

**NOTICE TO BIDDER**  
**BID # 2023-05**

**BOARD OF COUNTY COMMISSIONERS**  
**GRANT COUNTY, OKLAHOMA**

Bids will be received until **3:00 p.m., Friday, April 7, 2023**, at the Grant County Courthouse, County Clerk's Office, 112 E Guthrie Street, Room 102, Medford, Oklahoma, 73759 and will be opened at **9:30 a.m. Monday, April 10, 2023**, during the Regular Board of Commissioners' meeting.

Grant County Board of County Commissioners will be accepting bids on behalf of the Grant County Health Department to hire a General Contractor for the oversite on the construction of a facility on property owned by Grant County as below described:

**GRANT COUNTY HEALTH DEPARTMENT BUILDING**

Lots One (1), Two (2), Three (3), Four (4), and Five (5), Block Twenty (20), Original Town (now City) of Medford, Grant County, Oklahoma.


The Bidders must submit their bid on the official proposal forms which can be found in the packet titled: **GRANT COUNTY HEALTH DEPARTMENT BUILDING**. The submitted bid envelope must be clearly marked **"SEALED BID #2023-05 & BID OPENING DATE: APRIL 10, 2023"**. All pertinent documents as found in the **GRANT COUNTY HEALTH DEPARTMENT BUILDING** packet must be signed, and notarized (if applicable), and returned to the Grant County Clerk's Office as specified above or the bid will be rejected.

Any further questions regarding this bid request Cindy Pratt @ 580-395-2274 – Grant County Clerk, Grant County, Oklahoma. Bid packet can also be found at: [www.grant.okcounties.org](http://www.grant.okcounties.org).


The Board of Commissioners reserve the right to reject any and/or all bids.

Approved this 13<sup>th</sup> day of March 2023

**BOARD OF COUNTY COMMISSIONERS**  
**GRANT COUNTY, OKLAHOMA**

  
Steve Stinson, Chairman

  
Craig A. Fredrick, Vice-Chairman

  
Max L. Hess, Member

  
Cindy Pratt, County Clerk

Attest





# GRANT COUNTY HEALTH DEPARTMENT BUILDING (BID 2023-05)

MEDFORD, OK

CORBIN MERZ HANEY

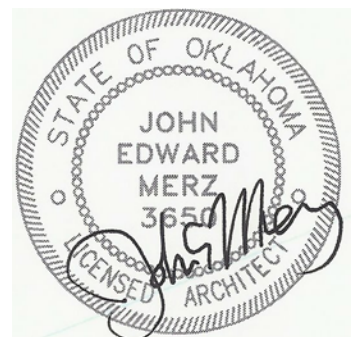
ARCHITECTURE INTERIOR DESIGN

302 NORTH INDEPENDENCE ENID, OK 73701

WWW.CORBINMERZHANEY.COM

PH: (580) 233-2362

DATE ISSUED:  
March 3, 2023





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**END OF SECTION**



**SECTION 001113  
ADVERTISEMENT FOR BIDS**

**PART 1 PROJECT INFORMATION**

**1.01 PROJECT**

- A. Grant County Health Department Building: Bid 2023-05

**1.02 OWNER**

- A. Grant County Commissioners
- B. Grant County Courthouse
- C. 112 West Guthrie Street #102
- D. Medford, OK 73759

**1.03 ARCHITECT**

- A. Corbin, Merz, & Haney Architects, Inc.
- B. 302 North Independence, Suite 206
- C. Enid, Oklahoma 73701
- D. Contact: Jessica Ramirez; jessica@corbinmerzhaney.com

**1.04 STRUCTURAL AND CIVIL ENGINEER**

- A. Holtzen Engineering Group
- B. 302 North Independence, Suite 1100
- C. Enid, OK 73701
- D. Contact: Scott Holtzen; seh@holtzenengineering.com

**1.05 MECHANICAL AND ELECTRICAL ENGINEER**

- A. Integrated Consulting Engineers, Inc.
- B. 349 South Hydraulic
- C. Wichita, KS 67211
- D. Electrical Contact: Drew Rose; drose@iconengineers.net
- E. Mechanical Contact: Joey Hrenchir; jhrenchir@iconengineers.net

**1.06 TO: POTENTIAL BIDDERS**

- A. Refer to the attached 2 pages titled 'INVITATION TO BID' and 'TERMS AND CONDITIONS'

**1.07 BIDDING SCHEDULE**

- A. The following dates shall apply to the Bid:
  - 1. Prebid Conference: Wednesday, **March 29 at 2:00 PM**
  - 2. Deadline for submitting questions or substitution requests: **Thursday, March 30**
  - 3. Final issue date for Addenda: **Monday, April 3**

**END OF SECTION**



GRANT

County, Oklahoma

**COUNTY PURCHASING OFFICE**

GRANT

County Court House

MEDFORD

, Oklahoma

Phone Number +1 (580) 395-2274

**Invitation to Bid**

PLEASE REVIEW TERMS AND CONDITIONS ON REVERSE SIDE  
RELATING TO SUBMISSION OF THIS BID.  
Notarized Affidavit completions and signature required on reverse side.

Date Issued Mar 13, 2023

Page 1 of 1

**BID NUMBER**

2023-05

**BID CLOSING DATE AND HOUR**

Friday - 04-07-23 @ 3:00 p.m.

**REQUIRED DELIVERY DATE**

(Days after award of Purchase Order)

**Date of Delivery****TERMS**

Bid packets opening will be during the BOCC open meeting on Monday, April 10, 2023 @ 9:30 a.m.

ITEM	QUANTITY	UNIT OF ISSUE	DESCRIPTION	UNIT PRICE	TOTAL
			<p>Grant County Board of County Commissioners will be accepting bids on behalf of the Grant County Health Department to hire a General Contractor for the oversite on the construction of a facility on property located owned by Grant County, Oklahoma, and described as:</p> <p style="text-align: center;"><b>GRANT COUNTY HEALTH DEPARTMENT BUILDING</b></p> <p>Lots One (1), Two (2), Three (3), Four (4), and Five (5), Block Twenty (20), Original Town (now City) of Medford, Grant County, Oklahoma.</p>		







**SECTION 002113  
INSTRUCTIONS TO BIDDERS**

**INVITATION**

**1.01 BID SUBMISSION**

- A. Refer to the attached 2 pages titled 'INSTRUCTIONS FOR SUBMITTING BID PROPOSALS' and 'Bid 2023-05'
- B. Offers submitted after the above time will be returned to the bidder unopened.

**1.02 INTENT**

- A. The intent of this Bid request is to obtain an offer to perform work to complete project named GRANT COUNTY HEALTH DEPARTMENT BUILDING, BID 2023-05 for a Stipulated Sum contract, in accordance with Contract Documents.

**1.03 CONTRACT TIME**

- A. Identify Contract Time in the Bid Form. The completion date in the Agreement shall be the Contract Time added to the commencement date.

**BID DOCUMENTS AND CONTRACT DOCUMENTS**

**2.01 DEFINITIONS**

- A. Bid Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Bid Form Supplements To Bid Forms and Appendices identified.
- B. Bid, Offer, or Bidding: Act of submitting an offer under seal.
- C. Bid Amount: Monetary sum identified by the Bidder in the Bid Form.

**2.02 CONTRACT DOCUMENTS IDENTIFICATION**

- A. Contract Documents are identified as Grant County Health Department Building (Bid 2023-05).

**2.03 AVAILABILITY**

- A. Bid Documents may be obtained at the office of Architect.
- B. Printed sets of Bid Documents can be obtained by general contract bidders free of charge upon receipt of a refundable deposit, by cash, in the amount of \$100 for one set.
- C. Deposit will be refunded if Bid Documents are returned complete, undamaged, unmarked and reusable, within 7 days of bid submission. Failure to comply will result in forfeiture of deposit.
- D. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

**2.04 EXAMINATION**

- A. Bid Documents may be viewed at the office of Architect.
- B. Bid Documents are on display at the offices of the following construction plan rooms:
  - 1. Construction Market Data.
  - 2. Dodge Data and Analytics
  - 3. Eplan
  - 4. Construct Connect
  - 5. Southwest Construction News
  - 6. Autry Technology Center Plan Room of Enid, Oklahoma
- C. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
- D. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

**2.05 INQUIRIES/ADDENDA**

- A. Direct questions to the office of the Architect, email; [jessica@corbinmerzhaney.com](mailto:jessica@corbinmerzhaney.com).
- B. Addenda may be issued during the bidding period. All Addenda become part of Contract Documents. Include resultant costs in the Bid Amount.



- C. Verbal answers are not binding on any party.
- D. Clarifications requested by bidders must be in writing not less than 7 days before date set for receipt of bids. The reply will be in the form of an Addendum, a copy of which will be forwarded to known recipients and construction news services.

## **2.06 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS**

- A. General Requirements for Substitution Requests:
- B. Substitution Request Time Restrictions:
  - 1. Where the Bid Documents stipulate a particular product, substitutions will be considered up to 10 days before receipt of bids.
- C. Substitution Request Form:
  - 1. Submit substitution requests by completing CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- D. Review and Acceptance of Request:
  - 1. Architect may approve the proposed substitution and will issue an Addendum to known bidders.

## **SITE ASSESSMENT**

### **3.01 SITE EXAMINATION**

- A. Examine the project site before submitting a bid.

### **3.02 PREBID CONFERENCE**

- A. A bidders conference has been scheduled for 2:00 p.m. on the 29th day of March at the location of the Project Site.
- B. All general contract bidders and suppliers are invited.
- C. Representatives of Architect will be in attendance.
- D. Information relevant to the Bid Documents will be recorded in an Addendum, issued to Bid Document recipients.

## **QUALIFICATIONS**

### **4.01 EVIDENCE OF QUALIFICATIONS**

- A. To demonstrate qualification for performing the Work of this Contract, bidders may be requested to submit AIA A305.

### **4.02 SUBCONTRACTORS/SUPPLIERS/OTHERS**

- A. Owner reserves the right to reject a proposed subcontractor for reasonable cause.
- B. Refer to General Conditions.

## **BID SUBMISSION**

### **5.01 SUBMISSION PROCEDURE**

- A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
- B. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- C. Improperly completed information, irregularities in security deposit, may be cause not to open the Bid Form envelope and declare the bid invalid or informal.
- D. An abstract summary of submitted bids will be made available to all bidders following bid opening.

### **5.02 BID INELIGIBILITY**



- A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.
- B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.

## **BID ENCLOSURES/REQUIREMENTS**

### **6.01 SECURITY DEPOSIT**

- A. Bids shall be accompanied by a security deposit as follows:
  - 1. Bid Bond of a sum no less than 5 percent of the Bid Amount.
- B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.
- C. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.
- D. Include the cost of bid security in the Bid Amount.
- E. After a bid has been accepted, all securities will be returned to the respective bidders and other requested enclosures.
- F. If no contract is awarded, all security deposits will be returned.

### **6.02 PERFORMANCE ASSURANCE**

- A. Accepted Bidder: Provide a Performance bond as described in 007300 - Supplementary Conditions.
- B. Include the cost of performance assurance bonds in the Bid Amount.

### **6.03 INSURANCE**

- A. Provide an executed "Undertaking of Insurance" on the form provided stating their intention to provide insurance to the bidder in accordance with the insurance requirements of Contract Documents.

### **6.04 BID FORM REQUIREMENTS**

- A. Complete all requested information in the Bid Form and Appendices.
- B. Taxes: Refer to Supplementary Conditions for inclusion of taxes and products that are tax exempt.

### **6.05 PERMITS AND FEES**

- A. Include the cost of building permits, fees, licenses, and inspections by government agencies necessary for prior execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received.

### **6.06 FEES FOR CHANGES IN THE WORK**

- A. Include the fees for overhead and profit on own Work and Work by subcontractors, identified in Document 007300 - Supplementary Conditions .

### **6.07 BID FORM SIGNATURE**

- A. The Bid Form shall be signed by the bidder, as follows:
  - 1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
  - 2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
  - 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.



4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

#### **6.08 SELECTION AND AWARD OF ALTERNATES**

- A. Indicate variation of bid price for Alternates listed on the Bid Form. Unless otherwise indicated, indicate Alternates as a difference in bid price by adding to or deducting from the base bid price.

#### **OFFER ACCEPTANCE/REJECTION**

##### **7.01 DURATION OF OFFER**

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of thirty (30) days after the bid closing date.

##### **7.02 ACCEPTANCE OF OFFER**

- A. After acceptance by Owner, Architect on behalf of Owner, will issue to the successful bidder, a written Notice To Proceed.

**END OF SECTION**



## **INSTRUCTIONS FOR SUBMITTING BID PROPOSALS**

1. Complete the "INVITATION TO BID" form.
2. Sign the 'TERMS AND CONDITIONS' form. *(Please have original signature(s) notarized)*
3. Identify the outside of the sealed envelope as follows: **"SEALED BID #2023-05 - CLOSING DATE: 04/07/23 "**
4. Your company name and return address must appear on the outside of the submitted bid proposal envelope.
5. The Bid Proposal must be received by the Grant County Clerk's Office, either by US mail, courier service or in person by 3:00 p.m. Friday, April 7, 2023. Bids received after the cutoff time will be rejected and returned unopened to the sender. Grant County CANNOT accept faxed bid proposals. The Grant County Courthouse is not open on Saturday, Sunday, or legal holidays. The 2023 Grant County Holiday Schedule can be obtained from the County Clerk's Office or found on the Grant County website: [www.grant.okcounties.org](http://www.grant.okcounties.org)
6. All eligible bids will be opened at 9:30 a.m. on Monday, April 10, 2023, during the Grant County Board of Commissioners' open meeting held in the Grant County Courthouse, Room 103, Medford, Oklahoma 73759.
7. Any incomplete forms submitted in the bid proposal could result in rejection of the bid proposal, if the Grant County Board of Commissioners consider such action to be in the best interest of Grant County.
8. The mailing address of the Grant County Clerk's Office is as follows:

Cindy Pratt, Grant County Clerk  
Grant County Clerk's Office  
112 E Guthrie St, Room 102  
Medford, OK 73759
9. All bid information shall be typewritten or in legibly handwritten ink. The person(s) signing the "TERMS AND CONDITIONS" form shall initial all corrections within the submitted bid proposal.
10. This bid requires services and/or contract labor, therefore, proof of liability insurance will be required by award bidder.
11. If you have any questions regarding the bid specifications or deadlines, etc., please contact Cindy Pratt, Grant County Clerk, at 580-395-2274.
12. A purchase order will be issued to the awarded bidder. Payment will be made after goods and/or services are delivered and received, and a proper invoice and all payment documentation is filed/submitted to the Grant County Clerk's Office for further submission to the Grant County Board of Commissioners for approved of payment. Payment will be made in accordance with the approved payment schedule at stated in the General Contractor's Contract.

**NOTE: THE GRANT COUNTY BOARD OF COMMISSIONERS RESERVE THE RIGHT TO REJECT ANY AND/OR ALL BIDS.**



## **GRANT COUNTY HEALTH DEPARTMENT BUILDING**

### **BID #2023-05**

#### **ALL BIDS MUST INCLUDE THE FOLLOWING:**

1. **Invitation to Bid SA&I 1-4040 (2012) Form** (Complete)
2. **Terms and Conditions** (Signed & Notarized)
3. **Certificate of Non-Discrimination** (Signed)
4. **Business Relationships Affidavit** (Signed & Notarized)
5. **Non-Collusion Affidavit** (Signed & Notarized)
6. **Affidavit for Contracts and Payments** (Signed & Notarized)
7. **Liability and Workmen's Compensation Insurance** (Provided by bidder or bidder's insurance company)
8. **Bid Bond** (Bidder can submit in the form of a Certified Cashier's Check, or a Bid Bond and must be equal to five percent (5%) of the bid price)

#### **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO SIGN AND SUBMIT THE FOLLOWING FORMS:**

- A. Contract
- B. Maintenance Bond (Effective for one (1) year)
- C. Statutory Bond

(Copies of these forms are included in the bid packet)



**SECTION 004100  
BID FORM**

**THE PROJECT AND THE PARTIES**

**1.01 TO:**

- A. Grant County Commissioners

**1.02 FOR:**

- A. Project: GRANT COUNTY HEALTH DEPARTMENT BUILDING, BID 2023-05  
B. Architect: Corbin, Merz, and Haney Architects, Inc.

**1.03 DATE: \_\_\_\_\_ (BIDDER TO ENTER DATE)**

**1.04 SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)**

- A. Bidder's Full Name .....  
1. Address.....  
2. City, State, Zip.....

**1.05 OFFER**

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Bid Documents prepared by Corbin, Merz, and Haney Architects, Inc. for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
- B. \_\_\_\_\_ dollars  
( \$ \_\_\_\_\_ ), in lawful money of the United States of America.
- C. We have included the required security deposit as required by the Instruction to Bidders.
- D. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.
- E. We have excluded from the Bid Sum all applicable federal and State of Oklahoma taxes.

**1.06 ACCEPTANCE**

- A. This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
  2. Furnish the required bonds within seven days of receipt of Notice of Award.
  3. Commence work within seven days after written Notice to Proceed of this bid.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

**1.07 CONTRACT TIME**

- A. If this Bid is accepted, we will:
- B. Complete the Work in \_\_\_\_\_ calendar weeks from Notice to Proceed.  
(Bidder to enter number of weeks.)

**1.08 ADDENDA**

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.



1. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.
2. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.
3. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.
4. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.
5. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.

**1.09 BID FORM SUPPLEMENTS**

- A. The following information is included with Bid submission:
- B. The following Supplements are completed and attached to this Bid Form and are considered an integral part of this Bid Form:
  1. Invitation to Bid and Terms and Conditions
  2. Certificate of Non-Discrimination
  3. Business Relationship Affidavit
  4. Non-Collusion Bidding Certification
  5. Document 004323 - Alternates Form
  6. Bid Bond
  7. Copies of bidders Liability and Workmen's Compensation Insurance

**1.10 BID FORM SIGNATURE(S)**

- A. The Corporate Seal of
- B. \_\_\_\_\_
- C. (Bidder - print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. \_\_\_\_\_
- F. (Authorized signing officer, Title)
- G. (Seal)

**1.11 IF THE BID IS A JOINT VENTURE OR PARTNERSHIP, ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.**

**END OF SECTION**



**SECTION 004301  
BID FORM SUPPLEMENTS COVER SHEET**

**PARTICULARS**

**1.01 PROJECT: GRANT COUNTY HEALTH DEPARTMENT BUILDING, BID 2023-05**

**1.02 SUPPLEMENTS TO BID FORM**

- A. Certificate of Non-Discrimination
- B. Business Relationship Affidavit
- C. Non-Collusion Bidding Certification

**END OF SECTION**



GRANT COUNTY HEALTH DEPARTMENT BUILDING

**CERTIFICATE OF NON-DISCRIMINATION**

In connection with the performance of work under this contract, the contractor agrees as follows:

- A. The Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin or ancestry. The Contractor shall take affirmative action to insure that employees are treated without regard to their race, creed, color, national origin, sex, or ancestry. Such actions shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruiting or recruitment, advertising, lay-off or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The Contractor and Sub-Contractor shall agree to post in a conspicuous place, available to employees and applicants for employment, notice to be provided by the County Clerk of Grant County setting forth provisions of this section.
- B. In the event of the Contractor's non-compliance with this non-discrimination clause, the contract may be cancelled or terminated by the County. The Contractor may be declared by the County ineligible for further contracts with the said agency until satisfactory proof of intent to comply shall be made by the Contractor.
- C. The Contractor agrees to include this non-discrimination clause in any sub-contracts connected with the performance of this agreement.

I have read the above stated clause and agree to abide by its requirements.

\_\_\_\_\_  
Contractor

ATTEST:

\_\_\_\_\_  
Secretary



# BUSINESS RELATIONSHIP AFFIDAVIT

My Commission Expires \_\_\_\_\_



GRANT COUNTY HEALTH DEPARTMENT BUILDING

NON-COLLUSION BIDDING CERTIFICATION

STATE OF OKLAHOMA    )  
  )SS  
COUNTY\_\_\_\_\_)

A.     For purposes of competitive bids, I certify:

1. I am the duly authorized agent of\_\_\_\_\_,  
the bidder submitting the competitive bid which is attached to this statement, for the purpose of certifying the facts pertaining to the existence of collusion among bidders and between bidders and state officials or employees, as well as facts pertaining to the giving or offering of things of value to government personnel in return for special consideration in the letting of any contract pursuant to the bid to which this statement is attached;
2. I am fully aware of the facts and circumstances surrounding the making of the bid to which this statement is attached and has been personally and directly involved in the proceedings leading to the submission of such bid; and
3. Neither the bidder nor anyone subject to the bidder's direction or control has been a party to the following:
  - a. Any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding;
  - b. Any collusion with any state official or employee as to quantity, quality or price in the prospective contract, or as to any other terms of such prospective contract; and
  - c. Any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract.

B.     I certify, if awarded the contract, whether competitively bid or not, that neither the Contractor nor anyone subject to the Contractor's direction or control has paid, given, or donated or agreed to pay, give, or donate to any officer or employee of the State of Oklahoma any money or other thing of value, either directly or indirectly, in procuring the contract to which this statement is attached.

Certified this\_\_\_\_\_day of\_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Position in the Company)



**SECTION 004323  
ALTERNATES FORM**

**PARTICULARS**

**1.01 THE FOLLOWING IS THE LIST OF ALTERNATES REFERENCED IN THE BID SUBMITTED BY:**

**1.02 (BIDDER) \_\_\_\_\_**

**1.03 TO (OWNER ): GRANT COUNTY COMMISSIONERS**

**1.04 FOR: GRANT COUNTY HEALTH DEPARTMENT BUILDING; BID 2023-05**

**1.05 DATED \_\_\_\_\_ AND WHICH IS AN INTEGRAL PART OF THE BID FORM.**

**ALTERNATES LIST**

**2.01 THE FOLLOWING AMOUNTS SHALL BE ADDED TO THE BID AMOUNT:**

**ALTERNATE # 1: ADD \$ \_\_\_\_\_**

- A. Provide all labor and material to add the drive canopy, related footings, canopy soffit lights, radiant tube heater, and driveway as noted on the Drawings.

**ALTERNATE # 2: ADD \$ \_\_\_\_\_**

- B. Provide all labor and material to add the back-up generator and related concrete pad as noted on the Drawings.

**ALTERNATE # 3: ADD \$ \_\_\_\_\_**

- C. Provide all labor and material to fabricate the countertops and backsplashes with 3 cm quartz in lieu of plastic laminate faced MDF in the following rooms: reception 3 (south countertop only), community 5, WIC/breastfeeding 8, staff 10, lab 13, staff toilet 14, exam 20, and exam 21.

**END OF SECTION**



**SECTION 005000  
CONTRACTING FORMS AND SUPPLEMENTS**

**PART 1 GENERAL**

**1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.**

**1.02 AGREEMENT AND CONDITIONS OF THE CONTRACT**

- A. See Section 005200 - Agreement Form for the Agreement and General Conditions.
- B. See Section 007300 - Supplementary Conditions for the Supplementary Conditions.

**1.03 FORMS**

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
- B. Bond Forms:
  - 1. Refer to Section 06000 PROJECT FORMS
- C. Post-Award Certificates and Other Forms:
  - 1. Submittal Transmittal Letter Form: AIA G810.
  - 2. Application for Payment Forms: AIA G702 with AIA G703 (for Contractors).
- D. Clarification and Modification Forms:
  - 1. Construction Change Directive Form: AIA G714.
  - 2. Change Order Form: AIA G701.
- E. Closeout Forms:
  - 1. Certificate of Substantial Completion Form: AIA G704.
  - 2. Contractor's Affidavit of Release of Liens Form: AIA G706A

**END OF SECTION**



**SECTION 005200  
AGREEMENT FORM**

**PART 1 GENERAL**

**1.01 FORM OF AGREEMENT**

**1.02 THE AGREEMENT TO BE EXECUTED IS ATTACHED FOLLOWING THIS PAGE.**

- A. The Agreement form is based on the attached AIA A101-2017 (8 pages)
- B. The General Conditions is based on the attached AIA A201-2017 (38 pages)

**1.03 RELATED REQUIREMENTS**

- A. Section 007300 - Supplementary Conditions.

**END OF SECTION**





# AIA<sup>®</sup> Document A101<sup>™</sup> – 2017

**Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum**

**AGREEMENT** made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_  
(In words, indicate day, month and year.)

**BETWEEN** the Owner:  
(Name, legal status, address and other information)

and the Contractor:  
(Name, legal status, address and other information)

for the following Project:  
(Name, location and detailed description)

The Architect:  
(Name, legal status, address and other information)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101<sup>™</sup>-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement.

AIA Document A201<sup>™</sup>-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Owner and Contractor agree as follows.

Init.

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## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
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- 4 CONTRACT SUM
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- 6 DISPUTE RESOLUTION
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- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

**§ 3.1** The date of commencement of the Work shall be:  
(Check one of the following boxes.)

- ☐ The date of this Agreement.
- ☐ A date set forth in a notice to proceed issued by the Owner.
- ☐ Established as follows:  
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

**§ 3.2** The Contract Time shall be measured from the date of commencement of the Work.

#### **§ 3.3 Substantial Completion**

**§ 3.3.1** Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

- ☐ Not later than ( ) calendar days from the date of commencement of the Work.



☐ By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ( \$ ), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item

Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.  
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item

Price

Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:  
(Identify each allowance.)

Item

Price

#### § 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price per Unit (\$0.00)

#### § 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

#### § 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)



## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the       day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the       day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than       (    ) days after the Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*



**§ 5.1.7.1.1** The following items are not subject to retainage:

*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:

*(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)*

**§ 5.1.7.3** Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

**§ 5.1.8** If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

**§ 5.1.9** Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## **§ 5.2 Final Payment**

**§ 5.2.1** Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

## **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

\_\_\_\_\_ %

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*



## § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- ☐ Litigation in a court of competent jurisdiction
- ☐ Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)*

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

*(Name, address, email address, and other information)*

§ 8.3 The Contractor's representative:

*(Name, address, email address, and other information)*

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.



## § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

§ 8.7 Other provisions:

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203-2013 incorporated into this Agreement.)*

- .5 Drawings

Number	Title	Date
--------	-------	------

- .6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

- .7 Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

Init.



☐ The Sustainability Plan:

Title	Date	Pages
-------	------	-------

☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

**.9** Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

This Agreement entered into as of the day and year first written above.

\_\_\_\_\_  
OWNER (Signature)

\_\_\_\_\_  
CONTRACTOR (Signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
(Printed name and title)

Init.

/





# AIA<sup>®</sup> Document A201<sup>™</sup> – 2017

## General Conditions of the Contract for Construction

for the following PROJECT:

*(Name and location or address)*

**THE OWNER:**

*(Name, legal status and address)*

**THE ARCHITECT:**

*(Name, legal status and address)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503<sup>™</sup>, Guide for Supplementary Conditions.

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 1.1.1 The Contract Documents**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 The Work**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### **§ 1.1.4 The Project**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

#### **§ 1.1.5 The Drawings**

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

#### **§ 1.1.6 The Specifications**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### **§ 1.1.7 Instruments of Service**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 Initial Decision Maker**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining



provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**§ 1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### **§ 1.3 Capitalization**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

### **§ 1.4 Interpretation**

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### **§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service**

**§ 1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

### **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building



information model, and each of their agents and employees.

## **ARTICLE 2 OWNER**

### **§ 2.1 General**

**§ 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### **§ 2.2 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

**§ 2.2.2** Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 2.2.3** After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.4** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### **§ 2.3 Information and Services Required of the Owner**

**§ 2.3.1** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

**§ 2.3.2** The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

**§ 2.3.3** If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

**§ 2.3.4** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the



site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.3.5** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.3.6** Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

#### **§ 2.4 Owner's Right to Stop the Work**

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

#### **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

#### **§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's



capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### **§ 3.3 Supervision and Construction Procedures**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 3.4 Labor and Materials**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**§ 3.4.2** Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes



remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 3.5.2** All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

### **§ 3.6 Taxes**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

### **§ 3.7.4 Concealed or Unknown Conditions**

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### **§ 3.8 Allowances**

**§ 3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and



- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

**§ 3.8.3** Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

**§ 3.9 Superintendent**

**§ 3.9.1** The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

**§ 3.9.3** The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

**§ 3.10 Contractor's Construction and Submittal Schedules**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

**§ 3.10.2** The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

**§ 3.10.3** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

**§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

**§ 3.12 Shop Drawings, Product Data and Samples**

**§ 3.12.1** Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

**§ 3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**§ 3.12.3** Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.



**§ 3.12.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

**§ 3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the



time and in the form specified by the Architect.

### **§ 3.13 Use of Site**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 3.14 Cutting and Patching**

**§ 3.14.1** The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### **§ 3.15 Cleaning Up**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 Access to Work**

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

### **§ 3.17 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.



## ARTICLE 4 ARCHITECT

### § 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### § 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

### § 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under



Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**§ 4.2.8** The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 4.2.10** If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

**§ 4.2.11** The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

**§ 4.2.12** Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

**§ 4.2.13** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

**§ 4.2.14** The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 Definitions**

**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### **§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the



Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

### **§ 5.4 Contingent Assignment of Subcontracts**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

### **§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts**

**§ 6.1.1** The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

**§ 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate



Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

**§ 6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

## **§ 6.2 Mutual Responsibility**

**§ 6.2.1** The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

**§ 6.2.4** The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

**§ 6.2.5** The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

## **§ 6.3 Owner's Right to Clean Up**

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 General**

**§ 7.1.1** Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

**§ 7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

**§ 7.1.3** Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

### **§ 7.2 Change Orders**

**§ 7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:



- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### **§ 7.3 Construction Change Directives**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**§ 7.3.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

**§ 7.3.4** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

**§ 7.3.5** If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

**§ 7.3.6** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

**§ 7.3.7** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

**§ 7.3.8** The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

**§ 7.3.9** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The



Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### **§ 7.4 Minor Changes in the Work**

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### **ARTICLE 8 TIME**

#### **§ 8.1 Definitions**

**§ 8.1.1** Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

**§ 8.1.2** The date of commencement of the Work is the date established in the Agreement.

**§ 8.1.3** The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

**§ 8.1.4** The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### **§ 8.2 Progress and Completion**

**§ 8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

#### **§ 8.3 Delays and Extensions of Time**

**§ 8.3.1** If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

**§ 8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Article 15.

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

### **ARTICLE 9 PAYMENTS AND COMPLETION**

#### **§ 9.1 Contract Sum**

**§ 9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable



by the Owner to the Contractor for performance of the Work under the Contract Documents.

**§ 9.1.2** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The



foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **§ 9.5 Decisions to Withhold Certification**

**§ 9.5.1** The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

**§ 9.5.2** When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

**§ 9.5.3** When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

**§ 9.5.4** If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

#### **§ 9.6 Progress Payments**

**§ 9.6.1** After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

**§ 9.6.2** The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 9.6.3** The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

**§ 9.6.4** The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers



to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

**§ 9.6.5** The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

**§ 9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.7** Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

#### **§ 9.7 Failure of Payment**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

#### **§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.



**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

**§ 9.9 Partial Occupancy or Use**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

**§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not



constitute a waiver of Claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 Safety Precautions and Programs**

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

### **§ 10.2 Safety of Persons and Property**

**§ 10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

**§ 10.2.2** The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

**§ 10.2.3** The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

**§ 10.2.4** When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**§ 10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

**§ 10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

**§ 10.2.7** The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.



### **§ 10.2.8 Injury or Damage to Person or Property**

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

### **§ 10.3 Hazardous Materials and Substances**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

**§ 10.3.2** Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

### **§ 10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

## **ARTICLE 11 INSURANCE AND BONDS**

### **§ 11.1 Contractor's Insurance and Bonds**

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the



endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

**§ 11.1.2** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

**§ 11.1.3** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

**§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

## **§ 11.2 Owner's Insurance**

**§ 11.2.1** The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

## **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The



Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

**§ 11.3.2** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

#### **§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance**

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

#### **§ 11.5 Adjustment and Settlement of Insured Loss**

**§ 11.5.1** A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

### **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

#### **§ 12.1 Uncovering of Work**

**§ 12.1.1** If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

#### **§ 12.2 Correction of Work**

##### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the



Contractor's expense.

#### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

#### **§ 12.3 Acceptance of Nonconforming Work**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

### **ARTICLE 13 MISCELLANEOUS PROVISIONS**

#### **§ 13.1 Governing Law**

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

#### **§ 13.2 Successors and Assigns**

**§ 13.2.1** The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

**§ 13.2.2** The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.



### **§ 13.3 Rights and Remedies**

**§ 13.3.1** Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

**§ 13.3.2** No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### **§ 13.4 Tests and Inspections**

**§ 13.4.1** Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

**§ 13.4.2** If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

**§ 13.4.3** If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

**§ 13.4.4** Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

**§ 13.4.5** If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

**§ 13.4.6** Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### **§ 13.5 Interest**

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

## **ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT**

### **§ 14.1 Termination by the Contractor**

**§ 14.1.1** The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.



**§ 14.1.2** The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

**§ 14.1.3** If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

**§ 14.1.4** If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

#### **§ 14.2 Termination by the Owner for Cause**

**§ 14.2.1** The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or Suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

**§ 14.2.3** When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

**§ 14.2.4** If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

#### **§ 14.3 Suspension by the Owner for Convenience**

**§ 14.3.1** The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.



#### **§ 14.4 Termination by the Owner for Convenience**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

**§ 14.4.2** Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1** cease operations as directed by the Owner in the notice;
- .2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 Claims**

##### **§ 15.1.1 Definition**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

##### **§ 15.1.2 Time Limits on Claims**

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

##### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

**§ 15.1.3.2** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

##### **§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

**§ 15.1.4.2** The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

##### **§ 15.1.5 Claims for Additional Cost**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

##### **§ 15.1.6 Claims for Additional Time**

**§ 15.1.6.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section



15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

**§ 15.1.6.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

**§ 15.1.7 Waiver of Claims for Consequential Damages**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

**§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.



**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

**§ 15.2.7** In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

**§ 15.2.8** If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### **§ 15.3 Mediation**

**§ 15.3.1** Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

**§ 15.3.2** The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

**§ 15.3.3** Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

**§ 15.3.4** The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### **§ 15.4 Arbitration**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

**§ 15.4.1.1** A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

**§ 15.4.2** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

**§ 15.4.3** The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly



consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

**§ 15.4.4 Consolidation or Joinder**

**§ 15.4.4.1** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

**§ 15.4.4.2** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.



**SECTION 006000  
PROJECT FORMS**

**PART 1 GENERAL**

**1.01 REQUIRED BONDS AND CERTIFICATES FORMS SUBMITTED WITH THE CONTRACT**

- A. Maintenance Bond (1 page)
- B. Statutory Bond (1 page)
- C. Affidavit for Contracts and Payments (1 page)

**END OF SECTION**



GRANT COUNTY HEALTH DEPARTMENT BUILDING

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That We, \_\_\_\_\_, as Principal, and \_\_\_\_\_ as Surety, are held and firmly bound unto Grant County of the State of Oklahoma, in the full and just sum of \_\_\_\_\_ (\$\_\_\_\_\_), such sum being equal to the contract price for a period of One (1) Year for the payment of which, well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, and assigns, themselves, and its successors and assigns, jointly and severally, firmly by these presents.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_. The conditions of this obligation are such, that whereas, said Principal, has by a certain contract between \_\_\_\_\_ and GRANT COUNTY, dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ agreed to \_\_\_\_\_ all in compliance with the plans and specifications therefore, made part of said contract and on file in the office of the County Clerk of GRANT COUNTY; and to maintain the said improvement in the amounts set for the above against any failure due to workmanship or material for a period of One (1) Year from the date of acceptance by the Board of County Commissioners of GRANT COUNTY.

NOW, THEREFORE, if said principal shall pay or cause to be paid to the County, all damage, loss, and expense which may result by reason of defective materials and/or damage, loss and expense which may result by reason of defective materials and/or workmanship in connection with said work occurring within a period of One (1) Year from and after acceptance of said project by the County, then this obligation shall be null and void, otherwise to be and remain in full force and effect.

It is further agreed that if said Principal or Surety herein shall fail to maintain said improvements against any failure due to defective workmanship and/or material for a period of One (1) Year and at any time repairs shall be necessary that the cost of making said repairs shall be determined by the Board of County Commissioners, or some person or persons designated by them to ascertain the same, and if, upon thirty (30) days notice, the said amount ascertained shall not be paid by the principal or surety herein, or if the necessary repairs are not made, that said amount shall become due upon the expiration of thirty (30) days and suit may be maintained to recover the amount so determined in any Court of competent jurisdiction. And that the amount so determined shall be conclusive upon the parties as to the amount due on this bond for the repair(s) included therein, and that the cost of all repairs shall be so determined from time to time during the life of this bond as the condition of the improvements may require.

It is further expressly agreed and understood by the parties hereto that no changes or alterations in said contract and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties or any of them, from the obligations of this bond.

IN WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its duly authorized officers; and the said Surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year first above written.

ATTEST: \_\_\_\_\_  
Principal  
By \_\_\_\_\_

ATTEST: \_\_\_\_\_  
Surety  
By \_\_\_\_\_



GRANT COUNTY HEALTH DEPARTMENT BUILDING

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS:

That We, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto GRANT COUNTY of the State of Oklahoma in the sum of \_\_\_\_\_ such sum being equal to 100% of the contract price for the payment of which, well and truly to be made, we, and each of us, bind ourselves, our heirs, executors and assigns, themselves, and its successors and assigns, jointly and severally, firmly by these presents.

Dated this \_\_\_\_ day of \_\_\_\_\_, 2023. The Conditions of this obligation are such, that whereas, the above bonded Principal, \_\_\_\_\_, is the lowest and best bidder for the making of the following work and improvements: **GRANT COUNTY HEALTH DEPARTMENT BUILDING, BID #2023-05** and has entered into a certain written contract with GRANT COUNTY on the \_\_\_\_ day of \_\_\_\_\_, 2023, for the erection and construction of said work and improvement, in exact accordance with the bid of said Principal, and according to certain plans and specifications heretofore made, adopted, and placed on file in the Office of the County Clerk of GRANT COUNTY.

NOW, THEREFORE, if said Principal shall fail or neglect to pay all indebtedness incurred by said Principal or subcontractor of said Principal who perform work in the performance of such, for labor and materials furnished by any supplier and consumed in the performance of said contract, and such repairs to and rental of machinery and equipment as may be furnished by a subcontractor to the person or persons contracting with the County and in accordance with the Prevailing Wage Scale promulgated by the Commissioner of Labor and on file in the Office of the Secretary of State pursuant to the provisions of 40 O.S., 1965 Supp. 196.1-196.12, within thirty (30) days after the same becomes due and payable, the person, firm, or corporation entitled thereto may due and recover on this bond the amount so due and unpaid.

It is further expressly agreed and understood by the parties hereto that no changes or alterations on said contract and no deviations from the plan or made of procedure herein fixed shall have the effect of releasing the sureties, o any of them, for the obligations of this bond.

IN WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its duly authorized officers, and the said Surety has caused these presents to be executed in its name and its name and its corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year first above written.

ATTEST:

\_\_\_\_\_  
Witness-Secretary

\_\_\_\_\_  
Principal

ATTEST:

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Surety



[illegible]

(CONTRACTOR, ARCHITECT, SUPPLIER, OR ENGINEER)

ATTESTED TO BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

NOTE: 62 O.S. § 310.9 (B), authorizes counties executing a contract with any architect, contractor, supplier or engineer for construction work, services or materials which are needed on a continual basis from such architect, contractor, supplier or engineer under the terms of such contract, or executing more than one contract during the fiscal year with such architect, contractor, supplier or engineer, may require that the architect, contractor, supplier or engineer complete a signed affidavit as provided for in subsection A of this section which shall apply to all work, services or materials completed or supplied under the terms of the contract or contracts.



