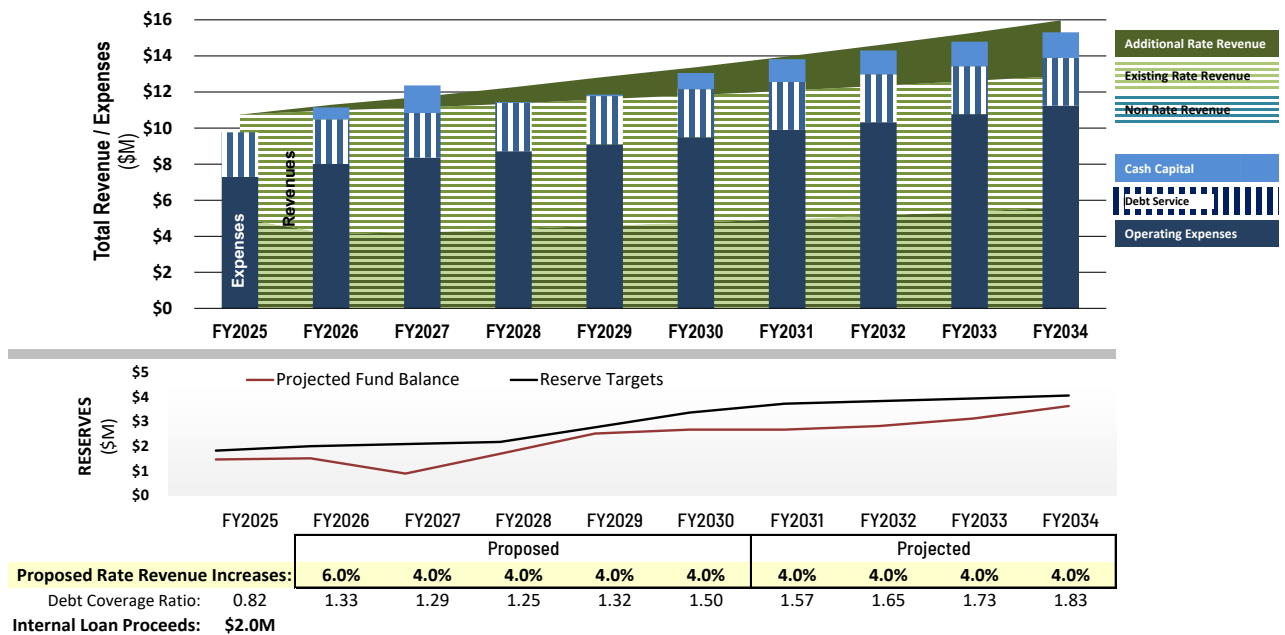


Figure 4: Sewer Enterprise 10-Year Cash Flow Projection

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%	
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

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH INITIATING THE PROPOSITION 218 PROCESS FOR PROPOSED ADJUSTMENTS TO SEWER SERVICE RATES AND SETTING A PUBLIC HEARING DATE**

WHEREAS, the City of Ukiah operates a sewer utility enterprise that is funded entirely by customer charges and must generate sufficient revenue to cover its operating, maintenance, capital, and debt service costs; and

WHEREAS, the City has engaged Hildebrand Consulting to prepare a comprehensive financial plan and rate study for the sewer utility in order to assess the adequacy of existing rates and recommend any necessary adjustments; and

WHEREAS, the rate study identifies the need for a series of rate increases to address operating and capital funding needs, including rebuilding reserves, responding to increased operating costs due to inflationary pressures, higher insurance costs, and a new allocation of Recycled Water Program expenses; and

WHEREAS, Article XIII D, Section 6 of the California Constitution (Proposition 218) requires that property owners and customers be notified of proposed increases to property-related charges, such as sewer service rates, and be given the opportunity to protest those increases through a written protest process; and

WHEREAS, Proposition 218 requires that a notice of the proposed rate increase be mailed at least 45 days in advance of a public hearing at which the City Council will consider adoption of the proposed rates.

NOW, THEREFORE, BE IT RESOLVED that:

1. Initiation of Proposition 218 Process: The City Council hereby initiates the Proposition 218 protest process for proposed adjustments to sewer service rates, consistent with the recommendations presented in the 2025 Sewer Rate Study prepared by Hildebrand Consulting.
2. Public Hearing Scheduled: A public hearing is hereby scheduled for September 17, 2025, at 5:15 PM, at a regular meeting of the City Council, to consider the proposed sewer rate adjustments and to receive and tabulate written protests from property owners and customers, as required by Proposition 218.
3. Notice to be Mailed: City staff is authorized and directed to prepare, print, and mail the required Proposition 218 notice of the proposed sewer service rate adjustments to all affected property owners and customers of record no later than August 2, 2025, which is at least 45 days before the scheduled public hearing.
4. Public Availability: The 2025 Sewer Rate Study shall be made available for public inspection during regular business hours at the City Clerk's Office and posted on the City's website.

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk

DRAFT

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 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.

DRAFT

The City of Ukiah is proposing a multi-year sewer rate adjustment schedule for all residential and commercial (non-residential) customers. The proposal will be considered by the City Council at a Public Hearing on September 17, 2025. If approved, the sewer rate adjustments will commence October 1, 2025. You are receiving this notification in compliance with California Constitution Article XIII C and D (commonly known as Proposition 218), which requires that all impacted property owner(s) are mailed notice of proposed rate increases at least 45 days prior to a public hearing.