**SECTION 007300  
SUPPLEMENTARY CONDITIONS**

**PART 1 SUPPLEMENTARY CONDITIONS**

**PART 2 GENERAL**

**2.01 THESE SUPPLEMENTARY CONDITIONS AMEND AND SUPPLEMENT THE GENERAL CONDITIONS AND OTHER PROVISIONS OF CONTRACT DOCUMENTS AS INDICATED BELOW. PROVISIONS THAT ARE NOT SO AMENDED OR SUPPLEMENTED REMAIN IN FULL FORCE AND EFFECT.**

**2.02 THE TERMS USED IN THESE SUPPLEMENTARY CONDITIONS THAT ARE DEFINED IN THE GENERAL CONDITIONS HAVE THE MEANINGS ASSIGNED TO THEM IN THE GENERAL CONDITIONS.**

**PART 3 MODIFICATIONS TO THE GENERAL CONDITIONS**

**3.01 ARTICLE 3 - CONTRACTOR**

- A. Modify paragraph **3.6 Taxes** to state the following:
  - 1. Purchases by Grant County, Oklahoma are not subject to State or Federal taxes

**3.02 ARTICLE 7 - CHANGES IN THE WORK**

- A. Add the following subparagraph:
  - 1. **7.2.2** The following fees apply to Changes in the Work:
    - a. Ten (10) percent overhead and profit on the net cost of Work done by the Contractor
    - b. Ten (10) percent overhead and profit on the cost of Work done by any Subcontractor
    - c. On Work deleted from the Contract, credit to the Owner shall be the Architect approved net cost plus 1/2 of the overhead and profit percentage noted above.

**3.03 ARTICLE 9 - PAYMENTS AND COMPLETION**

- A. Add the following subparagraph:
  - 1. **9.3.1.3** The Application for Payment shall reflect a retainage of five (5) percent on itemized amounts. This retainage will be held until Final Completion of the Project.

**3.04 ARTICLE 11 - INSURANCE AND BONDS**

- A. Add the following subparagraphs:
  - 1. **11.1.1.1** The following insurance shall be carried by the General Contractor:
    - a. Workmen's compensation insurance at statutory limits.
    - b. Commercial General Liability for the Project written on an occurrence form with policy limits of not less than:
      - 1) \$1,000,000 each occurrence
      - 2) \$2,000,000 general aggregate
      - 3) \$2,000,000 products/completed operations hazard, providing coverage for claims including:
        - (a) damages because of bodily injury, sickness, or disease, including occupational sickness or disease, and death of any person;
        - (b) personal injury and advertising injury;
        - (c) damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
        - (d) bodily injury or property damage arising out of completed operations; and
        - (e) the Contractor's indemnity obligations under Section 3.18 of the General Conditions.
      - 4) \$1,000,000 personal injury
      - 5) \$100,000 fire damage
      - 6) \$10,000 medical
    - c. The Commercial General Liability policy shall not contain exclusion or restriction of coverage for the following:



- 1) Claims by one insured against another insured, if the exclusion of restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- 2) Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damage Work or the Work out of which the damage arises was performed by a Subcontractor.
- 3) Claims for bodily injury other than to employees of the insured.
- 4) Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- 5) Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- 6) Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- 7) Claims related to residential multi-family, or other habitational projects, if the Work is to be performed on such a project.
- 8) Claims related to roofing, if the Work involves roofing.
- 9) Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- 10) Claims related to earth subsidence or movement, where the work involves such hazards.
- 11) Claims related to explosion, collapse and underground hazards where the Work involves such hazards.
- d. Automobile Liability covering vehicles owned, and not-owned vehicles used by the Contractor, with policy limits of not less than \$1,000,000 combined single limits per accident, for bodily injury, death, or any person and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.
- e. Property Insurance
  - 1) The Contractor shall effect and maintain property insurance written on a builder's risk 'all-risk' completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The property insurance coverage shall be not less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. This insurance shall include the interests of mortgagees as loss payees. This insurance shall include coverage for the following:
    - (a) Physical damage to property while it is in storage and in transit to the construction site.
    - (b) Property owned by the Contractor and used on the Project including scaffolding and other equipment.
- f. Owners and Contractors Protective Liability Coverage (OCP) with policy limits of \$1,000,000 per occurrence/aggregate
2. **11.1.1.2** The following insurance shall be carried by each sub-contractor:
  - a. The General Contractor shall require each of his subcontractors to procure and maintain during the life of his sub-contract, sub-contractors Public Liability and Property Damage Insurance in an amount not less than \$1,000,000 for injuries, including accidental death to any one person and subject to the same limit for each person in an amount not less than \$1,000,000 on account of one accident.
3. **11.1.2.1** Performance and Payment Bond
  - a. The Contractor shall provide performance and payment bonds. The bond value requirements are as follows:
    - 1) Maintenance bond in the amount of 100 percent for a period of 1 year after acceptance by the Owner.
    - 2) Provide a 100 percent Performance Bond on AIA 312 or a standard surety bond.



- 3) Provide a 100 percent Payment Bond on AIA 311 or a standard surety bond form.
- 4. **11.2.1.1** The following insurance shall be carried by the Owner:
  - a. General Liability Insurance

**END OF SECTION**



**SECTION 012000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Procedures for preparation and submittal of application for final payment.

**1.02 SCHEDULE OF VALUES**

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.
- E. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit Application for Payment in an electronic format
- I. Include the following with the application:
  - 1. Transmittal letter as specified for submittals in Section 013000.
  - 2. Affidavits attesting to off-site stored products.
- J. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**1.04 MODIFICATION PROCEDURES**

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications. Contractor shall prepare and submit a fixed price quotation within 21 days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for



the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.

- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- F. Substantiation of Costs: Provide full information required for evaluation.
  - 1. On request, provide the following data:
    - a. Quantities of products, labor, and equipment.
    - b. Taxes, insurance, and bonds.
    - c. Overhead and profit.
    - d. Justification for any change in Contract Time.
    - e. Credit for deletions from Contract, similarly documented.
- G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- J. Promptly enter changes in Project Record Documents.

#### **1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 017000.

#### **END OF SECTION**



**SECTION 012500  
SUBSTITUTION PROCEDURES**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 002113 - Instructions to Bidders: Restrictions on timing of substitution requests.

**1.02 DEFINITIONS**

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
  - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
    - a. Unavailability.
    - b. Regulatory changes.
  - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
    - a. Substitution requests offering advantages solely to the Contractor will not be considered.

**1.03 REFERENCE STANDARDS**

- A. CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage) Current Edition.
- B. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase) Current Edition.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL REQUIREMENTS**

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
  - 1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.
- D. Limit each request to a single proposed substitution item.

**3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT**

- A. Submittal Time Restrictions:
  - 1. Section 002113 - Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Submittal Form (before award of contract):
  - 1. Submit substitution requests by completing CSI/CSC Form 1.5C - Substitution Request. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

**3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION**



- A. Submittal Form (after award of contract):
  - 1. Submit substitution requests by completing CSI/CSC Form 13.1A - Substitution Request (After Bidding/Negotiating). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Architect will consider requests for substitutions only within 15 days after date of Agreement.

#### **3.04 RESOLUTION**

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
  - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

#### **3.05 ACCEPTANCE**

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

#### **3.06 CLOSEOUT ACTIVITIES**

- A. See Section 017800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record.

#### **END OF SECTION**



**SECTION 013000  
ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Submittals for review, information, and project closeout.
- E. Number of copies of submittals.
- F. Submittal procedures.

**1.02 GENERAL ADMINISTRATIVE REQUIREMENTS**

- A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
  - 1. Requests for Interpretation (RFI).
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
  - 11. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Schedule meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to Contract and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

**3.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.



- B. Attendance Required:
  - 1. Contractor.
  - 2. Owner.
  - 3. Architect.
  - 4. Contractor's superintendent.
  - 5. Major subcontractors.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Maintenance of progress schedule.
  - 7. Corrective measures to regain projected schedules.
  - 8. Planned progress during succeeding work period.
  - 9. Maintenance of quality and work standards.
  - 10. Effect of proposed changes on progress schedule and coordination.
  - 11. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

### **3.04 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

### **3.05 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.



4. Bonds.
  5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

### **3.06 NUMBER OF COPIES OF SUBMITTALS**

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
  2. Retained samples will not be returned to Contractor unless specifically so stated.

### **3.07 SUBMITTAL PROCEDURES**

- A. General Requirements:
1. Use a single transmittal for related items.
  2. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
  3. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
  4. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
  5. Schedule submittals to expedite the Project, and coordinate submission of related items.
    - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
    - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
  6. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
  7. Provide space for Contractor and Architect review stamps.
  8. When revised for resubmission, identify all changes made since previous submission.
  9. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
- B. Product Data Procedures:
1. Submit only information required by individual specification sections.
  2. Collect required information into a single submittal.
  3. Submit concurrently with related shop drawing submittal.
  4. Do not submit (Material) Safety Data Sheets for materials or products.
- C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
  2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.
  2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

**END OF SECTION**



**SECTION 014000  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

**1.02 TESTING AND INSPECTION AGENCIES AND SERVICES**

**PART 3 EXECUTION**

**2.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

**2.02 MOCK-UPS**

- A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

**2.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

**2.04 TESTING AND INSPECTION**

- A. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
  - 5. Perform additional tests and inspections required by Architect.
  - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:



1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  2. Agency may not approve or accept any portion of the Work.
  3. Agency may not assume any duties of Contractor.
  4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

## **2.05 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

### **END OF SECTION**



**SECTION 015000  
TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 015100 - Temporary Utilities.

**1.02 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

**1.03 TEMPORARY UTILITIES - SEE SECTION 015100**

- A. Use trigger-operated nozzles for water hoses, to avoid waste of water.

**1.04 TELECOMMUNICATIONS SERVICES**

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

**1.05 TEMPORARY SANITARY FACILITIES**

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

**1.06 BARRIERS**

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

**1.07 FENCING**

- A. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

**1.08 EXTERIOR ENCLOSURES**

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

**1.09 INTERIOR ENCLOSURES**

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces:
  - 1. STC rating of 35 in accordance with ASTM E90.
  - 2. Maximum flame spread rating of 75 in accordance with ASTM E84.

**1.10 VEHICULAR ACCESS AND PARKING**

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.



- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

#### **1.11 WASTE REMOVAL**

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

#### **1.12 FIELD OFFICES**

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. Locate offices a minimum distance of 30 feet from existing and new structures.

#### **1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS**

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 015100  
TEMPORARY UTILITIES**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

**1.02 TEMPORARY ELECTRICITY**

- A. Cost: By Owner.
- B. Provide power service required from utility source.
- C. Provide temporary electric feeder from existing building electrical service at location as directed.
- D. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- E. Provide main service disconnect and over-current protection at convenient location and meter.
- F. Permanent convenience receptacles may be utilized during construction.
- G. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

**1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES**

- A. Provide and maintain LED, compact fluorescent, or high-intensity discharge lighting as suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- C. Maintain lighting and provide routine repairs.

**1.04 TEMPORARY HEATING**

- A. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
- B. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

**1.05 TEMPORARY VENTILATION**

- A. Provide temporary ventilation as necessary for construction operations and to comply with applicable safety regulations.

**1.06 TEMPORARY WATER SERVICE**

- A. Cost of Water Used: By Owner.
- B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- C. Exercise measures to conserve water.
- D. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**



## **SECTION 016000 PRODUCT REQUIREMENTS**

### **PART 1 GENERAL**

#### **1.01 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### **1.02 SUBMITTALS**

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

### **PART 2 PRODUCTS**

#### **2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

#### **2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Provide interchangeable components by the same manufacture for components being replaced.
- C. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.
- D. Cord and Plug: Provide minimum 6 foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

#### **2.03 PRODUCT OPTIONS**

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### **2.04 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

### **PART 3 EXECUTION**

#### **3.01 SUBSTITUTION LIMITATIONS**

- A. See Section 012500 - Substitution Procedures.

#### **3.02 TRANSPORTATION AND HANDLING**



- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.03 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

### **END OF SECTION**



**SECTION 017000  
EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

**1.02 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
  - 1. On request, submit documentation verifying accuracy of survey work.
  - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
  - 3. Submit surveys and survey logs for the project record.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.

**1.03 QUALIFICATIONS**

- A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,
- B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.

**1.04 PROJECT CONDITIONS**

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced



by construction operations. Comply with federal, state, and local regulations.

## **1.05 COORDINATION**

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.



### **3.03 LAYING OUT THE WORK**

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that indicated on drawings.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- H. Utilize recognized engineering survey practices.
- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
  - 2. Grid or axis for structures.
  - 3. Building foundation, column locations, ground floor elevations.
- J. Periodically verify layouts by same means.
- K. Maintain a complete and accurate log of control and survey work as it progresses.

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
  - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
  - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
  - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- D. Remove existing work as indicated and as required to accomplish new work.



1. Remove items indicated on drawings.
  2. Relocate items indicated on drawings.
  3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. Provide temporary connections as required to maintain existing systems in service.
  4. Verify that abandoned services serve only abandoned facilities.
  5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
  2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  3. Repair adjacent construction and finishes damaged during removal work.
- G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- I. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- J. Clean existing systems and equipment.
- K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- L. Do not begin new construction in alterations areas before demolition is complete.
- M. Comply with all other applicable requirements of this section.

### **3.06 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  1. Complete the work.



2. Fit products together to integrate with other work.
  3. Provide openings for penetration of mechanical, electrical, and other services.
  4. Match work that has been cut to adjacent work.
  5. Repair areas adjacent to cuts to required condition.
  6. Repair new work damaged by subsequent work.
  7. Remove samples of installed work for testing when requested.
  8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
  - E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
  - F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
  - G. Restore work with new products in accordance with requirements of Contract Documents.
  - H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
  - I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.
  - J. Patching:
    1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
    2. Match color, texture, and appearance.
    3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.07 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.08 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

### **3.09 ADJUSTING**



- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### **3.10 FINAL CLEANING**

- A. Execute final cleaning prior to final project assessment.
  - 1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.11 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Owner.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

### **3.12 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.



- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**



**SECTION 017800  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Individual Product Sections: Specific requirements for operation and maintenance data.
- C. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 3 EXECUTION**

**2.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.



- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 3. Field changes of dimension and detail.
  - 4. Details not on original Contract drawings.

## **2.02 OPERATION AND MAINTENANCE DATA**

- A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

## **2.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES**

- A. For Each Product, Applied Material, and Finish:
  - 1. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

## **2.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  - 1. Description of unit or system, and component parts.
  - 2. Identify function, normal operating characteristics, and limiting conditions.
  - 3. Include performance curves, with engineering data and tests.
  - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.



- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Include test and balancing reports.
- N. Additional Requirements: As specified in individual product specification sections.

## **2.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

## **2.06 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

**END OF SECTION**



**SECTION 031000  
CONCRETE FORMING AND ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.

**1.02 REFERENCE STANDARDS**

- A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- B. ACI 301 - Specifications for Concrete Construction 2020.
- C. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- D. ACI 347R - Guide to Formwork for Concrete 2014 (Reapproved 2021).
- E. PS 1 - Structural Plywood 2019.

**PART 2 PRODUCTS**

**2.01 FORMWORK - GENERAL**

- A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.
- B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.
- C. Chamfer outside corners of beams, joists, columns, and walls.
- D. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.
- E. Comply with relevant portions of ACI 347R, ACI 301, and ACI 318.

**2.02 WOOD FORM MATERIALS**

- A. Softwood Plywood: PS 1, B-B High Density Concrete Form Overlay, Class I.
- B. Lumber: Douglas Fir or Southern Pine species; 2 grade; with grade stamp clearly visible.

**2.03 FORMWORK ACCESSORIES**

- A. Form Ties: Removable type, galvanized metal, fixed length, cone type, with waterproofing washer, 1 inch back break dimension, free of defects that could leave holes larger than 1 inch in concrete surface.
- B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
- C. Filler Strips for Chamfered Corners: Wood strip type; 3/4 x 3/4 inch size; maximum possible lengths.
- D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
- E. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 051200.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

**3.02 EARTH FORMS**



- A. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete.

### **3.03 ERECTION - FORMWORK**

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval before framing openings in structural members that are not indicated on drawings.

### **3.04 APPLICATION - FORM RELEASE AGENT**

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

### **3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS**

- A. Provide formed openings where required for items to be embedded in passing through concrete work.
- B. Locate and set in place items that will be cast directly into concrete.
- C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

### **3.06 FORM CLEANING**

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.

### **3.07 FORMWORK TOLERANCES**

- A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.

### **3.08 FORM REMOVAL**

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

**END OF SECTION**



**SECTION 032000  
CONCRETE REINFORCING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

**1.02 REFERENCE STANDARDS**

- A. ACI 301 - Specifications for Concrete Construction 2020.
- B. ACI SP-66 - ACI Detailing Manual 2004.
- C. CRSI (DA4) - Manual of Standard Practice 2018, with Errata (2019).

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.

**1.04 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301.

**PART 2 PRODUCTS**

**2.01 REINFORCEMENT**

- A. Refer to Structural Notes for additional requirements
- B. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
  - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
    - a. At flat slabs use prefabricated chairs sized and spaced to maintain specified clearances

**2.02 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.
- B. Welding of reinforcement is not permitted.
- C. Locate reinforcing splices not indicated on drawings at point of minimum stress.
  - 1. Review locations of splices with Architect.

**PART 3 EXECUTION**

**3.01 PLACEMENT**

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Comply with applicable code for concrete cover over reinforcement.
- E. Bond and ground all reinforcement to requirements of Section 260526.

**END OF SECTION**



**SECTION 033000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Elevated concrete slabs.
- B. Floors and slabs on grade.
- C. Joint devices associated with concrete work.
- D. Concrete curing.

**1.02 REFERENCE STANDARDS**

- A. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide 2022.
- B. ACI 301 - Specifications for Concrete Construction 2020.
- C. ACI 302.1R - Guide to Concrete Floor and Slab Construction 2015.
- D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).
- E. ACI 305R - Guide to Hot Weather Concreting 2020.
- F. ACI 306R - Guide to Cold Weather Concreting 2016.
- G. ACI 308R - Guide to External Curing of Concrete 2016.
- H. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- I. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- J. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
- K. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2022a.
- L. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- M. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete 2020.
- N. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete 2010a (Reapproved 2016).
- O. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).
- P. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2022.
- Q. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink) 2020.
- R. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- S. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) 2018.
- T. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers 2020.
- U. ASTM E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers (Metric) 2014.
- V. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs 2018a.
- W. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs 2017.

**1.03 SUBMITTALS**



- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Mix Design: Submit proposed concrete mix design.
  - 1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
  - 2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
- C. Samples: Submit samples of underslab vapor retarder to be used.
- D. Test Reports: Submit report for each test or series of tests specified.

#### **1.04 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.

### **PART 2 PRODUCTS**

#### **2.01 FORMWORK**

- A. Comply with requirements of Section 031000.

#### **2.02 REINFORCEMENT MATERIALS**

- A. Comply with requirements of Section 032000.

#### **2.03 CONCRETE MATERIALS**

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

#### **2.04 ADMIXTURES**

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- D. Accelerating Admixture: ASTM C494/C494M Type C.
- E. Water Reducing Admixture: ASTM C494/C494M Type A.

#### **2.05 ACCESSORY MATERIALS**

- A. Underslab Vapor Retarder:
  - 1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single-ply polyethylene is prohibited.
  - 2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
  - 3. Products:
    - a. Henry Company; Moistop Ultra 15: [www.henry.com](http://www.henry.com)
    - b. Stego Industries, LLC; Stego Wrap Vapor Barrier (15-mils): [www.stegoindustries.com](http://www.stegoindustries.com)
    - c. W. R. Meadows, Inc; PERMINATOR Class A - 15 mils (0.38 mm): [www.wrmeadows.com](http://www.wrmeadows.com)
    - d. Substitutions: See Section 016000 - Product Requirements.
- B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
  - 1. Grout: Comply with ASTM C1107/C1107M.



## **2.06 BONDING AND JOINTING PRODUCTS**

- A. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
  - 1. Material: ASTM D1751, cellulose fiber.
- B. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.

## **2.07 CURING MATERIALS**

- A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.
  - 1. Application: Use at exterior slabs on grade.
- B. Moisture-Retaining Sheet: ASTM C171.
  - 1. Curing paper, regular.
  - 2. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.
  - 3. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.
- C. Water: Potable, not detrimental to concrete.

## **2.08 CONCRETE MIX DESIGN**

- A. Refer to Structural Notes for Mix Design and additional requirements
- B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

## **2.09 MIXING**

- A. Transit Mixers: Comply with ASTM C94/C94M.
- B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

## **3.02 PREPARATION**

- A. Verify that forms are clean and free of rust before applying release agent.
- B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- C. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- D. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

## **3.03 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 304R.
- B. Notify Architect not less than 24 hours prior to commencement of placement operations.
- C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- D. Ensure reinforcement, inserts, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

## **3.04 SLAB JOINTING**



- A. Locate joints as indicated on drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

### **3.05 FLOOR FLATNESS AND LEVELNESS TOLERANCES**

- A. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
  - 1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15, on-grade only.
  - 2. Under Thick-Bed Tile: F(F) of 20; F(L) of 15, on-grade only.
  - 3. Under Carpeting: F(F) of 25; F(L) of 20, on-grade only.
  - 4. Under Thin Resilient Flooring and Thinset Tile: F(F) of 35; F(L) of 25, on-grade only.
- B. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
- C. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
- D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

### **3.06 CONCRETE FINISHING**

- A. Repair surface defects, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
  - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
  - 2. Cement slurry coat finish over surface is not allowed.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
  - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
  - 2. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

### **3.07 CURING AND PROTECTION**

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
  - 1. Normal concrete: Not less than seven days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
  - 1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to



- flooring manufacturer's satisfaction.
2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
  3. Final Curing: Begin after initial curing but before surface is dry.
    - a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.

### **3.08 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
- D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- E. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

### **3.09 DEFECTIVE CONCRETE**

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

### **3.10 PROTECTION**

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

**END OF SECTION**



**SECTION 033511  
CONCRETE FLOOR FINISHES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface treatments for exposed interior concrete floors and slabs.
- B. Liquid densifiers and hardeners.

**1.02 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

**1.04 FIELD CONDITIONS**

- A. Maintain light level equivalent to a minimum 200 W light source at 8 feet above the floor surface over each 20 foot square area of floor being finished.
- B. Do not finish floors until interior heating system is operational.
- C. Maintain ambient temperature of 50 degrees F minimum.

**PART 2 PRODUCTS**

**2.01 CONCRETE FLOOR FINISH APPLICATIONS**

- A. Liquid Densifier and Hardener:
  - 1. Use at following locations: exposed interior concrete floors.

**2.02 DENSIFIERS AND HARDENERS**

- A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores, hardening, and dustproofing.
  - 1. Composition: Lithium silicate.
  - 2. Products:
    - a. PROSOCO, Inc; Consolideck LS: [www.prosoco.com/consolideck](http://www.prosoco.com/consolideck)
    - b. SpecChem, LLC; LithSeal SC: [www.specchemllc.com](http://www.specchemllc.com)
    - c. W. R. Meadows, Inc; Liqui-Hard Ultra: [www.wrmeadows.com](http://www.wrmeadows.com)
    - d. Substitutions: See Section 016000 - Product Requirements.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

**3.02 GENERAL**

- A. Apply materials in accordance with manufacturer's instructions.

**3.03 COATING APPLICATION**

- A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.
- B. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.
- C. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.



**END OF SECTION**



**SECTION 042000  
UNIT MASONRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete block.
- B. Clay facing brick.
- C. Mortar and grout.
- D. Reinforcement and anchorage.
- E. Flashings.
- F. Accessories.

**1.02 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2022.
- C. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2022.
- D. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.
- E. ASTM C91/C91M - Standard Specification for Masonry Cement 2023.
- F. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.
- H. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- I. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale) 2022.
- J. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- K. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- L. ASTM C476 - Standard Specification for Grout for Masonry 2022.
- M. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry 2019a.
- N. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- O. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls 2017.
- P. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- Q. BIA Technical Notes No. 46 - Maintenance of Brick Masonry 2017.
- R. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

**1.04 MOCK-UPS**

- A. Construct a masonry wall as a mock-up panel sized 8 feet long by 6 feet high; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam) in mock-up.
- B. Locate where directed.
- C. Mock-up may remain as part of work.



## **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

## **PART 2 PRODUCTS**

### **2.01 CONCRETE MASONRY UNITS**

- A. Concrete Block: Comply with referenced standards and as follows:
  - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
  - 2. Load-Bearing Units: ASTM C90, normal weight.
    - a. Hollow block, as indicated.

### **2.02 BRICK UNITS**

- A. Manufacturers:
  - 1. Interstate Brick: [www.interstatebrick.com](http://www.interstatebrick.com).
  - 2. Substitutions: See section 016000 - Product Requirements.
- B. Facing Brick: ASTM C216, Type FBX, Grade SW.
  - 1. Color and texture:
    - a. Brick #1: Tumbleweed, matte texture
    - b. Brick #2: Ironstone, matte texture
  - 2. Actual size: 3 1/2 inch Emperor Brick (3 1/2 inch x 15 1/2 inch x 3 1/2 inch).
  - 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
    - a. 135 degree corner shaped brick

### **2.03 MORTAR AND GROUT MATERIALS**

- A. Masonry Cement: ASTM C91/C91M, Type N.
- B. Portland Cement: ASTM C150/C150M, Type I.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Mortar Aggregate: ASTM C144.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.
- G. Packaged Dry Material for Mortar for Unit Masonry: Premixed masonry cement and mason's sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
  - 1. Type: Types as scheduled in this section.
  - 2. Color: Standard gray.
- H. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.

### **2.04 REINFORCEMENT AND ANCHORAGE**

- A. Manufacturers:
  - 1. Hohmann & Barnard, Inc: [www.h-b.com](http://www.h-b.com)
  - 2. TruFast Walls, a division of Altenloh, Brinck & Co. US, Inc: [www.trufastwalls.com](http://www.trufastwalls.com)
  - 3. WIRE-BOND [www.wirebond.com](http://www.wirebond.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Reinforcing Steel: Type specified in Section 032000; size as indicated on drawings; uncoated finish.
- C. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- D. Single Wythe Joint Reinforcement: ASTM A951/A951M.



1. Type: Truss.
  2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
  3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- E. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
1. Description: Single screw veneer tie for metal stud construction with a stainless steel barrel and EDPM washers and anchor.
  2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
  3. Vertical adjustment: Not less than 2 inches.
  4. Reference Product: Thermal 2-Seal Wing Nut Anchor by Hohmann & Barnard, Inc.

## **2.05 FLASHINGS**

- A. Membrane Non-Asphaltic Flashing Materials:
1. Composite Polymer Flashings - Self-Adhering: Composite polyethylene; 40 mil thick with pressure-sensitive butyl adhesive and release paper.
    - a. Manufacturers:
      - 1) Hohmann & Barnard, Inc; Textroflash: [www.h-b.com](http://www.h-b.com)
      - 2) York Manufacturing, Inc; Wicked Good Flashing: [www.yorkmfg.com](http://www.yorkmfg.com)
      - 3) Substitutions: See Section 016000 - Product Requirements.
- B. Termination Bars: aluminum; compatible with membrane and adhesives.
- C. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

## **2.06 ACCESSORIES**

- A. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
- B. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
    - a. Manufacturers:
      - 1) Advanced Building Products, Inc; Mortar Break DT: [www.advancedbuildingproducts.com](http://www.advancedbuildingproducts.com)
      - 2) Mortar Net Solutions; MortarNet: [www.mortarnet.com](http://www.mortarnet.com)
      - 3) Substitutions: See Section 016000 - Product Requirements.
- C. Weeps:
1. Type: Polyester mesh.
- D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.
1. Manufacturers:
    - a. Diedrich Technologies, Inc.; a Hohmann & Barnard Company
    - b. PROSOCO, Inc.
    - c. Substitutions: See Section 01600 - Product Requirements

## **2.07 MORTAR AND GROUT MIXING**

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
- B. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
- C. Mixing: Use mechanical batch mixer and comply with referenced standards.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**



- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### **3.02 PREPARATION**

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

### **3.03 COLD AND HOT WEATHER REQUIREMENTS**

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

### **3.04 COURSING**

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
  - 1. Bond: Running.
  - 2. Coursing: One unit and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.
- D. Brick Units:
  - 1. Bond: Running.
  - 2. Coursing: Three units and three mortar joints to equal 12 inches.
  - 3. Mortar Joints: Concave.

### **3.05 PLACING AND BONDING**

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Interlock intersections and external corners, except for units laid in stack bond.
- D. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- E. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

### **3.06 WEEPS/CAVITY VENTS**

- A. Install weeps in veneer and cavity walls at 32 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

### **3.07 CAVITY MORTAR CONTROL**

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

### **3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY**

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.



- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches.

### **3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER**

- A. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

### **3.10 MASONRY FLASHINGS**

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
  - 1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.
  - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
  - 3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 8 inches minimum on vertical surface of backing:
  - 1. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
  - 2. Anchor vertical leg of flashing into backing with a termination bar and sealant.
  - 3. Apply cap bead of sealant on top edge of self-adhered flashing.
- C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
- D. Support flexible flashings across gaps and openings.
- E. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

### **3.11 LINTELS**

- A. Install loose steel lintels over openings.

### **3.12 GROUTED COMPONENTS**

- A. Lap splices minimum 24 bar diameters.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.

### **3.13 CONTROL AND EXPANSION JOINTS**

- A. Do not continue horizontal joint reinforcement through control or expansion joints.

### **3.14 BUILT-IN WORK**

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.

### **3.15 TOLERANCES**

- A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- E. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

### **3.16 CUTTING AND FITTING**



- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

### **3.17 CLEANING**

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution.
- C. Use non-metallic tools in cleaning operations.

### **3.18 PROTECTION**

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

**END OF SECTION**



**SECTION 047200  
CAST STONE MASONRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Architectural cast stone.

**1.02 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- C. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement 2019.
- D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement 2019, with Editorial Revision (2020).
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2022.
- F. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- I. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).
- J. ASTM C1364 - Standard Specification for Architectural Cast Stone 2023.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- C. Verification Samples: Pieces of actual cast stone components not less than 6 inches square, illustrating range of color and texture to be anticipated in components furnished for the project.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications:
  - 1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
  - 2. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.
- F. Store mortar materials where contamination can be avoided.



- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

## **PART 2 PRODUCTS**

### **2.01 ARCHITECTURAL CAST STONE**

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural granite, complying with ASTM C1364.
  - 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
  - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
  - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
  - 4. Color: Selected by Architect from manufacturer's full range.
  - 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings.
  - 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
  - 2. Unless otherwise indicated on drawings, provide:
    - a. Wash or slope of 1:12 on exterior horizontal surfaces.
    - b. Drips on projecting components, wherever possible.
    - c. Raised fillets at back of sills and at ends to be built in.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.

### **2.02 MATERIALS**

- A. Portland Cement: ASTM C150/C150M.
  - 1. For Units: Type I, white or gray as required to match Architect 's sample.
  - 2. For Mortar: Type I or II, except Type III may be used in cold weather.
- B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D. Admixtures: ASTM C494/C494M.
- E. Water: Potable.
- F. Reinforcing Bars: ASTM A615/A615M, Grade 40 (40,000 psi), deformed bars, galvanized.
  - 1. Galvanized in accordance with ASTM A767/A767M, Class I.
- G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- I. Mortar: Portland cement-lime, as specified in Section 040511 ; do not use masonry cement.
- J. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.



### **3.02 INSTALLATION**

- A. Install cast stone components in conjunction with masonry, complying with requirements of Section 042000.
- B. Mechanically anchor cast stone units indicated; set remainder in mortar.
- C. Setting:
  - 1. Drench cast stone components with clear, running water immediately before installation.
  - 2. Set units in a full bed of mortar unless otherwise indicated.
  - 3. Fill vertical joints with mortar.
  - 4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

### **3.03 TOLERANCES**

- A. Joints: Make all joints 3/8 inch, except as otherwise detailed.
  - 1. Rake mortar joints 3/4 inch for pointing.
  - 2. Remove excess mortar from face of stone before pointing joints.
  - 3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
  - 4. Leave the following joints open for sealant:
    - a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
    - b. Joints in projecting units.
    - c. Joints between rigidly anchored units, including soffits, panels, and column covers.
    - d. Joints below lugged sills and stair treads.
    - e. Joints below ledge and relieving angles.
    - f. Joints labeled "expansion joint".
- B. Installation Tolerances:
  - 1. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.
  - 2. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.
  - 3. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
  - 4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

### **3.04 REPAIR**

- A. Repair chips and other surface damage noticeable when viewed in direct daylight at 20 feet.
- B. Repair with matching touch-up material provided by the manufacturer and in accordance with manufacturer's instructions.
- C. Repair methods and results subject to Architect 's approval.

### **3.05 CLEANING**

- A. Clean completed exposed cast stone after mortar is thoroughly set and cured.
  - 1. Wet surfaces with water before applying cleaner.
  - 2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
  - 3. Remove cleaner promptly by rinsing thoroughly with clear water.
  - 4. Do not use acidic cleaners.

### **3.06 PROTECTION**

- A. Protect completed work from damage.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

**END OF SECTION**



**SECTION 051200  
STRUCTURAL STEEL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Structural steel framing members.
- B. Grouting under base plates.

**1.02 REFERENCE STANDARDS**

- A. AISC (MAN) - Steel Construction Manual 2017.
- B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges 2022.
- C. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).
- D. SSPC-SP 3 - Power Tool Cleaning 2018.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  - 1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.

**1.04 QUALITY ASSURANCE**

- A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."
- B. Fabricator: Company specializing in performing the work of this section with minimum five years of documented experience.
- C. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Refer to Structural Notes for Materials specifications and additional requirements
- B. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
- C. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

**2.02 FABRICATION**

- A. Shop fabricate to greatest extent possible.
- B. Continuously seal joined members by continuous welds. Grind exposed welds smooth.
- C. Fabricate connections for bolt, nut, and washer connectors.

**2.03 FINISH**

- A. Prepare structural component surfaces in accordance with SSPC-SP 3.
- B. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

**3.02 ERECTION**

- A. Erect structural steel in compliance with AISC 303.



- B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Do not field cut or alter structural members without approval of Architect.
- D. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- E. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

### **3.03 TOLERANCES**

- A. Maximum Offset From True Alignment: 1/4 inch.

**END OF SECTION**



## **SECTION 053100 STEEL DECKING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Roof deck.
- B. Bearing plates and angles.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2023.
- C. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).
- D. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018, with Errata (2022).
- E. ICC-ES AC43 - Acceptance Criteria for Steel Deck Roof and Floor Systems 2016.
- F. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks 2007.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.
- C. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.

#### **1.04 QUALITY ASSURANCE**

- A. Design deck layout, spans, fastening, and joints under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M and dated no more than 12 months before start of scheduled welding work.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Cut plastic wrap to encourage ventilation.
- B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

### **PART 2 PRODUCTS**

#### **2.01 STEEL DECK**

- A. Refer to Structural Notes for Steel Deck and additional requirements
- B. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.
  - 1. Calculate to structural working stress design and structural properties specified.
- C. Roof Deck: Non-composite type, fluted steel sheet:

#### **2.02 ACCESSORY MATERIALS**

- A. Bearing Plates and Angles: ASTM A36/A36M steel, galvanized per ASTM A123/A123M.
- B. Welding Materials: AWS D1.1/D1.1M.
- C. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.
  - 1. Design Requirements for Sidelap Connections: Provide number and type of fasteners that comply with the applicable requirements of SDI (DM) design method for roof deck and floor deck applications and ICC-ES AC43.



2. Fasteners for Steel Roof Decks Protected with Waterproofing Membrane: ASTM B633, SC1, Type III zinc electroplate.

- D. Flute Closures: Closed cell foam rubber, 1 inch thick; profiled to fit tight to the deck.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify existing conditions prior to beginning work.

#### **3.02 INSTALLATION**

- A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.
- B. On steel supports provide minimum 1-1/2 inch bearing.
- C. Fasten deck to steel support members at ends and intermediate supports at 12 inches on center maximum, parallel with the deck flute and at each transverse flute using methods specified.
- D. Drive mechanical sidelap connectors completely through adjacent lapped sheets; positively engage adjacent sheets with minimum three-thread penetration.
- E. At deck openings from 6 inches to 18 inches in size, provide 2 by 2 by 1/4 inch steel angle reinforcement. Place angles perpendicular to flutes; extend minimum two flutes beyond each side of opening and fusion weld to deck at each flute.
- F. At deck openings greater than 18 inches in size, provide steel angle reinforcement. as specified in Section 051200.
- G. Close openings above walls and partitions perpendicular to deck flutes with single row of foam cell closures.

### **END OF SECTION**



**SECTION 054000  
COLD-FORMED METAL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formed steel stud exterior wall framing.

**1.02 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2020).
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing 2015, with Errata (2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- E. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings 2020.
- F. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.
- G. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020.
- H. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with work of other sections that is to be installed in or adjacent to metal framing systems, including but not limited to structural anchors, cladding anchors, utilities, insulation, and firestopping.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on cold-formed steel structural members; include material descriptions and base steel thickness.

**PART 2 PRODUCTS**

**2.01 PERFORMANCE REQUIREMENTS**

- A. Design Requirements: Design cold-formed framing systems, components and connectors to withstand specified design loads in compliance with ICC (IBC), ASCE 7, AISI S100, and AISI S240.
- B. Design Criteria: In accordance with applicable codes.
  - 1. Live load deflection meeting the following, unless otherwise indicated:
    - a. Exterior Walls: Maximum horizontal deflection under wind load of 1/180 of span.
  - 2. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
  - 3. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

**2.02 MATERIALS**

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.

**2.03 STRUCTURAL FRAMING COMPONENTS**

- A. Refer to Structural Notes for Structural Framing Components and additional requirements



- B. Wall Studs and Track Sections: AISI S240; c-shaped studs and u-shaped track sections in stud-matching nominal width and compatible height.

## **2.04 CONNECTIONS**

- A. Performance Requirements: Provide connections in compliance with requirements of AISI S240.
- B. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
  - 1. Structural Grade: As required to meet design criteria.
  - 2. Corrosion Protection Coating Designation: CP 90 in accordance with AISI S240.
- C. Structural Performance: Maintain load and movement capacity required by applicable building code and specified design criteria.
- D. Movement Connections: Provide mechanical anchorage devices that accommodate movement using slotted holes, shouldered screws or screws and anti-friction or stepped bushings, while maintaining structural performance of framing. Provide movement connections where indicated on drawings.
- E. Fixed Connections: Provide nonmovement devices for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.
- F. Bridging Connections: Provide mechanical load-transferring devices that accommodate wind load torsion and weak axis buckling induced by axial compression loads. Provide bridging connectors where indicated on the drawings.

## **2.05 MISCELLANEOUS CONNECTIONS**

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot-dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.
- C. Welding: Comply with AWS D1.1/D1.1M.

## **2.06 SHEATHING**

- A. Wall Sheathing: See Section 061000.

## **2.07 ACCESSORIES**

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Galvanizing Repair: Touch up bare steel with zinc-rich paint in compliance with ASTM A780/A780M.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

## **3.02 PREPARATION**

- A. Structural Wall Foundations: For gaps between wall bottom track and top of foundation 1/4 inch or greater, level substrate with loadbearing shims or grout between track and foundation.

## **3.03 INSTALLATION - GENERAL**

- A. Install structural members and connections in compliance with AISI S240.

## **3.04 INSTALLATION OF STUDS**

- A. Install wall studs plumb and level.
- B. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- C. Install load-bearing studs full length in one piece. Splicing of studs is not permitted.



- D. Install load-bearing studs; brace, and reinforce to develop full strength and achieve design requirements.
- E. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- F. Install intermediate studs above and below openings to align with wall stud spacing.
- G. Provide deflection allowance in stud track, directly below horizontal building framing at non-loadbearing framing.
- H. Touch-up field welds and damaged corrosion-protected surfaces zinc-rich paint in compliance with ASTM A780/A780M.

### **3.05 INSTALLATION OF WALL SHEATHING**

- A. Install wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using self-tapping screws.