Proposed 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
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)

Your Sewer Rates pay all costs necessary to operate and maintain the City’s sewer collection, treatment, and disposal infrastructure. The proposed Sewer Rates will help enable the City to provide reliable and dependable wastewater collection and treatment service while protecting our streams, creeks, rivers, navigable waterbodies and public health.

Please be advised that pursuant to Government Code Section 53759(d) there is a 120-day statute of limitation for any challenge to the new, increased or extended fee or charge.

City of Ukiah
300 Seminary Ave
Ukiah, CA 95482



IMPORTANT NOTICE – Sewer Rate Increase
PUBLIC HEARING NOTICE



AGENDA SUMMARY REPORT

SUBJECT: Review of Applications Received, and Possible Adoption of Resolution Making Appointments to Fill Vacancies on the City of Ukiah Planning Commission.

DEPARTMENT: City Clerk

PREPARED BY: Araceli Sandoval, Deputy City Clerk

PRESENTER: Kristine Lawler, City Clerk

ATTACHMENTS:

1. Resolution 2021-52
2. Applications
3. Proposed Resolution

Summary: The City Council will review and consider applications received, and possibly adopt a resolution making appointments to fill vacancies on the City of Ukiah Planning Commission.

Background: On January 20, 2021, the City Council voted to amend the procedure for filling vacancies on the Planning Commission to solicit applicants with the technical experience and qualifications needed to make the decisions required in their role as a Planning Commissioner. An Ordinance was then introduced on February 3, 2021, and adopted on February 17, 2021, to amend Division 1, Chapter 4, Article 4 of the City Code Regarding the Procedure for Filling Vacancies on the Planning Commission. This ordinance went into effect on March 19, 2021. On October 20, 2021, the City Council adopted Resolution 2021-52 (Attachment 1), which establishes a policy for the in-meeting process for nominating and appointing members to the Planning Commission.

There are currently two vacant seats on the Planning Commission:

- One unexpired term previously held by Thao Phi, which has been noticed since October 2024.
- One expired term previously held by Angie Grainger, which has been noticed since July 2024.

Notices of the vacancies have been posted on the City's website, in the display case in front of the Civic Center, at the Ukiah Library, and published in the Ukiah Daily Journal.

Discussion: Staff recommends that Council review the applications (Attachment 2), interview the applicants if there are any questions, then make the nomination and adopt the resolution (Attachment 3) making the following appointments to the Planning Commission: Devery Montano to a term ending July 16, 2029; and Jacob Brown to fill the unexpired term of Thao Phi, with an expiration date of February 1, 2027. The candidates have been consulted and have concurred with these positions as stated. If appointed by the City Council, Devery Montano and Jacob Brown could be seated at their first Planning Commission meeting on July 23, 2025.

Recommended Action: 1) Review, possibly interview applicants, and discuss applications received; 2) make nominations; 3) adopt resolution making appointments to fill vacant seats on the Planning 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: Craig Schlatter, Community Development Director

STRATEGIC PLAN (SP): N/A

CLIMATE INITIATIVES (CI): N/A

GENERAL PLAN ELEMENTS (GP): N/A

Approved:


Sage Sangiacomo, City Manager

RESOLUTION NO. 2021-52

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH ESTABLISHING A POLICY FOR THE IN-MEETING PROCESS FOR NOMINATING AND APPOINTING NEW MEMBERS (*WHEN MORE THAN ONE CANDIDATE*) TO THE CITY COUNCIL (*FOR MID-TERM VACANCIES THAT COUNCIL OPTS TO APPOINT*), PLANNING COMMISSION, AND DESIGN REVIEW BOARD.

WHEREAS, the City Council and Staff have determined that it would be helpful to have written clarification for the in-meeting process of nominating and appointing new members (*when more than one candidate*) to the City Council (*for mid-term vacancies that Council opts to appoint*), Planning Commission, and Design Review Board.

NOW, THEREFORE BE IT RESOLVED that the Council of the City of Ukiah adopts the following method for the in-meeting process of nominating and appointing new members (*when more than one candidate*) to the City Council (*for mid-term vacancies that Council opts to appoint*), Planning Commission, and Design Review Board:

Applicant Statements:

1. Each applicant will fill out an application/questionnaire that will be published with the agenda, and which the councilmembers can review ahead of the meeting.
2. At the meeting, the candidates will give a three-minute statement of why they want to serve in the position.
3. Council can ask questions for specific candidates.
4. Public comment followed by additional Council questions if any.

Discussion:

5. Councilmembers will discuss the pros, cons, and preferences of the various candidates (*nominations are not accepted*).

Ranking:

6. Councilmembers will fill out a ranking form (Exhibit A to the Resolution – Attachment 1). The forms will be submitted to the clerk, and a short recess will be held while the clerk calculates the results using the Ranking Form Calculator Sheet (Exhibit B to the Resolution - Attachment 1 – provides details of how the ranking is calculated). Following the recess, the clerk will present the results of the ranking forms. If there is a tie resulting in three or more candidates with top ranks*, the process will be repeated with the top-ranking candidates until there are only two top-ranking candidates.

**The lowest score equals the top rank.*

7. With the top two candidates, a final run-off vote will be completed with a blind vote using ballots that will be distributed and returned to the Clerk, where each Councilmember may vote for one candidate. The Clerk will tabulate and announce the results. The successful candidate is the one receiving the most votes.

If there is more than one seat being filled, then the process starts over from Step #6, with the remaining candidates.

Appointment:

8. Once a successful candidate (or candidates, if there is more than one) has been selected, the Mayor may call for a motion, second, and roll call vote to adopt the resolution making the appointment(s).

If there is only one candidate, then a simple discussion and adoption of a resolution is all that would be necessary to make the appointment.

PASSED, ADOPTED and APPROVED this 20th day of October, 2021 by the following vote on roll call vote:

AYES: Councilmembers Duenas, Brown, and Mayor Orozco

NOES: None

ABSTAIN: None

ABSENT: Councilmembers Crane and Rodin



Juan V. Orozco, Mayor

ATTEST:



Kristine Lawler, City Clerk

RANKING FORM

Councilmember Name: _____

Candidate #1	
Candidate #2	
Candidate #3	
Candidate #4	
Candidate #5	
Candidate #6	
Candidate #7	
Candidate #8	
Candidate #9	
Candidate #10	

**EXAMPLE
APPOINTMENT RANKING FORM**

Each Councilmember lists the Candidates in the order of preference with 1 being most preferred.

	Councilmember 1	Councilmember 2	Councilmember 3	Councilmember 4	Councilmember 5	SCORE
Candidate #1	2	2	4	3	2	2.6
Candidate #2	1	3	2	1	4	2.2
Candidate #3	4	1	1	2	3	2.2
Candidate #4	3	4	3	4	1	3
Candidate #5						0
Candidate #6						0
Candidate #7						0
Candidate #8						0
Candidate #9						0
Candidate #10						0

To get the score, the numbers on each Candidate's line are added up, then divided by the number of Councilmembers voting.

In this example Candidates #2 & #3 have tied for first place, with Candidate #1 in second place, and Candidate #4 in fourth place.



City of Ukiah

Office of the City Clerk

300 Seminary Avenue
Ukiah, CA 95482

Stipend: \$100 per month

Estimated Monthly Time Commitment: 5-10 hours

APPLICATION FOR PLANNING COMMISSION

(Open until filled)

NAME: Devery Montano

STREET ADDRESS: [REDACTED]

CITY: Ukiah **STATE:** CA **ZIP CODE:** 95482

PHONE: Home n/a **Work/Cell:** [REDACTED] **Email:** [REDACTED]

Please, 1) attach a description outlining of your educational background, experience, and/or interest (or attach a resume); 2) attach a statement (400-500 words) describing why you should be selected to fill this vacant position; and 3) complete all questions on this application *(If there is not enough room in the field, please use an attached page)*. Applications can be submitted in person or mailed to: City of Ukiah, Attn: City Clerk, 300 Seminary Ave., Ukiah, CA 95482.

1. Highlight the relevant knowledge or skills that you will bring to the Planning Commission:

My knowledge of this community comes as a medical provider familiar with the struggles of local families, as a parent, and as the spouse of a small business owner. I am a quick and motivated learner, a necessary trait when approaching a new role. Fair-minded and calm under pressure, I am skilled at taking in opposing viewpoints when forming opinions and making recommendations.

2. Have you ever served on a public, private, or non-profit Board, Committee, Commission, or Task Force? If yes, please specify below: YES ☐ NO ☒

Name

Length of Service

Applicant Questionnaire

2. What do you believe to be the purpose of the Planning Commission and the duties and responsibilities of Commissioners?

The Planning Commission has a unique role in both the long-term planning for growth in Ukiah and in helping to solve more immediate issues. It has a duty to represent the desires of the current community with an eye for future needs as our community grows and changes. Commissioners are responsible for the mindful development of our city.

3. What do you consider to be the two most important land use issues facing our community? In your opinion, what role does the Planning Commission have in addressing these land use issues?

Providing affordable housing, both to low-income and middle-class working families, should be a priority in land use planning for Ukiah. It is difficult for the new grad or young adult without capital to afford rent or purchase a home in town. The result often seen within the medical community is one of new nurses and providers working here just long enough to gain the experience needed to then get hired in another city with more affordable housing options. The Planning Commission has a clear role in identifying areas of sustainable housing growth.

Water rights and use is the critical issue throughout California. The Planning Commission, with the help and knowledge of experts in the field, should have a long-term view of climate and water when developing plans for Ukiah's future.

4. What is, or should be, the relationship between the City's Planning Commission and the City Council and between the Commission and Staff?

The sharing, consolidating, and prioritizing of information is how the Planning Commission can be of use to the City Council. The Planning Commission has a role in providing the long-term perspective and goals for our city to have sustainable growth in ways that are meaningful and important to the families who live here. The Commission needs to work closely with staff to ensure that accurate and timely information is conveyed between the public and city officials.

5. How do you believe your own skills, experience, and perspective will be beneficial to the work of the Planning Commission?

I am skilled at taking in and processing large amounts of information, a quick-study, and an informed decision-maker. A desire for preparation prior to meetings makes me well-suited to ask thoughtful questions and summarize complicated problems.

My professional experience involves frequent exposure to managing high-stress environments; this has well-prepared me for the occasional volatility that can present at public meetings when interacting with passionate community members.

My perspective is one of someone who has actively chosen to move to and raise a family in Ukiah. My job involves daily interactions with local families, my husband owns a small business in town, and our three children attend Ukiah public schools. I am very invested in the health and growth of the Ukiah community.

6. 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?