### **3.06 TOLERANCES**

- A. Studs - Vertical Alignment (Plumbness): 1/960 of span or 1/8 inch in 10 ft, in accordance with ASTM C1007.
- B. Studs - Maximum Variation from True Position: 1/8 inch in accordance with ASTM C1007.
- C. Stud Spacing: 1/8 inch from the designated spacing, provided that the cumulative error does not exceed the requirements of the finishing materials in accordance with ASTM C1007.

**END OF SECTION**



**SECTION 054400  
COLD-FORMED METAL TRUSSES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Light gauge cold-formed steel roof trusses.
- B. Anchorages, bracing, and bridging.

**1.02 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2020).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- C. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings 2020.
- D. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).
- E. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018, with Errata (2022).
- F. CFSEI 5000 - Field Installation Guide for Cold-Formed Steel Roof Trusses May 2000.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  - 1. Include detailed roof truss layout.
  - 2. Show member type, location, spacing, size and gauge, methods of attachment, and erection details. Indicate supplemental bracing, strapping, splices, bridging, and accessories.
  - 3. Include truss design drawings, signed and sealed by a qualified professional engineer registered in the State in which the Project is located, verifying ability of each truss design to meet applicable code and design requirements.

**1.04 QUALITY ASSURANCE**

- A. Designer Qualifications: Design trusses under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Fabricator Qualifications: Steel truss fabricator with minimum 10 years of experience designing and fabricating truss systems equivalent to those required for this project and licensed by an acceptable manufacturer.
- C. Installer Qualifications: Experienced installer approved by truss system fabricator.
- D. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months in accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver trusses and other materials in manufacturer's unopened bundles or containers, each marked with manufacturer's name, brand, type, and grade. Exercise care to avoid damage during unloading, storing, and erection.
- B. Store trusses on blocking, pallets, platforms, or other supports, off the ground and in an upright position, sufficiently braced to avoid damage from excessive bending. Gently slope stored trusses to avoid accumulation of water on interior of truss chord members.
- C. Protect trusses and accessories from contact with earth, corrosion, deformation, mechanical damage, or other deterioration when stored at project site.

**PART 2 PRODUCTS**

**2.01 TRUSS DESIGN REQUIREMENTS**



- A. Refer to Structural Notes for Truss Design Requirements and additional requirements
- B. Design: Calculate structural characteristics of cold-formed steel truss members according to AISI S100.
- C. Structural Performance: Design, engineer, fabricate, and erect trusses to withstand specified design loads for project conditions within required limits.
  - 1. Design Loads: In accordance with applicable codes.
  - 2. Deflections: Live load deflection meeting the following, unless otherwise indicated:
    - a. Roofs: Maximum vertical deflection under live load of 1/240 of span.
  - 3. Design trusses to accommodate movement attributable to temperature changes within a range of 120 degrees F without damage or overstressing, sheathing failure, undue strain on fasteners and anchors, or other deleterious effects.

## **2.02 COMPONENTS**

- A. Trusses: Light gauge steel assemblies providing a complete horizontal framing system for locations indicated, ready for deck installation.
  - 1. Truss Type, Span, and Height: As indicated on drawings.
  - 2. Chord and Web Members: Fabricate required shapes from commercial quality galvanized steel sheet complying with ASTM A653/A653M, with minimum yield strength of 40,000 psi; minimum G60/Z180 coating; gauges as required for load conditions; all edges rolled or closed.
- B. Fasteners: Self-drilling, self-tapping screw fasteners with corrosion-resistant plated finish, as recommended by steel truss manufacturer and marked for easy identification.
  - 1. Welding: Comply with applicable provisions of AWS D1.1/D1.1M and AWS D1.3/D1.3M.
- C. Bracing, Bridging, and Blocking Members: Fabricate required shapes from commercial quality galvanized steel sheet complying with ASTM A653/A653M, with minimum yield strength of 33,000 psi; minimum G60/Z180 coating; gauges as required for load conditions.

## **2.03 FABRICATION**

- A. Factory fabricate cold-formed steel trusses plumb, square, true to line, and with secure connections, complying with manufacturer's recommendations and project requirements.
  - 1. Fabricate trusses using jig templates.
  - 2. Cut truss members by sawing, shearing, or plasma cutting.
  - 3. Fasten members in full compliance with instructions of manufacturer. Wire tying of framing members is not permitted.
- B. Tolerances: Fabricate trusses to maximum allowable tolerance variation from plumb, level and true line of 1/8 inch in 10 feet.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine structure, substrates, and installation conditions. Notify Architect of unsatisfactory preparation. Do not begin installation until substrates have been properly prepared and unsatisfactory conditions have been corrected.
- B. Proceeding with installation indicates installer's acceptance of substrate conditions.

### **3.02 INSTALLATION**

- A. Install cold-formed steel trusses in strict accordance with manufacturer's instructions and approved shop drawings, using approved fastening methods.
- B. Install temporary erection bracing and permanent bracing and bridging before application of any loads. Erect trusses with plane of truss webs vertical and parallel to each other, accurately located at spacing indicated. Anchor trusses securely at bearing points.
- C. Adequately distribute applied loads to avoid exceeding the carrying capacity of any one joint, truss, or other component.



- D. Exercise care to avoid damaging truss members during lifting and erection and to minimize horizontal bending of trusses.
- E. Removal, cutting, or alteration of any truss chord, web, or bracing member in the field is prohibited, unless approved in advance by Architect or the engineer of record and the truss manufacturer.
- F. Repair or replace damaged members and complete trusses as directed and approved in writing by Architect or the engineer of record and the truss manufacturer.
- G. Galvanizing Repair: Touch up bare steel with zinc-rich paint in compliance with ASTM A780/A780M.
- H. Field Welding: In accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M, as applicable, and as follows:
  - 1. Connections: Provide fillet, flat, plug, or butt welds, as indicated.
  - 2. Minimum steel thickness for welded connections, 18 gauge, 0.0478 inch.
- I. Roof Trusses:
  - 1. Comply with recommendations of CFSEI 5000.
  - 2. Align truss bottom chords with load-bearing studs or continuously reinforce track as required to transfer loads to structure.
  - 3. Install continuous bridging and permanent truss bracing as indicated.
  - 4. Install roof cross bracing and diagonal bracing as indicated.

### **3.03 TOLERANCES**

- A. Install trusses to maximum allowable tolerance variation from plumb, level, and true to line of 1/8 inch in 10 feet.
- B. Space individual trusses not more than plus or minus 1/8 inch from plan location. Cumulative error in placement may not exceed minimum fastening requirements of sheathing or other material fastened to trusses.

### **3.04 PROTECTION**

- A. Protect trusses from damage by subsequent construction activities.
- B. Repair or replace damaged trusses, truss members, and bracing members; obtain approval in advance by Architect or the engineer of record and the truss manufacturer for all cutting, repairs, and replacements.

**END OF SECTION**



**SECTION 055000  
METAL FABRICATIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Shop fabricated steel items.
- B. Cast iron trench castings.

**1.02 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.
- C. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.
- D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2021.
- E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing 2021.
- F. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2020.
- G. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2021.
- H. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).
- I. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 2004.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
  - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

**PART 2 PRODUCTS**

**2.01 MATERIALS - STEEL**

- A. Steel Sections: ASTM A36/A36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Plates: ASTM A283/A283M.
- D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- E. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
- F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

**2.02 FABRICATION**

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.



- D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

### **2.03 FABRICATED ITEMS**

- A. Lintels: As detailed; prime paint finish.

### **2.04 FINISHES - STEEL**

- A. Prime paint steel items.
- B. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- C. Prime Painting: One coat.

### **2.05 FABRICATION TOLERANCES**

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.

### **3.02 PREPARATION**

- A. Clean and strip primed steel items to bare metal where site welding is required.

### **3.03 INSTALLATION**

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.
- E. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

**END OF SECTION**



**SECTION 061000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Rough opening framing for doors, windows, and roof openings.
- B. Sheathing.
- C. Roofing nailers.
- D. Preservative treated wood materials.
- E. Miscellaneous framing and sheathing.
- F. Communications and electrical room mounting boards.
- G. Concealed wood blocking, nailers, and supports.

**1.02 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- C. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- E. AWPA U1 - Use Category System: User Specification for Treated Wood 2022.
- F. PS 1 - Structural Plywood 2019.
- G. PS 20 - American Softwood Lumber Standard 2021.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on manufactured products.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: Douglas Fir or Southern Pine, unless otherwise indicated.
  - 2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
  - 3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at [www.alsc.org](http://www.alsc.org), and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

**2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.



2. Boards: Standard or No. 3.

### **2.03 CONSTRUCTION PANELS**

- A. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, 1/2 inch; at fire rated assemblies use type x, 5/8 inch.
  1. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly.
  2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  3. Edges: Square.
  4. Products:
    - a. CertainTeed Corporation; GlasRoc Brand: [www.certainteed.com](http://www.certainteed.com)
    - b. Georgia-Pacific Gypsum; DensGlass Sheathing: [www.gpgypsum.com](http://www.gpgypsum.com)
    - c. USG Corporation; Securock Brand Glass-Mat Sheathing Regular 1/2 in. (12.7 mm): [www.usg.com](http://www.usg.com)
    - d. USG Corporation; Securock Brand Glass-Mat Sheathing Firecode SHX 5/8 in. (15.9 mm): [www.usg.com](http://www.usg.com)
    - e. Substitutions: See Section 016000 - Product Requirements.
- B. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- C. Other Applications:
  1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
  2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
  3. Other Locations: PS 1, C-D Plugged or better.

### **2.04 ACCESSORIES**

- A. Fasteners and Anchors:
  1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

### **2.05 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Preservative Treatment:
  1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber in contact with masonry or concrete.
    - c. Treat lumber in other locations as indicated.
  2. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
    - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
    - b. Treat plywood in contact with masonry or concrete.
    - c. Treat plywood in other locations as indicated.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Coordinate installation of rough carpentry members specified in other sections.

### **3.02 INSTALLATION - GENERAL**



- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.03 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- C. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- D. Provide the following specific nonstructural framing and blocking:
  - 1. Cabinets and shelf supports.
  - 2. Wall brackets.
  - 3. Handrails.
  - 4. Grab bars.
  - 5. Towel and bath accessories.
  - 6. Wall-mounted door stops.
  - 7. Chalkboards and marker boards.
  - 8. Wall paneling and trim.
  - 9. Joints of rigid wall coverings that occur between studs.

### **3.04 INSTALLATION OF CONSTRUCTION PANELS**

- A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using screws.
  - 1. Install sheathing according to manufacturer's written instructions
- B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
  - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
  - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
  - 3. Install adjacent boards without gaps.
  - 4. Size: 48 by 96 inches, installed horizontally at ceiling height.

**END OF SECTION**



**SECTION 064100  
ARCHITECTURAL WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 123600 - Countertops.

**1.03 REFERENCE STANDARDS**

- A. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications 2022.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- D. BHMA A156.9 - Cabinet Hardware 2020.
- E. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood 2020.
- F. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
  - 1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Product Data: Provide data for hardware accessories.

**1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect units from moisture damage.

**1.07 FIELD CONDITIONS**

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

**PART 2 PRODUCTS**

**2.01 CABINETS**

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Wood Veneer Faced Cabinet:
  - 1. Exposed Surfaces: HPVA HP-1 Grade A, Red Oak, plain sliced, random-matched.
  - 2. Semi-Exposed Surfaces: Thermally fused, melamine-impregnated laminate, NEMA LD 3, Grade VGL
  - 3. Concealed Surfaces: Manufacturer's option.

**2.02 WOOD-BASED COMPONENTS**

- A. Wood fabricated from old growth timber is not permitted.
- B. Hardwood Edgebanding: Use solid hardwood edgebanding matching species, color, grain, and grade for exposed portions of cabinetry.
  - 1. Thickness: 3 mm



### **2.03 PANEL CORE MATERIALS**

- A. Medium Density Fiberboard (MDF): Composite panel composed of cellulosic fibers, additives, and bonding system; cured under heat and pressure; comply with ANSI A208.2.
  - 1. Grade: 130; moisture resistance: MR10.

### **2.04 HARDWOOD PLYWOOD PANELS**

- A. Hardwood Plywood: Plywood manufactured for nonstructural decorative applications; consisting of faces and backs applied to a variety of core types; comply with HPVA HP-1.
  - 1. Woodwork Quality Standard: Panels complying with specified woodwork quality standard.
  - 2. Face: Red oak; plain-sliced; grade AA.
  - 3. Back: melamine
  - 4. Core, Medium Density Fiberboard: Comply with ANSI A208.2.

### **2.05 THERMALLY FUSED LAMINATE PANELS**

- A. Thermally Fused Laminate (TFL): Melamine- or polyester-resin-saturated decorative papers; for fusion to composite wood substrates under heat and pressure.
  - 1. Test in accordance with NEMA LD 3 Section 3.
  - 2. Panel Core Substrate: Medium Density Fiberboard (MDF).
  - 3. Color: White.

### **2.06 COUNTERTOPS**

- A. Countertops: See Section 123600.

### **2.07 ACCESSORIES**

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.
- E. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.

### **2.08 HARDWARE**

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Exposed Hardware Finishes: provide finish that complies with ANSI/BHMA A156.18 for finish number indicated
  - 1. Satin Chromium Plated: ANSI/BHMA 626 for brass or bronze base; ANSI/BHMA 652 for steel base
- C. Concealed Hardware Finishes: provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9
- D. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self rests, satin chrome finish, for nominal 1 inch spacing adjustments.
- E. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.
  - 1. 5/16 inch diameter
- F. Keyed Cabinet Locks: Keyed cylinder, two keys per lock, steel with satin finish.
  - 1. Door Locks: ANSI/BHMA A156.11, E07121
  - 2. Drawer Locks: ANSI/BHMA A156.11, E07041
- G. Drawer Slides:
  - 1. Type: Full extension.
  - 2. Static Load Capacity: Heavy Duty grade.
  - 3. Stops: Integral type.



- 4. Features: Provide self closing/stay closed type.
- 5. Manufacturers:
  - a. Blum, Inc: [www.blum.com](http://www.blum.com)
  - b. Grass America Inc: [www.grassusa.com](http://www.grassusa.com)
  - c. Knappe & Vogt Manufacturing Company: [www.knappeandvogt.com](http://www.knappeandvogt.com)
  - d. Substitutions: See Section 016000 - Product Requirements.
- H. Hinges: European style concealed self-closing type, ANSI/BHMA A 156.9, B01602 , steel with nickel-plated finish.
  - 1. Manufacturers:
    - a. Blum, Inc: [www.blum.com](http://www.blum.com)
    - b. Grass America Inc: [www.grassusa.com](http://www.grassusa.com)
    - c. Substitutions: See Section 016000 - Product Requirements.
- I. Grommets for Cable Passage: 1-1/4 inch OD, molded plastic grommets and matching plastic caps with slot for wire passage.
- J. Door and Door Silencers: ANSI/BHMA A156.16, L03011; clear silicone, stick on type at all cabinet doors and drawers

## **2.09 SITE FINISHING MATERIALS**

- A. Stain, Shellac, Varnish, and Finishing Materials: In compliance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

## **2.10 FABRICATION**

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- E. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:

**END OF SECTION**



**SECTION 072100  
THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Board insulation at cavity wall construction and perimeter foundation wall.
- B. Batt insulation and vapor retarder in exterior wall and ceiling construction.
- C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

**1.02 REFERENCE STANDARDS**

- A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- B. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).
- C. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2022.
- D. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation 2014 (Reapproved 2019).
- E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- G. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C 2022.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
- B. Insulation Inside Masonry Cavity Walls: Extruded polystyrene (XPS) board.
- C. Insulation Over Metal Stud Framed Walls, Continuous: Mineral fiber board.
- D. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

**2.02 FOAM BOARD INSULATION MATERIALS**

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
  - 1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
  - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  - 4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
  - 5. Board Edges: Square.
  - 6. Products:
    - a. DuPont de Nemours, Inc: [building.dupont.com/#sle](http://building.dupont.com/#sle).
    - b. Kingspan Insulation LLC: [www.kingspan.com/#sle](http://www.kingspan.com/#sle).
    - c. Owens Corning Corporation: [www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).
    - d. Substitutions: See Section 016000 - Product Requirements.

**2.03 MINERAL FIBER BOARD INSULATION MATERIALS**

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Thermal Insulation



- A. Mineral Wool Block, Board, or Blanket Thermal Insulation: Complying with ASTM C612 or ASTM C553.
  - 1. Where indicated, provide fiberglass reinforced polypropylene facing on one side; with flame spread index of 25 or less, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  - 3. Board Size: 16 by 48 inches.
  - 4. Board Thickness: 2 inches.
  - 5. Thermal Resistance: R-value of 4.2 per inch at 75 degrees F, minimum, when tested in accordance with ASTM C518.
  - 6. Products:
    - a. Johns Manville; CladStone 45 Water & Fire Block Insulation: [www.jm.com](http://www.jm.com)
    - b. ROCKWOOL; CAVITYROCK: [www.rockwool.com](http://www.rockwool.com)
    - c. Thermafiber, Inc; RainBarrier 45: [www.thermafiber.com](http://www.thermafiber.com)
    - d. Substitutions: See Section 016000 - Product Requirements.

#### **2.04 MINERAL FIBER BLANKET INSULATION MATERIALS**

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
  - 1. Classification: Type III, Class A, Category 1
  - 2. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  - 3. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  - 4. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
  - 5. Formaldehyde Content: Zero.
  - 6. Facing: Aluminum foil, flame spread 25 rated; one side.
  - 7. Products:
    - a. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com)
    - b. Johns Manville: [www.jm.com](http://www.jm.com)
    - c. Owens Corning Corporation: [www.ocbuildingspec.com](http://www.ocbuildingspec.com)
    - d. Substitutions: See Section 016000 - Product Requirements.

#### **2.05 ACCESSORIES**

- A. Insulation Fasteners: Appropriate for purpose intended.
- B. Adhesive: Type recommended by insulation manufacturer for application.

### **PART 3 EXECUTION**

#### **3.01 BOARD INSTALLATION AT FOUNDATION PERIMETER**

- A. Install boards horizontally on foundation perimeter.
  - 1. Butt edges and ends tightly to adjacent boards and to protrusions.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

#### **3.02 BOARD INSTALLATION AT CAVITY WALLS**

- A. Install boards to fit snugly between wall ties.
- B. Install boards horizontally on walls.
  - 1. Install in running bond pattern.
  - 2. Butt edges and ends tightly to adjacent boards and protrusions.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

#### **3.03 BATT INSTALLATION**

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.



- E. Tape insulation batts in place.
- F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
- G. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member
- H. Tape seal tears or cuts in vapor retarder.
- I. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

#### **3.04 PROTECTION**

- A. Do not permit installed insulation to be damaged prior to its concealment.

**END OF SECTION**



## **SECTION 072700 AIR BARRIERS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Air barriers.

#### **1.02 DEFINITIONS**

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable but water vapor permeable, both to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a.
- D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- E. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2023.

#### **1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.

#### **1.05 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

### **PART 2 PRODUCTS**

#### **2.01 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)**

- A. Air Barrier, Fluid Applied: Vapor semi-permeable, elastomeric waterproofing.
  - 1. Air Barrier Coating:
    - a. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
    - b. Water Vapor Permeance: 11 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure B - Water Method, at 73.4 degrees F.
    - c. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
    - d. Elongation: 300 percent, minimum, when tested in accordance with ASTM D412.
    - e. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
    - f. Comply with NFPA 285 requirements for wall assembly.
    - g. Sealants, Tapes and Accessories: As recommended by coating manufacturer.
    - h. Products:
      - 1) Dow Chemical Company; DOWSIL DefendAir 200C: [consumer.dow.com/en-us/industry/ind-building-construction.html](https://consumer.dow.com/en-us/industry/ind-building-construction.html)
      - 2) Master Builders Solutions; MasterSeal AWB 660: [www.master-builders-solutions/en-us/](https://www.master-builders-solutions/en-us/)
      - 3) Parex USA, Inc; Parex USA WeatherSeal Spray & Roll-on: [www.parexusa.com](https://www.parexusa.com)
      - 4) Pecora Corporation; Pecora ProPerm VP - Vapor Permeable Air Barrier System with XL-Flash Liquid Flashing and Joint Filler, AVB Silicone Surface Transitions,



- and XL-Span Transition Membrane: [www.pecora.com](http://www.pecora.com)  
5) Sto Corp; Sto Gold Coat: [www.stocorp.com](http://www.stocorp.com)  
6) W.R. Meadows, Inc; Air-Shield TMP: [www.wrmeadows.com](http://www.wrmeadows.com)  
7) Substitutions: See Section 016000 - Product Requirements.

## **2.02 ACCESSORIES**

- A. Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions.
- B. Thinners and Cleaners: As recommended by material manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready for work of this section.
- B. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.
- C. Do not proceed with this work until unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Fluid-Applied Coatings or Membranes:
  - 1. Prepare substrate in accordance with manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
  - 2. Seal joints between panels and around penetrations
  - 3. Where exterior masonry veneer is being installed, install masonry anchors before installing air barrier over masonry; provide airtight seal around anchors.
  - 4. Apply bead or trowel coat of mastic sealant with minimum thickness of 1/4 inch along coating seams, rough cuts, and as recommended by manufacturer.
  - 5. Use flashing to seal to adjacent construction and to bridge joints in coating substrate.
- E. Openings and Penetrations in Exterior Air Barriers:
  - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
  - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
  - 3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
  - 4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
  - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
  - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

### **3.04 PROTECTION**



- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

**END OF SECTION**



**SECTION 074213  
METAL WALL PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured metal panels for exterior wall panels, with related flashings and accessory components.

**1.02 REFERENCE STANDARDS**

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
  - 1. Physical characteristics of components shown on shop drawings.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation instructions and recommendations.
- C. Manufacturer's qualification statement.
- D. Installer's qualification statement.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in installing products specified in this section with minimum three years of documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

**1.06 FIELD CONDITIONS**

- A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.

**1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Metal Wall Panels - Exposed Fasteners:
  - 1. Berridge Manufacturing Company; Deep-Deck Panel: [www.berridge.com](http://www.berridge.com)
  - 2. Fabral: [www.fabral.com](http://www.fabral.com)
  - 3. McElroy Metal: [www.mcelroymetal.com](http://www.mcelroymetal.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.

**2.02 METAL WALL PANEL SYSTEM**

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
  - 1. Provide exterior wall panels.



2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
  3. Maximum Allowable Deflection of Panel:  $L/180$  for length(L) of span.
  4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
  5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
  6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
  7. Corners: Factory-fabricated in one continuous piece with minimum 2-inch returns.
- B. Exterior Wall Panels:
1. Profile: Vertical; style as indicated.
  2. Side Seams: lapped, sealed with continuous bead of sealant.
  3. Material: Precoated steel sheet, 24 gauge, 0.0239 inch minimum thickness.
  4. Panel Width: 36 inches.
  5. Color: Champagne (Kynar 500), Premium Metallic by Berridge.
- C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- D. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- E. Anchors: Galvanized steel.

## **2.03 MATERIALS**

- A. Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Structural Steel (SS) or Forming Steel (FS), with G90/Z275 coating; continuous coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

## **2.04 FINISHES**

- A. Exposed Surface Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.
- B. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

## **2.05 ACCESSORIES**

- A. Concealed Sealants: Non-curing butyl sealant or tape sealant, see Section 079200
- B. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
1. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws.
- C. Field Touch-up Paint: As recommended by panel manufacturer.
- D. Bituminous Paint: Asphalt base.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that building framing members are ready to receive panels.
- B. Verify air barrier, see Section 072700, has been installed over wall panel substrate; see Section 054000.

### **3.02 INSTALLATION**

- A. Install panels on walls in accordance with manufacturer's instructions.
- B. Fasten panels to structural supports; aligned, level, and plumb.
- C. Lap panel ends 2 inches, minimum.

### **3.03 TOLERANCES**



- A. Offset From True Alignment Between Adjacent Members Abutting or In Line: 1/16 inch, maximum.

#### **3.04 CLEANING**

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.
- C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

#### **3.05 PROTECTION**

- A. Protect metal wall panels until completion of project.
- B. Touch-up, repair, or replace damaged wall panels or accessories before Date of Substantial Completion.

**END OF SECTION**



**SECTION 074623  
WOOD SIDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Engineered wood trim
- B. Engineered wood siding with panels for walls and soffits.

**1.02 REFERENCE STANDARDS**

- A. APA PRP-108 - Performance Standards and Qualification Policy for Wood Structural Panels (Form E445) 2021.
- B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- D. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- E. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Store in ventilated areas with constant minimum temperature of 60 degrees F and maximum relative humidity of 55 percent.

**1.05 FIELD CONDITIONS**

- A. Do not install siding when air temperature or relative humidity are outside manufacturer's limits.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Engineered Wood Paneling and Trim:
  - 1. Louisiana Pacific Building Products; LP SmartSide: [www.lpcorp.com](http://www.lpcorp.com)
  - 2. Substitutions: See Section 016000 - Product Requirements.

**2.02 PERFORMANCE REQUIREMENTS**

- A. Comply with local wind load resistance requirements of ASCE 7.

**2.03 ENGINEERED WOOD SIDING, SOFFIT, AND TRIM MATERIALS**

- A. Structural Performance: Comply with APA PRP-108 performance standards for engineered wood siding and requirements of local authorities having jurisdiction (AHJ).
- B. Fire Resistance: Provide testing by qualified testing agency in accordance with ASTM E119, and identify products with markings of applicable testing agency acceptable to authorities having jurisdiction (AHJ).
  - 1. Surface Burning Characteristics: Flame spread index (FSI) of 200 or less, Class C, and smoke development index (SDI) of 450 or less in accordance with ASTM E84 and UL 723.
- C. Thermal Movement: Allow space for thermal movement at ends of wall siding that butt against trim; seal joint between siding and trim.
- D. Treatment of Engineered Wood Siding: Treated with exterior grade adhesive resins, water-resistant waxes and zinc borate, and bonded with water-resistant, resin-saturated overlay that provides protection against water damage, termites, and fungal decay.
- E. Finish: Factory primed



- F. Wood Trim: Provide manufacturer's standard engineered wood trim, such as fascia board, transitions, and perimeter trim.
  - 1. Thickness: 1 1/16 inch, nominal.
  - 2. Width: As indicated on drawings
  - 3. Edges: Square.
  - 4. Texture: Cedar texture.
- G. Wood Soffit: Exposed edges beveled and sealed with acrylic finish for moisture resistance.
  - 1. Thickness: 3/8 inch, nominal.
  - 2. Width: 47-7/8 inches, nominal.
  - 3. Length: 8 feet, nominal.
  - 4. Edges: Square.
  - 5. Texture: Cedar texture.

## **2.04 ACCESSORIES**

- A. Screws: Corrosion resistant type; nonstaining, of size and strength to securely and rigidly retain the work; prefinished to match siding finish.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrates are ready to receive work.
- B. Do not begin until unacceptable conditions have been corrected.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### **3.02 INSTALLATION**

- A. Install soffits and trim in accordance with manufacturer's instructions.
- B. Fasten siding securely in place, level and plumb.
  - 1. Arrange for orderly nailing pattern, blind nail except over trim.
  - 2. Install siding for natural shed of water.
  - 3. Position cut ends over bearing surfaces, and sand cut edges smooth and clean.
- C. Seal exposed wood substrates exposed to weather to prevent water accumulation and moisture intrusion.
  - 1. Seal penetrations.
  - 2. Seal exposed cuts of siding and trim; use of field-applied coatings is not permitted.
- D. Sand work smooth and set exposed nails and screws.

### **3.03 TOLERANCES**

- A. Maximum Variation from Plumb and Level: 1/4 inch per 10 feet.
- B. Maximum Offset from Joint Alignment: 1/16 inch.

### **3.04 CLEANING**

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

### **3.05 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before Date of Substantial Completion.

**END OF SECTION**



**SECTION 075400  
THERMOPLASTIC MEMBRANE ROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Mechanically attached system with thermoplastic roofing membrane.
- B. Insulation, flat and tapered.
- C. Cover boards.
- D. Flashings.
- E. Roofing cant strips, stack boots, and walkway pads.

**1.02 REFERENCE STANDARDS**

- A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2022a.
- C. ASTM D4434/D4434M - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing 2021.
- D. NRCA (RM) - The NRCA Roofing Manual 2022.
- E. NRCA (WM) - The NRCA Waterproofing Manual 2021.
- F. UL (FRD) - Fire Resistance Directory Current Edition.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, and fasteners.
- C. Shop Drawings: Submit drawings that indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and mechanical fastener layout.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.
- F. Warranty Documentation:
  - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
  - 2. Submit installer's written verification that installation complies with warranty conditions for waterproof membrane.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of this section with at least three years of documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact, unless otherwise indicated.
- B. Store materials in weather protected environment, clear of ground and moisture.
- C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
- D. Protect foam insulation from direct exposure to sunlight.

**1.06 FIELD CONDITIONS**



- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- D. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

## **1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. The Contractor shall guarantee the materials and workmanship and shall provide the owner with the attached Roofing Contractor Materials and Workmanship Warranty (1 page) covering workmanship for a period of **15 years** from completion date

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Thermoplastic Polyvinyl Chloride (PVC) Membrane Roofing Materials:
  - 1. Carlisle SynTec Systems; Sure-Flex PVC: [www.carlisle-syntec.com](http://www.carlisle-syntec.com)
  - 2. Johns Manville; PVC SD Plus: [www.jm.com](http://www.jm.com)
  - 3. Sika Corporation Roofing; Sarnafil PVC: [usa.sika.com/sarnafil/](http://usa.sika.com/sarnafil/)
  - 4. Duro-last: [www.duro-last.com](http://www.duro-last.com).
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Insulation:
  - 1. Atlas EPS; Reference Product: ACFoam-II
  - 2. Carlisle SynTec Systems: [www.carlisle-syntec.com](http://www.carlisle-syntec.com)
  - 3. GAF: [www.gaf.com](http://www.gaf.com)
  - 4. Hunter Panels: [www.hunterpanels.com](http://www.hunterpanels.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.

### **2.02 ROOFING**

- A. Thermoplastic Membrane Roofing: One ply membrane, mechanically fastened, over insulation.
- B. Roofing Assembly Requirements:
  - 1. Material Compatibility: roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
  - 2. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:
    - a. Zone 1 (Roof Area Field): -17 lbs/sq. ft.
    - b. Zone 2 (Roof Area Perimeter): -20 lbs/sq. ft.
    - c. Zone 3 (Roof Area Corners): -24 lbf/sq. ft.
  - 3. Roof Covering External Fire Resistance Classification: UL (FRD) Class A.
  - 4. Insulation Thermal Value (R), minimum (provide insulation of thickness required):
    - a. Main Building: 25
      - 1) Number of Insulation Layers: 2
    - b. Drive Canopy: 5.7
      - 1) Number of Insulation Layers: 1

### **2.03 MEMBRANE ROOFING AND ASSOCIATED MATERIALS**

- A. Membrane Roofing Materials:
  - 1. PVC: Polyvinyl chloride (PVC) complying with ASTM D4434/D4434M, Type III, sheet contains reinforcing fibers or reinforcing fabrics.
    - a. Thickness: 60 mil, 0.060 inch, minimum.
  - 2. Sheet Width: Factory fabricated into widest possible sheets.



- 3. Color: White.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Membrane Fasteners: As recommended and approved by membrane manufacturer.
- D. Flexible Flashing Material: Same material as membrane.
  - 1. Color: Charcoal Gray

## **2.04 COVER BOARDS**

- A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C1177/C1177M.
  - 1. Board Size: 48 by 96 inches
  - 2. Thickness: 1/2 inch, fire-resistant.
  - 3. Products:
    - a. Georgia-Pacific; DensDeck: [www.densdeck.com](http://www.densdeck.com)
    - b. Gold Bond Building Products, LLC provided by National Gypsum Company; DEXcell Glass Mat Roof Board: [www.goldbondbuilding.com](http://www.goldbondbuilding.com)
    - c. Substitutions: See Section 016000 - Product Requirements.

## **2.05 INSULATION**

- A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
  - 1. Classifications:
    - a. Type II: Faced with either cellulosic facers or glass fiber mat facers on both major surfaces of the core foam.
      - 1) Class 2 - Faced with coated glass fiber mat facers on both major surfaces of the core foam.
      - 2) Compressive Strength: Classes 1-2-3, Grade 2, 20 psi (138 kPa), minimum.
      - 3) Thermal Resistance, R-value: At 1-1/2 inches thick; Class 2, 8.0 (1.41), minimum, at 75 degrees F.
  - 2. Board Size: 48 by 96 inches.
  - 3. Board Thickness:
    - a. Minimum layer thickness is 1 1/2 inches unless noted otherwise.
  - 4. Tapered Board: Slope as indicated; minimum thickness 1 inch; fabricate of fewest layers possible.
  - 5. Board Edges: Square.

## **2.06 ACCESSORIES**

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
- B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
- C. Membrane Adhesive: As recommended by membrane manufacturer.
- D. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.
- E. Sealants: As recommended by membrane manufacturer.
- F. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
  - 1. Composition: Roofing membrane manufacturer's standard.
  - 2. Surface Color: gray.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.



- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

### **3.02 INSTALLATION, GENERAL**

- A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.
- B. Do not apply roofing membrane during cold or wet weather conditions.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

### **3.03 INSTALLATION - INSULATION, UNDER MEMBRANE**

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday
- B. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks
- C. Make joints between adjacent insulation boards not more than 1/4 inch in width
- D. Cut and fit insulation within 1/4 inch of nailers
- E. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
  - 1. Staggered end joints with each layer not less than 24 inches in adjacent rows.
  - 2. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows
- F. Trim insulation so that water flow is unrestricted.
- G. Attachment of Insulation:
  - 1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions.
- H. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions.
- I. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- J. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.
- K. Do not install more insulation than can be covered with membrane in same day.

### **3.04 INSTALLATION - COVER BOARD**

- A. Mechanically fasten cover boards in accordance with roofing manufacturer's instructions.
- B. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction
- C. Trim boards neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks
- D. Trim cover boards so that water flow is unrestricted.

### **3.05 INSTALLATION - MEMBRANE**

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.



- B. Shingle joints on sloped substrate in direction of drainage.
- C. Overlap edges and ends and seal seams by heat welding, minimum 3 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
- D. Mechanical Attachment: Install membrane and mechanical attachment devices in accordance with manufacturer's instructions.
- E. At intersections with vertical surfaces:
  - 1. Extend membrane over cant strips and up a minimum of 4 inches onto vertical surfaces.
  - 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- F. Around roof penetrations, seal flanges and flashings with flexible flashing.
- G. Coordinate installation of roof drains and sumps and related flashings.

### **3.06 CLEANING**

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Remove bituminous markings from finished surfaces.
- C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- D. Repair or replace defaced or damaged finishes caused by work of this section.

### **3.07 PROTECTION**

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

**END OF SECTION**



## ROOFING CONTRACTOR MATERIALS AND WORKMANSHIP WARRANTY

1) Contractor: \_\_\_\_\_

2) Roof Owner: \_\_\_\_\_

3) Type and Name of Building: \_\_\_\_\_

Building Location: \_\_\_\_\_

Area of Roof: \_\_\_\_\_

4) Warranty begins: \_\_\_\_\_ and expires: \_\_\_\_\_  
(Date) (Date)

5) **Warranty:** Contractor warrants to Owner that it applied the roofing materials to the above-described roof in accordance with good roofing practices. Subject to the following terms, conditions and limitations, Contractor will, during the term of this Warranty, at its expense, repair or cause to be repaired leaks in said roof which are the result of defects in the roofing materials or Contractor's workmanship. Upon expiration of the term of this Warranty, without notice from Owner of some defect, Contractor shall have no further obligation to make repairs at Contractor's expense under any provision of this Warranty and Owner shall not make any further demand or claim against Contractor concerning Contractor's workmanship, or the roofing materials installed, provided that Contractor promptly commences and diligently proceeds with the correction and repair of all such defects covered by this Warranty which are called to Contractor's attention in the manner set forth in paragraph 8 below during the term of this Warranty by Owner.

6) **Terms, Conditions and Limitations.** This warranty does not cover any leaks in the roof caused by: the acts or omissions of other trades or contractors; lightning, wind storm, hail storm, flood, earthquake or other unusual phenomenon of the elements; structural settlement; failure, movement, cracking or excess deflection of the roof deck; defects or failure of materials used as a roof substrate over which the roof system is applied; faulty condition of parapet walls, copings, chimneys, skylights, vents, supports or other parts of the building; vapor condensation beneath the roof; penetrations for pitch boxes; erosion, cracking and porosity of mortar and brick; dry rot; stoppage of roof drains and gutters; penetration of the roof from beneath by rising fasteners of any type; inadequate drainage, slope or other conditions beyond the control of Contractor which cause ponding or standing of water; termites or other insects; rodents or other animals; fire; or harmful chemicals, oils, acids and the like that come in contact with the roofing system and cause a leak or otherwise damage the roof system. If the roof fails to maintain a watertight condition because of damage by reason of any of the foregoing, this warranty shall immediately become null and void for the balance of its term unless such damage is repaired by Contractor at the expense of Owner.

7) **Notification by Owner.** During the term of this warranty, if the roof leaks, Owner must immediately notify Contractor by telephone of such leaks, and promptly confirm such telephone notice by written notice to Contractor.

8) **Events Which May Void Warranty.** This warranty shall become null and void:

- (a) Unless Contractor receives notice from Owner during the term of this Warranty in accordance with paragraph 7 above of any leaks and is provided an opportunity to inspect, and if required by the terms of this warranty, to repair the roof;
- (b) If work is done on such roof, including, but without limitation, work in connection with flues, vents, drains, sign braces, railings, platforms or other equipment fastened to or set on the roof or if repairs or alterations are made to said roof, without first notifying Contractor in writing and giving Contractor the opportunity to make the necessary roofing application recommendations with respect thereto, which recommendations are complied with. Contractor shall be paid for time and materials expended in making recommendations or repairs occasioned by the work of others on the subject roof;
- (c) If any area of the roof is used as a promenade, walkway or work area or is sprayed or flooded, unless such use was originally specified with a defined area and the specification is noted in paragraph 13 below.

9) **Transferability.** This warranty is transferable.

10) **No Other Warranties.** **NO OTHER EXPRESS WARRANTY IS GIVEN BY CONTRACTOR TO OWNER. THE REPAIR OF THE SUBJECT ROOF IS THE EXCLUSIVE REMEDY. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THE IMPLIED WARRANTIES, AND SPECIFICALLY THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED AND DISCLAIMED.** This warranty is separate and apart from any warranty that may be issued to Owner by the Roofing Materials Manufacturer. **CONTRACTOR EXPRESSLY EXCLUDES AND DISCLAIMS ANY RESPONSIBILITY TO OWNER IN CONNECTION WITH OR ATTRIBUTABLE TO ANY SUCH ROOFING MATERIALS MANUFACTURER'S WARRANTY.**

11) **Incidental or Consequential Damages.** **UNDER NO CIRCUMSTANCES SHALL CONTRACTOR BE LIABLE TO OWNER OR ANY OTHER PERSON FOR ANY INCIDENTAL, SPECIAL, CONSEQUENTIAL, OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGE TO OR LOSS OF USE OF THE BUILDING OR ITS CONTENTS, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT OR UNDER ANY OTHER THEORY OF LAW.**

12) **Payment to Contractor.** This warranty shall not be or become effective unless and until Contractor has been paid in full for said roof in accordance with the agreement pursuant to which said roof was applied.

13) **Additional conditions or exclusions:** \_\_\_\_\_

This warranty has been duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By: \_\_\_\_\_  
Building Owner

By: \_\_\_\_\_

NO.



**SECTION 076200  
SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fabricated sheet metal items, including flashings, counterflashings, gutters, and downspouts.
- B. Sealants for joints within sheet metal fabrications.

**1.02 REFERENCE STANDARDS**

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.03 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

**PART 2 PRODUCTS**

**2.01 SHEET MATERIALS**

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.
- B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal, shop pre-coated with PVDF coating.
  - 1. Texture: smooth, flat
  - 2. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
  - 3. Color: As selected by Architect from manufacturer's standard colors.
  - 4. Concealed Finish: Pretreat with manufacturer's standard acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

**2.02 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.
- F. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
  - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.