My time serving in the Navy allowed for the opportunity to work with people from a wide variety of backgrounds. My current job as Nurse Midwife and Nurse Practitioner involves daily interactions with patients of different ethnicities, language, sexual orientation, etc. I love learning about my fellow community members to provide them individualized care.

7. Is there anything that you would like to add?

I am excited for this opportunity to volunteer in my community. Since moving here, I have looked for a non-elected role that I could serve in. I am hopeful that the Planning Commission will be a position that I can usefully dedicate my time and energy to for the next several years.

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.

Date: 7/5/2025

**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.*

Application Statement for Planning Commission

My name is Devery Montano and I am applying for a seat on the City of Ukiah Planning Commission. I moved here with my family in 2016 and have worked at MCHC and the Adventist hospital as a Certified Nurse Midwife and Nurse Practitioner where I have had the opportunity to meet and form connections with many families within the community. My husband owns and runs a small business in town, Mendo Training Center, which has been both a huge learning curve for us and another level of community involvement. We have three children who attend Ukiah public schools and participate in local sports and theater. I have spent my nine years here in Ukiah becoming involved with multiple aspects of our wonderful city and am highly motivated to participate in the improvement of some of our city's needs.

Service is an important quality that I want to demonstrate to my children as necessary work in maintaining healthy and thriving communities. Both my husband and I served as active duty members in the US Navy at Camp Pendleton. We have been foster parents in Ukiah, recently adopting our son from foster care. Since arriving in town, I have hoped to find a volunteer position within the local government to which I can apply my time and energy. The Planning Commission vacancy was presented to me as a position that would be meaningful and appeal to my sensible nature.

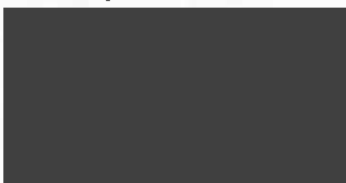
While land use and zoning are admittedly not my area of expertise, one of my great joys is discovering a new topic, reading deeply into the subject, and emerging ready to (at the very least) be able to ask intelligent and thoughtful questions. I would present to all meetings well-prepared for topics of discussion. A willingness to listen to opposing viewpoints and an ability to remain calm when emotions run high are social skills I need to use daily at work and that would serve me well in this role.

City planning is a vital part of helping a community grow in a sustainable way that also maintains the qualities that are valued locally. I would love to be a part of developing the plan for our city's future and navigating the difficult roadblocks (sometimes literally as streets are repaved!) that will inevitably crop up. Thank you so much for your time and consideration of my application.

Devery Montano

Certified Nurse
Midwife & Women's
Health NP

Devery Montano



Skills

Full scope midwifery care, including inpatient intrapartum care and cesarean first assist. Performs vaginal deliveries, laceration repair, and IUD / Nexplanon insertion. Limited OB ultrasound skills.

Experience

Care For Her / Certified Nurse Midwife

OCT 2016 - PRESENT

Full scope midwifery practice in both a clinic and inpatient setting. Provides intrapartum care in a small rural hospital with on-call OB backup. First assist during cesarean sections. Lead midwife in an eight-midwife group practice since 2021.

Naval Hospital Camp Pendleton / Labor & Delivery Nurse

AUG 2009 - SEP 2016

Charge, triage, and staff RN as well as OR circulator on a 8-bed L&D unit. Assisted in training more than 30 new nurses and corpsmen.

United States Navy / Registered Nurse

JUL 2005 - AUG 2009

Active duty Navy Nurse; worked on Med-Surg, Pediatrics, Post Partum, and Labor & Delivery. Received Honorable Discharge at end of service. Awarded Navy and Marine Corps Achievement Medal.

Education

San Diego State University / MSN, Midwifery & Women's Health

AUG 2012 - MAY 2015

University of Florida / BSN

AUG 2001 - MAY 2005

Certifications & Licensure

Board Certified Nurse Midwife (AMCB) and Women's Health Nurse Practitioner (NCC)

Current California licensure for RN, CNM, CNM Furnishing, and NP

Current DEA prescriber

AWHONN EFM Instructor



City of Ukiah

Office of the City Clerk

300 Seminary Avenue
Ukiah, CA 95482

Stipend: \$100 per month

Estimated Monthly Time Commitment: 5-10 hours

APPLICATION FOR PLANNING COMMISSION

(Open until filled)

NAME: Jacob Brown
First Last

STREET ADDRESS: [REDACTED]

CITY: Ukiah STATE: CA ZIP CODE: 95482

PHONE: Home [REDACTED] Work/Cell [REDACTED] Email: [REDACTED]

Please, 1) attach a description outlining of your educational background, experience, and/or interest (or attach a resume); 2) attach a statement (400-500 words) describing why you should be selected to fill this vacant position; and 3) complete all questions on this application *(If there is not enough room in the field, please use an attached page)*. Applications can be submitted in person or mailed to: City of Ukiah, Attn: City Clerk, 300 Seminary Ave., Ukiah, CA 95482.

1. Highlight the relevant knowledge or skills that you will bring to the Planning Commission:

I bring a well-rounded combination of leadership, regulatory, and real-world experience that aligns with the duties of the Planning Commission. As a licensed real estate agent with Century 21, I have direct knowledge of zoning, permitting, property development, and the local housing market. I understand how planning decisions affect residents, businesses, and future growth. This mix of technical, operational, and community engagement experience gives me the tools to evaluate proposals fairly, communicate effectively, and make thoughtful, forward-looking decisions that benefit Ukiah.

2. Have you ever served on a public, private, or non-profit Board, Committee, Commission, or Task Force? If yes, please specify below:

YES ☒ NO ☐

Name

Length of Service

Name: Mendocino County Republican Central Committee

Length of Service: Ongoing (current member involved in organizational leadership and civic engagement)

Applicant Questionnaire

2. What do you believe to be the purpose of the Planning Commission and the duties and responsibilities of Commissioners?

The Planning Commission serves to guide the physical development of the city in alignment with the General Plan and community goals. Commissioners are responsible for reviewing land use proposals, conditional use permits, zoning changes, and development plans, ensuring that all projects comply with city policies, ordinances, and long-term planning objectives. Commissioners should fairly evaluate applications, listen to community input, and strike a balance between private property rights and the broader public interest to promote orderly and sustainable growth.

3. What do you consider to be the two most important land use issues facing our community? In your opinion, what role does the Planning Commission have in addressing these land use issues?

First, the lack of annexation and city expansion has constrained housing availability and infrastructure development. Second, the city faces pressure to support economic growth while preserving its small-town character. The Planning Commission plays a central role in both areas by evaluating development proposals through the lens of long-term planning, advocating for annexation where appropriate, and ensuring new projects serve the broader needs of the community. The Commission must help Ukiah grow responsibly and equitably.

4. What is, or should be, the relationship between the City's Planning Commission and the City Council and between the Commission and Staff?

The Planning Commission should operate as an advisory body to the City Council, offering informed, unbiased recommendations based on sound planning principles and community needs. Commissioners should maintain open, respectful communication with Council members while preserving independence in decision-making. The relationship with City Staff should be collaborative and professional, relying on staff expertise to interpret ordinances, explain technical details, and ensure consistency with the General Plan and regulatory frameworks.

5. How do you believe your own skills, experience, and perspective will be beneficial to the work of the Planning Commission?

My background as a U.S. Marine Corps veteran, former operations manager, and current real estate professional gives me a strong foundation in logistics, regulation, and practical land use issues. I understand how policies affect residents, businesses, and developers on the ground. I bring leadership, a disciplined work ethic, and a commitment to results. My experience navigating property development, local governance, and regulatory compliance positions me to serve as a steady, informed voice on the Commission.

6. 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

Throughout my military, educational, and professional career, I've worked alongside people from diverse cultural, racial, and socioeconomic backgrounds. I value respectful dialogue and inclusive decision-making, especially when it comes to how development impacts different parts of our community. On the Commission, I would ensure that all community voices are heard, respected, and reflected in land use decisions.

increasingly diverse?

7. Is there anything that you would like to add?

I'm applying for this seat because I believe the Planning Commission has an opportunity to shape a stronger, more prosperous Ukiah. Our community needs leaders willing to confront long-standing challenges like annexation and housing head-on, with integrity and purpose. I bring the experience, perspective, and resolve to help make that happen.

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

Date

7/9/2025

**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.*

Jacob S. Brown

Description of Educational Background, Experience, and Interest

I obtained a Bachelor of Science degree in Aviation Management, graduating Cum Laude from Southern Illinois University Carbondale. My education emphasized operations, regulatory compliance, and systems management — areas that have served me well during my multifaceted professional career.

I am a U.S. Marine Corps veteran with experience in environmental and safety operations, critical incident response, and logistical coordination during the Iraq War. Following my military service, I spent over a decade in the private industry as a safety and production manager, eventually becoming General Manager at METALfx in Willits, where I oversaw large-scale operations and compliance across multiple departments.

Currently, I work as a licensed real estate agent with Century 21. I also serve part-time as a substitute teacher for the Ukiah Unified School District during the school year. I stay engaged in local civic and political efforts, advocating for responsible governance and community development. My interest in serving on the Planning Commission comes from my deep commitment to our community and a desire to help improve Ukiah's economic growth and the preservation of Ukiah's unique character.

Jacob S. Brown

Statement - Why I Should Be Selected

Ukiah is at a pivotal point in its growth. We face significant challenges — from housing shortages and homelessness to the flight of small businesses and the need for economic revitalization. The Planning Commission plays a crucial role in shaping the direction of our community, and I am eager to contribute to this work with a practical, service-oriented mindset.

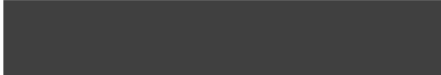
I bring a unique combination of leadership experience, regulatory knowledge, and a boots-on-the-ground understanding of Ukiah's challenges. My military service instilled in me a deep sense of duty, discipline, and an ability to execute under pressure. My background in manufacturing management gave me a results-driven approach to problem-solving, while my current role in education keeps me connected to families and the next generation of Ukiah residents.

I have a particular interest in land use policy that balances development with long-term sustainability. Ukiah can support growth while protecting its small-town character and environmental resources. I understand the importance of adhering to the General Plan while being responsive to emerging community needs.

As someone who has navigated permitting and zoning both professionally and personally, I understand the frustrations many residents and developers face. I would bring a common-sense, transparent perspective to the Planning Commission — one that listens carefully, respects diverse opinions, and keeps the focus on what's best for the whole community.

I believe in thoughtful development that encourages local businesses, supports workforce housing, and improves infrastructure without overburdening residents. If appointed, I will commit myself to thorough preparation, active engagement, and respectful collaboration with fellow commissioners, staff, and the public. My goal is to contribute to a city that is safe, prosperous, and welcoming for generations to come.