2. Use lapped expansion joints only where indicated on Drawings.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal

### **2.03 GUTTERS AND DOWNSPOUTS**

- A. Gutters: SMACNA (ASMM) Rectangular profile.
  1. Join sections with joints sealed with sealant
  2. Provide for thermal expansion
  3. Attach gutters at eave or fascia to firmly anchor them in position
  4. Provide end closures and seal watertight with sealant
  5. Install gutter with expansion joints not exceeding 50 feet apart. Install expansion joint caps.
- B. Downspouts: Rectangular profile.
  1. Join sections with 1 1/2 inch telescoping joints
  2. Provide hangers with fasteners designed to hold downspouts 60 inches o.c.
  3. Locate hangers at top and bottom and at approximately 60 inches o.c.
  4. Provide elbows at base of downspout to direct water away from building
- C. Gutters and Downspouts: Size indicated.
- D. Accessories: Profiled to suit gutters and downspouts.
  1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
  2. Gutter Supports: Straps.
  3. Downspout Supports: Straps.
- E. Seal metal joints.

### **2.04 ACCESSORIES**

- A. Fasteners: Wood screws, annular threaded nails, self-locking rivets, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufacturer's item..
  1. General: Blind fasteners or self-drilling, gasketed screws with hex-washer head
  2. Exposed Fasteners: Heads matching color of sheet metal using factory-applied coating. Provide metal backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
  3. Blind Fasteners: High Strength aluminum or stainless steel rivets suitable for metal being fastened.
- B. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick
- C. Slip Sheet: Rosin-sized sheathing paper.
- D. Primer Type: Zinc chromate.
- E. Concealed Sealants: Non-curing butyl sealant.
- F. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- G. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

### **3.02 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.



- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

### **3.03 INSTALLATION**

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
  - 1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corners or intersections
  - 2. use lapped expansion joints only where indicated on drawings.
- E. Seal metal joints watertight.
- F. Secure gutters and downspouts in place with fasteners.

### **3.04 CLEANING**

- A. Clean off excessive sealants

### **3.05 PROTECTION**

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Remove and replace sheet metal flashing and trim that have been damaged beyond successful repair by finish touch up or similar minor repair procedures, as determined by the Architect.

**END OF SECTION**



**SECTION 077200  
ROOF ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Roof hatches, manual and automatic operation, including smoke vents.

**1.02 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used.
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Maintenance requirements.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products under cover and elevated above grade.

**PART 2 PRODUCTS**

**2.01 ROOF HATCHES AND VENTS**

- A. Roof Hatch Manufacturers:
  - 1. Activar Construction Products Group, Inc. - JL Industries: [www.activarcpg.com](http://www.activarcpg.com)
  - 2. Acudor Products Inc: [www.acudor.com](http://www.acudor.com)
  - 3. Babcock-Davis: [www.babcockdavis.com](http://www.babcockdavis.com)
  - 4. Bilco Company: [www.bilco.com/](http://www.bilco.com/)
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Roof Hatches and Smoke Vents: Factory-assembled galvanized steel frame and cover, complete with operating and release hardware.
  - 1. Style: Provide flat metal covers unless otherwise indicated.
  - 2. Mounting: Provide frames and curbs suitable for mounting conditions as indicated on drawings.
  - 3. Thermally Broken Hatches: Provide insulation within frame and cover.
- C. Size: 30 inches by 54 inches
- D. Frames and Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
  - 1. Material: Galvanized steel, 14 gauge, 0.0747 inch thick.
  - 2. Finish: Factory prime paint.
  - 3. Insulation: Manufacturer's standard; 2 inches rigid polyisocyanurate, located on inside hollow curb.
  - 4. Curb Height: 12 inches from finished surface of roof, minimum.
- E. Metal Covers: Flush, insulated, hollow metal construction.
  - 1. Capable of supporting 40 psf live load.
  - 2. Material: Galvanized steel; outer cover 14 gauge, 0.0747 inch thick, liner 22 gauge, 0.03 inch thick.
  - 3. Finish: Factory prime paint.
  - 4. Insulation: Manufacturer's standard 2 inches rigid polyisocyanurate.
  - 5. Gasket: Neoprene, continuous around cover perimeter.
- F. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
  - 1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf load.
  - 2. Hinges: Heavy duty pintle type.



3. Hold open arm with vinyl-coated handle for manual release.
4. Latch: Upon closing, engage latch automatically and reset manual release.
5. Manual Release: Pull handle on interior.
6. Locking: Padlock hasp on interior.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

#### **3.04 CLEANING**

- A. Clean installed work to like-new condition.

#### **3.05 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

**END OF SECTION**



## **SECTION 078400 FIRESTOPPING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Firestopping systems.
- B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, and other openings indicated.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
- C. ITS (DIR) - Directory of Listed Products Current Edition.
- D. FM (AG) - FM Approval Guide Current Edition.
- E. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.
- F. UL (DIR) - Online Certifications Directory Current Edition.
- G. UL (FRD) - Fire Resistance Directory Current Edition.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- C. Product Data: Provide data on product characteristics, performance ratings, and limitations.

#### **1.04 QUALITY ASSURANCE**

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
  - 1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.

#### **1.05 FIELD CONDITIONS**

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Firestopping Manufacturers:
  - 1. 3M Fire Protection Products: [www.3m.com/firestop.com](http://www.3m.com/firestop.com)
  - 2. A/D Fire Protection Systems Inc: [www.adfire.com](http://www.adfire.com)
  - 3. Hilti, Inc: [www.hilti.com](http://www.hilti.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 MATERIALS**

- A. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- B. Fire Ratings: Refer to drawings for required systems and ratings.

#### **2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS**

- A. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.



1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

## **2.04 FIRESTOPPING SYSTEMS**

- A. Firestopping: Any material meeting requirements.
  1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify openings are ready to receive the work of this section.

### **3.02 PREPARATION**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.

### **3.03 INSTALLATION**

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

### **3.04 CLEANING**

- A. Clean adjacent surfaces of firestopping materials.

### **3.05 PROTECTION**

- A. Protect adjacent surfaces from damage by material installation.

## **END OF SECTION**



## **SECTION 079200 JOINT SEALANTS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C834 - Standard Specification for Latex Sealants 2017.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2022.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
  - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  - 2. List of backing materials approved for use with the specific product.
  - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  - 4. Substrates the product should not be used on.
  - 5. Substrates for which use of primer is required.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Nonsag Sealants:
  - 1. Dow: [www.dow.com](http://www.dow.com)
  - 2. Master Builders Solutions: [www.master-builders-solutions.com/en-us](http://www.master-builders-solutions.com/en-us)
  - 3. Pecora Corporation: [www.pecora.com](http://www.pecora.com)
  - 4. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com](http://www.tremcosealants.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Self-Leveling Sealants:
  - 1. Dow: [www.dow.com](http://www.dow.com)
  - 2. Master Builders Solutions: [www.master-builders-solutions.com/en-us](http://www.master-builders-solutions.com/en-us)
  - 3. Pecora Corporation: [www.pecora.com](http://www.pecora.com)
  - 4. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com](http://www.tremcosealants.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 JOINT SEALANT APPLICATIONS**

- A. Scope:
  - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
    - a. Wall expansion and control joints.
    - b. Joints between door, window, and other frames and adjacent construction.
    - c. Joints between different exposed materials.



- d. Openings below ledge angles in masonry.
  - e. Other joints indicated below.
- 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
  - a. Joints between door, window, and other frames and adjacent construction.
  - b. Other joints indicated below.
- B. Type P1 - Exterior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
  - 1. Type B1 - Lap Joints in Sheet Metal Fabrications: Butyl rubber, noncuring.
  - 2. Type P2 - Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane traffic-grade sealant.
- C. Type A1 - Interior Joints: Use nonsag acrylic emulsion latex sealant, unless otherwise indicated.
  - 1. Type S1 - Joints between tile in wet areas and floors, walls, and ceilings: nonstaining silicone sealant
  - 2. Type S1 - Joints between fixtures and floor and wall surfaces: nonstaining silicone sealant
- D. Interior Wet Areas: Bathrooms, restrooms, and kitchens; fixtures in wet areas include plumbing fixtures, countertops, cabinets, and other similar items.

### **2.03 NONSAG JOINT SEALANTS**

- A. Type S1 - Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 25 percent, minimum.
  - 2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
  - 3. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
  - 4. Color: To be selected by Architect from manufacturer's standard range.
  - 5. Products:
    - a. Pecora Corporation; Pecora 864 NST (Non-Staining Technology):
    - b. Tremco Commercial Sealants & Waterproofing; Tremsil 200
    - c. Substitutions: See Section 016000 - Product Requirements.
- B. Type P1 - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
  - 2. Hardness Range: 35 to 45, Shore A, when tested in accordance with ASTM C661.
  - 3. Color: To be selected by Architect from manufacturer's standard range.
  - 4. Products:
    - a. Master Builders Solutions; MasterSeal NP1
    - b. Pecora Corporation; DynaFlex
    - c. Tremco Commercial Sealants & Waterproofing; Dymonic 100
    - d. Substitutions: See Section 016000 - Product Requirements.
- C. Type A1 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.
  - 1. Color: To be selected by Architect from manufacturer's standard range.
  - 2. Products:
    - a. Master Builders Solutions; MasterSeal NP 520
    - b. Pecora Corporation; AC-20 +Silicone
    - c. Tremco Commercial Sealants & Waterproofing; Tremflex 834
    - d. Substitutions: See Section 016000 - Product Requirements.
- D. Type B1 - Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; nonvapor permeable; intended for fully concealed applications.
  - 1. Products:
    - a. Pecora Corporation; Pecora BA-98 Non-Skinning Butyl Sealant
    - b. Tremco Commercial Sealants & Waterproofing; Acoustical/Curtainwall Sealant



- c. Substitutions: See Section 016000 - Product Requirements.

## **2.04 SELF-LEVELING JOINT SEALANTS**

- A. Type P2 - Self-Leveling Polyurethane Sealant for Horizontal Expansion Joints: ASTM C920, Grade P, Uses T, M, and O; multicomponent; explicitly approved by manufacturer for horizontal expansion joints.
  - 1. Movement Capability: Plus and minus 25 percent, minimum.
  - 2. Hardness Range: 30 to 35, Shore A, when tested in accordance with ASTM C661.
  - 3. Color: Limestone.
  - 4. Products:
    - a. Pecora Corporation; DynaTrol II-SG (Slope Grade)
    - b. Tremco Commercial Sealants & Waterproofing; THC-901
    - c. Substitutions: See Section 016000 - Product Requirements.

## **2.05 ACCESSORIES**

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
  - 1. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

### **3.02 PREPARATION**

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

### **3.03 INSTALLATION**

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.



- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

**END OF SECTION**



**SECTION 081113  
HOLLOW METAL DOORS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Fire-rated hollow metal doors and frames.
- D. Thermally insulated hollow metal doors with frames.
- E. Tornado-resistant hollow metal doors and frames.
- F. Hollow metal borrowed lites glazing frames.

**1.02 ABBREVIATIONS AND ACRONYMS**

- A. ANSI: American National Standards Institute.
- B. HMMA: Hollow Metal Manufacturers Association.
- C. NAAMM: National Association of Architectural Metal Manufacturers.
- D. NFPA: National Fire Protection Association.
- E. SDI: Steel Door Institute.
- F. UL: Underwriters Laboratories.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.
- I. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).
- J. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames 2016.
- K. FEMA P-361 - Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms 2021.
- L. ICC 500 - ICC/NSSA Standard for the Design and Construction of Storm Shelters 2020.
- M. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- N. ITS (DIR) - Directory of Listed Products Current Edition.
- O. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
- P. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.

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Hollow Metal Doors and Frames



- Q. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.
- R. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.
- S. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- T. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.
- U. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2019.
- V. UL (DIR) - Online Certifications Directory Current Edition.
- W. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

#### **1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Maintain at project site copies of reference standards relating to installation of products specified.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Hollow Metal Doors and Frames:
  - 1. Ceco Door, an Assa Abloy Group company: [www.assaabloydss.com](http://www.assaabloydss.com)
  - 2. Curries, an Assa Abloy Group company: [www.assaabloydss.com](http://www.assaabloydss.com)
  - 3. Fleming Door Products, an Assa Abloy Group company: [www.assaabloydss.com](http://www.assaabloydss.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 PERFORMANCE REQUIREMENTS**

- A. Requirements for Hollow Metal Doors and Frames:
  - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
  - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
  - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
  - 4. Typical Door Face Sheets: Flush.
  - 5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
  - 6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.



7. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
  - a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

## 2.03 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
  1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 2 - Heavy-duty.
    - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Model 2 - Seamless.
    - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
    - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
  2. Door Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
    - a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
  3. Door Thermal Resistance: R-Value of 8.7, minimum, for installed thickness of polyurethane.
  4. Door Thickness: 1-3/4 inches, nominal.
  5. Weatherstripping: Refer to Section 087100.
- C. Fire-Rated Doors:
  1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 2 - Heavy-duty.
    - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Model 1 - Full Flush.
    - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
    - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
  2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
  3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
    - a. Attach fire rating label to each fire rated unit.
  4. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
  5. Door Thickness: 1-3/4 inches, nominal.
- D. Tornado-Resistant Doors:
  1. Design and size door and frame components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M.
    - a. Design Wind Loads: Comply with requirements of authorities having jurisdiction.
    - b. Wind-Borne Debris Resistance: Door and frame components shall have UL (DIR) approval for Large and Small Missile impact and pressure cycling at design wind loads.
  2. Tornado Shelter Application: Comply with ICC 500 standard.
    - a. Commercial: Designed and tested to comply with FEMA P-361 community shelter door assembly guidelines.



3. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
  - a. Level 4 - Maximum-duty.
  - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
  - c. Model 1 - Full Flush.
  - d. Door Face Metal Thickness: 14 gauge, 0.067 inch, minimum.
4. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
5. Door Thickness: 1-3/4 inches, nominal.
6. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests")
7. Provide units listed and labeled by UL (DIR) or ITS (DIR)
8. Attach fire rating label to each fire rated unit.

#### **2.04 HOLLOW METAL FRAMES**

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Full profile/continuously welded type.
  1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
  2. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
  3. Weatherstripping: Separate, see Section 087100.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
  1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
- E. Door Frames, Fire-Rated: Full profile/continuously welded type.
  1. Fire Rating: Same as door, labeled.
  2. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
- F. Tornado-Resistant Door Frames: With same tornado resistance as door; full profile/continuously welded construction, ground smooth, fully prepared and reinforced for hardware installation.
  1. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.
- G. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
- H. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- I. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

#### **2.05 FINISHES**

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

#### **2.06 ACCESSORIES**

- A. Door Window Frames: Door window frames with glazing securely fastened within door opening.
  1. Size: As indicated on drawings.
  2. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.
- B. Glazing: As specified in Section 088000, factory installed.
- C. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws.
- D. Mechanical Fasteners for Concealed Metal-to-Metal Connections: Self-drilling, self-tapping, steel with electroplated zinc finish.



- E. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

#### **3.02 INSTALLATION**

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Install door hardware as specified in Section 087100.
- E. Comply with glazing installation requirements of Section 088000.
- F. Coordinate installation of electrical connections to electrical hardware items.

#### **3.03 TOLERANCES**

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

#### **3.04 ADJUSTING**

- A. Adjust for smooth and balanced door movement.

#### **3.05 SCHEDULE**

- A. Refer to Door and Frame Schedule on the drawings.

**END OF SECTION**



**SECTION 081416  
FLUSH WOOD DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

**1.02 RELATED REQUIREMENTS**

- A. Section 081113 - Hollow Metal Doors and Frames.
- B. Section 087100 - Door Hardware.
- C. Section 088000 - Glazing.
- D. Section 099300 - Staining and Transparent Finishing: Field finishing of doors.

**1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- F. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Samples: Submit two samples of door veneer, 6 by 6 inches in size illustrating wood grain, stain color, and sheen.

**1.05 QUALITY ASSURANCE**

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Wood Veneer Faced Doors:
  - 1. Masonite Architectural: [www.architectural.masonite.com](http://www.architectural.masonite.com)
  - 2. VT Industries, Inc: [www.vtindustries.com](http://www.vtindustries.com)
  - 3. Substitutions: See Section 016000 - Product Requirements.

**2.02 DOORS**

- A. Doors: See drawings for locations and additional requirements.
  - 1. Quality Standard: Premium Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.



2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
  1. Provide solid core doors at each location.
  2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.
  3. Wood veneer facing for field transparent finish.

### **2.03 DOOR AND PANEL CORES**

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

### **2.04 DOOR FACINGS**

- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
  1. Vertical Edges: Same species as face veneer.
  2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
- B. Facing Adhesive: Type I - waterproof.

### **2.05 DOOR CONSTRUCTION**

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
- C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
  1. Exception: Doors to be field finished.
- F. Provide edge clearances in accordance with the quality standard specified.

### **2.06 FINISHES - WOOD VENEER DOORS - FACTORY APPLIED**

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
  1. Transparent:
    - a. System - 1, Lacquer, Nitrocellulose.
    - b. Stain: As selected by Architect.
    - c. Sheen: Flat.

### **2.07 ACCESSORIES**

- A. Hollow Metal Door Frames: See Section 081113.
- B. Glazed Openings:
  1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
  2. Fire-Protection-Rated Glass: Safety Certification, 16 CFR 1201, Category II.
- C. Door Window Frames: Door window frames with glazing securely fastened within door opening.
- D. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.



- E. Door Hardware: See Section 087100.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

### **3.02 INSTALLATION**

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
  - 1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.
- F. Install door louvers plumb and level.

### **3.03 TOLERANCES**

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

### **3.04 ADJUSTING**

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

### **3.05 SCHEDULE**

- A. See Door and Frame Schedule appended to Drawings.

**END OF SECTION**



**SECTION 084313**  
**ALUMINUM-FRAMED STOREFRONTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Aluminum-framed storefront, with vision glass.
- B. Aluminum doors and frames.
- C. Weatherstripping.
- D. Door hardware.

**1.02 REFERENCE STANDARDS**

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- B. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- C. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- E. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- G. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- J. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- K. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).
- L. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).
- M. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with installation of other components that comprise the exterior enclosure.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, and internal drainage details.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

**1.05 QUALITY ASSURANCE**



- A. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

#### **1.07 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Aluminum-Framed Storefronts:
  - 1. Kawneer North America: [www.kawneer.com](http://www.kawneer.com)
  - 2. Manko Window Systems, Inc: [www.mankowindows.com](http://www.mankowindows.com)
  - 3. Oldcastle BuildingEnvelope: [www.oldcastlebe.com](http://www.oldcastlebe.com)
  - 4. YKK AP America, Inc: [www.ykkap.com/commercial](http://www.ykkap.com/commercial)
  - 5. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING**

- A. Center-Set Style, Thermally-Broken:
  - 1. Basis of Design: Kawneer; Model 451T.
  - 2. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.

#### **2.03 BASIS OF DESIGN -- SWINGING DOORS**

- A. Wide Stile, Monolithic Glazing:
  - 1. Basis of Design: Kawneer Company, Inc.; 500 Wide Style Standard Entrance with a 10 inch bottom rail.
  - 2. Thickness: 1-3/4 inches.
- B. Wide Stile, Insulating Glazing, Not Thermally-Broken:
  - 1. Basis of Design: Kawneer Company, Inc.; 500 Wide Style Standard Entrance with a 10 inch bottom rail.
  - 2. Thickness: 1-3/4 inches.

#### **2.04 ALUMINUM-FRAMED STOREFRONT**

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
  - 1. Glazing Rabbet: For 1 inch insulating glazing.
  - 2. Finish: Class I color anodized.
    - a. Factory finish all surfaces that will be exposed in completed assemblies.
  - 3. Finish Color: Dark bronze.
  - 4. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
  - 5. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
  - 6. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
  - 7. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.



8. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
  9. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- B. Performance Requirements
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
    - a. Design Wind Loads: Comply with requirements of ASCE 7.
    - b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
  2. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8 psf.
  3. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 6.27 psf pressure difference.
  4. Condensation Resistance Factor of Framing: 50, minimum, measured in accordance with AAMA 1503.
  5. Overall U-value Including Glazing: 0.41 Btu/(hr sq ft deg F), maximum.

## **2.05 COMPONENTS**

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Framing members for interior applications need not be thermally broken.
  2. Glazing Stops: Flush.
  3. Structurally Reinforced Members: Extruded aluminum with internal reinforcement of structural steel member.
- B. Swing Doors: Glazed aluminum.
1. Thickness: 1-3/4 inches.
  2. Top Rail: 5 inches wide.
  3. Vertical Stiles: 5 inches wide.
  4. Bottom Rail: 10 inches wide.
  5. Glazing Stops: Square.
  6. Finish: Same as storefront.

## **2.06 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Sheet Aluminum: ASTM B209/B209M.
- C. Structural Steel Sections: ASTM A36/A36M; galvanized in accordance with requirements of ASTM A123/A123M.
- D. Fasteners: Stainless steel.
- E. Sill Flashing Sealant: Elastomeric, silicone or polyurethane, compatible with flashing material.
- F. Sealant for Setting Thresholds: Non-curing butyl type.
- G. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- H. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

## **2.07 FINISHES**

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.

## **2.08 HARDWARE**

- A. Weatherstripping: Wool pile, continuous and replaceable; provide on all exterior doors.
- B. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all exterior doors.



- C. Threshold: Extruded aluminum, one piece per door opening, ribbed surface; provide on all exterior doors.
  - 1. 1/4 inch offset saddle threshold, ADA compliant
- D. Pivots: Offset type; top, intermediate, and bottom.
  - 1. Provide on all doors.
- E. Pull Set: Standard configuration pull handle
  - 1. Finish: Brushed aluminum
  - 2. Provide on all doors
- F. Exit Devices: Panic type.
  - 1. Provide on all doors.
- G. Door Closers: Exposed overhead.
  - 1. Provide on all doors.
- H. Locks: See Section 087100 .

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

### **3.02 INSTALLATION**

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Install hardware using templates provided.
- J. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

### **3.03 TOLERANCES**

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

### **3.04 ADJUSTING**

- A. Adjust operating hardware and sash for smooth operation.

### **3.05 CLEANING**

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.

### **3.06 PROTECTION**



A. Protect installed products from damage until Date of Substantial Completion.

**END OF SECTION**



**SECTION 085113  
ALUMINUM WINDOWS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Extruded aluminum windows with fixed sash.
- B. Factory glazing.

**1.02 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- D. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- E. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- H. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- I. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2023).

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.
- C. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
  - 1. Evidence of AAMA Certification.
  - 2. Evidence of WDMA Certification.
  - 3. Evidence of CSA Certification.
  - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- D. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or



weather.

#### **1.06 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

#### **1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Basis of Design: Kawneer TR-7100.
- B. Other Acceptable - Aluminum Windows Manufacturers:
  - 1. Manko Window Systems, Inc: [www.mankowindows.com](http://www.mankowindows.com)
  - 2. Peerless Products, Inc: [www.peerlessproducts.com](http://www.peerlessproducts.com)
  - 3. Wausau Window and Wall Systems: [www.wausauwindow.com](http://www.wausauwindow.com)
  - 4. Kawneer Inc.: [www.kawneer.us.com](http://www.kawneer.us.com).
  - 5. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS**

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 having Performance Class of AW, and Performance Grade 50.
- B. Fixed, Thermally-Broken:

#### **2.03 ALUMINUM WINDOWS**

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
  - 1. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
  - 2. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
  - 3. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
  - 4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- B. Fixed, Non-Operable Type:
  - 1. Glazing: Double; gray tinted; low-e.
  - 2. Exterior Finish: Class I color anodized.
  - 3. Interior Finish: Class I color anodized.

#### **2.04 PERFORMANCE REQUIREMENTS**

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
  - 1. Performance Class (PC): AW.
  - 2. Performance Grade (PG): 50, with minimum design pressure (DP) of 50.13 psf.
- B. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
- C. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 psf.



- D. Air Leakage: 0.1 cfm/sq ft maximum leakage per unit area of outside window frame dimension when tested at 1.57 psf pressure difference in accordance with ASTM E283/E283M.
- E. Condensation Resistance Factor of Frame: 50, measured in accordance with AAMA 1503.
- F. Overall Thermal Transmittance (U-value): 0.44, maximum, including glazing, measured on window sizes required for this project.

## **2.05 COMPONENTS**

- A. Frames: 1 1/2 inch wide by 3 1/2 inch deep profile, of 0.062 inch thick section; thermally broken with interior portion of frame insulated from exterior portion; flush glass stops of snap-on type.
- B. Glazing: See Section 088000.
- C. Fasteners: Stainless steel.
- D. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

## **2.06 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Sheet Aluminum: ASTM B209/B209M, 5005 alloy, H12 or H14 temper.

## **2.07 FINISHES**

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44, electrolytically deposited colored anodic coating not less than 0.7 mil thick.
- B. Finish Color: Dark bronze.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 072500.

## **3.02 PRIME WINDOW INSTALLATION**

- A. Install windows in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

## **3.03 TOLERANCES**

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

## **3.04 CLEANING**

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

## **END OF SECTION**



## **SECTION 087100 DOOR HARDWARE**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Hardware for wood, aluminum, and hollow metal doors.
- B. Hardware for fire-rated doors.
- C. Lock cylinders for doors that hardware is specified in other sections.
- D. Thresholds.
- E. Weatherstripping and gasketing.

#### **1.02 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames 2016.
- C. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames 2006.
- D. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- F. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.
- H. UL (DIR) - Online Certifications Directory Current Edition.
- I. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

#### **1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

#### **1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

### **PART 2 PRODUCTS**

#### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
- B. Provide individual items of single type, of same model, and by same manufacturer.
- C. Provide door hardware products that comply with the following requirements:
  - 1. Applicable provisions of federal, state, and local codes.
  - 2. Accessibility: ADA Standards and ICC A117.1.
  - 3. Applicable provisions of NFPA 101.
  - 4. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
  - 5. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.



6. Hardware Preparation for Wood Doors with Wood or Steel Frames: BHMA A156.115W.
  7. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.
- D. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
    - a. Aluminum fasteners are not permitted.
    - b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
  2. Fire-Rated Applications: Comply with NFPA 80.
    - a. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
    - b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

## **2.02 FIRE DEPARTMENT LOCK BOX**

- A. Manufacturers:
1. Knox Company; Knox-Box Rapid Entry System: [www.knoxbox.com/#sle](http://www.knoxbox.com/#sle).
- B. Fire Department Lock Box:
1. Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
  2. Capacity: Holds 10 keys.
  3. Finish: Manufacturer's standard dark bronze.

## **2.03 FINISHES**

- A. Finishes: Identified in Door Hardware Schedule.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.
- B. Verify that electric power is available to power operated devices and of correct characteristics.

### **3.02 INSTALLATION**

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
- C. Use templates provided by hardware item manufacturer.
- D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
- E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

### **3.03 ADJUSTING**

- A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

### **3.04 CLEANING**

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.



### **3.05 PROTECTION**

- A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

### **3.06 SCHEDULE**

- A. Refer to the attached Door Hardware Schedule

**END OF SECTION**



## Set #1

Doors: 01A, 01B

1 Cylinder	1109 MK	626	YA
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NOTE: BALANCE OF HARDWARE BY DOOR SUPPLIER.

## Set #2

Doors: 02, 03, 05B

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Lockset	PB 5405LN MK	626	YA
1 Strike Kit	7501	630	HS
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Linear Power Supply	BPS-12/24-1		SN
1 Smoke Seal	S88 D 17'		PE

NOTE: CARD READER BY OTHERS

## Set #3

Doors: 04, 08, 09, 12, 13, 18, 19

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Lockset	PB 5407LN MK	626	YA
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Wall Stop	409	US32D	RO
1 Smoke Seal	S88 D 17'		PE

## Set #4

Doors: 05A, 06

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Lockset	PB 5407LN MK	626	YA
1 Wall Stop	409	US32D	RO
3 Door Silencer	608-RKW	GREY	RO

## Set #5

Doors: 07

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Privacy Set	PBR 8802FL V20	626	YA
1 Wall Stop	409	US32D	RO
3 Door Silencer	608-RKW	GREY	RO



**Set #6**

Doors: 10

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Passage	PB 5401LN	626	YA
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Wall Stop	409	US32D	RO
1 Smoke Seal	S88 D 17'		PE

**Set #7**

Doors: 11

3 Hinges	SP3786 4 1/2 x 4 1/2	26D	MC
1 Multi-Point Lock	MP6618 PSLW1	626	CR
1 Cylinder	2153 1 1/2"	626	YA
1 Closer	7500	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Smoke Seal	S88 D 17'		PE

NOTE: Supply AUX 188 Dogging Indicator.

**Set #8**

Doors: 14, 15

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Privacy Set	PBR 8802FL V20	626	YA
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Wall Stop	409	US32D	RO
1 Smoke Seal	S88 D 17'		PE

**Set #9**

Doors: 16A

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Exit Device	6100FED x PB626F 36"	630	YA
1 Cylinder	1109 MK	626	YA
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Wall Stop	409	US32D	RO



## Set #10

Doors: 16B, 17

4 Hinges	MPB79 4 1/2 x 4 1/2 NRP	26D	MC
1 Exit Device	6100FED x PB627F 36"	630	YA
1 Cylinder	1109 MK	626	YA
1 Electric Strike Body	9700	630	HS
1 Closer	UNI7500 33-41" DR. WIDTH	689	NO
1 Protection Plate	K1050 10" x 34" SS Tek Screws (12)	US32D	RO
1 Linear Power Supply	BPS-12/24-1		SN
1 Raindrip	346 C 40"		PE
1 Door Bottom	345 AV 36"		PE
1 Door Bottom	307 AV 1 x 36" 2 x 94"		PE
1 Threshold	171 A 36"		PE

NOTE: CARD READER BY OTHERS

## Set #11

Doors: 20, 21

3 Hinges	MPB79 4 1/2 x 4 1/2	26D	MC
1 Passage	PB 5401LN	626	YA
1 Closer	8501 SN-134	689	NO
1 Protection Plate	K1050 10" x 34"	US32D	RO
1 Dome Stop	440	US26D	RO
1 Smoke Seal	S88 D 17'		PE



## **SECTION 088000 GLAZING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Insulating glass units.
- B. Glazing units.
- C. Glazing compounds.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 072700 - Air Barriers.

#### **1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers 2005 (Reapproved 2019).
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- F. ASTM C1036 - Standard Specification for Flat Glass 2021.
- G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- H. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.
- J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.
- K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.
- L. GANA (GM) - GANA Glazing Manual 2022.
- M. GANA (SM) - GANA Sealant Manual 2008.
- N. GANA (LGRM) - Laminated Glazing Reference Manual 2019.
- O. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use 1990 (2016).
- P. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.
- Q. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2020.
- R. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2023.

#### **1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.



- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

#### **1.05 QUALITY ASSURANCE**

- A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for glazing installation methods.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

#### **1.06 FIELD CONDITIONS**

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

#### **1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.
- C. Laminated Glass: Provide a five (5) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Glass Fabricators:
  - 1. Trulite Glass & Aluminum Solutions, LLC: [www.trulite.com](http://www.trulite.com)
  - 2. Viracon, Inc: [www.viracon.com](http://www.viracon.com)
  - 3. Substitutions: See Section 016000 - Product Requirements.
- B. Float Glass Manufacturers:
  - 1. Cardinal Glass Industries: [www.cardinalcorp.com](http://www.cardinalcorp.com)
  - 2. Guardian Glass, LLC: [www.guardianglass.com](http://www.guardianglass.com)
  - 3. Pilkington North America Inc; [ ]: [www.pilkington.com/na](http://www.pilkington.com/na)
  - 4. Vitro Architectural Glass (formerly PPG Glass): [www.vitroglazings.com](http://www.vitroglazings.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.
- C. Laminated Glass Manufacturers:
  - 1. Cardinal Glass Industries: [www.cardinalcorp.com](http://www.cardinalcorp.com)
  - 2. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: [www.viracon.com](http://www.viracon.com)

#### **2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES**

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
  - 1. Design Pressure: Calculated in accordance with ASCE 7.
  - 2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
  - 3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
  - 4. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
  - 1. In conjunction with weather barrier related materials described in other sections, as follows:
    - a. Air Barriers: See Section 072700.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's



published data as determined with the following procedures and/or test methods:

1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

## **2.03 GLASS MATERIALS**

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
  1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
  2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
  3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
  4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
  5. Tinted Type: ASTM C1036, Class 2 - Tinted, Quality - Q3, with color and performance characteristics as indicated.

## **2.04 INSULATING GLASS UNITS**

- A. Manufacturers:
  1. Glass: Any of the manufacturers specified for float glass.
- B. Insulating Glass Units: Types as indicated.
  1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
  2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
  3. Metal-Edge Spacers: Aluminum, bent and soldered corners.
  4. Spacer Color: Black.
  5. Edge Seal:
    - a. Color: Black.
  6. Purge interpane space with dry air, hermetically sealed.
- C. Insulating Glass Units: Vision glass, double glazed.
  1. Applications: Exterior glazing unless otherwise indicated.
  2. Space between lites filled with air.
  3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
    - a. Tint: Clear.
    - b. Coating: Low-E (passive type), on #2 surface.
  4. Metal edge spacer.
  5. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
    - a. Tint: Clear.
  6. Total Thickness: 1 inch.
  7. Total Thickness at doors: 5/8 inch
  8. Thermal Transmittance (U-Value): 0.29, nominal.
  9. Visible Light Transmittance (VLT): 35 percent, nominal.
  10. Solar Heat Gain Coefficient (SHGC): 0.25, nominal.
  11. Glazing Method: Dry glazing method, gasket glazing.
- D. Insulating Glass Units: Safety glazing.
  1. Applications:
    - a. Glazed lites in exterior doors.
    - b. Glazed sidelights and panels next to doors.
    - c. Other locations required by applicable federal, state, and local codes and regulations.
    - d. Other locations indicated on drawings.
  2. Space between lites filled with air.
  3. Glass Type: Same as other vision glazing except use fully tempered float glass for both outboard and inboard lites.



## 2.05 GLAZING UNITS

- A. Monolithic Interior Vision Glazing:
  - 1. Applications: Interior glazing unless otherwise indicated.
  - 2. Glass Type: Annealed float glass.
  - 3. Tint: Clear.
  - 4. Thickness: 1/4 inch, nominal.
- B. Type G-3 - Monolithic Safety Glazing: Non-fire-rated.
  - 1. Applications:
    - a. Glazed lites in doors, except fire doors.
    - b. Glazed sidelights to doors, except in fire-rated walls and partitions.
    - c. Other locations required by applicable federal, state, and local codes and regulations.
    - d. Other locations indicated on drawings.
  - 2. Glass Type: Fully tempered safety glass as specified.
  - 3. Tint: Clear.
  - 4. Thickness: 1/4 inch, nominal.
- C. Transparent One-Way Mirror: Mirror quality float glass with pyrolytic (hard coat) type coating located on high light level surface of glass; ASTM C1376.
  - 1. Applications: Locations as indicated on drawings.
  - 2. Thickness: 1/4 inch.
  - 3. Glass Tint: Grey.
  - 4. Glass Type: Annealed.

## 2.06 GLAZING COMPOUNDS

- A. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.
- B. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.
- C. Manufacturers:
  - 1. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com)
  - 2. Dow Corning Corporation: [www.dowcorning.com/construction](http://www.dowcorning.com/construction)
  - 3. Master Builders Solutions: [www.master-builders-solutions.com/en-us](http://www.master-builders-solutions.com/en-us)
  - 4. Momentive Performance Materials, Inc: [www.momentive.com](http://www.momentive.com)
  - 5. Pecora Corporation: [www.pecora.com](http://www.pecora.com)
  - 6. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com](http://www.tremcosealants.com)
  - 7. Substitutions: See Section 016000 - Product Requirements.

## 2.07 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.
- E. Glazing Clips: Manufacturer's standard type.

## PART 3 EXECUTION

### 3.01 VERIFICATION OF CONDITIONS

GRANT COUNTY HEALTH

DEPARTMENT BUILDING, BID

2023-05

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Glazing



- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

### **3.02 PREPARATION**

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

### **3.03 INSTALLATION, GENERAL**

- A. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
- B. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
- C. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

### **3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)**

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

### **3.05 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)**

- A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- D. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
- F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch below sight lines.
  - 1. Place glazing tape on glazing pane of unit with tape flush with sight line.
- G. Fill gap between glazing and stop with exterior type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
- H. Apply cap bead of exterior type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### **3.06 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)**

- A. Application - Interior Glazed: Set glazing infills from the interior of the building.
- B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.



- D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.
- F. Fill gaps between pane and applied stop with compatible type sealant to depth equal to bite on glazing, to uniform and level line.
- G. Carefully trim protruding tape with knife.

### **3.07 CLEANING**

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

### **3.08 PROTECTION**

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

**END OF SECTION**



## **SECTION 088300 MIRRORS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Glass mirrors.
  - 1. Annealed float glass.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- C. ASTM C1036 - Standard Specification for Flat Glass 2021.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- E. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.
- F. GANA (GM) - GANA Glazing Manual 2022.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data on Mirror Types: Submit structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

#### **1.04 QUALITY ASSURANCE**

- A. Perform Work in accordance with GANA (GM) for glazing installation methods.
- B. Fabricate, store, transport, receive, install, and clean mirrors in accordance with manufacturer's recommendations.

#### **1.05 WARRANTY**

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for reflective coating on mirrors and replacement of same.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Mirrors:
  - 1. Binswanger Mirror/ACI Distribution: [www.binswangerglass.com](http://www.binswangerglass.com)
  - 2. Lenoir Mirror Co: [www.lenoirmirror.com](http://www.lenoirmirror.com)
  - 3. Trulite Glass and Aluminum Solutions: [www.trulite.com](http://www.trulite.com)
  - 4. Walker Glass Company Ltd: [www.walkerglass.com](http://www.walkerglass.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 MATERIALS**

- A. Mirror Design Criteria: Select materials and/or provide supports as required to limit mirror material deflection to 1/200, or to the flexure limit of glass, with full recovery of glazing materials, whichever is less.
- B. Mirror Glass: ASTM C1036, Type 1 - Transparent Flat, Class 1 - Clear, Quality - Q2 (general use mirrors); silvering, protective coating, and quality requirements in compliance with ASTM C1503.
  - 1. Size: As indicated on drawings.

#### **2.03 ACCESSORIES**

- A. Safety Glazing Products: For film backed mirrors, provide products that comply with 16CFR 1201, Category II.



- B. J-Shape Frame: Aluminum extrusion, 1/2 inch by 1/2 inch by 3/8 inch deep.
  - 1. Material: Comply with ASTM B221 (ASTM B221M), 6005-T6 alloy and temper.
  - 2. Finish: Anodized, clear.
  - 3. Location: Continuous along top and bottom edges of mirror

#### **2.04 FABRICATION**

- A. Film-Backed Safety Mirrors: Apply film backing with adhesive coating over mirror backing paint, as recommend in writing by film backing manufacturer.

### **PART 3 EXECUTION**

#### **3.01 PREPARATION**

- A. Clean contact surfaces with solvent and wipe dry.
- B. Prepare installation in accordance with ASTM C1193 for solvent release sealants, and install sealant in accordance with manufacturer's instructions.

#### **3.02 INSTALLATION**

- A. Install mirrors in accordance with manufacturer's recommendations.
- B. Set mirrors plumb and level, and free of optical distortion.
- C. Set mirrors with edge clearance free of surrounding construction including countertops or backsplashes.
- D. Install mirrors with mirror hardware. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or insert as applicable. Install fasteners so heads do not impose point loads on backs of mirrors.

#### **3.03 CLEANING**

- A. Remove labels after work is complete.
- B. Clean mirrors and adjacent surfaces.

**END OF SECTION**



**SECTION 088813  
FIRE-RATED GLAZING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fire-rated glazing units.
- B. Glazing compounds.