Thank you for your consideration.


Jacob S. Brown

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH MAKING APPOINTMENTS TO THE PLANNING COMMISSION.**

WHEREAS, pursuant to Ordinance 1211, members of the Planning Commission shall be appointed by a majority of the City Council, each to serve at the will of the City Council up to a term of four (4) years; and

WHEREAS, Thao Phi resigned on October 21, 2024, leaving an open term expiring on February 1, 2027; and

WHEREAS, Angie Grainger resigned on June 2024, leaving an open term that expired on April 7, 2025; and

WHEREAS, the vacancies were posted online, in the glass case in front of the Civic Center, at the Ukiah Library, and published in the Ukiah Daily Journal; and

WHEREAS, the City Clerk's office received two applications from Devery Montano and Jacob Brown, with no other applications having been received; and

WHEREAS, the City Council met on July 16, 2025, reviewed the applications and asked any questions that they may have had for the applicants.

NOW, THEREFORE, BE IT RESOLVED, that the Ukiah City Council approve the nominations, and do hereby appoint the following persons and terms:

BOARD/ COMMISSION	NAME	POSITION	TERM EXPIRATION
Planning Commission	Devery Montano	Commissioner	July 16, 2029
Planning Commission	Jacob Brown (filling the unexpired term of Thao Phi)	Commissioner	February 1, 2027

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Douglas F. Crane, Mayor

ATTEST:

Kristine Lawler, City Clerk



AGENDA SUMMARY REPORT

SUBJECT: Adoption of a Resolution Amending Resolution 2024-09 to Revise the Diversity and Equity Committee Membership Composition.

DEPARTMENT: City Manager /
Admin

PREPARED BY: Traci Boyl, Senior Management Analyst

PRESENTER: Traci Boyl, Sr. Management Analyst

ATTACHMENTS:

1. Resolution 2024-09 - Modifying Diversity and Equity Standing Committee
2. 2025-07-01 Diversity and Equity Committee
3. Resolution 2025 - Amending Resolution 2024-09 to Revise the Diversity and Equity Committee Membership Structure

Summary: Staff recommends adopting a resolution amending Resolution 2024-09, which currently governs the structure and role of the Diversity and Equity Committee, to reduce the total number of committee seats from eleven (11) to seven (7). This amendment preserves the committee's purpose, including its role as a DEI ambassador body, while improving meeting consistency and maintaining inclusive representation.

Background: In 2020, the Ukiah City Council adopted Resolution 2020-59, establishing an 11-member Diversity and Equity Standing Committee tasked with developing an Equity Action Plan. The Committee successfully developed the plan, which was adopted through Resolution 2022-01. In 2024, the initiatives outlined in the Action Plan were incorporated into the City Council's Strategic Plan through Resolution 2024-09 (Attachment 1), at which time the Committee's role shifted to serving as ambassadors in the community.

Since the incorporation of the plan into the City Council's Strategic Plan, City staff have diligently tracked and continued implementing the various initiatives outlined in the plan. As a result, the Committee's workload has decreased significantly, which has contributed to a noticeable decline in meeting attendance. From 2020 to 2022, only three members per year missed three or more meetings. Since 2023, that number has doubled, with six members missing three or more meetings each year. In 2025, two out of the three scheduled meetings have already been canceled due to lack of quorum.

Additionally, filling vacant seats has become increasingly difficult. The Committee currently has four open seats, including one that has remained vacant for over a year. For reference, a Committee roster is attached (Attachment 2).

Discussion: Frequent absenteeism and longstanding vacancies have made it difficult to convene and conduct the work effectively. Therefore, Staff recommends adopting a resolution (Attachment 3) modifying Resolution 2024-09 to reduce the number of seats from eleven (11) to seven (7), to strengthen quorum reliability while preserving diverse representation and ensuring the Committee's ongoing active role as Diversity, Equity, and Inclusion (DEI) ambassadors in our community.

Staff recommend the following committee composition:

Two (2) City Councilmembers

Five (5) at-large community members, each representing one of the nine distinct demographic groups as follows: individuals and families who are low income; persons with physical or mental disabilities; persons from the LGBTQA community; members of Native American tribes and communities in Mendocino County; members of the Hispanic/Latino community; persons of color; people whose primary language is not English; youth ages 21 and younger; and seniors 65 years and older.

While an applicant may identify with multiple groups (e.g., being both a senior and someone whose primary language is not English), they would select only *one* demographic group to represent on their application. We would not accept more than one member representing the same demographic group, nor would we accept multiple applications for representation of the same group.

Recommended Action: Adopt a resolution amending Resolution 2024-09 to revise the Diversity and Equity Committee membership composition and reduce the number of seats from eleven (11) to seven (7).

BUDGET AMENDMENT REQUIRED: N/A

CURRENT BUDGET AMOUNT: N/A

PROPOSED BUDGET AMOUNT:

FINANCING SOURCE:

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

PREVIOUS CONTRACT/PURCHASE ORDER NO.:

COORDINATED WITH: Marianne Aranda, Sr. Recreation Coordinator; Darcy Vaughn, City Attorney's Office

STRATEGIC PLAN (SP)SPSP 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

RESOLUTION NO. 2024-09**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH MODIFYING THE DIVERSITY AND EQUITY STANDING COMMITTEE****WHEREAS:**

1. The population of the City of Ukiah and the larger community living in the Ukiah Valley who work and shop in the City of Ukiah consist of a diversity of demographic groups, including individuals and families who are low income, persons with physical or mental disabilities, persons from the LGBTQ+ community, members of Native American tribes and communities in Mendocino County, members of the Hispanic/Latino community, persons of color, people whose primary language is not English, youth 21 years and younger, and seniors 65 years and older; and
2. These different demographic groups face unique barriers to accessing employment and municipal services and have different needs affecting their receipt of municipal services than the general population; and
3. Other demographic groups exist in this area which are not specifically identified in this resolution, but the identified groups are believed to be the most substantial of such groups; and
4. If other such groups are identified as significant as a result of the Committee's work or otherwise, the membership of the Committee can be expanded to include them in the future; and
5. The City has established a standing committee of the City Council, known as the Diversity and Equity Standing Committee, which is an advisory body reporting to the City Council and to the City Manager and City Department Heads, as a means to adopt written objectives to improve diversity and equity in the City's workforce and in the provision of municipal services; develop a written Action Plan to achieve those objectives; implement and oversee the Action Plan; provide an annual review and update to the City Council on the Committee's progress; and propose revisions to the plan as necessary.

NOW, THEREFORE BE IT RESOLVED as follows:**1. MEMBERSHIP; APPOINTMENT**

The Equity and Diversity Standing Committee ("Committee") shall consist of eleven (11) members. The members shall consist of two members of the City Council and one member from each of nine organizations in the City of Ukiah or the Ukiah Valley, including Redwood and Potter Valleys, which serve or represent: (1) Persons with lived experience of poverty (currently or formerly living at or below the poverty level); (2) Persons with physical or mental disabilities; (3) Persons from the LGBTQ+ community; (4) Native American tribes and communities in Mendocino County; (5) Persons from the Hispanic/Latino community; (6) Persons of color (7) Persons whose primary language is not English; (8) Youth 21 years and younger; and (9) Seniors 65 years or older. In addition, committee members must either reside or work in the City of Ukiah. Members shall be appointed by the City Council based on written applications submitted by deadlines established by the City Council and any oral interviews the City Council may elect to conduct.

2. TERM OF OFFICE; VACANCIES

- A. Terms of Office. All appointments to the Committee shall be for a term of two (2) years during which the member serves and the will and pleasure of the City Council. Appointments to fill vacancies during a term of office shall be filled as provided in Section 1. The person appointed shall serve for the remainder of the term of that vacancy. Members whose terms expire may be reappointed to serve subsequent terms.
- B. Vacancies. Vacancies may occur as a result of the member's death or incapacity, resignation, no longer residing or working in the City, termination by the City Council with or without cause or failure of a member to attend three (3) meetings in any consecutive four-month period without the prior approval of the Committee.

3. DUTIES OF THE COMMITTEE

Having developed and implemented its two-year Action Plan and incorporated DEI priorities into the City's major planning documents and strategic plan, the Committee shall now have the following responsibilities:

1. To continuously assess the impact of the City's DEI efforts within the community and make recommendations regarding City programs, policies, and services as necessary.
2. To serve as ambassadors promoting diversity, equity, and inclusion within the community and representing the City's commitment to these values.
3. To raise public awareness about the City's commitment to DEI initiatives and values by sharing information about City programs, policies, employment opportunities, and services through social media channels, email, and word of mouth.

4. EXPENSES OF MEMBERS; NO COMPENSATION

The members of the Committee shall receive no compensation or reimbursement for expenses.

5. CHAIRPERSON; OFFICERS

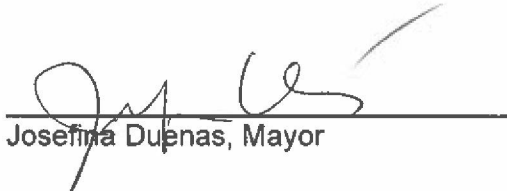
The Committee shall elect a presiding officer to preside at special and regular meeting. City staff assigned by the City Manager shall provide support services, including preparation and posting of agendas, preparing minutes, staff reports and other documents as required for the conduct of the Committee's business.

6. COMMITTEE GOVERNANCE.

- A. Brown Act. The Committee shall comply with the Brown Act. Upon the first appointment of its members, it shall establish a meeting date and time for regular meetings and a procedure for placing items on its agendas. Special meetings may be called by the Chairperson, City staff assigned to assist the Committee or by the Committee during a regular or special meeting.
- B. Parliamentary procedure. The Committee shall adopt any rules it considers necessary for the orderly conduct of its meetings which may, but are not required to, use all or any portion of Robert's Rules of Order or the City Council rules for conducting City Council meetings.

PASSED, ADOPTED and APPROVED this 3rd day of April 2024 by the following vote on roll call vote:

AYES: Councilmembers Rodin, Orozco, Sher, Crane, and Mayor Duenas
NOES: None
ABSTAIN: None
ABSENT: None



Josefina Duenas, Mayor

ATTEST:



Kristine Lawler, City Clerk

Diversity and Equity Standing Committee

Board Contact Person: Traci Boyl - 467-5720

Established: Resolution No. 2020-59: There is hereby created a Standing Committee of the City Council known as the Equity and Diversity Standing Committee, which is an advisory body reporting to the City Council and to the City Manager and City Department Heads

City Dept. Affiliation: City Manager's Office

Membership: The Equity and Diversity Standing Committee ("Committee") shall consist of eleven (11) members. The members shall consist of two members of the City Council and one member from each of nine organizations in the City of Ukiah or the Ukiah Valley, including Redwood and Potter Valleys, which serve or represent: (1) Persons with lived experience of poverty (currently or formerly living at or below the poverty level); (2) Persons with physical or mental disabilities; (3) Persons from the LGBTQ+ community; (4) Native American tribes and communities in Mendocino County; (5) Persons from the Hispanic/Latino community; (6) Persons of color (7) Persons whose primary language is not English; (8) Youth 21 years and younger; and (9) Seniors 65 years or older. In addition, committee members must either reside or work in the City of Ukiah. Members shall be appointed by the City Council based on written applications submitted by deadlines established by the City Council and any oral interviews the City Council may elect to conduct.