**1.02 REFER TO SECTION 088000 - GLAZING FOR GENERAL REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ITS (DIR) - Directory of Listed Products Current Edition.
- C. UL (DIR) - Online Certifications Directory Current Edition.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Fire-Protection-Rated Glass:
  - 1. Fabricators:
    - a. GGI - General Glass International: [www.generalglass.com](http://www.generalglass.com)
    - b. McGrory Glass, Inc: [www.mcgrory.com/glass/fire-rated-glass-schott-pyran-platinum](http://www.mcgrory.com/glass/fire-rated-glass-schott-pyran-platinum)
  - 2. Manufacturers:
    - a. SAFTIFIRST, a division of O'Keeffe's Inc: [www.safti.com](http://www.safti.com)
    - b. SCHOTT North America Inc: [www.us.schott.com/](http://www.us.schott.com/)
    - c. Technical Glass Products: [www.fireglass.com](http://www.fireglass.com)
    - d. Vetrotech North America: [www.vetrotechusa.com](http://www.vetrotechusa.com)
    - e. Substitutions: See Section 016000 - Product Requirements.

**2.02 PERFORMANCE REQUIREMENTS**

- A. Refer to Section 088000 - GLAZING
- B. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated, in accordance with manufacturer's published data as determined with the following procedures or test methods:
  - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW software.
  - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW software.
  - 3. Solar Optical Properties: Comply with NFRC 300 test method.

**2.03 GLAZING UNITS**

- A. Fire-Protection-Rated Glazing: Type, thickness, and configuration of glazing that contains flame, smoke, and does not block radiant heat, as required to achieve indicated fire rating period of 90 minutes or less.
  - 1. Applications:
    - a. Glazing in fire-resistance-rated door assembly.
    - b. Other locations as indicated on drawings.
  - 2. Glass Type: Specialty tempered float glass.
  - 3. Provide products listed by ITS (DIR) or UL (DIR) and approved by authorities having jurisdiction.
  - 4. Safety Glazing Certification: 16 CFR 1201 Category II.
  - 5. Glazing Method: As required for fire rating.
  - 6. Fire-Rating Period: As indicated on drawings.

**2.04 GLAZING COMPOUNDS**

- A. Refer to Section 088000 - GLAZING



## **2.05 ACCESSORIES**

- A. Refer to Section 088000 - GLAZING

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Refer to Section 088000 - GLAZING

**END OF SECTION**



**SECTION 092116  
GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal stud wall framing.
- B. Metal channel ceiling framing.
- C. Acoustic insulation.
- D. Gypsum wallboard.
- E. Joint treatment and accessories.
- F. Textured finish system.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Building framing and sheathing.
- B. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

**1.03 REFERENCE STANDARDS**

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing 2015, with Errata (2020).
- C. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.
- D. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).
- E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- H. ASTM C954 - Standard Specification for 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 2022.
- I. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
- J. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- K. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
- L. GA-216 - Application and Finishing of Gypsum Panel Products 2021.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate the installation of gypsum board assemblies with size, location, and installation of service utilities.
- B. Sequencing: Install service utilities in an orderly and expeditious manner.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data:

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

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Gypsum Board Assemblies



- B. Store metal products to prevent corrosion.

## **PART 2 PRODUCTS**

### **2.01 METAL FRAMING MATERIALS**

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
  - 1. ClarkDietrich: [www.clarkdietrich.com](http://www.clarkdietrich.com)
  - 2. MarinoWARE: [www.marinoware.com](http://www.marinoware.com)
  - 3. Phillips Manufacturing Co: [www.phillipsmfg.com](http://www.phillipsmfg.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.
- C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
  - 1. Studs: C-shaped with knurled or embossed faces.
  - 2. Runners: U shaped, sized to match studs.
  - 3. Ceiling Channels: C-shaped.
  - 4. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch.
  - 5. Furring Members: Zee-shaped sections, minimum depth of 1 inch.
- D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
- E. Non-structural Framing Accessories:
  - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- F. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

### **2.02 BOARD MATERIALS**

- A. Manufacturers - Gypsum-Based Board:
  - 1. American Gypsum Company: [www.americangypsum.com](http://www.americangypsum.com)
  - 2. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com)
  - 3. Georgia-Pacific Gypsum: [www.gpgypsum.com](http://www.gpgypsum.com)
  - 4. Gold Bond Building Products, LLC provided by National Gypsum Company: [www.goldbondbuilding.com](http://www.goldbondbuilding.com)
  - 5. USG Corporation: [www.usg.com](http://www.usg.com)
  - 6. Substitutions: See Section 016000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
  - 2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  - 3. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Ceilings: 5/8 inch.
- C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
  - 1. Application: Vertical surfaces behind thinset tile, except in wet areas.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  - 3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  - 4. Type: Regular and Type X, in locations indicated.
  - 5. Type X Thickness: 5/8 inch.
  - 6. Regular Board Thickness: 5/8 inch.



- 7. Edges: Tapered.
- D. Exterior Sheathing Board: See Section 061000.

## **2.03 GYPSUM BOARD ACCESSORIES**

- A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 2 inches.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
  - 1. Types: As detailed or required for finished appearance.
  - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
  - 3. Products:
    - a. Same manufacturer as framing materials.
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
  - 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners.
  - 2. Joint Compound: Drying type, vinyl-based, ready-mixed.
- E. Textured Finish Materials: Latex-based compound; plain.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.

### **3.02 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with AISI S220 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
  - 1. Level ceiling system to a tolerance of 1/1200.
  - 2. Laterally brace entire suspension system.
- C. Studs: Space studs at 16 inches on center.
  - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
  - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
  - 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Blocking: Install wood blocking for support of:
  - 1. Wall-mounted cabinets.
  - 2. Plumbing fixtures.
  - 3. Toilet partitions.
  - 4. Toilet accessories.
  - 5. Wall-mounted door hardware.

### **3.03 ACOUSTIC ACCESSORIES INSTALLATION**

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.



1. Place one bead continuously on substrate before installation of perimeter framing members.

### **3.04 BOARD INSTALLATION**

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board parallel to framing, with ends and edges occurring over firm bearing.
- C. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.
- E. Installation on Metal Framing: Use screws for attachment of gypsum board.

### **3.05 INSTALLATION OF TRIM AND ACCESSORIES**

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
  1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
  2. Wings of 'L', 'U' and 'T' shaped ceiling areas
  3. Door and window frame jambs
  4. Abutting dissimilar materials
  5. At changes in construction type within the plane of the partition or ceiling
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

### **3.06 JOINT TREATMENT**

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  2. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  1. Feather coats of joint compound so that camber is maximum 1/32 inch.

### **3.07 TEXTURE FINISH**

- A. Apply finish texture coating by means of roller in accordance with manufacturer's instructions and to match approved sample.

### **3.08 TOLERANCES**

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

### **3.09 PROTECTION**

- A. Protect installed gypsum board assemblies from subsequent construction operations.

**END OF SECTION**



## **SECTION 093000 TILING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Ceramic trim.
- D. Non-ceramic trim.

#### **1.02 REFERENCE STANDARDS**

- A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.
- B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.
- C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).
- D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive 2019.
- F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2021.
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy 1999 (Reaffirmed 2019).
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.
- K. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).
- L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).
- M. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2020.
- N. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs 2020.
- O. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2019.
- P. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2019.
- Q. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014 (Reaffirmed 2019).



- R. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- S. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.
- T. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- U. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2022.

### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

### **1.04 QUALITY ASSURANCE**

- A. Installer Qualifications:
  - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

### **1.06 FIELD CONDITIONS**

- A. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

## **PART 2 PRODUCTS**

### **2.01 TILE**

- A. Manufacturers: Refer to Finish Schedule .

### **2.02 TRIM AND ACCESSORIES**

- A. Ceramic Trim: Matching bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
  - 1. Applications:
    - a. Open Edges: Bullnose.
    - b. Inside Corners: Jointed.
  - 2. Manufacturers: Same as for tile.
- B. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
  - 1. Applications:
    - a. Open edges of wall tile.
    - b. Open edges of floor tile.
    - c. Transition between floor finishes of different heights.
    - d. Thresholds at door openings.
    - e. Expansion and control joints, floor and wall.
    - f. Floor to wall joints.
    - g. Borders and other trim as indicated on drawings.
  - 2. Manufacturers:
    - a. Schluter-Systems: [www.schluter.com](http://www.schluter.com)
    - b. Substitutions: See Section 016000 - Product Requirements.

### **2.03 SETTING MATERIALS**

- A. Manufacturers:
  - 1. ARDEX Engineered Cements: [www.ardexamericas.com](http://www.ardexamericas.com)
  - 2. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com)
  - 3. Custom Building Products: [www.custombuildingproducts.com](http://www.custombuildingproducts.com)



4. LATICRETE International, Inc: [www.laticrete.com](http://www.laticrete.com)
  5. Merkrete, by Parex USA, Inc: [www.merkrete.com](http://www.merkrete.com)
  6. Mapei Corporation: [www.mapei.com](http://www.mapei.com).
  7. Substitutions: See Section 016000 - Product Requirements.
- B. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
1. Applications: Use this type of bond coat where indicated, and where no other type of bond coat is indicated.
  2. Products:
    - a. Mapei Corporation; Ultraflex LFT.
    - b. Substitutions: See Section 016000 - Product Requirements.

## **2.04 GROUTS**

- A. Manufacturers:
1. ARDEX Engineered Cements: [www.ardexamericas.com](http://www.ardexamericas.com)
  2. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com)
  3. Custom Building Products: [www.custombuildingproducts.com](http://www.custombuildingproducts.com)
  4. LATICRETE International, Inc: [www.laticrete.com](http://www.laticrete.com)
  5. Merkrete, by Parex USA, Inc: [www.merkrete.com](http://www.merkrete.com)
  6. Mapei Corporation: [www.mapei.com](http://www.mapei.com).
  7. Substitutions: See Section 016000 - Product Requirements.
- B. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
  2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
  3. Color(s): As selected by Architect from manufacturer's full line.
  4. Products:
    - a. Mapei Corporation; Ultracolor Plus FA.
    - b. Substitutions: See Section 016000 - Product Requirements.

## **2.05 MAINTENANCE MATERIALS**

- A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
- B. Refer to Section 079200 - JOINT SEALANTS
1. Applications: Between tile and plumbing fixtures.
  2. Color(s): As selected by Architect from manufacturer's full line.

## **2.06 ACCESSORY MATERIALS**

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
1. Crack Resistance: No failure at 1/8 inch gap, minimum.
  2. Fluid or Trowel Applied Type:
    - a. Thickness: 20 mils, maximum.
    - b. Products:
      - 1) LATICRETE International, Inc; LATICRETE Blue 92 Anti-Fracture Membrane
      - 2) Merkrete, by Parex USA, Inc; Merkrete Fracture Guard:
      - 3) Mapei Corporation: Mapeilastic CI.
      - 4) Substitutions: See Section 016000 - Product Requirements.
- B. Mesh Tape: 2 inch wide self-adhesive fiberglass mesh tape.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.



- B. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
  - 1. Test as Follows:
    - a. Alkalinity (pH): ASTM F710.
    - b. Internal Relative Humidity: ASTM F2170.
    - c. Moisture Vapor Emission: ASTM F1869.
  - 2. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.

### **3.02 PREPARATION**

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

### **3.03 INSTALLATION - GENERAL**

- A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

### **3.04 INSTALLATION - FLOORS - THIN-SET METHODS**

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
  - 1. Use uncoupling membrane under all tile unless other underlayment is indicated.

### **3.05 INSTALLATION - WALL TILE**

- A. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat, unless otherwise indicated.

### **3.06 CLEANING**

- A. Clean tile and grout surfaces.

### **3.07 PROTECTION**

- A. Do not permit traffic over finished floor surface for 4 days after installation.

### **END OF SECTION**



## **SECTION 095100 ACOUSTICAL CEILINGS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2019.
- C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2022.
- D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2022.

#### **1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

#### **1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Acoustical Units: 40 sq ft of each type and size.

#### **1.05 FIELD CONDITIONS**

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Acoustic Tiles/Panels:
  - 1. Armstrong World Industries, Inc: [www.armstrongceilings.com](http://www.armstrongceilings.com)
  - 2. CertainTeed Corporation: [www.certainteed.com/ceilings-and-walls](http://www.certainteed.com/ceilings-and-walls)
  - 3. Hunter Douglas Contract: [www.hunterdouglascontract.com](http://www.hunterdouglascontract.com)
  - 4. USG Corporation: [www.usg.com/ceilings](http://www.usg.com/ceilings)
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Suspension Systems:
  - 1. Same as for acoustical units.
  - 2. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 ACOUSTICAL UNITS**

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Panels: Painted mineral fiber, with the following characteristics:
  - 1. Classification: ASTM E1264 Type III.
    - a. Form: 2, water felted.
  - 2. Size: 24 by 24 inches.
  - 3. Thickness: 5/8 inch.



4. Light Reflectance: 82 percent, determined in accordance with ASTM E1264.
5. NRC Range: 0.50 to 0.60, determined in accordance with ASTM E1264.
6. Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
7. Panel Edge: tegular.
8. Color: White.
9. Suspension System: Exposed grid.
10. Products:
  - a. Refer to Finish Schedule
  - b. Substitutions: See Section 016000 - Product Requirements.

### **2.03 SUSPENSION SYSTEM(S)**

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, stabilizer bars, clips, and splices as required.
- B. Exposed Suspension System: Hot-dipped galvanized steel grid with steel cap.
  1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
  2. Profile: Tee; 15/16 inch face width.
  3. Finish: Baked enamel.
  4. Color: White.
  5. Products:
    - a. Armstrong World Industries: Prelude
    - b. USG Corporation; Donn DX
    - c. Substitutions: See Section 016000 - Product Requirements.

### **2.04 ACCESSORIES**

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Perimeter Moldings: Same metal and finish as grid.
- D. Touch-up Paint: Type and color to match acoustical and grid units.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

### **3.02 PREPARATION**

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

### **3.03 INSTALLATION - SUSPENSION SYSTEM**

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
  1. Use longest practical lengths.
- D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.



- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.

#### **3.04 INSTALLATION - ACOUSTICAL UNITS**

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
  - 1. Make field cut edges of same profile as factory edges.
  - 2. Double cut and field paint exposed reveal edges.

#### **3.05 TOLERANCES**

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

#### **3.06 CLEANING**

- A. Clean surfaces.
- B. Replace damaged or abraded components.

**END OF SECTION**



**SECTION 096500  
RESILIENT FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Resilient sheet flooring.
- B. Resilient tile flooring.
- C. Resilient base.
- D. Installation accessories.

**1.02 REFERENCE STANDARDS**

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- C. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.
- D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2023.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Flooring Material: 20 square feet of each type and color.
  - 3. Extra Wall Base: 10 linear feet of each type and color.

**1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.

**1.06 FIELD CONDITIONS**

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

**PART 2 PRODUCTS**

**2.01 SHEET FLOORING**

- A. Refer to the Finish Schedule

**2.02 TILE FLOORING**

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- A. Refer to the Finish Schedule

## **2.03 RESILIENT BASE**

- A. Resilient Base: ASTM F1861, Type TS, rubber, vulcanized thermoset; style as scheduled.
  - 1. Manufacturers:
    - a. Johnsonite, a Tarkett Company: [www.johnsonite.com](http://www.johnsonite.com)
    - b. Mannington Commercial: [www.manningtoncommercial.com](http://www.manningtoncommercial.com)
    - c. Roppe Corporation: [www.roppe.com](http://www.roppe.com)
    - d. Substitutions: See Section 016000 - Product Requirements.
  - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  - 3. Height: 4 inches.
  - 4. Thickness: 0.125 inch.
  - 5. Finish: Satin.
  - 6. Length: Roll.
  - 7. Color: As indicated on drawings.

## **2.04 ACCESSORIES**

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: Same material as flooring.
- D. Filler for Coved Base: Plastic.
- E. Metal termination strip at top of coved sheet vinyl flooring: Stainless steel

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
  - 1. Test as Follows:
    - a. Alkalinity (pH): ASTM F710.
    - b. Internal Relative Humidity: ASTM F2170.
    - c. Moisture Vapor Emission: ASTM F1869.
  - 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

### **3.02 PREPARATION**

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.
- D. Clean substrate.

### **3.03 INSTALLATION - GENERAL**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
  - 1. Spread only enough adhesive to permit installation of materials before initial set.
  - 2. Fit joints and butt seams tightly.
  - 3. Set flooring in place, press with heavy roller to attain full adhesion.



- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
  - 1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
  - 2. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

### **3.04 INSTALLATION - SHEET FLOORING**

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
- B. Seal seams by heat welding where indicated.
- C. Coved Base: Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

### **3.05 INSTALLATION - TILE FLOORING**

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

### **3.06 INSTALLATION - RESILIENT BASE**

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.

### **3.07 CLEANING**

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

### **3.08 PROTECTION**

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

**END OF SECTION**



**SECTION 096813  
TILE CARPETING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Carpet tile, fully adhered.

**1.02 REFERENCE STANDARDS**

- A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- B. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.
- C. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

**1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

**1.05 FIELD CONDITIONS**

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Refer to Finish Schedule

**2.02 ACCESSORIES**

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Embossed aluminum, color as selected by Architect.
- C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
  - 1. Test as Follows:
    - a. Alkalinity (pH): ASTM F710.
    - b. Internal Relative Humidity: ASTM F2170.
    - c. Moisture Vapor Emission: ASTM F1869.
  - 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

**3.02 PREPARATION**

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.



- B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.

### **3.03 INSTALLATION**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Locate change of color or pattern between rooms under door centerline.
- G. Fully adhere carpet tile to substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

### **3.04 CLEANING**

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

**END OF SECTION**



**SECTION 099113  
EXTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
  - 1. Exposed surfaces of steel lintels and ledge angles.
- D. Do Not Paint or Finish the Following Items:
  - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
  - 2. Items indicated to receive other finishes.
  - 3. Items indicated to remain unfinished.
  - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
  - 5. Floors, unless specifically indicated.
  - 6. Glass.
  - 7. Concealed pipes, ducts, and conduits.

**1.02 REFERENCE STANDARDS**

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.
- B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- C. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- D. SSPC-SP 2 - Hand Tool Cleaning 2018.
- E. SSPC-SP 6 - Commercial Blast Cleaning 2007.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. MPI product number (e.g. MPI #47).
  - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- C. Samples: Submit two paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
  - 1. Where sheen is specified, submit samples in only that sheen.

**1.04 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

**1.05 MOCK-UPS**

- A. See Section 014000 - Quality Requirements, for general requirements for mock-up.
- B. Provide panel, 4 feet long by 4 feet wide, illustrating paint color, texture, and finish.
- C. Locate where directed by Architect.
- D. Mock-up may remain as part of the work.



## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

## **1.07 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
- B. Paints:
  - 1. Behr Process Corporation: [www.behr.com](http://www.behr.com)
  - 2. PPG Paints: [www.ppgpaints.com](http://www.ppgpaints.com)
  - 3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com)
  - 4. Valspar Corporation: [www.valsparpaint.com](http://www.valsparpaint.com).
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 016000 - Product Requirements.

### **2.02 PAINTS AND FINISHES - GENERAL**

- A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
  - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
  - 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

### **2.03 PAINT SYSTEMS - EXTERIOR (SHERWIN WILLIAMS PRODUCTS ARE USED AS REFERENCE STANDARDS)**

- A. Factory-primed Wood, Opaque, Latex, 2 Coat
  - 1. Flat: Two coats of latex enamel: A-100 Exterior Latex
    - a. Dry mil thickness: 1.3
- B. Ferrous Metals, Unprimed, Waterbourne Acrylic, 3 Coats:
  - 1. One coat of Pro Industrial Pro-Cryl Primer
  - 2. Matte: Two coats acrylic enamel: Pro Industrial Multi-Surface Acrylic
    - a. Dry mil thickness: 1.4 - 2.3
- C. Ferrous Metals, Primed, Waterbourne Acrylic, 2 Coats:
  - 1. Touch up with Pro Industrial Pro-Cryl Primer



2. Matte: Two coats of acrylic enamel: Pro Industrial Multi-Surface Acrylic
  - a. Dry mil thickness: 1.4 - 2.3
- D. Galvanized Metals, Waterborne Acrylic, 2 Coats:
  1. Matte: Two coats of acrylic enamel: Pro Industrial Multi-Surface Acrylic
    - a. Dry mil thickness: 1.4 - 2.3
- E. Pavement Marking Paint:
  1. White: One coat.

## **2.04 PRIMERS**

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

## **2.05 ACCESSORY MATERIALS**

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  1. Exterior Plaster and Stucco: 12 percent.
  2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
  3. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
  4. Concrete Floors and Traffic Surfaces: 8 percent.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Concrete:
- G. Masonry:
  1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
  2. Prepare surface as recommended by top coat manufacturer.
  3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.
- H. Galvanized Surfaces:
  1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.



2. Prepare surface according to SSPC-SP 2.
- I. Ferrous Metal:
  1. Solvent clean according to SSPC-SP 1.
  2. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.
- J. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

### **3.03 APPLICATION**

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### **3.04 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.05 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

**END OF SECTION**



**SECTION 099123  
INTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
  - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
  - 2. Items indicated to receive other finishes.
  - 3. Items indicated to remain unfinished.
  - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
  - 5. Floors, unless specifically indicated.
  - 6. Glass.
  - 7. Concealed pipes, ducts, and conduits.

**1.02 REFERENCE STANDARDS**

- A. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- B. SSPC-SP 2 - Hand Tool Cleaning 2018.
- C. SSPC-SP 6 - Commercial Blast Cleaning 2007.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
  - 2. Cross-reference to specified paint system products to be used in project; include description of each system.
- C. Samples: Submit two paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
  - 1. Where sheen is specified, submit samples in only that sheen.

**1.04 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.

**1.05 MOCK-UP**

- A. See Section 014000 - Quality Requirements, for general requirements for mock-up.
- B. Provide panel, 4 feet long by 4 feet wide, illustrating paint color, texture, and finish.
- C. Locate where directed by Architect.
- D. Mock-up may remain as part of the work.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.



- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

#### **1.07 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 fc measured mid-height at substrate surface.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
  - 1. If a single manufacturer cannot provide specified products; minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
- B. Paints:
  - 1. Behr Process Corporation: [www.behr.com](http://www.behr.com)
  - 2. PPG Paints: [www.ppgpaints.com](http://www.ppgpaints.com)
  - 3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com)
  - 4. Valspar Corporation - Architectural (Pro).
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 PAINTS AND FINISHES - GENERAL**

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
  - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
  - 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
  - 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

#### **2.03 PAINT SYSTEMS - INTERIOR**

- A. Concrete/Masonry, Opaque, Latex, 3 Coat:
  - 1. One coat of block filler.
  - 2. Eggshell: Two coats of latex enamel; Promar 200
    - a. Dry mil thickness: 1.7
- B. Ferrous Metals, Unprimed, Water-Based Light Industrial Coating System, 3 Coat:
  - 1. One Coat Primer: Pro Industrial Pro-Cryl Primer
  - 2. Eggshell: Two coats of epoxy coating: Pro Industrial Pre-Catalyzed Epoxy
  - 3. Dry mil thickness: 1.4
- C. Ferrous Metals, Primed, Water-Based Light Industrial Coating System, 2 Coat:
  - 1. Touch up with Pro Industrial Pro-Cryl Primer
  - 2. Eggshell: Two coats of epoxy coating: Pro Industrial Pre-Catalyzed Epoxy



3. Dry mil thickness: 1.4
- D. Galvanized Metals, Water-Based Light Industrial Coating System, 3 Coat:
  1. One Coat Primer: Pro Industrial Pro-Cryl Primer
  2. Eggshell: Two coats of epoxy coating: Pro Industrial Pre-Catalyzed Epoxy
  3. Dry mil thickness: 1.4
- E. Gypsum Board/Plaster, Latex, 3 Coat:
  1. One coat of latex primer sealer.
  2. Two coats of latex enamel; Promar 200.
    - a. Sheen: eggshell at walls and flat at ceilings and bulkheads
    - b. Dry mil thickness: 1.7

## **2.04 PRIMERS**

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
  1. Gypsum Wallboard: 12 percent.
  2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Masonry:
  1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
  2. Prepare surface as recommended by top coat manufacturer.
- F. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- G. Galvanized Surfaces:
  1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
  2. Prepare surface according to SSPC-SP 2.
- H. Ferrous Metal:
  1. Solvent clean according to SSPC-SP 1.
  2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
  3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.



- I. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

### **3.03 APPLICATION**

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions.
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### **3.04 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.05 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

**END OF SECTION**



**SECTION 099300  
STAINING AND TRANSPARENT FINISHING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Field application of stains.
- B. Field application of transparent finishes.

**1.02 REFERENCE STANDARDS**

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and catalog number, and general product category.
- C. Samples: Two samples on actual wood substrate to be finished, 12 by 12 inch in size, indicating selected colors and sheens for each system.

**1.04 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of stain or transparent finish, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Stain and Transparent Finish Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

**1.06 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by manufacturer of stains and transparent finishes.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 fc measured mid-height at substrate surface.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Provide finishes from the same manufacturer to the greatest extent possible.
  - 1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
- B. Transparent Finishes:
  - 1. Behr Process Corporation: [www.behr.com](http://www.behr.com)
  - 2. PPG Paints: [www.ppgpaints.com](http://www.ppgpaints.com)
  - 3. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.
- C. Stains:
  - 1. Behr Process Corporation: [www.behr.com](http://www.behr.com)
  - 2. PPG Paints: [www.ppgpaints.com](http://www.ppgpaints.com)



3. Sherwin-Williams Company: [www.sherwin-williams.com/](http://www.sherwin-williams.com/)
4. Substitutions: See Section 016000 - Product Requirements.

## **2.02 STAINS AND TRANSPARENT FINISHES - GENERAL**

- A. Finishes:
  1. Provide finishes capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  2. Provide materials compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  3. Supply each finish material in quantity required to complete entire project's work from a single production run.
  4. Do not reduce, thin, or dilute finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Colors: To be selected from manufacturer's full range of available colors.
  1. Selection to be made by Architect after award of contract.

## **2.03 EXTERIOR STAIN AND TRANSPARENT FINISH SYSTEMS**

## **2.04 INTERIOR STAIN AND TRANSPARENT FINISH SYSTEMS (SHERWIN WILLIAMS PRODUCTS ARE USED AS REFERENCE STANDARDS)**

- A. Finish on Wood - Vertical Surfaces:
  1. Filler Coat (for open grained wood only)
  2. One-coat stain.
  3. One-coat sealer.
  4. One-coat lacquer.
  5. Stain: Semi-transparent stain for wood, solvent based.
    - a. Products:
      - 1) SW Oil Stain.
  6. Sealer: Alkyd, sanding sealer, clear.
    - a. Products:
      - 1) SW T6-F3.
  7. Top Coat: Clear lacquer.
    - a. Products:
      - 1) Sherwood Moisture Resistant Lacquer, T70 series.
  8. Top Coat Sheen:
    - a. Satin: MPI gloss level 4; use this sheen at all locations.

## **2.05 ACCESSORY MATERIALS**

- A. Accessory Materials: Cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of finished surfaces.
- B. Fastener Head Cover Material: Latex filler.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin application of stains and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  1. Wood: 15 percent, measured in accordance with ASTM D4442.

### **3.02 PREPARATION**



- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

### **3.03 APPLICATION**

- A. Apply products in accordance with manufacturer's written instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Sand wood surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- G. Reinstall items removed prior to finishing.

### **3.04 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.05 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

**END OF SECTION**



**SECTION 101419  
DIMENSIONAL LETTER SIGNAGE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Dimensional letter signage.
- B. Dimensional logo signage

**1.02 REFERENCE STANDARDS**

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.
- C. Shop Drawings:
  - 1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Package dimensional letter signs as required to prevent damage before installation.
- B. Store under cover and elevated above grade.

**PART 2 PRODUCTS**

**2.01 DIMENSIONAL LETTERS AND LOGO**

- A. Metal Letters and Logo:
  - 1. Material: Aluminum sheet, flat.
  - 2. Thickness at Logos: 1/4 inch
  - 3. Thickness at letters: 1/2 inch minimum.
  - 4. Letter and Logo Height: As indicated on drawings.
  - 5. Image: A digital file of the logo and lettering will be provided by the Architect
  - 6. Finish: Baked Enamel or Powder Coat Finish: Manufacturer's standard (unless noted otherwise).
  - 7. Color: As selected.
  - 8. Mounting: 1/2 inch projection mount.

**2.02 ACCESSORIES**

- A. Concealed Screws: Noncorroding metal; stainless steel or other.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install with horizontal edges level.

**END OF SECTION**



## **SECTION 101423 PANEL SIGNAGE**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Panel signage.

#### **1.02 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's product literature for each type of panel sign, indicating styles, font, foreground and background colors, locations, and overall dimensions of each sign.
- C. Shop Drawings:
  - 1. Include dimensions, locations, elevations, materials, text and graphic layout, attachment details, and schedules.
- D. Manufacturer's qualification statement.

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Package signs as required to prevent damage before installation.
- B. Store tape adhesive at normal room temperature.

#### **1.06 FIELD CONDITIONS**

- A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- B. Maintain minimum ambient temperature during and after installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Panel Signage:
  - 1. Best Sign Systems, Inc: [www.bestsigns.com](http://www.bestsigns.com)
  - 2. Inpro Corporation: [www.inprocorp.com](http://www.inprocorp.com)
  - 3. Mohawk Sign Systems, Inc: [www.mohawksign.com](http://www.mohawksign.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Building Plaque:
  - 1. ARK Ramos: [www.arkramos.com](http://www.arkramos.com)

#### **2.02 REGULATORY REQUIREMENTS**

- A. Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

#### **2.03 PANEL SIGNAGE**

- A. Interior Panel Signage:
  - 1. Application: Room signs.
  - 2. Refer to Sign Schedule
  - 3. Description: Flat signs with engraved panel media, tactile characters.
  - 4. Color and Font, unless otherwise indicated:
    - a. Character Font: Helvetica, Arial, or other sans serif font.



- b. Character Case: Upper case only.
  - c. Font Height: 5/8 inch
  - d. Background Color: As selected by the Architect from Manufacturer's standard selections.
  - e. Surface texture: Matte
  - f. Character Color: As selected by the Architect from Manufacturer's standard selections.
- 5. Material: Laminated colored plastic engraved through face to expose core as background color.
- 6. Tactile Letters: Raised 1/32 inch minimum.
- 7. Braille: Grade II, ADA-compliant.
- 8. Graphics: Provide International Symbols of accessible toilets
- 9. Mounting: Tape adhesive
- B. Exterior Panel Signage
  - 1. Application: Exterior room sign
  - 2. Description: Signage description is identical to Interior Panel Signage with the following exceptions:
    - a. Total Thickness: 1/4 inch
    - b. Material: Fiberglass
    - c. Mounting: Exposed stainless steel screws, countersink
- C. Handicapped Parking Sign
  - 1. Material: Screen printed copy on engineer grade reflective vinyl sheeting on 0.8 inch aluminum backing
  - 2. Size: 12 inch by 18 inch
  - 3. Graphic: 'HANDICAPPED PARKING' with International symbol for accessibility
  - 4. Color: Manufacturer's standard
  - 5. Mounting: Attach to galvanized 'u' channel post with galvanized steel carriage bolts. Mount 60 inches above the paving to the bottom of the sign
- D. Traffic Signs
  - 1. Material: Screen printed copy on engineer grade reflective vinyl sheeting on 0.8 inch aluminum backing
  - 2. Size: 48 inches x 6 inches
  - 3. Graphic: '12'-6" CLEARANCE' with 4 inch letters
  - 4. Color: White Background with black letters
  - 5. Mounting: Screw-attach with stainless steel fasteners
- E. Building Plaque
  - 1. Material : Cast aluminum, Alloy 356
  - 2. Size: 20 inches x 20 inches
  - 3. Graphic: Refer to Drawings
  - 4. Mounting: Concealed studs

## **2.04 ACCESSORIES**

- A. Exposed Screws: Stainless steel.
- B. Tape Adhesive: Double-sided tape, permanent adhesive.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.



- B. Install with horizontal edges level.
- C. Locate panel signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

### **3.03 SCHEDULE**

- A. Refer to Drawings

**END OF SECTION**



**SECTION 102800**  
**TOILET, BATH, AND LAUNDRY ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Commercial toilet accessories.

**1.02 REFERENCE STANDARDS**

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Commercial Toilet, Shower, and Bath Accessories:
  - 1. AJW Architectural Products: [www.ajw.com](http://www.ajw.com)
  - 2. American Specialties, Inc: [www.americanspecialties.com](http://www.americanspecialties.com)
  - 3. Bradley Corporation: [www.bradleycorp.com](http://www.bradleycorp.com)
  - 4. Substitutions: Section 016000 - Product Requirements.
- B. Diaper Changing Stations:
  - 1. American Specialties, Inc: [www.americanspecialties.com](http://www.americanspecialties.com)
  - 2. Bradley Corporation: [www.bradleycorp.com](http://www.bradleycorp.com)
  - 3. Koala Kare Products: [www.koalabear.com](http://www.koalabear.com)
  - 4. Substitutions: 016000 - Product Requirements.

**2.02 COMMERCIAL TOILET ACCESSORIES**

- A. Reference Standard: Bradley Corporation
- B. Diaper Changing Station: Surface mounted, high density plastic, ADA compliant, integrated liner dispenser
  - 1. Color: Light Gray
  - 2. Products:
    - a. 9631
- C. Grab Bars: Stainless steel, textured surface.
  - 1. Standard Duty Grab Bars:
    - a. Push/Pull Point Load: 250 pound-force, minimum.
    - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, concealed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
    - c. Length and Configuration: As indicated on drawings.
    - d. Products:
      - 1) 832-2.
- D. Coat Hook: Single-prong, surface mounted, concealed fasteners, polished chrome finish
  - 1. Products:
    - a. 9119
- E. Specimen Pass Through Cabinet: Stainless steel unit with satin finish. Interlock mechanism permits operation of only one door at a time. Removeable stainless steel spill tray.
  - 1. Dimensions: 13 3/8 inches by 12 5/8 inches
  - 2. Product: 9813

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify existing conditions before starting work.



- B. Verify exact location of accessories for installation.

### **3.02 INSTALLATION**

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
  - 1. Grab Bars: As indicated on drawings.

### **3.03 PROTECTION**

- A. Protect installed accessories from damage due to subsequent construction operations.

### **3.04 SCHEDULE**

- A. 7 Accessible Toilet
  - 1. 1 - 36 inch grab bar
  - 2. 1 - 42 inch grab bar
  - 3. 1 - 18 inch grab bar
  - 4. 1 - coat hook
  - 5. 1 - baby changing station
- B. 14 Staff Toilet
  - 1. 1 - coat hook
- C. 15 Accessible Toilet
  - 1. 1 - 36 inch grab bar
  - 2. 1 - 42 inch grab bar
  - 3. 1 - 18 inch grab bar
  - 4. 1 - coat hook
  - 5. 1 - specimen pass through cabinet

**END OF SECTION**



**SECTION 104400  
FIRE PROTECTION SPECIALTIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fire extinguishers.
- B. Fire extinguisher cabinets.

**1.02 REFERENCE STANDARDS**

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
- B. FM (AG) - FM Approval Guide Current Edition.
- C. NFPA 10 - Standard for Portable Fire Extinguishers 2022.
- D. UL (DIR) - Online Certifications Directory Current Edition.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide extinguisher operational features.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Fire Extinguishers:
  - 1. Activar Construction Products Group, Inc. - JL Industries: [www.activarcpg.com](http://www.activarcpg.com)
  - 2. Guardian Fire Equipment, Inc.: [www.guardianfire.com](http://www.guardianfire.com)
  - 3. Larsens Manufacturing Co: [www.larsenmfg.com](http://www.larsenmfg.com)
  - 4. Potter-Roemer: [www.potterroemer.com](http://www.potterroemer.com)
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Fire Extinguisher Cabinets and Accessories:
  - 1. Same as Fire Extinguishers

**2.02 FIRE EXTINGUISHERS**

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
  - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
  - 1. Class: A:B:C type.
  - 2. Size: 5 pound.
  - 3. Classification: 3A:40B:C
  - 4. Finish: Baked polyester powder coat, red color.

**2.03 FIRE EXTINGUISHER CABINETS**

- A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.
- B. Cabinet Construction: Non-fire rated.
  - 1. Formed primed steel sheet; 0.036 inch thick base metal.
- C. Fire Rated Cabinet Construction: Maintain wall's specified fire rating.
- D. Cabinet Configuration: Semi-recessed type.
  - 1. Size to accommodate accessories.
  - 2. Trim: Flat rolled edge, with 2 1/2 inch wide face.
- E. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with two butt hinges.



- F. Door Glazing: Acrylic plastic, clear, 1/8 inch thick, flat shape and set in resilient channel glazing gasket.
- G. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.
- H. Finish of Cabinet Interior: White colored enamel.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, 36 inches from finished floor to inside bottom of cabinet.
- C. Secure rigidly in place.
- D. Place extinguishers in cabinets.

**END OF SECTION**



## **SECTION 107500 FLAGPOLES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Aluminum Flagpoles.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2022.
- C. NAAMM FP 1001 - Guide Specifications for Design Loads of Metal Flagpoles 2007.

#### **1.03 SUBMITTALS**

- A. Product Data: Provide data on pole, accessories, and configurations.
- B. Shop Drawings: Indicate detailed dimensions, base details, anchor requirements, and imposed loads.

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Spiral wrap flagpole with protective covering and pack in protective shipping tubes or containers.
- B. Protect flagpole and accessories from damage or moisture.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Source Limitations: Obtain flagpoles as complete units, including fittings, accessories, bases, and anchorage devices from a single source and single manufacturer
- B. Flagpoles:
  - 1. Concord American Flagpole: [www.concordamericanflagpole.com](http://www.concordamericanflagpole.com)
  - 2. Morgan-Francis Flagpoles & Accessories: [www.morgan-francis.com](http://www.morgan-francis.com)
  - 3. Pole-Tech Co, Inc: [www.poletech.com](http://www.poletech.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.

#### **2.02 FLAGPOLES**

- A. Flagpoles: Designed in accordance with NAAMM FP 1001
  - 1. Material: Aluminum.
  - 2. Design: Cone tapered.
  - 3. Mounting: Ground mounted type.
  - 4. Nominal Height: 25 ft; measured from nominal ground elevation.
  - 5. Halyard: Internal type, manual winch operation.
- B. Performance Requirements:
  - 1. Structural Performance: Flagpole assemblies, including anchorages and supports shall withstand design loads indicated with limits and under conditions indicated
    - a. Design Flag Size: 5 feet x 8 feet
  - 2. Wind Pressure Loading on Flagpole with Flag: Resistant without permanent deformation to 90 miles/hr wind speed, in accordance with NAAMM FP 1001; the factor of safety used is 2.5.

#### **2.03 POLE MATERIALS**

- A. Aluminum: ASTM B241/B241M , 6063 alloy , T6 temper.

#### **2.04 ACCESSORIES**

- A. Finial Ball: Aluminum, 6 inch diameter.



- B. Internal Halyard, Cam Cleat System: 5/16 inch diameter, braided polypropylene halyard; cam cleat; and cast aluminum, concealed revolving truck assembly with sealed, stainless steel bearings; and plastic coated counterweight and sling. Furnish flush access door secured with cylindrical lock. Finish truck assembly to match flagpole.

- 1. Halyard Flag Snaps: Stainless steel swivel snap hooks with neoprene or vinyl covers. Finish two per halyard.

- C. Spun Aluminum flash collar, sloped to drain

## **2.05 MOUNTING COMPONENTS**

- A. Foundation Tube Sleeve: Manufacturer's standard corrugated steel foundation tube, 0.060 inch wall thickness with 3/16 inch steel bottom plate and support plate; 3/4 inch diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

## **2.06 MISCELLANEOUS MATERIALS**

- A. Drainage Material: Crushed stone, or uncrushed gravel; coarse aggregate
- B. Sand: ASTM C33, fine aggregate
- C. Elastomeric Joint Sealant: Single component, nonsag urethane joint sealant
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187

## **2.07 FINISHING**

- A. Metal Surfaces in Contact With Concrete: Asphaltic paint.
- B. Concealed Steel Surfaces: Galvanized to ASTM A123/A123M requirements.
- C. Aluminum: Natural Satin Finish: AA-M32, fine, directional, medium satin polish; buff complying with AA-M20; seal aluminum surfaces with clear, hard-coat wax..
- D. Final: Gold anodized finish.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that concrete foundation is ready to receive work and dimensions are as indicated on shop drawings.

### **3.02 PREPARATION**

- A. Coat metal sleeve surfaces below grade and surfaces in contact with dissimilar materials with asphaltic paint.

### **3.03 INSTALLATION**

- A. Install flagpole, base assembly, and fittings in accordance with manufacturer's instructions.
- B. Prepare uncoated metal flagpoles that are set in foundation tubes by painting belowgrade portions with a heavy coat of bituminous paint
- C. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete. Place and compact drainage material at excavation bottom
- D. Foundation Tube: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure.
- E. Place concrete. Compact in place by using vibrators. Moist cure exposed concrete for no fewer than seven days
- F. Trowel exposed concrete surfaces to a smooth dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.
- G. Flagpole installation: Install flagpole according to Shop Drawings and manufacturer's written instructions.



- H. Foundation Tube: Place flagpole in tube, seated on bottom plate between steel centering wedges, and install hardwood wedges to secure flagpole in space. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2 inch layer of elastomeric joint sealant and cover with flashing collar.

#### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1 inch.

#### **3.05 ADJUSTING**

- A. Adjust operating devices so that halyard functions smoothly.

**END OF SECTION**



## **SECTION 123600 COUNTERTOPS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Countertops for architectural cabinet work.

#### **1.02 REFERENCE STANDARDS**

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- C. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material 2013.
- D. NEMA LD 3 - High-Pressure Decorative Laminates 2005.
- E. NSI (DSDM) - Dimensional Stone Design Manual, Version VIII 2016.

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

#### **1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

### **PART 2 PRODUCTS**

#### **2.01 COUNTERTOPS**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
  - 1. Laminate Sheet: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
    - a. Manufacturers:
      - 1) Refer to Finish Schedule
    - b. Finish: refer to Finish Schedule.
  - 2. Exposed Edge Treatment: Molded PVC edge, 3.0 mm thick, matching laminate in color, pattern, and finish.
  - 3. Back and End Splashes: Same material, same construction.
- C. Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.
  - 1. Flat Sheet Thickness: 1-1/4 inch, minimum.



2. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA 3-01 and NEMA LD 3; orthophthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard stone fabrication tools; no surface coating; color and pattern consistent throughout thickness.
  - a. Manufacturers:
    - 1) Refer to Finish Schedule
  - b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with NSI (DSDM).
  - c. Finish on Exposed Surfaces: Polished.
3. Other Components Thickness: 3/4 inch, minimum.
4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
- D. Natural Quartz and Resin Composite Wall Panels: Sheet or slab of natural quartz and plastic resin over continuous substrate.
  1. Flat Sheet Thickness: 3/4 inch thick.
  2. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA 3-01 and NEMA LD 3; orthophthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard stone fabrication tools; no surface coating; color and pattern consistent throughout thickness.
    - a. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with NSI (DSDM).
    - b. Finish on Exposed Surfaces: Polished.

## **2.02 FABRICATION**

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
  1. Join lengths of tops using best method recommended by manufacturer.
  2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
  3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
  1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
  2. Height: 4 inches, unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.03 INSTALLATION**

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Seal joint between back/end splashes and vertical surfaces.



### **3.04 TOLERANCES**

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

### **3.05 CLEANING**

- A. Clean countertops surfaces thoroughly.

### **3.06 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

**END OF SECTION**



## **SECTION 311000 SITE CLEARING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Clearing and protection of vegetation.
- B. Removal of existing debris.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Fill Material: As specified in Section 312200 - Grading

### **PART 3 EXECUTION**

#### **3.01 SITE CLEARING**

- A. Comply with other requirements specified in Section 017000.
- B. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

#### **3.02 EXISTING UTILITIES AND BUILT ELEMENTS**

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Protect existing structures and other elements that are not to be removed.

#### **3.03 VEGETATION**

- A. Scope: Remove trees, shrubs, brush, and stumps in areas to be covered by building structure, paving, playing fields, lawns, and planting beds.
- B. Do not begin clearing until vegetation to be relocated has been removed.
- C. Do not remove or damage vegetation beyond the limits indicated on drawings.
- D. Install substantial, highly visible fences at least 3 feet high to prevent inadvertent damage to vegetation to remain:
  - 1. At vegetation removal limits.
- E. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.
- F. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
  - 1. Existing Stumps: Treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
  - 2. Fill holes left by removal of stumps and roots, using suitable fill material, with top surface neat in appearance and smooth enough not to constitute a hazard to pedestrians.
- G. Dead Wood: Remove all dead trees (standing or down), limbs, and dry brush on entire site; treat as specified for vegetation removed.
- H. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

#### **3.04 DEBRIS**

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**



## **SECTION 312200 GRADING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Removal of topsoil.
- B. Rough grading the site for site structures.
- C. Finish grading.

### **PART 2 PRODUCTS**

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.
- B. Verify the absence of standing or ponding water.

#### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect from damage above- and below-grade utilities to remain.
- D. Notify utility company to remove and relocate utilities.
- E. Provide temporary means and methods to remove all standing or ponding water from areas prior to grading.
- F. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.
- G. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.
- H. Protect plants, lawns, and other features to remain as a portion of final landscaping.

#### **3.03 ROUGH GRADING**

- A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.
- B. Do not remove topsoil when wet.
- C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
- D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- E. When excavating through roots, perform work by hand and cut roots with sharp axe.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.
- G. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack surface water control.

#### **3.04 SOIL REMOVAL**

- A. Stockpile topsoil to be re-used on site; remove remainder from site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designated on site; pile depth not to exceed 8 feet; protect from erosion.

#### **3.05 FINISH GRADING**

- A. Before Finish Grading:
  - 1. Verify building and trench backfilling have been inspected.
  - 2. Verify subgrade has been contoured and compacted.



- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove soil contaminated with petroleum products.
- C. Where topsoil is to be placed, scarify surface to depth of 3 inches.
- D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches.
- E. Place topsoil to the following compacted thicknesses:
  - 1. Areas to be Sodded: 4 inches.
  - 2. Shrub Beds: 18 inches.
- F. Place topsoil during dry weather.
- G. Remove roots, weeds, rocks, and foreign material while spreading.
- H. Near plants spread topsoil manually to prevent damage.
- I. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- J. Maintain stability of topsoil during inclement weather. Replace topsoil in areas where surface water has eroded thickness below specifications.

### **3.06 TOLERANCES**

- A. Top Surface of Subgrade: Plus or minus 0.10 foot (1-3/16 inches) from required elevation.
- B. Top Surface of Finish Grade: Plus or minus 0.04 foot (1/2 inch).

### **3.07 REPAIR AND RESTORATION**

- A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.
- B. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

### **3.08 FIELD QUALITY CONTROL**

- A. See Section 312323 for compaction density testing.

### **3.09 CLEANING**

- A. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.
- B. Leave site clean and raked, ready to receive landscaping.

**END OF SECTION**



## **SECTION 312316 EXCAVATION**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Excavating for building volume below grade, footings, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Trenching for utilities outside the building to utility main connections.
- C. Temporary excavation support and protection systems.

#### **1.02 REFERENCE STANDARDS**

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

### **PART 2 PRODUCTS**

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that survey bench mark and intended elevations for the work are as indicated.

#### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Grade top perimeter of excavation to prevent surface water from draining into excavation. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by Architect.

#### **3.03 TEMPORARY EXCAVATION SUPPORT AND PROTECTION**

- A. Excavation Safety: Comply with OSHA's Excavation Standard, 29 CFR 1926, Subpart P.

#### **3.04 EXCAVATING**

- A. Excavate to accommodate new structures and construction operations.
  - 1. Excavate to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work.
  - 2. Hand trim excavations. Remove loose matter.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Provide temporary means and methods, as required, to remove all water from excavations until directed by Architect. Remove and replace soils deemed suitable by classification and which are excessively moist due to lack of dewatering or surface water control.

#### **3.05 FILLING AND BACKFILLING**

- A. Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.
- B. See Section 312323 for fill, backfill, and compaction requirements at general excavations.

#### **3.06 CLEANING**

- A. Remove excavated material that is unsuitable for re-use from site.
- B. Remove excess excavated material from site.

#### **3.07 PROTECTION**

- A. Divert surface flow from rains or water discharges from the excavation.
- B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.



- C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.
- D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- E. Keep excavations free of standing water and completely free of water during concrete placement.

**END OF SECTION**



## **SECTION 312323 FILL**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Filling, backfilling, and compacting for building volume below grade, footings, slabs-on-grade, paving, and utilities within the building.
- B. Backfilling and compacting for utilities outside the building to utility main connections.
- C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

#### **1.02 REFERENCE STANDARDS**

- A. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop 2021, with Errata (2022).
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)) 2012 (Reapproved 2021).
- C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method 2015, with Editorial Revision (2016).
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)) 2012 (Reapproved 2021).
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method 2015.
- F. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) 2017a, with Editorial Revision (2021).

#### **1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Manufactured Fill.
- C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.
- D. Compaction Density Test Reports.

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. When necessary, store materials on site in advance of need.

### **PART 2 PRODUCTS**

#### **2.01 FILL MATERIALS**

- A. General Fill
  - 1. Amount finer than 2 inch sieve = 100 percent
  - 2. Amount finer than No. 200 sieve = 12 percent minimum and if PI is greater than or equal to 7, 60 percent maximum
  - 3. Liquid Limit: 40 percent, maximum
  - 4. Plasticity Index (PI) range: 5-15
- B. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter.
- C. Topsoil: Topsoil excavated on-site.
  - 1. Select.
  - 2. Graded.
  - 3. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.
  - 4. Acidity range (pH) of 5.5 to 7.5.
  - 5. Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter.

#### **2.02 ACCESSORIES**



- A. Geotextile: Non-biodegradable, woven.

## **2.03 SOURCE QUALITY CONTROL**

- A. See Section 014000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. See Section 312200 for additional requirements.
- C. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- D. Verify structural ability of unsupported walls to support imposed loads by the fill.
- E. Verify areas to be filled are not compromised with surface or ground water.

### **3.02 PREPARATION**

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
- B. Proofroll with a tandem axle truck weighing at least 16,000 pounds per axle to locate any zones that are soft or unstable. Proofrolling should involve overlapping passes in perpendicular directions. Where pumping or rutting is encountered, the unstable soils should be overexcavated and replaced with cohesive low volume change fill. Compact to required density.
- C. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- D. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- E. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

### **3.03 FILLING**

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Employ a placement method that does not disturb or damage other work.
- C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- G. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- H. Correct areas that are over-excavated.
  - 1. Load-bearing foundation surfaces: Use structural fill, flush to required elevation, compacted to 95 percent of maximum dry density.
  - 2. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
- I. Compaction Density Unless Otherwise Specified or Indicated:
- J. Reshape and re-compact fills subjected to vehicular traffic.
- K. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or



surface water control.

### **3.04 FILL AT SPECIFIC LOCATIONS**

- A. Use general fill unless otherwise specified or indicated.
- B. Structural Fill at locations where natural bearing is disturbed or footings are above stripped natural grade:
  - 1. Use general fill.
  - 2. Fill up to subgrade elevations.
  - 3. Maximum depth per lift: 8 inches, compacted.
  - 4. Compact to minimum 95 percent of maximum dry density.
- C. Under Interior Slabs-On-Grade:
  - 1. Use general fill.
  - 2. Compact to 95 percent of maximum dry density.
  - 3. Cover with granular fill.
    - a. Depth: 6 inches.
    - b. Compact to 95 percent of maximum dry density.
- D. At Foundation Walls and Footings:
  - 1. Use general fill.
  - 2. Fill up to subgrade elevation.
  - 3. Compact each lift to 95 percent of maximum dry density.
  - 4. Do not backfill against unsupported foundation walls.
- E. Over Buried Utility Piping, Conduits, and Duct Bank in Trenches:
  - 1. Bedding: Use general fill.
  - 2. Cover with general fill.
  - 3. Fill up to subgrade elevation.
  - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- F. At Lawn Areas:
  - 1. Use general fill.
  - 2. Fill up to subgrade elevations.
  - 3. Compact to 95 percent of maximum dry density.
- G. At Planting Areas Other Than Lawns :
  - 1. Use general fill.
  - 2. Fill up to 12 inches below finish grade elevations.
  - 3. Compact to 95 percent of maximum dry density.
- H. Under Monolithic Paving and Monolithic Paver Setting Beds:
  - 1. Compact subsoil to 95 percent of its maximum dry density before placing fill.
  - 2. Use general fill.
  - 3. Fill up to subgrade elevation.
  - 4. Compact to 95 percent of maximum dry density.
  - 5. Provide coarse aggregate base course over subgrade
    - a. Comply with ODOT standards
    - b. Depth: 4 inches
- I. Under exterior sidewalks and patios:
  - 1. Use general fill.
  - 2. Fill up to subgrade elevation.
  - 3. Maximum compacted depth of each lift: 8 inches.
  - 4. Compact to 95 percent of maximum dry density.

### **3.05 TOLERANCES**

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

### **3.06 FIELD QUALITY CONTROL**

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Fill



- A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Soil Fill Materials:
  - 1. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.
  - 2. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor"), or AASHTO T 180.
  - 3. If tests indicate work does not meet specified requirements, remove work, replace and retest.
  - 4. Frequency of Tests: Test the field density for each lift of fill at frequencies of every 4,000 square feet in areas under structures (minimum of two tests) and every 10,000 square feet in areas under pavement (minimum of two tests)..

### **3.07 CLEANING**

- A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

**END OF SECTION**



**SECTION 313116  
TERMITE CONTROL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Chemical soil treatment.
- B. Site-applied termiticide for wood, steel, and concrete.

**1.02 REFERENCE STANDARDS**

- A. Title 7, United States Code, 136 through 136y - Federal Insecticide, Fungicide and Rodenticide Act 2019.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate toxicants to be used, composition by percentage, dilution schedule, intended application rate.
- C. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements.
- D. Manufacturer's Instructions: Indicate caution requirement.
- E. Warranty: Submit warranty and ensure that forms have been completed in Owner's name.

**1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing this type of work and:
  - 1. Having minimum of three (3) years documented experience.
  - 2. Approved by manufacturer of treatment materials.
  - 3. Licensed in the State in which the Project is located.

**1.05 WARRANTY**

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year installer's warranty against damage to building caused by termites.

**PART 2 PRODUCTS**

**2.01 CHEMICAL SOIL TREATMENT**

- A. Toxicant Chemical: EPA Title 7, United States Code, 136 through 136y approved; synthetically color dyed to permit visual identification of treated soil.
- B. Diluent: Recommended by toxicant manufacturer.
- C. Manufacturers:
  - 1. Bayer Environmental Science Corp: [www.backedbybayer.com/pest-management](http://www.backedbybayer.com/pest-management)
  - 2. FMC Professional Solutions: [www.fmcprosolutions.com](http://www.fmcprosolutions.com)
  - 3. Syngenta Professional Products: [www.syngentaprofessionalproducts.com](http://www.syngentaprofessionalproducts.com)
  - 4. Substitutions: See Section 016000 - Product Requirements.
- D. Mixes: Mix toxicant to manufacturer's instructions.

**2.02 SITE-APPLIED TERMITICIDE**

- A. Site Applied Termiticide for Wood, Steel and Concrete: Borate mineral salt based, spray applied termiticide formulated for use on wood, steel, concrete and other building materials.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that soil surfaces are unfrozen, sufficiently dry to absorb toxicant, and ready to receive treatment.
- B. Verify final grading is complete.

**3.02 APPLICATION - CHEMICAL TREATMENT**

GRANT COUNTY HEALTH

DEPARTMENT BUILDING, BID  
2023-05

313116 - 1

Termite Control



- A. Comply with requirements of U.S. EPA and applicable state and local codes.
- B. Spray apply toxicant in accordance with manufacturer's instructions.
- C. Apply toxicant at following locations:
  - 1. Under Slabs-on-Grade.
  - 2. At Both Sides of Foundation Surface.
- D. Under slabs, apply toxicant immediately prior to installation of vapor barrier.
- E. At foundation walls, apply toxicant immediately prior to finish grading work outside foundations.
- F. Apply extra treatment to structure penetration surfaces such as pipe or ducts, and soil penetrations such as grounding rods or posts.
- G. Re-treat disturbed treated soil with same toxicant as original treatment.
- H. If inspection or testing identifies the presence of termites, re-treat soil and re-test.

### **3.03 INSTALLATION - SITE-APPLIED TERMITICIDE**

- A. Comply with manufacturer's written instructions.

### **3.04 PROTECTION**

- A. Do not permit soil grading over treated work.
- B. Protect sheet materials from damage after completed installation. Repair damage with manufacturer's recommended products and according to the manufacturer's written instructions.

**END OF SECTION**



**SECTION 329223  
SODDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Placing topsoil.
- B. Sod installation.

**1.02 RELATED REQUIREMENTS**

- A. Section 312200 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.

**1.03 DEFINITIONS**

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

**1.04 REFERENCE STANDARDS**

- A. TPI (SPEC) - Guideline Specifications to Turfgrass Sodding 2006.

**1.05 QUALITY ASSURANCE**

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the State of Oklahoma.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver sod on pallets. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be laid within 24 hours.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Sod: TPI (SPEC), Certified Turfgrass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft. Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
  - 1. Type: Bermuda Grass Type: 100 percent.
  - 2. Thickness: "Thin" sod, minimum 3/4 inch and maximum 1 inch topsoil base.
  - 3. Cut sod in area not exceeding 1 sq yd.
  - 4. Machine cut sod and load on pallets in accordance with TPI (SPEC) Guidelines.
- B. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that prepared soil base is ready to receive the work of this section.

**3.02 PREPARATION**

- A. Place topsoil in accordance with Section 312200.

**3.03 LAYING SOD**

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.



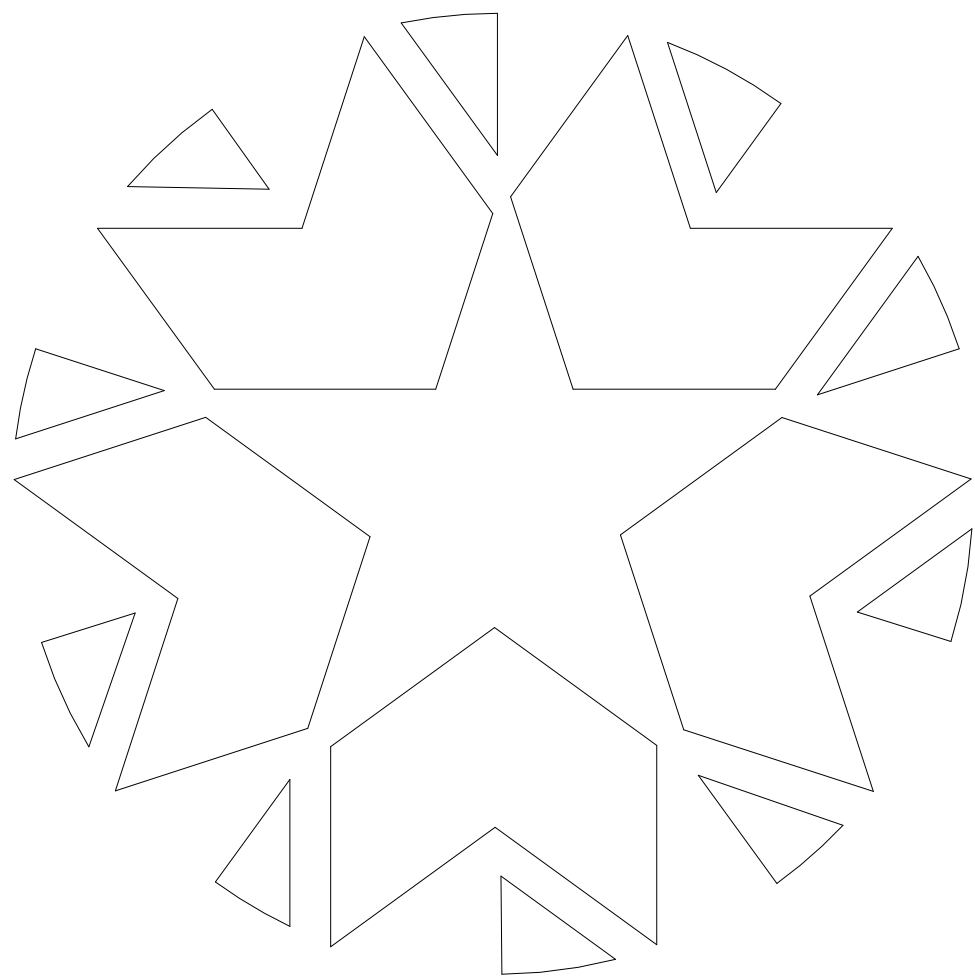
- D. Where new sod adjoins existing grass areas, align top surfaces.
- E. Where sod is placed adjacent to hard surfaces, such as curbs, pavements, etc., place top elevation of sod 1/2 inch below top of hard surface.
- F. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.
- G. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
- H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

#### **3.04 MAINTENANCE**

- A. Maintain lawn areas and planters until Substantial Completion
- B. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- C. Immediately remove clippings after mowing and trimming.
- D. Water to prevent grass and soil from drying out.

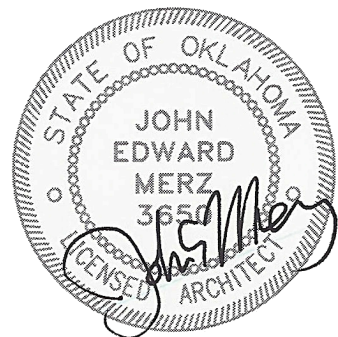
**END OF SECTION**





# Grant County Health Department

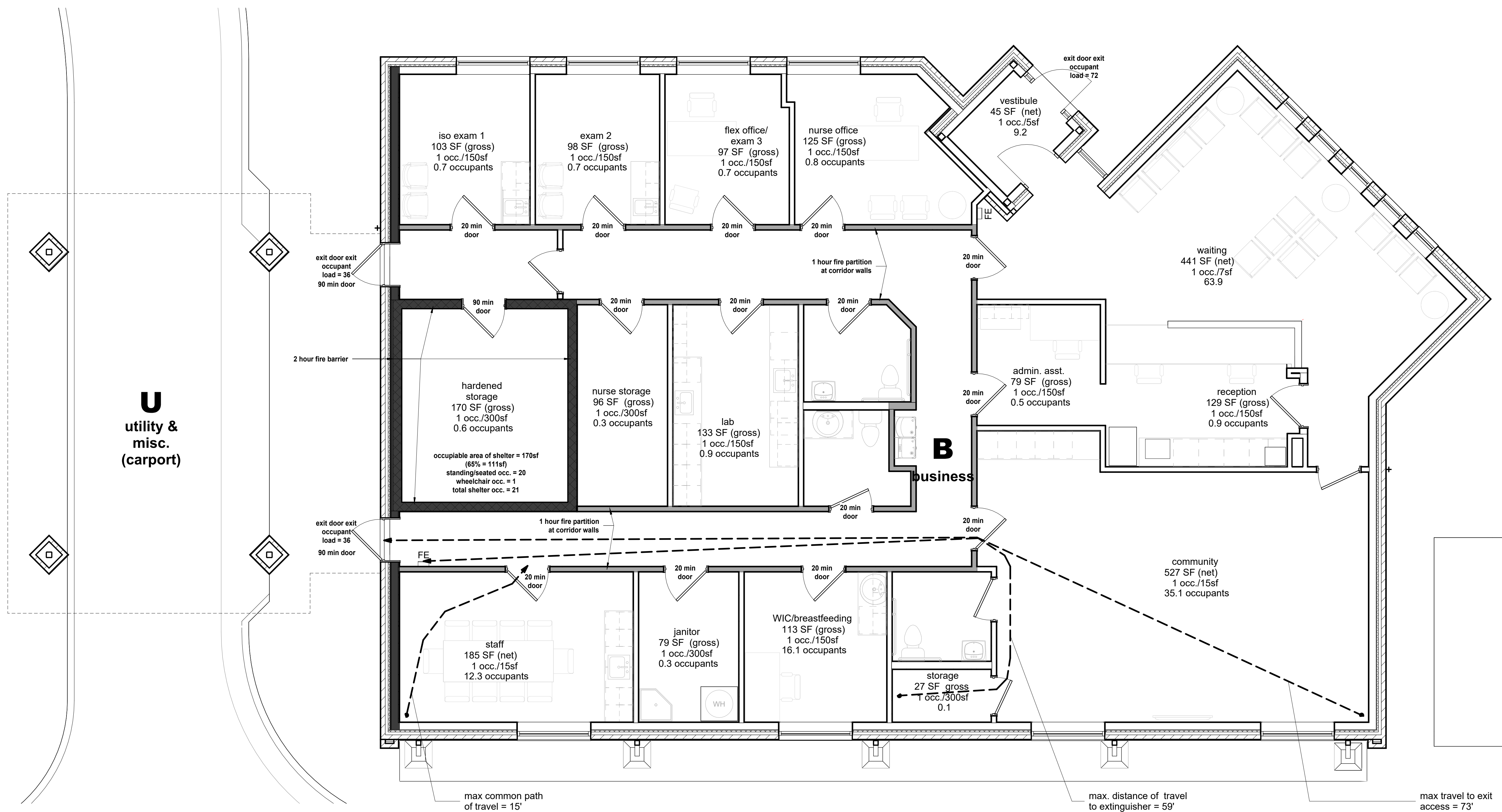
Sheet Index	
Sheet Number	Sheet Name
Coversheet	
a0	Coversheet
Life Safety	
ls101	Life Safety Plan
ls102	Code Review
Site	
sp01	Site Plan
Architectural	
a1	Floorplan
a2	RCP
a3	Exterior Elevations
a3.1	Exterior Elevations Cont.
a4	Interior Elevations
a5	Building Sections
a6	Wall Sections
a6.1	Wall Sections Cont.
a7	Enlarged Toilet Plans/Elevations
a7.1	Enlarged Plan/Details - Entry Vestibule
a7.2	Enlarged Plan/ Details - Reception Desk
a8	Details
a8.1	Details Cont.
a9	Door & Window Schedule
a10	Millwork Details
a10.1	Millwork Details Cont.
a11	Finish Plan/Schedule
Civil	
0	Topographic Survey
1	Site Plan
2	Grading Plan
3	Grading Plan Sections
4	Erosion Control Plan
5	Site Details
Structural	
S1.0	General Structural Notes
S1.1	Special Inspections
S1.2	Typical Details
S1.3	Typical Details
S1.4	Typical Details
S2.0	Foundation Plan
S2.1	Framing Plan
S3.0	Details
S3.1	Details
S3.2	Details
Mechanical	
M1.1	HVAC Plan
MP1.0	General Notes, Mechanical Design Criteria, Legend
MP1.1	Schedules
MP1.2	Mechanical Details
MP1.3	Mechanical Details
MP1.4	Specifications
MP1.5	Specifications
P1.1	Waste & Vent Plan
P2.1	Plumbing Plan
Electrical	
E1.1	General Notes, Riser Diagram, Schedules, and Symbol List
E1.2	Details
E1.3	Specifications
E1.4	Specifications
E1.5	Specifications
E2.0	Electrical Site Plan
E2.1	Electrical Power Plan
E2.2	Electrical Power Plan - Roof
E3.1	Electrical Lighting Plan





Plan Legend

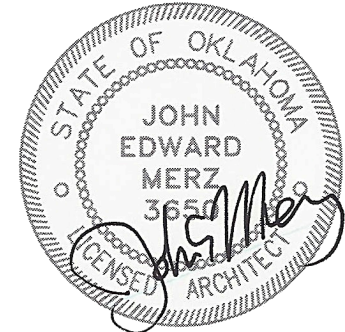
- existing item
- drywall partition
- cmu wall
- brick wall
- 2 hour fire barrier
- 1 hour fire partition
- fire extinguisher
- downspout
- wall type, see typical wall details
- door type, see door schedule
- window type, see door schedule
- ADA clearance



a Level 1 - lifesafety plan  
1/4" = 1'-0" NORTH

date issued: 03-03-23					

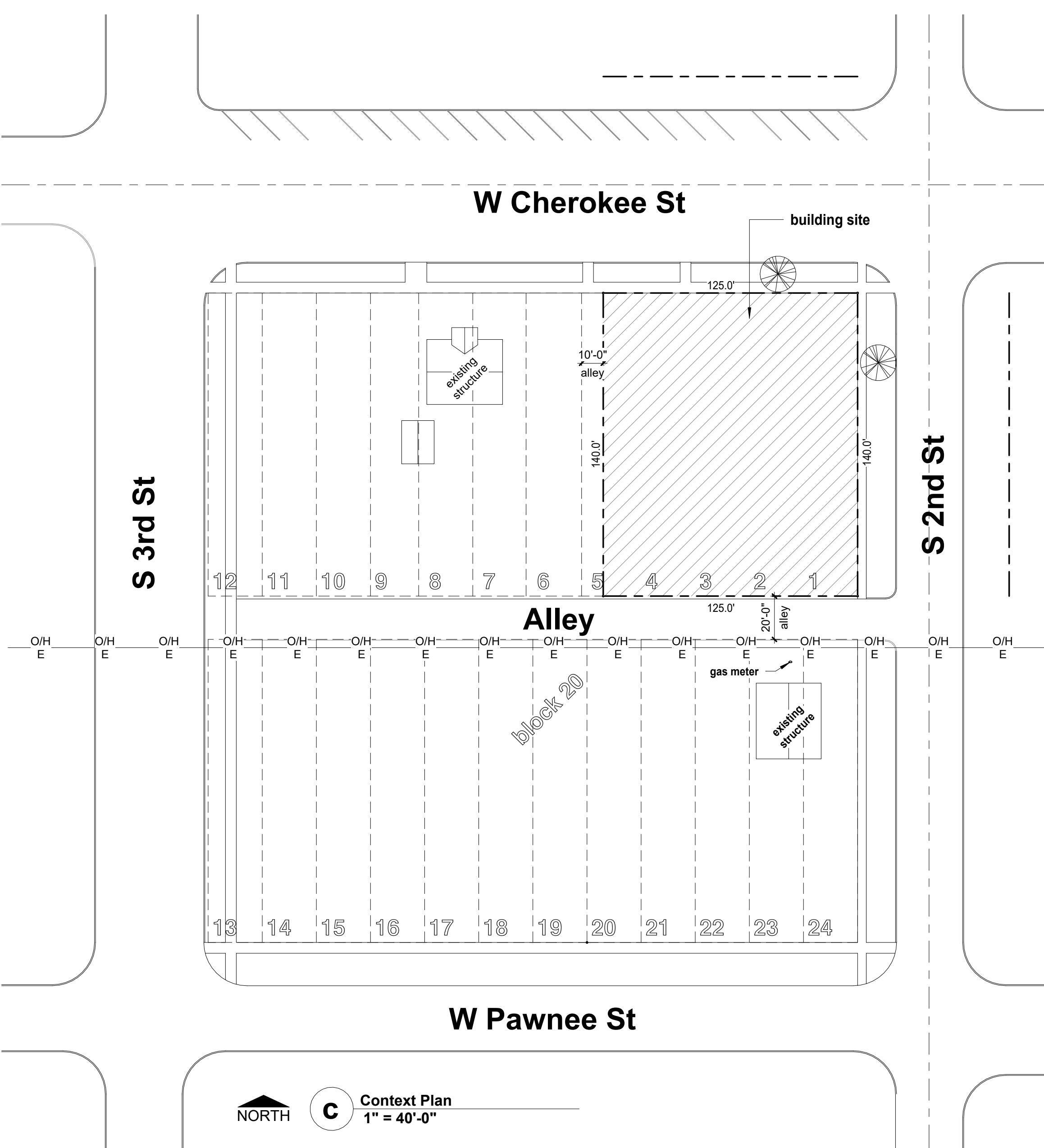
Grant County Health Department (BID 2023-05)  
Lots 1-5, Block 20, Medford, OK



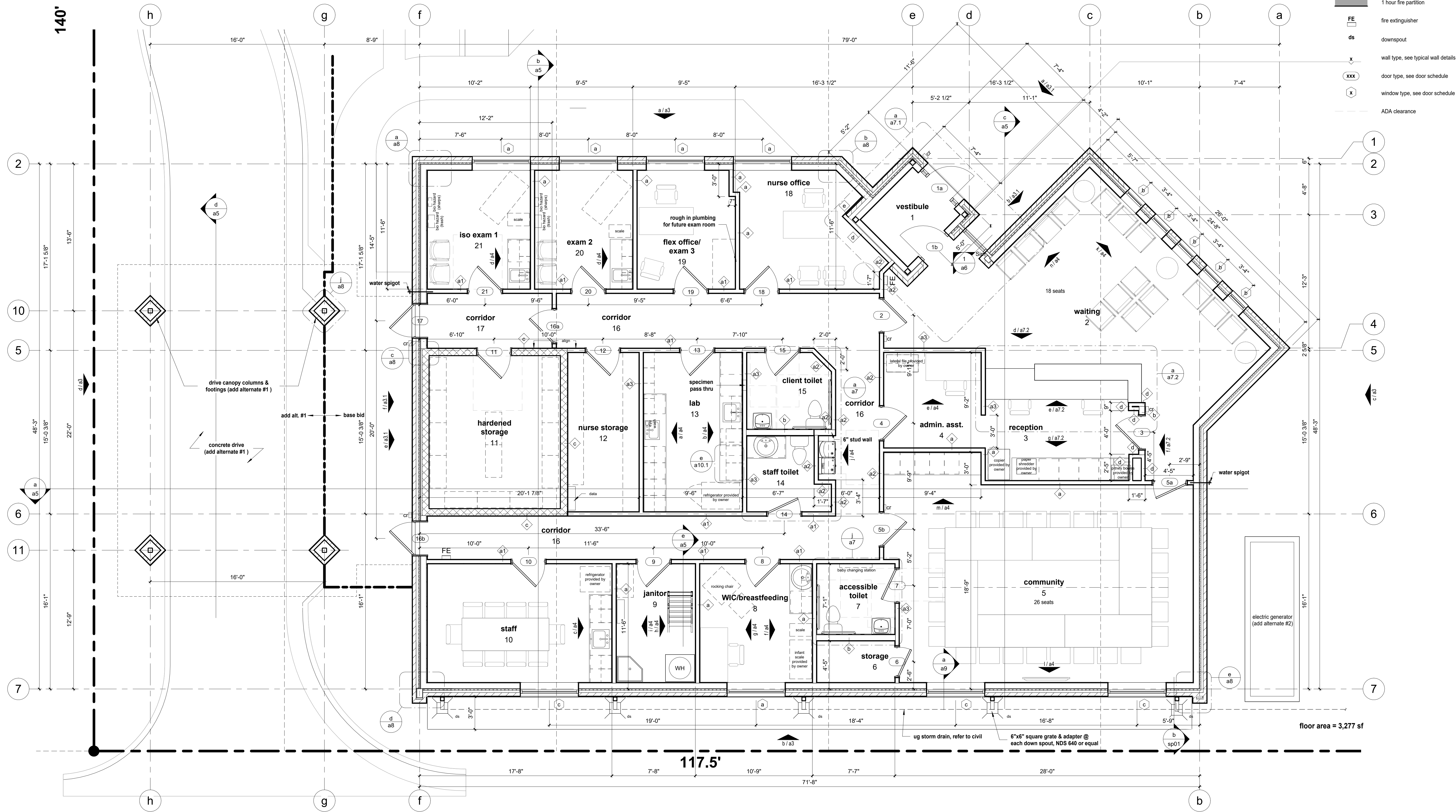












Plan Legend	
text	existing item
---	drywall partition
---	cmu wall
---	brick wall
---	2 hour fire barrier
---	1 hour fire partition
FE	fire extinguisher
ds	downspout
x	wall type, see typical wall details
xxx	door type, see door schedule
x	window type, see door schedule
---	ADA clearance

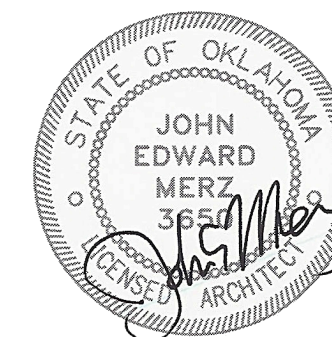
NORTH  
a Level 1  
1/4" = 1'-0"

date issued: 03-03-23

# Grant County Health Department (BID 2023-05)

Lots 1-5, Block 20, Medford, OK

CORBIN MERZ HANEY  
ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701  
WWW.CORBINMERZHANEY.COM  
PH (580) 233-2362