Term: A. Terms of Office. All appointments to the Committee shall be for a term of two (2) years during which the member serves and the will and pleasure of the City Council. Appointments to fill vacancies during a term of office shall be filled as provided in Section 1. The person appointed shall serve for the remainder of the term of that vacancy. Members whose terms expire may be reappointed to serve subsequent terms.

B. Vacancies. Vacancies may occur as a result of the member's death or incapacity, resignation, no longer residing or working in the City, termination by the City Council with or without cause or failure of a member to attend three (3) meetings in any consecutive four-month period without the prior approval of the Committee.

Appointed By: Committee members must either reside or work in the City of Ukiah. Members shall be appointed by the City Council based on written applications submitted by deadlines established by the City Council and any oral interviews the City Council may elect to conduct.

Meets: TBD

Function: Committee members will evaluate the impact of the City's DEI efforts and recommend changes to City programs, policies, and services as needed. They will act as ambassadors, promoting diversity, equity, and inclusion and representing the City's commitment to these values. Additionally, they will raise public awareness about DEI initiatives by sharing information on City programs, policies, job opportunities, and services through various communication channels.

(See other side for roster)

Name/Address	Contact Info	Member Position	Current Appt. Date	Expiration Date
Juan Orozco [REDACTED]	[REDACTED]	City Council Member	N/A	N/A
Heather Criss [REDACTED]	[REDACTED]	City Council Member	N/A	N/A
Xochilt Morales de Martinez [REDACTED]	[REDACTED];	Persons with physical or mental disabilities	12/18/2024	12/18/2026
Denise Gorny [REDACTED]	[REDACTED]	Persons with lived experience of poverty	12/18/2024	12/18/2026
Elizabeth Kirsch [REDACTED]	[REDACTED]	Persons from the LGBTQA community	2/5/2025	2/5/2027
Brian Williams [REDACTED]	[REDACTED]	Native American tribes and communities in Mendocino County	12/18/2024	12/18/2026
VACANT		Persons of color		1/11/2025
VACANT		Youth 21 years and younger		1/11/2025
VACANT		Persons from the Hispanic/Latino community		6/21/2025
David Lieberman [REDACTED]	[REDACTED]	Seniors 65 years or older	7/19/2023	7/19/2025
VACANT		Persons whose primary language is not English		6/26/2023

RESOLUTION NO. 2025-**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UKIAH AMENDING RESOLUTION 2024-09 TO REVISE THE DIVERSITY AND EQUITY COMMITTEE MEMBERSHIP STRUCTURE**

WHEREAS, in 2020, the Ukiah City Council adopted Resolution 2020-09 establishing an eleven (11) member Diversity and Equity Standing Committee ("Committee"), tasked with developing an Equity Action Plan, which was successfully completed and adopted through City Council Resolution 2022-01; and

WHEREAS, in 2024, the Equity Action Plan initiatives were incorporated into the City's Strategic Plan by adoption of City Council Resolution 2024-09, and the role of the Committee Members transitioned to serving as Diversity, Equity, and Inclusion ("DEI") ambassadors within the community; and

WHEREAS, City staff have continued to track and implement the initiatives outlined in the Equity Action Plan since its incorporation into the City Council's Strategic Plan; and

WHEREAS, since that time, the Committee's workload has significantly decreased, contributing to reduced meeting attendance; and

WHEREAS, vacancies on the Committee have become increasingly difficult to fill; and

WHEREAS, reducing the number of seats on the Committee will increase quorum reliability while preserving diverse representation and ensuring the Committee's ongoing active role as DEI ambassadors in our community.

NOW, THEREFORE, IT IS HEREBY RESOLVED that:

The Equity and Diversity Standing Committee ("Committee") shall consist of seven (7) members. The members shall consist of two (2) members of the City Council and five (5) members representing organizations in the City of Ukiah or the greater Ukiah Valley, including Redwood and Potter Valleys, which serve or represent one (1) of the nine (9) distinct demographic groups as follows: (1) Persons with lived experience of poverty (currently or formerly living at or below the poverty level); (2) Persons with physical or mental disabilities; (3) Persons from the LGBTQ+ community; (4) Native American tribes and communities in Mendocino County; (5) Persons from the Hispanic/Latino community; (6) Persons of color; (7) Persons whose primary language is not English; (8) Youth 21 years and younger; and (9) Seniors 65 years or older. In addition, committee members must either reside or work in the City of Ukiah. Members shall be appointed by the City Council based on written applications submitted by deadlines established by the City Council and any oral interviews at the discretion of the City Council.

PASSED AND ADOPTED this 16th day of July, 2025, by the following roll call 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 Hoc(s)

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, 4:30 p.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
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
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 jbenenson@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; malinjr@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
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.