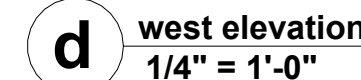
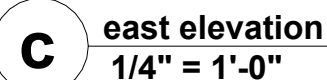
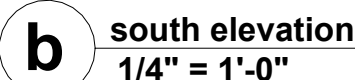
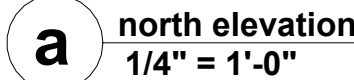


a1

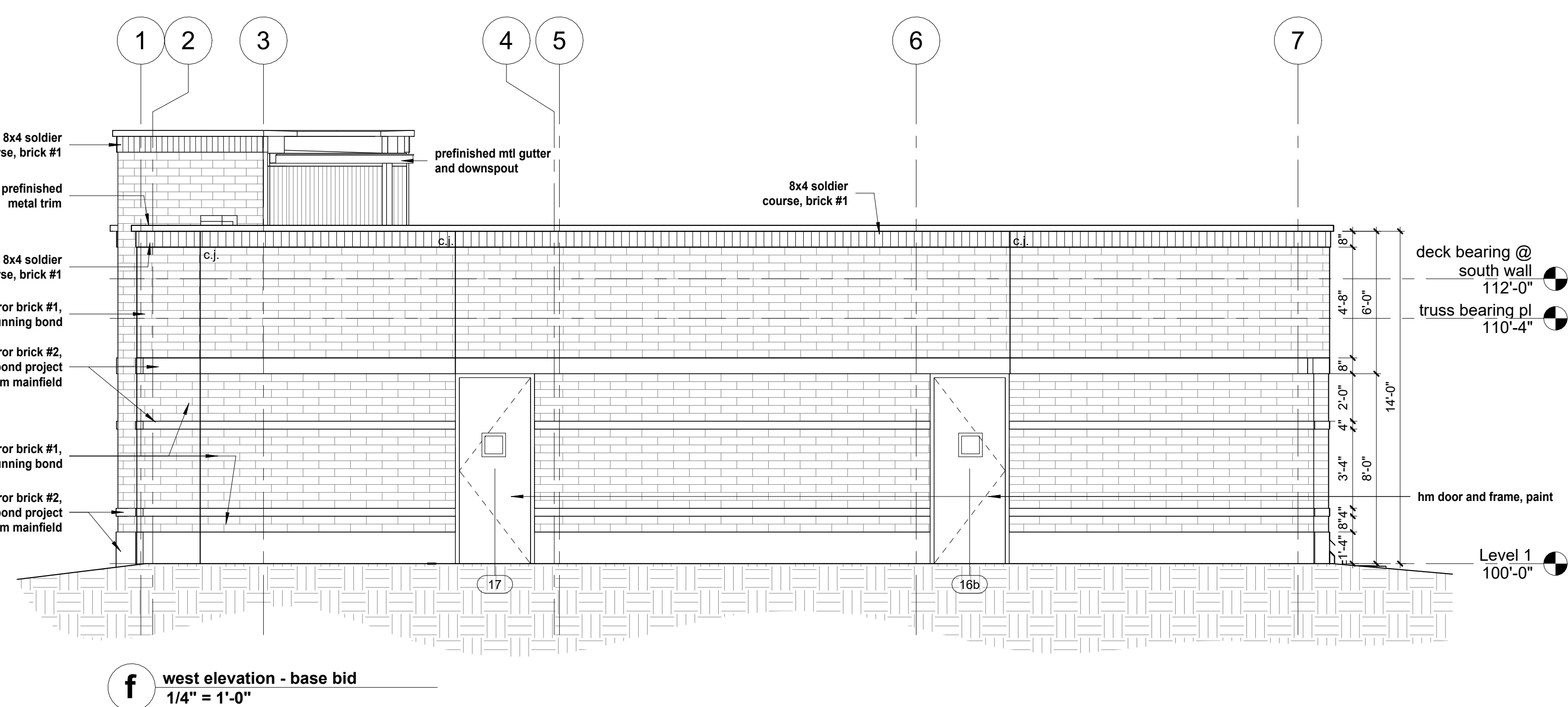
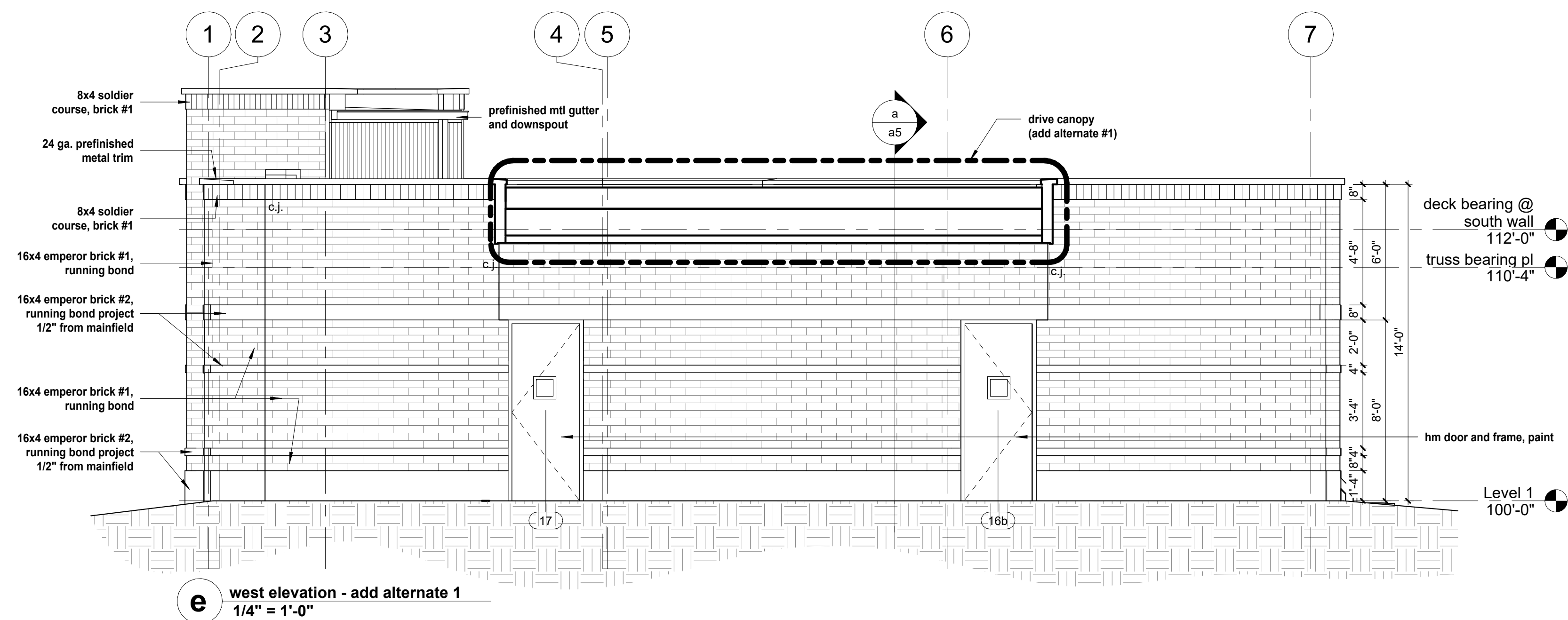
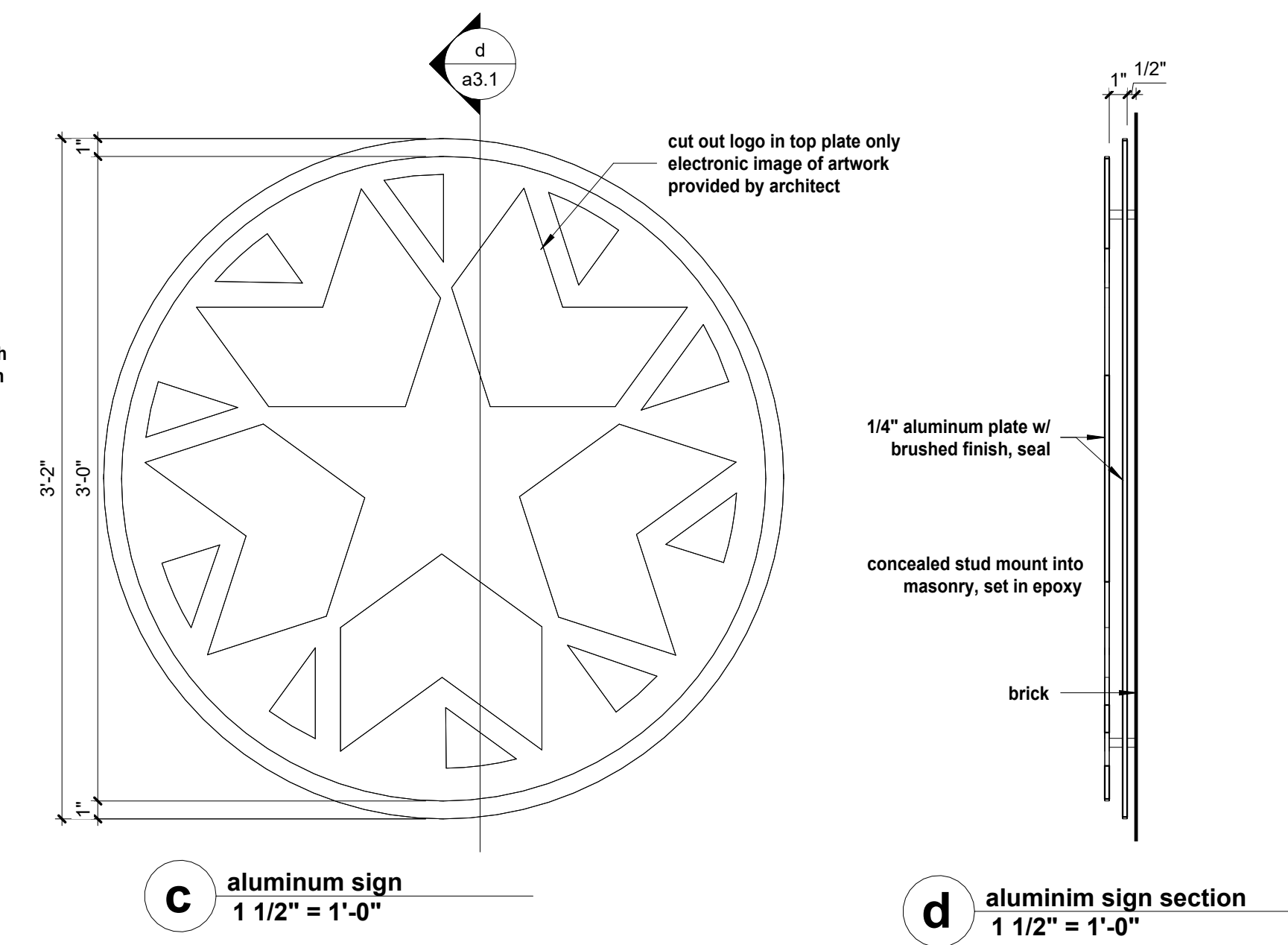
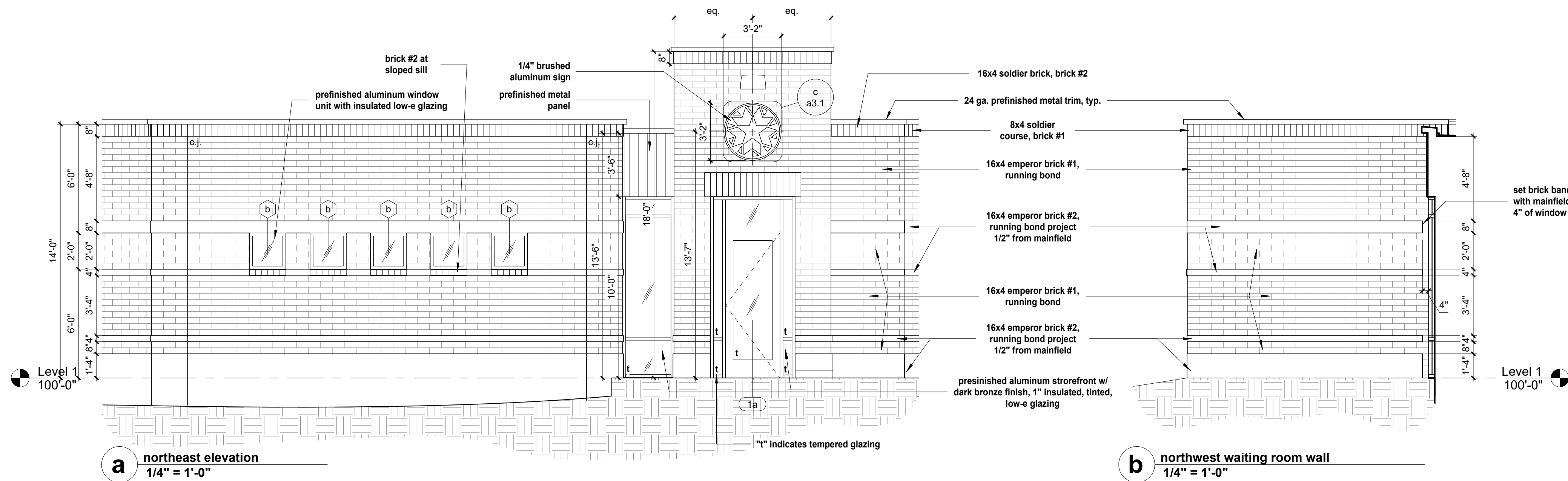








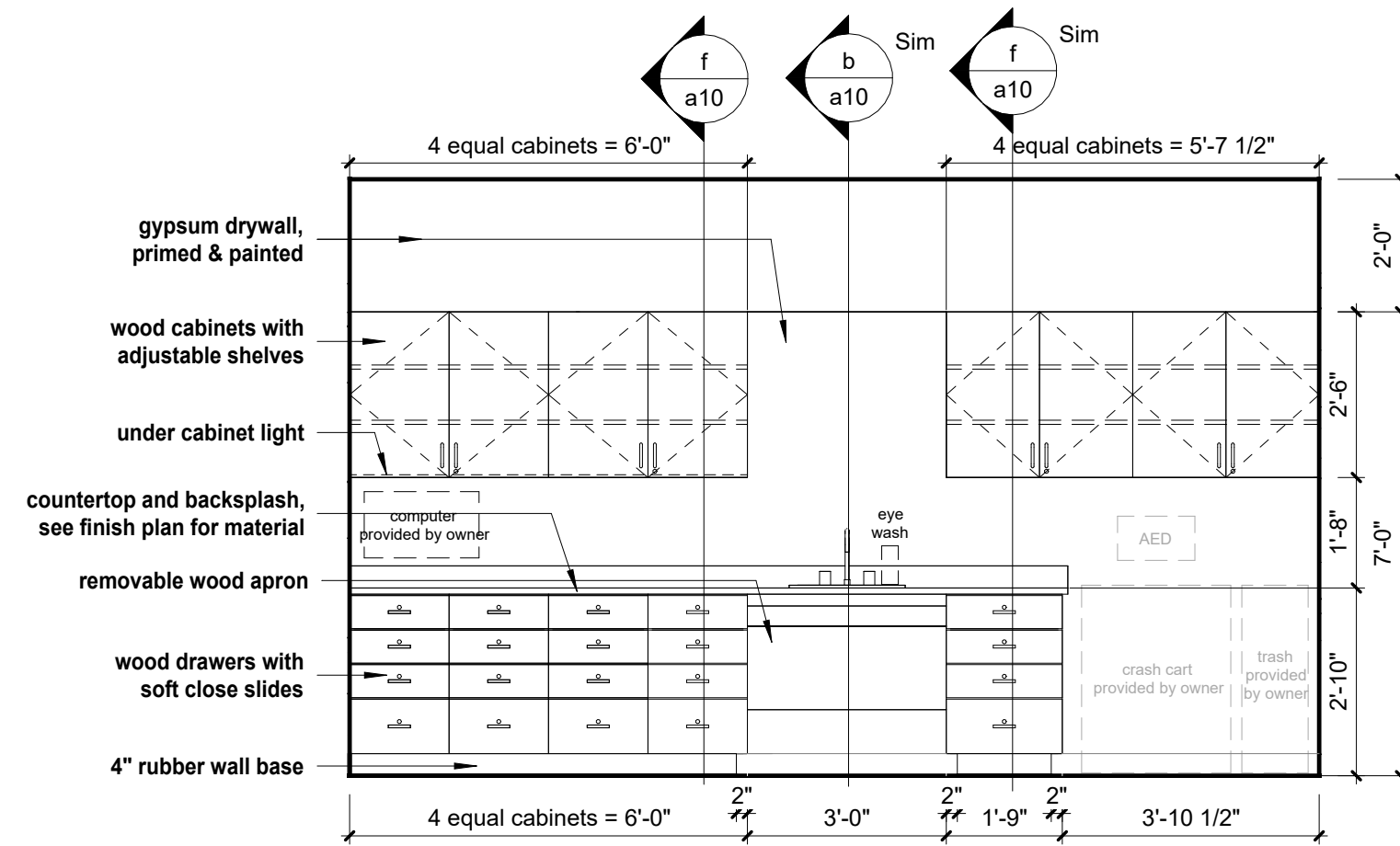




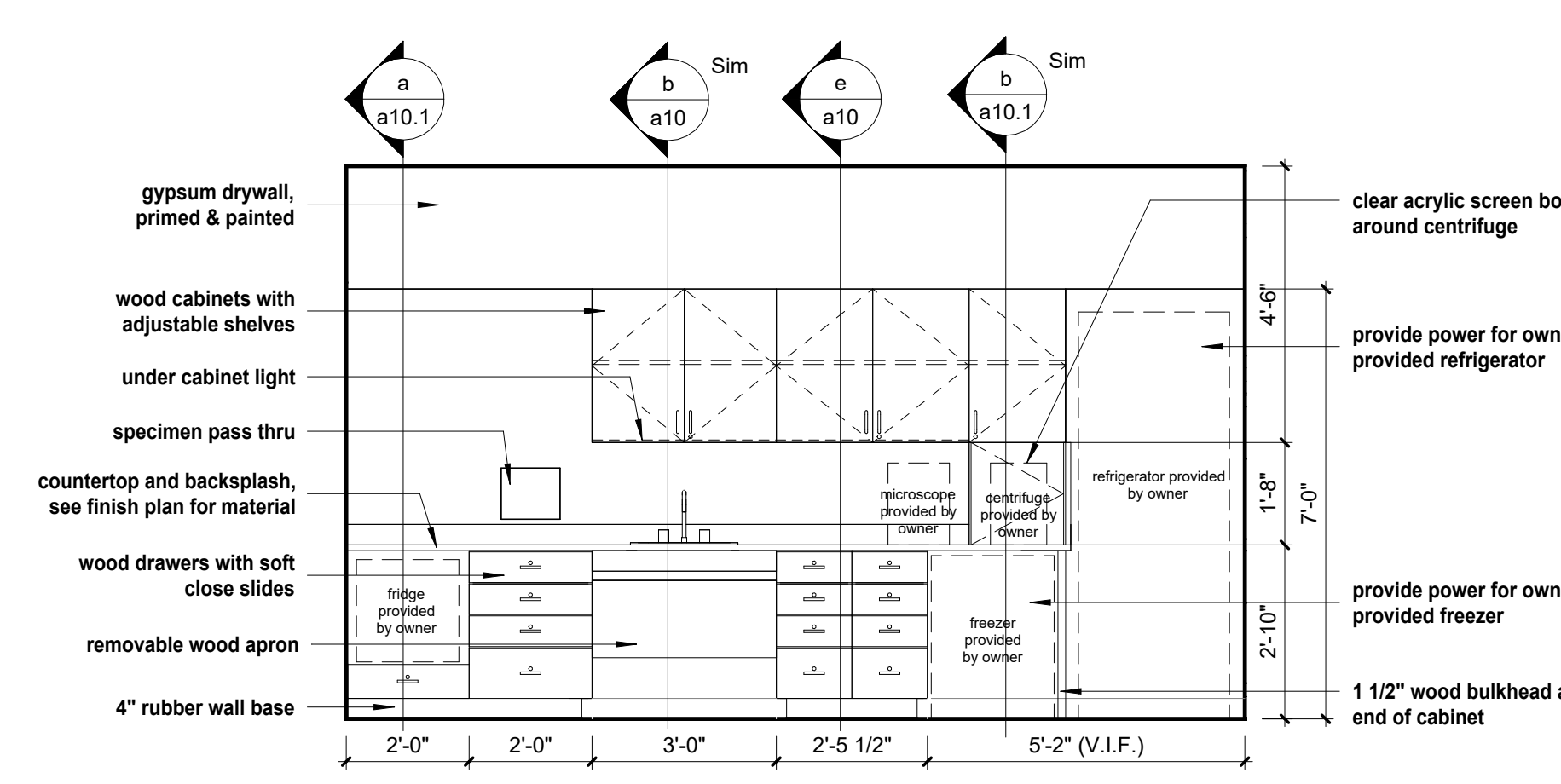
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# Grant County Health Department (BID 2023-05) Lots 1-5, Block 20, Medford, OK

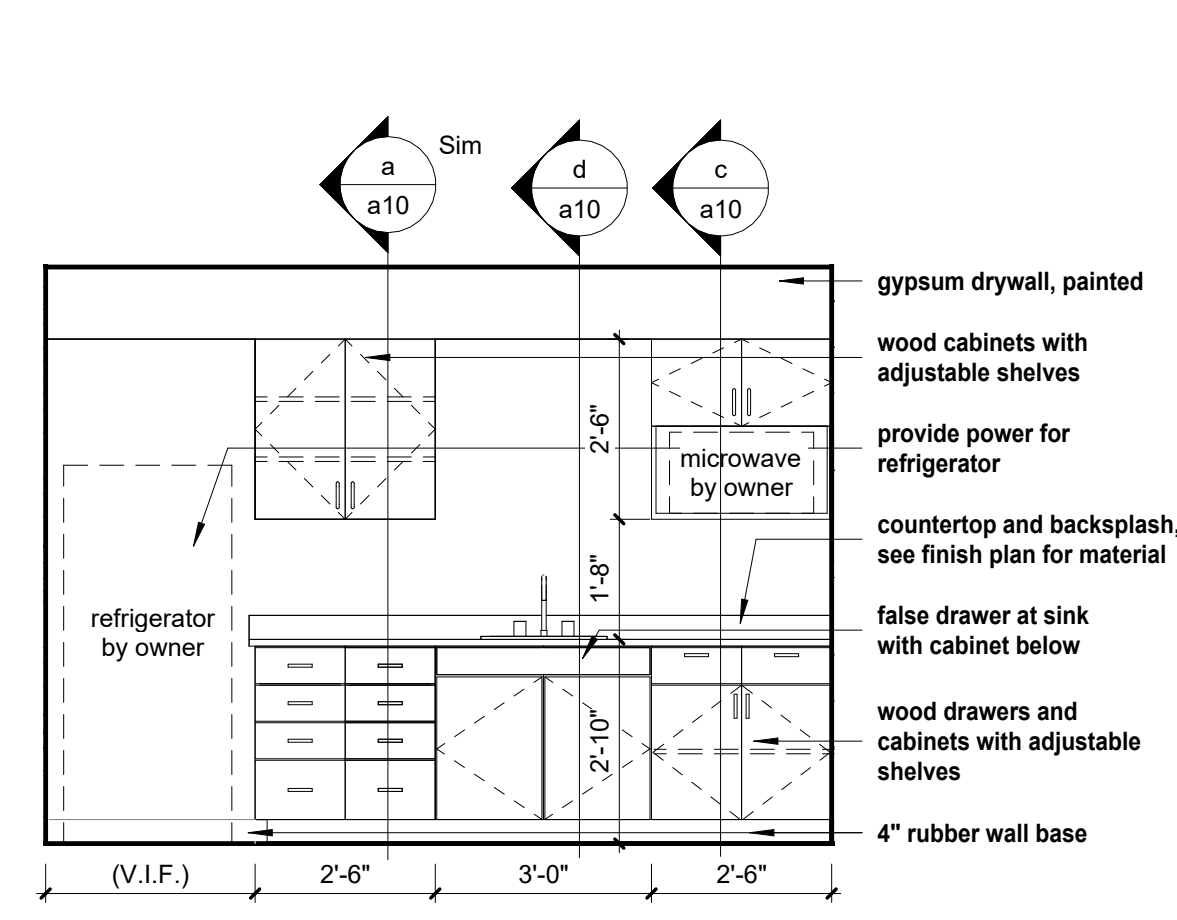




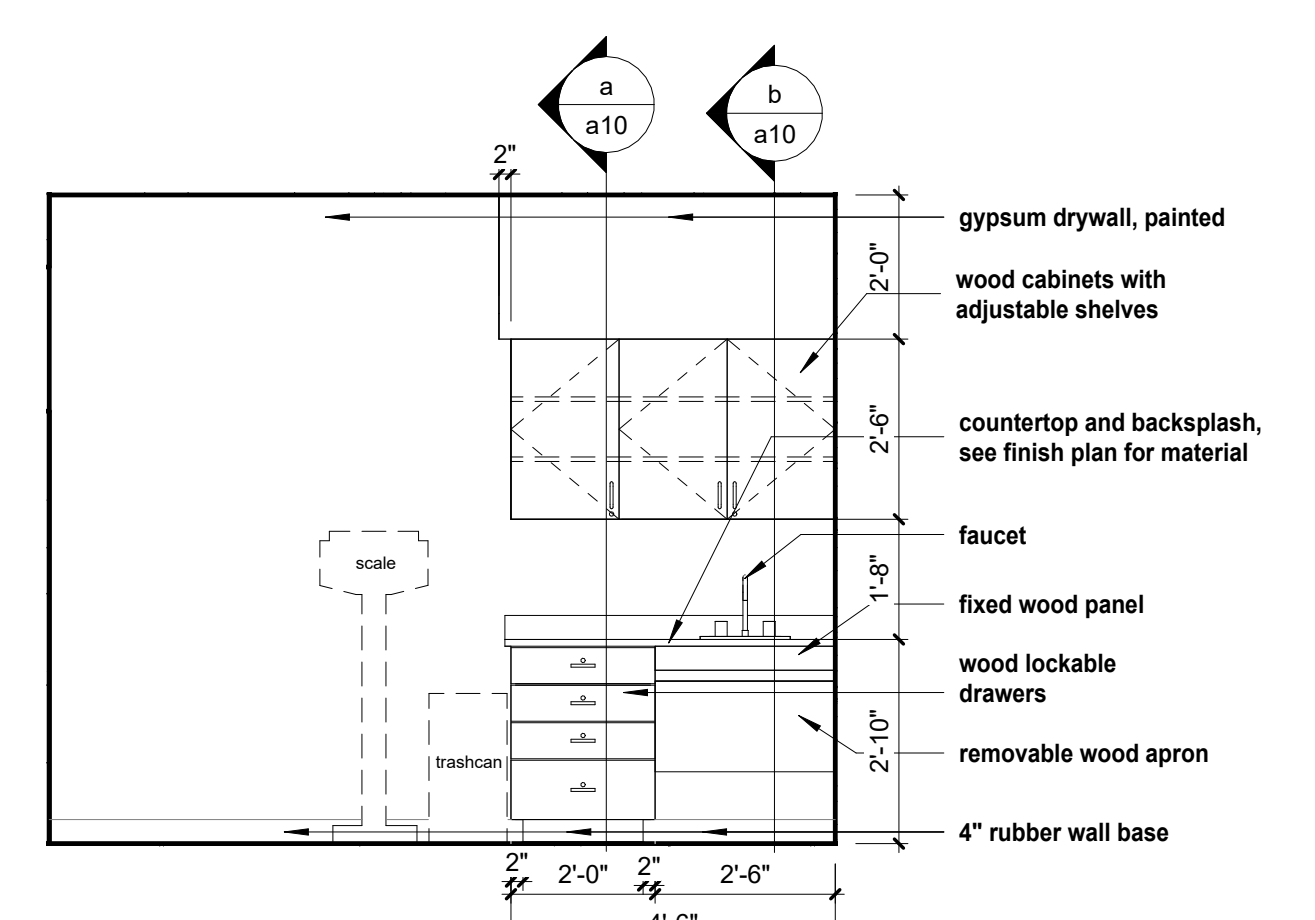
**a** lab looking west  
3/8" = 1'-0"



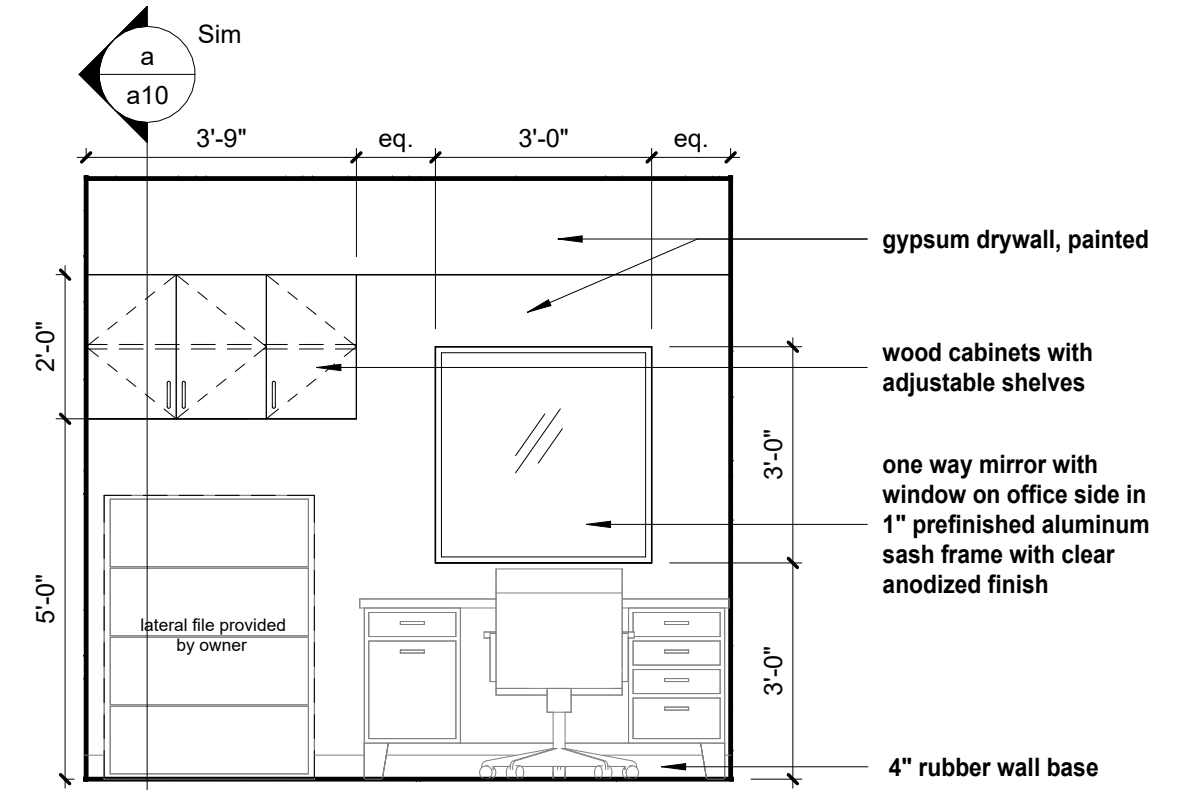
**b** lab looking east  
3/8" = 1'-0"



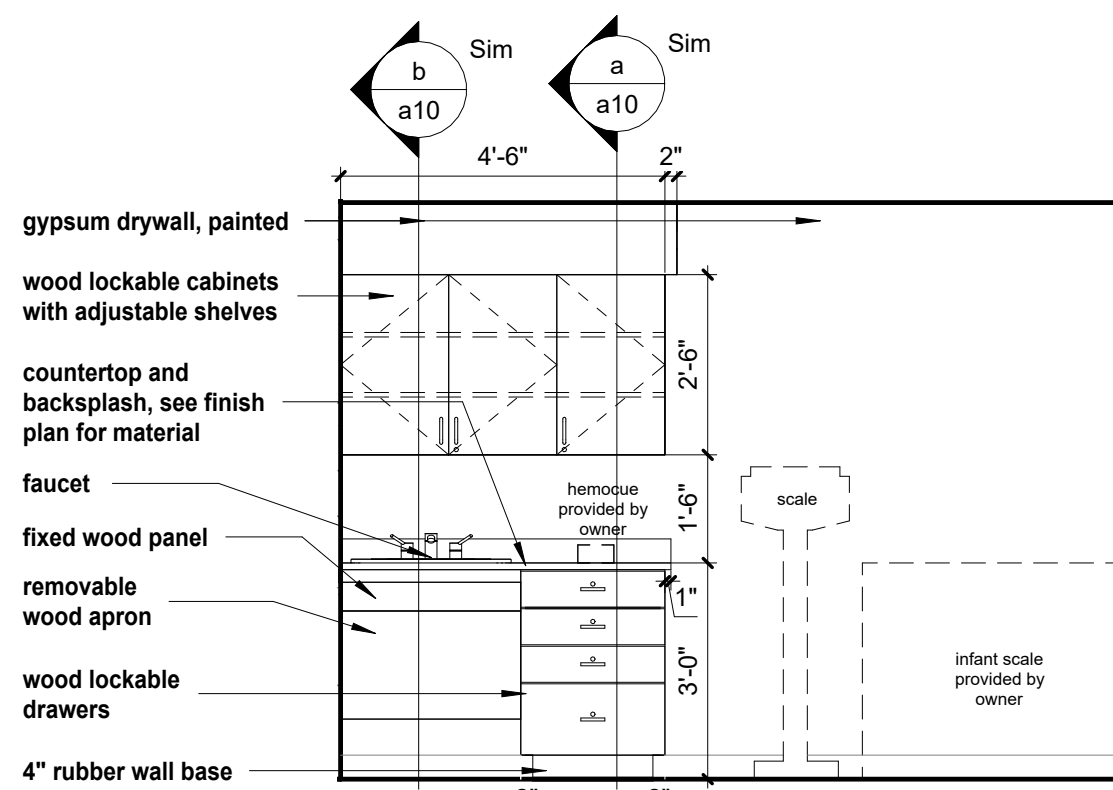
**c** staff room looking east  
3/8" = 1'-0"



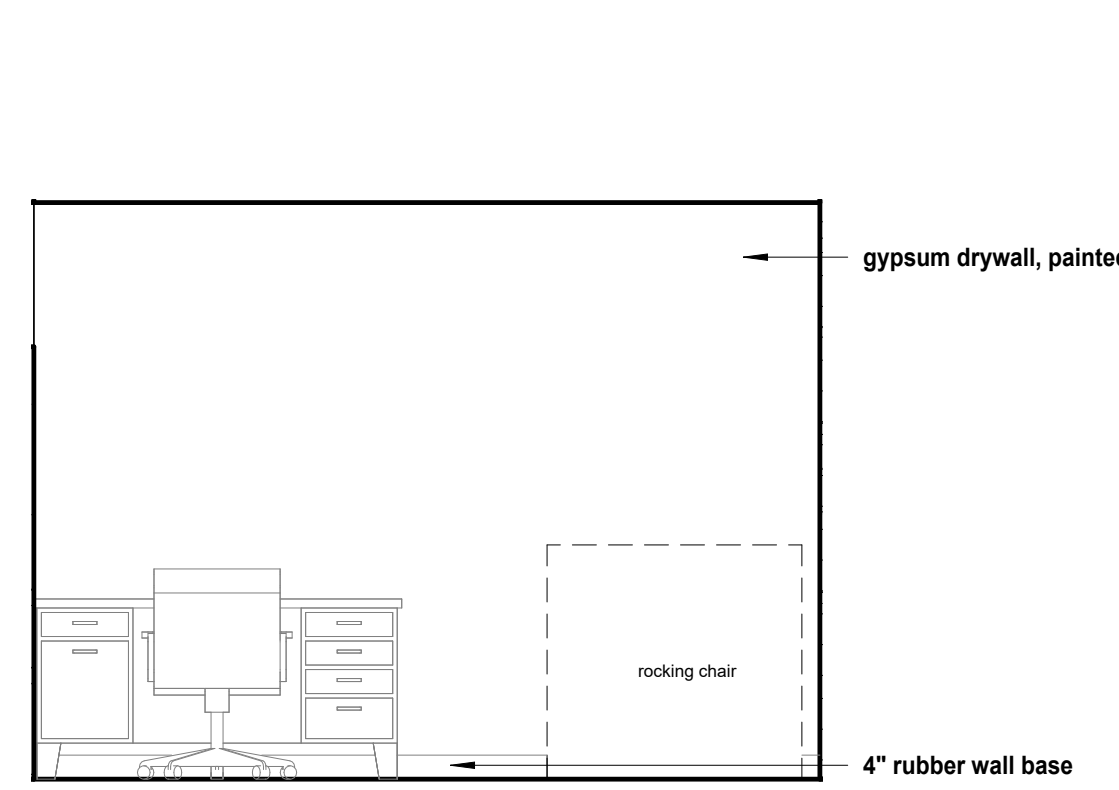
**d** typ. exam room millwork  
3/8" = 1'-0"



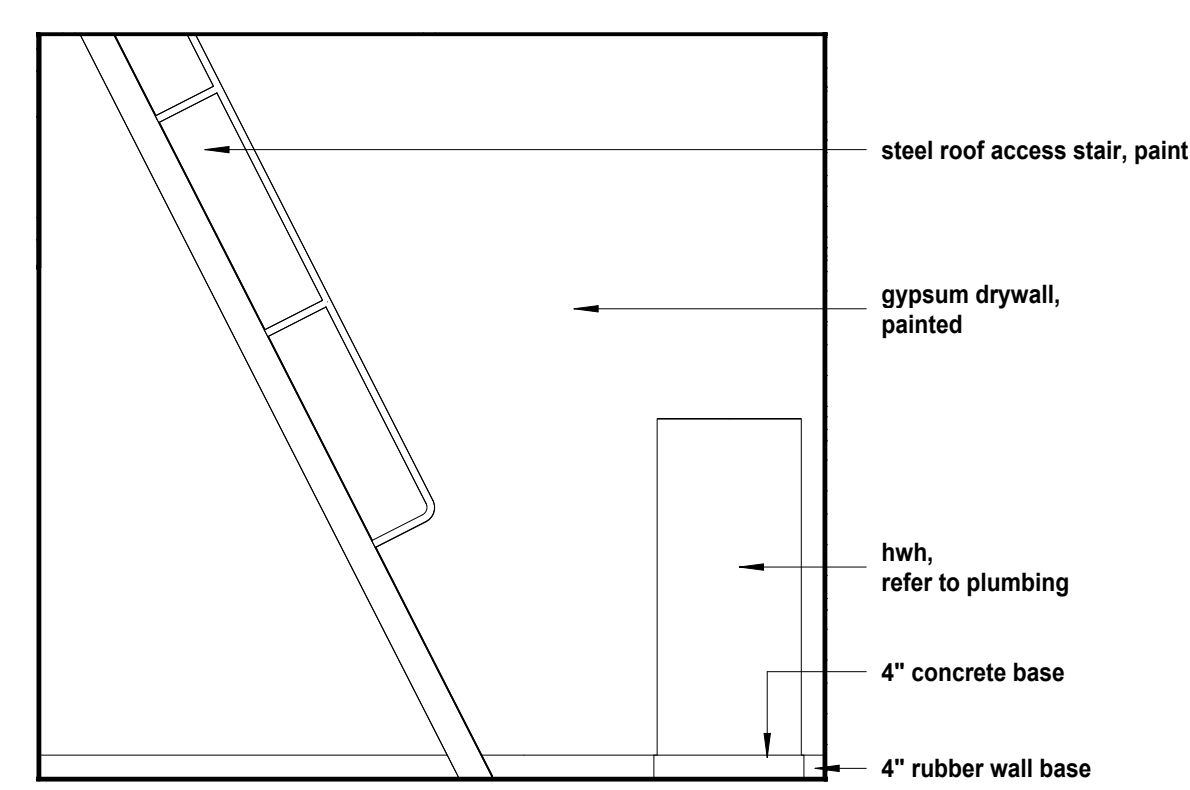
**e** admin. assistant looking south  
3/8" = 1'-0"



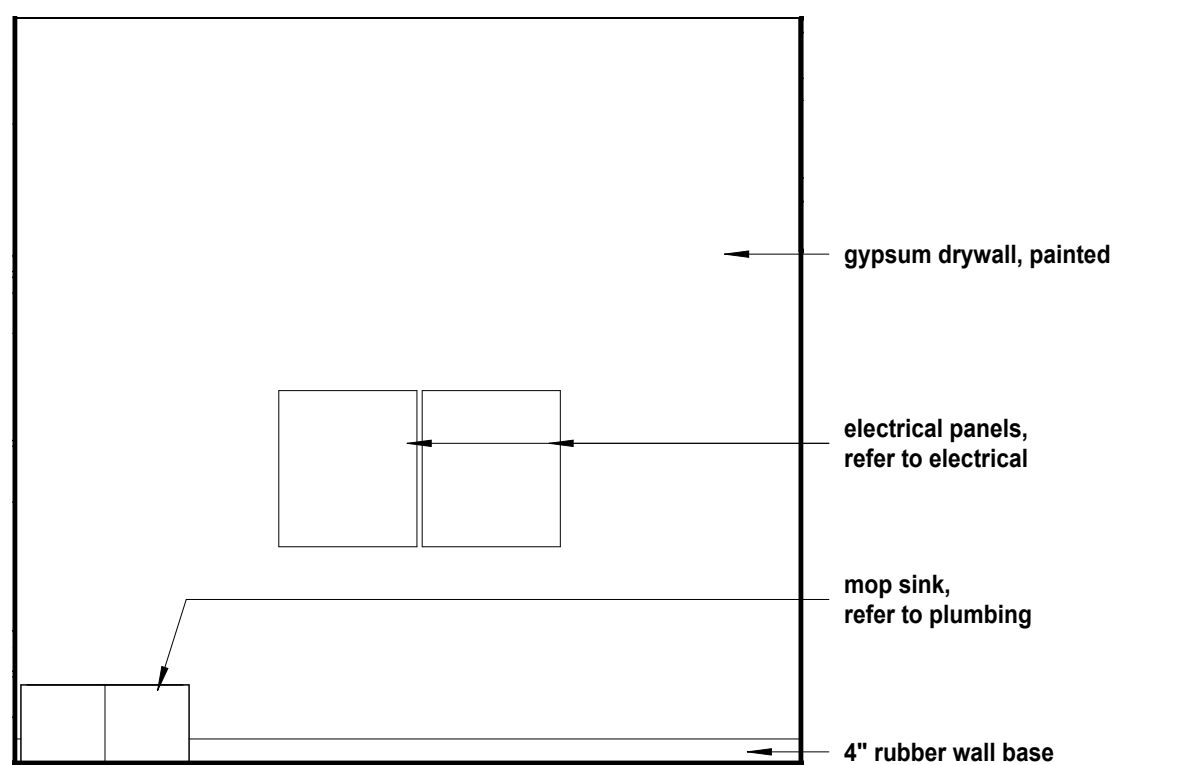
**f** WIC/breastfeeding looking east  
3/8" = 1'-0"



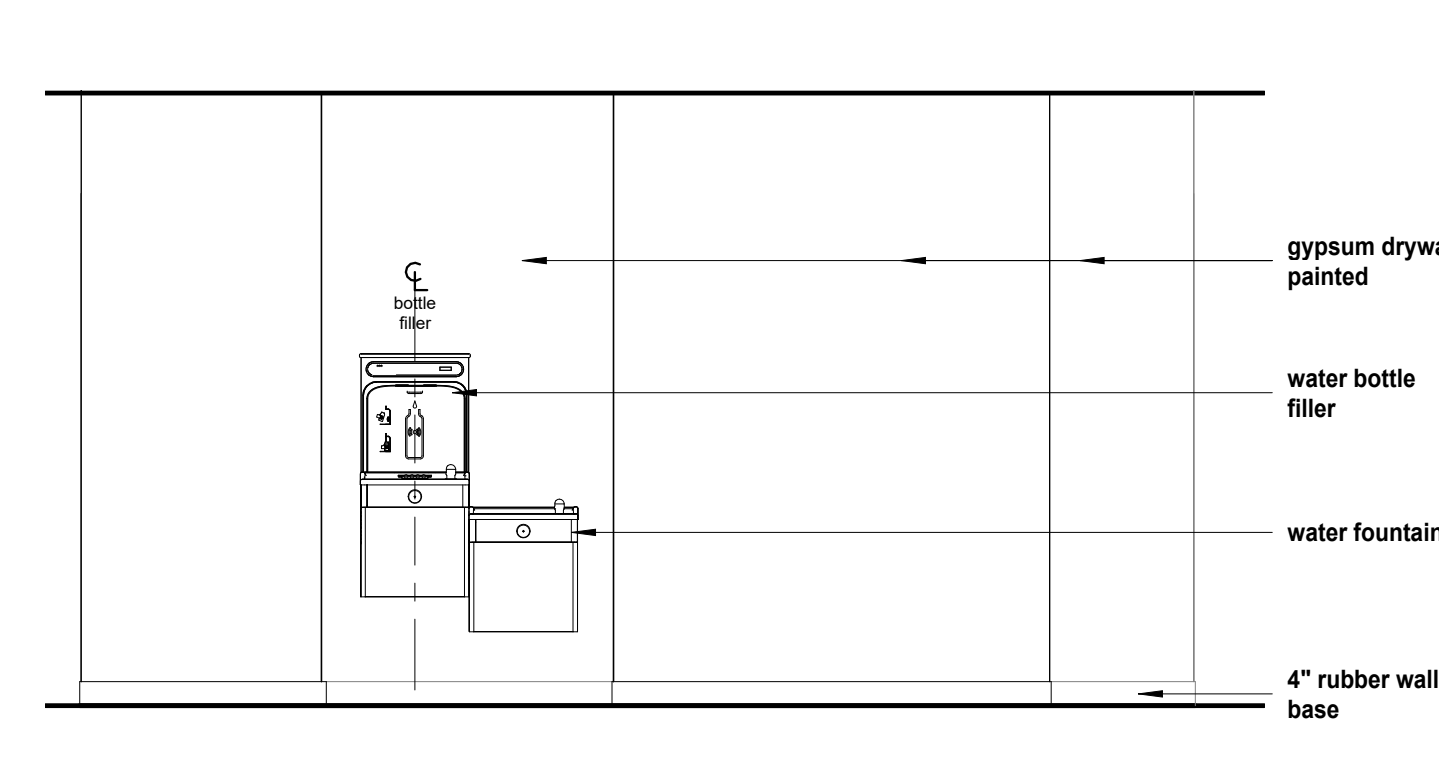
**g** WIC/breastfeeding looking west  
3/8" = 1'-0"



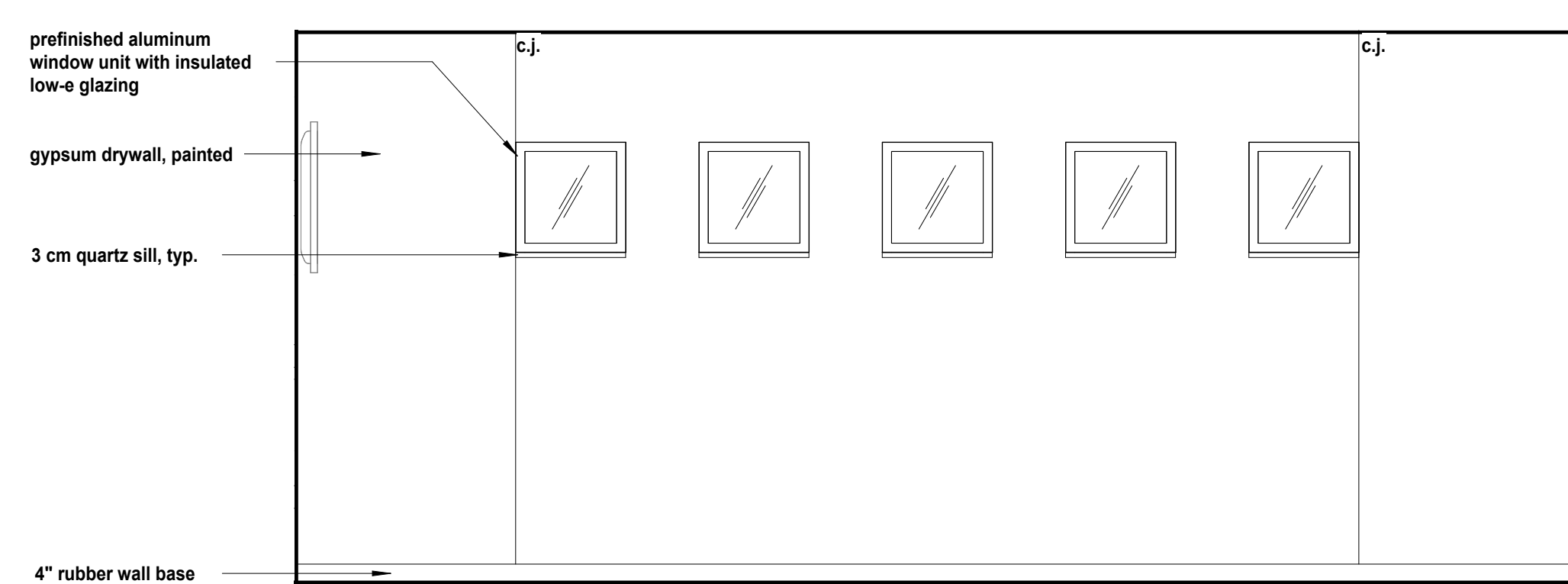
**h** janitor looking east  
3/8" = 1'-0"



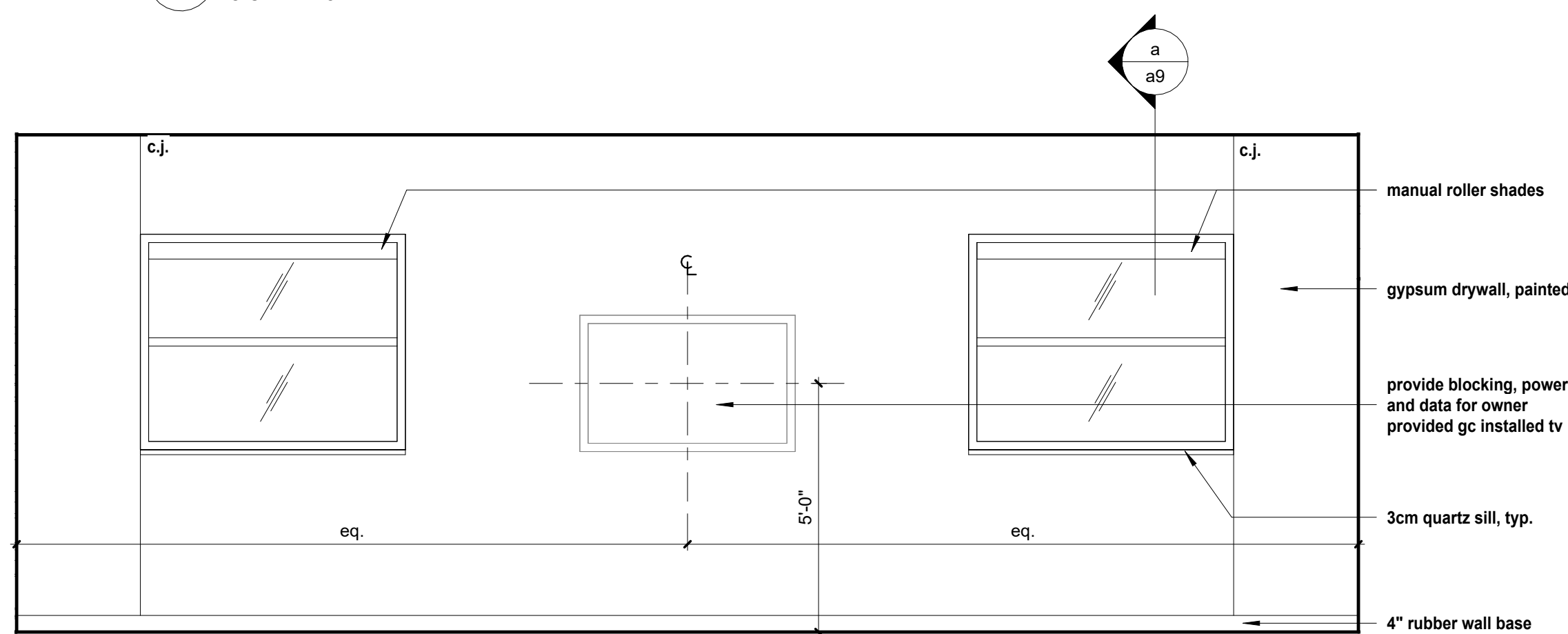
**i** janitor looking west  
3/8" = 1'-0"



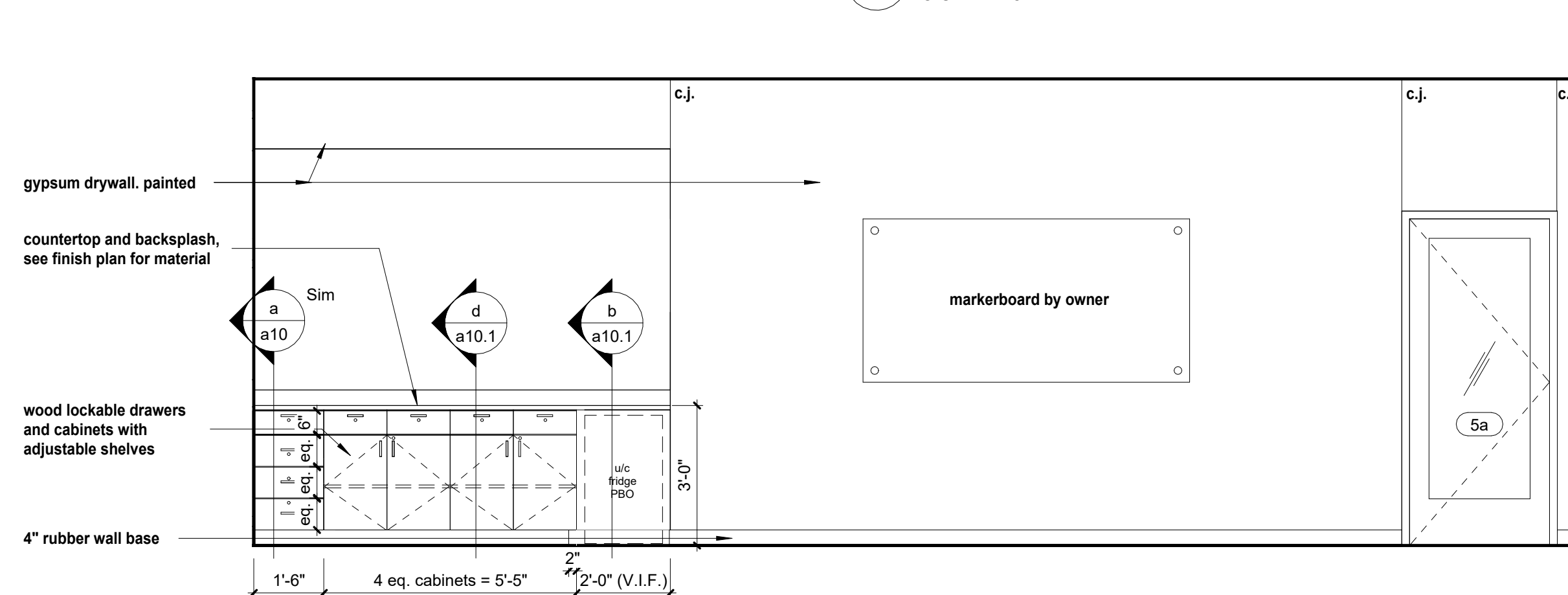
**j** corridor looking west  
3/8" = 1'-0"



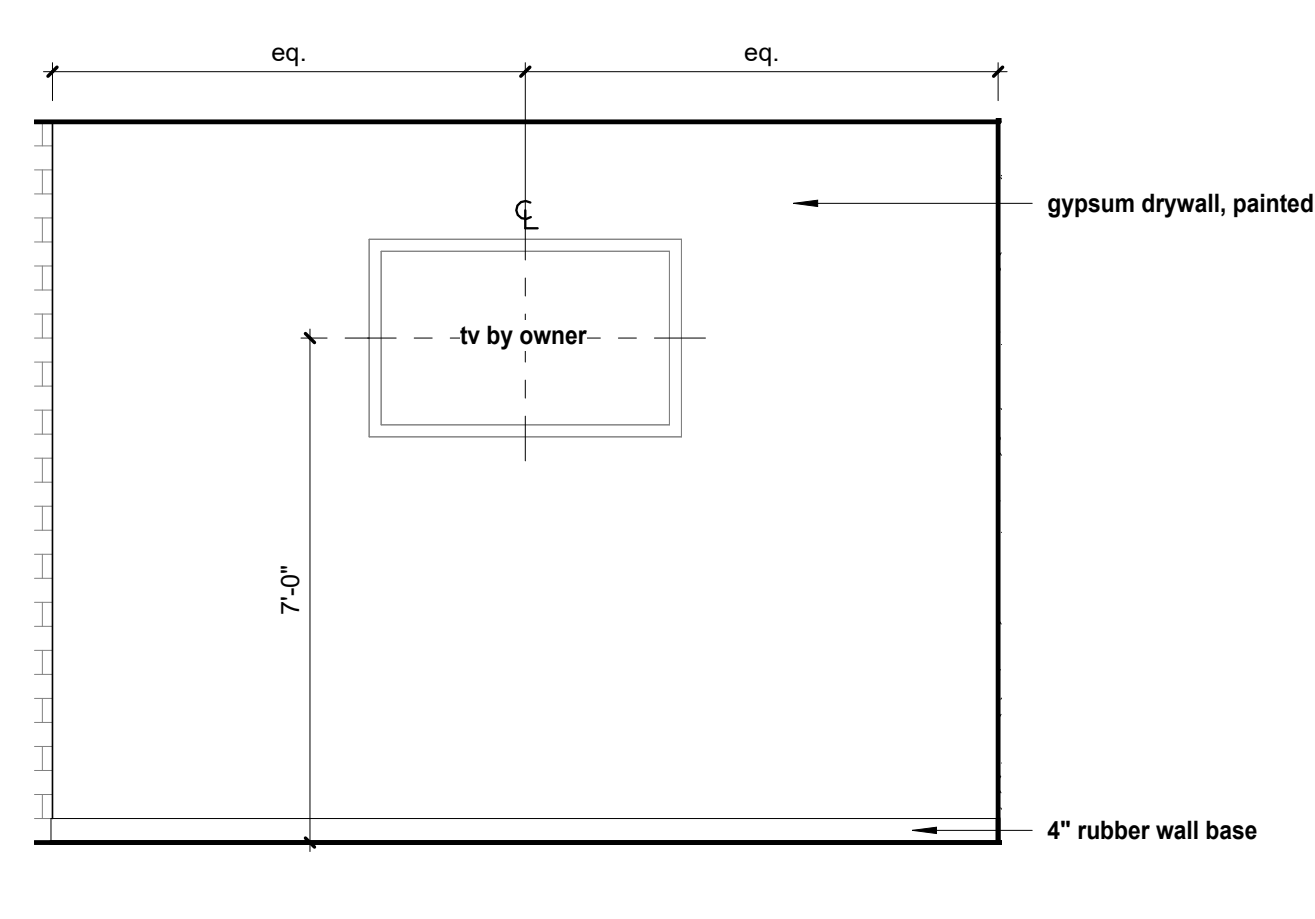
**k** waiting looking northeast  
3/8" = 1'-0"



**l** community looking south  
3/8" = 1'-0"

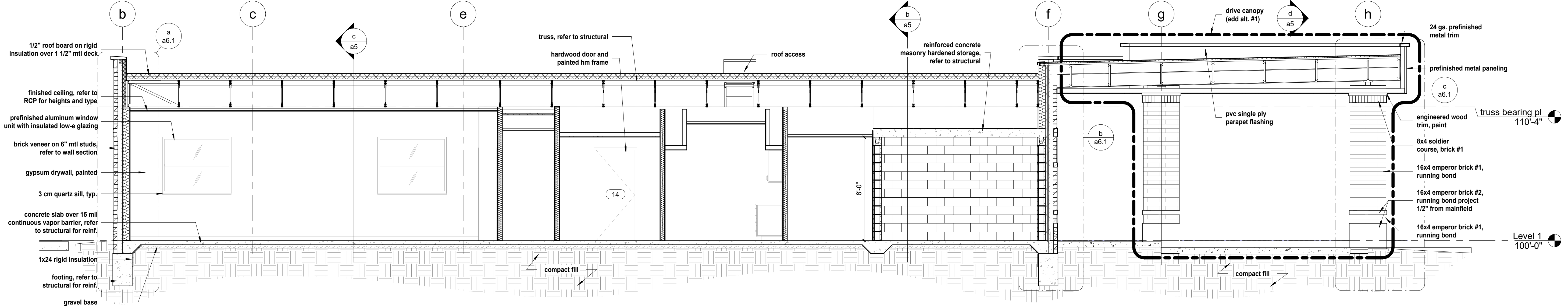


**m** community looking north  
3/8" = 1'-0"

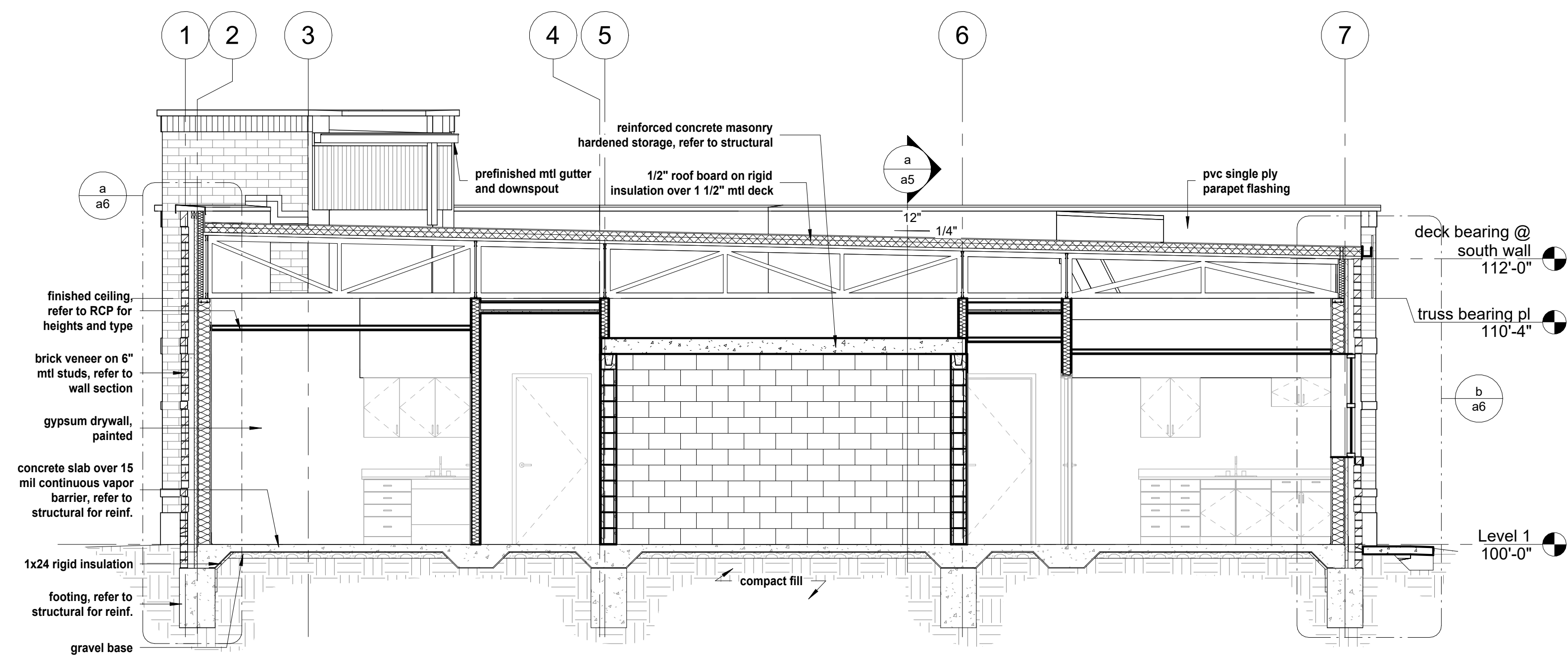


**n** waiting room looking northwest  
3/8" = 1'-0"

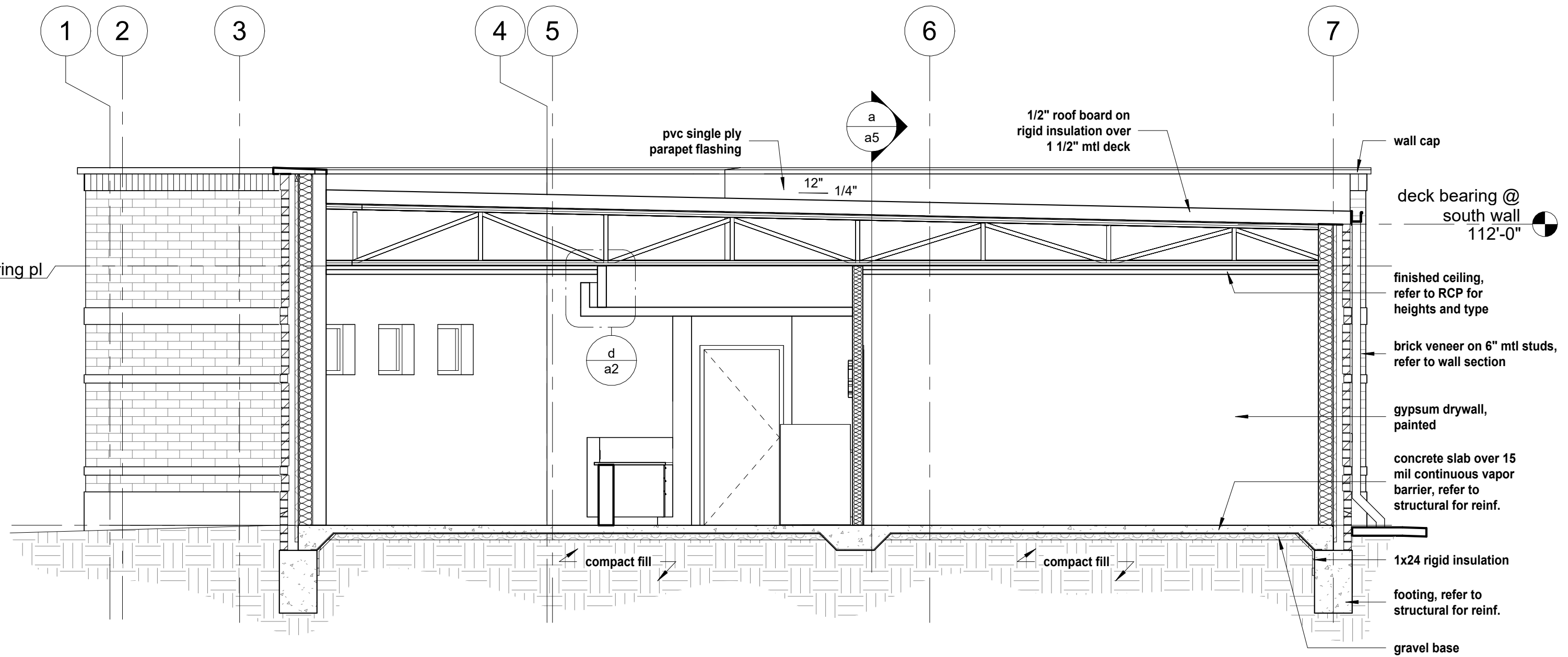




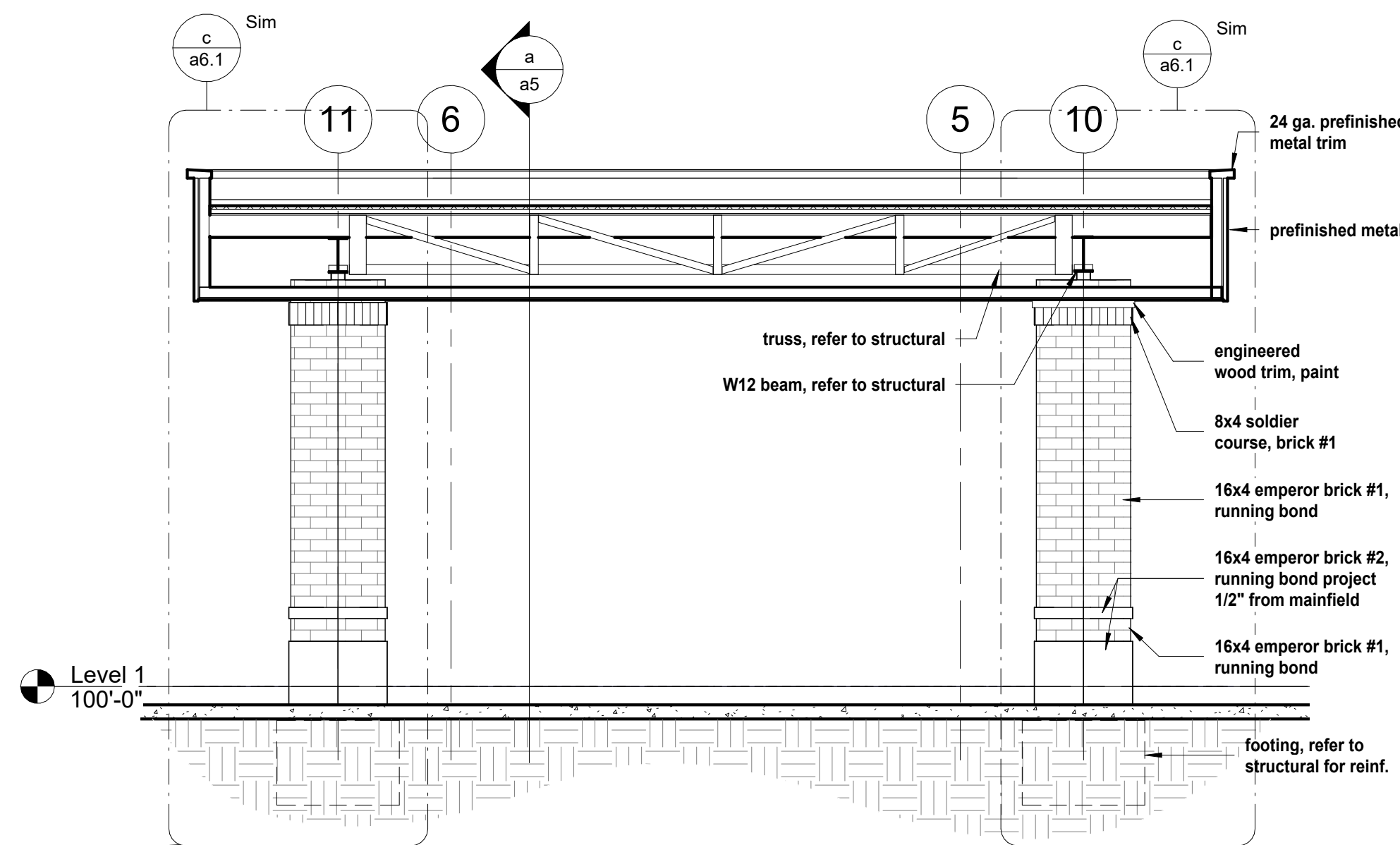
**a** longitudinal section looking north  
1/4" = 1'-0"



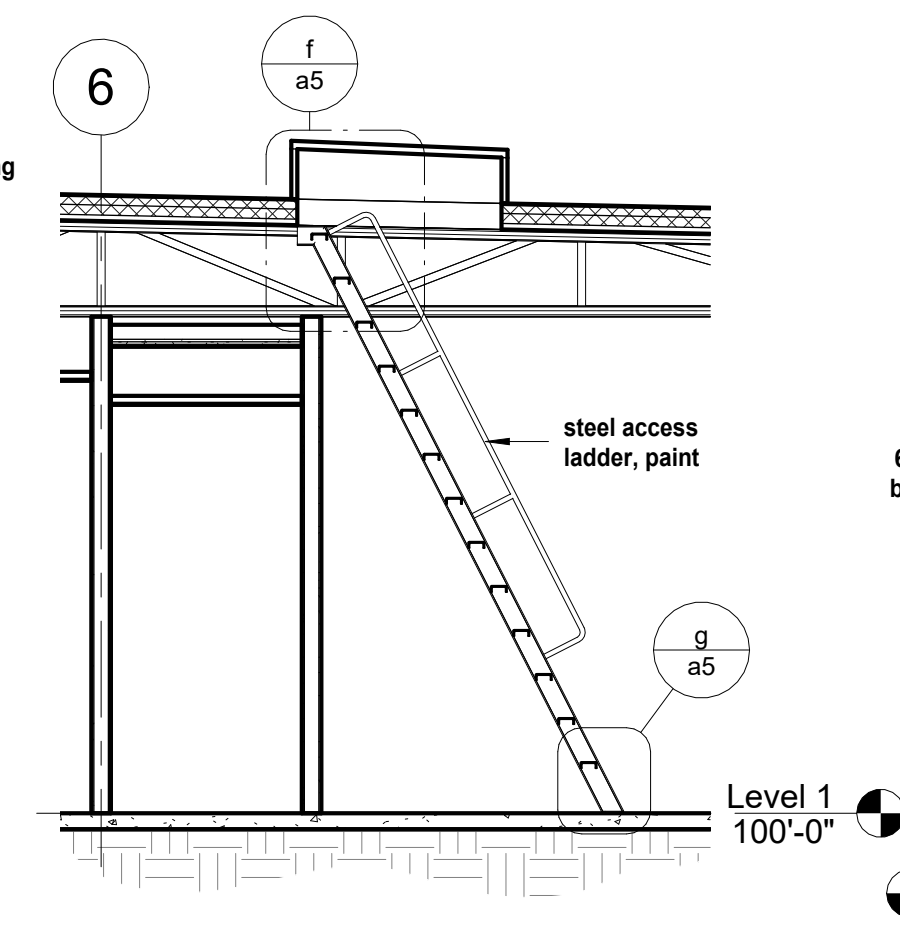
**b** typ. transverse section looking east  
1/4" = 1'-0"



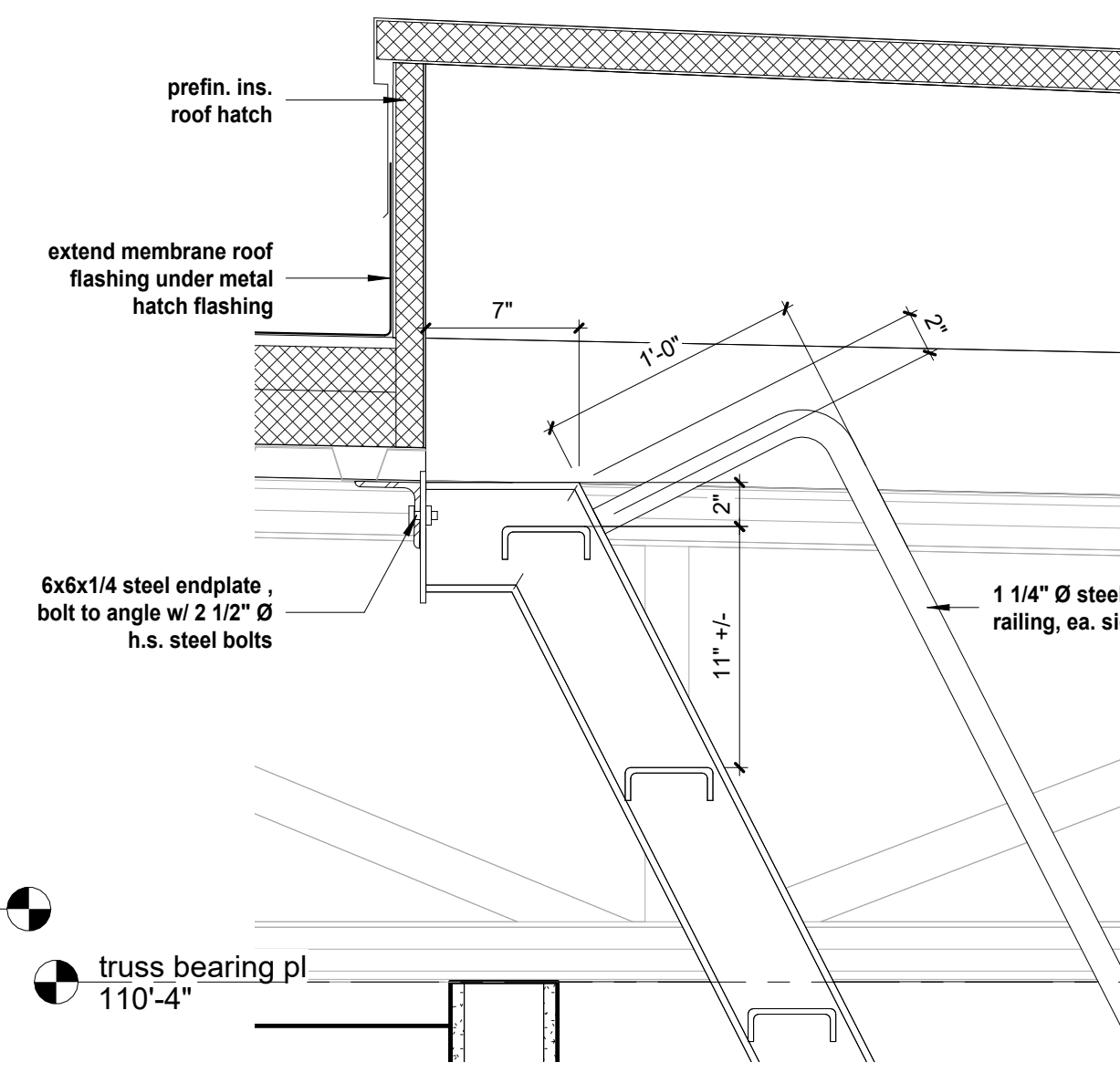
**c** transverse section looking east  
1/4" = 1'-0"



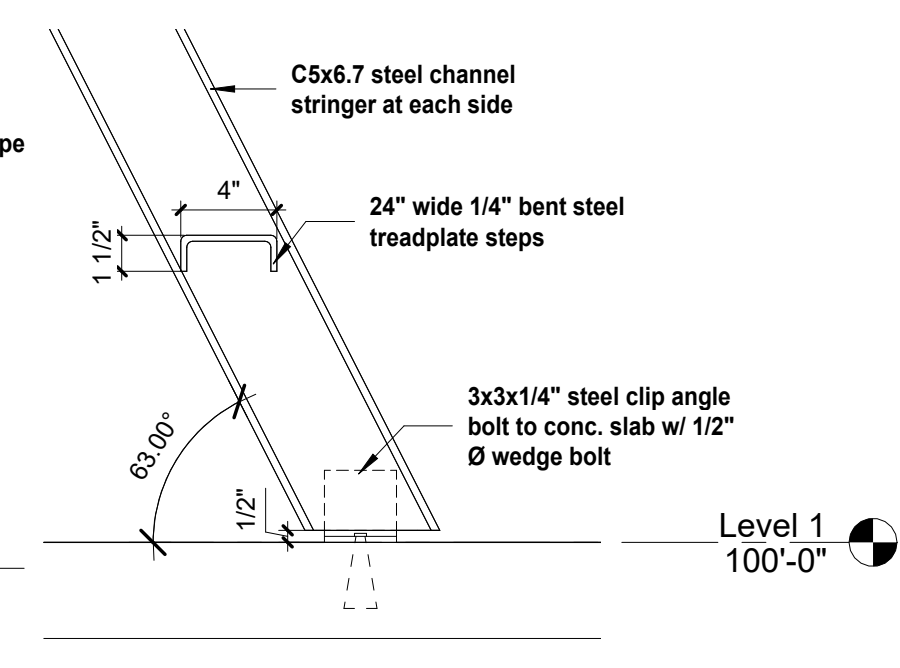
**d** covered canopy building section (add alternate #1)  
1/4" = 1'-0"



**e** section thru roof access ladder  
1/4" = 1'-0"



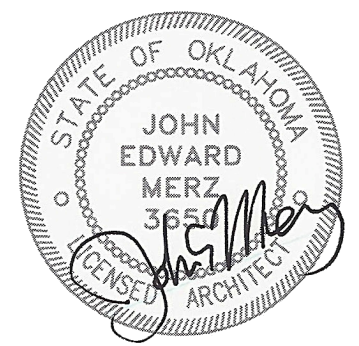
**f** roof access ladder at roof  
1 1/2" = 1'-0"



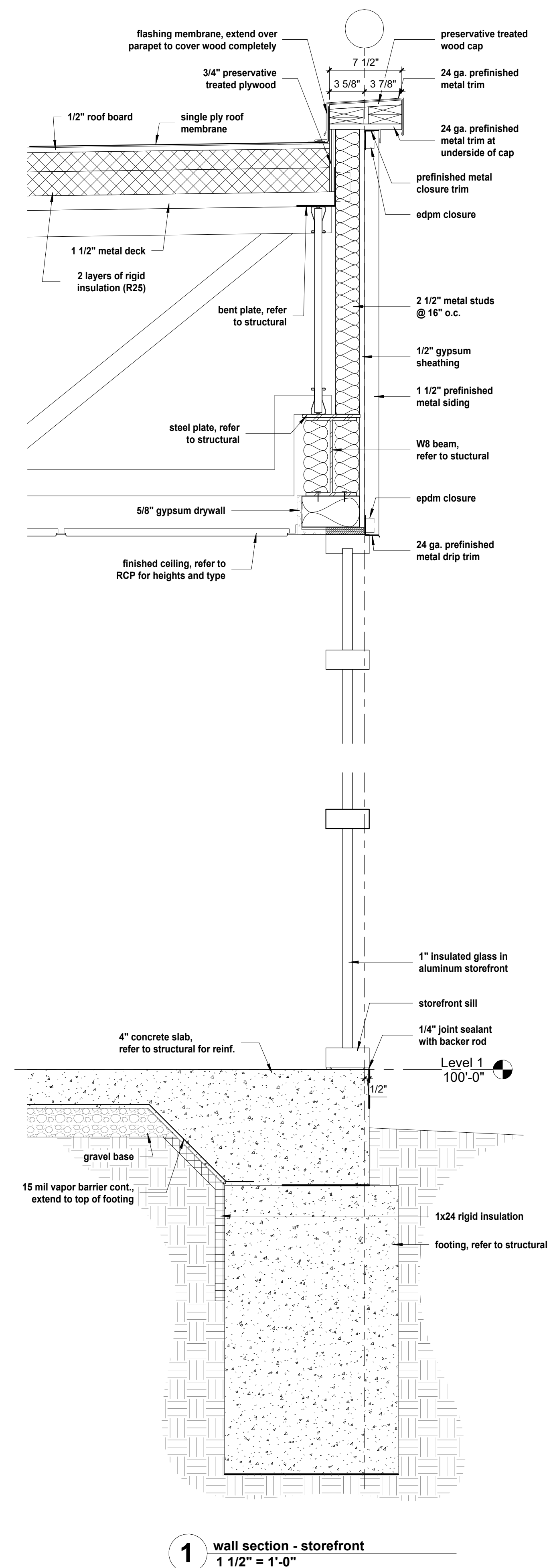
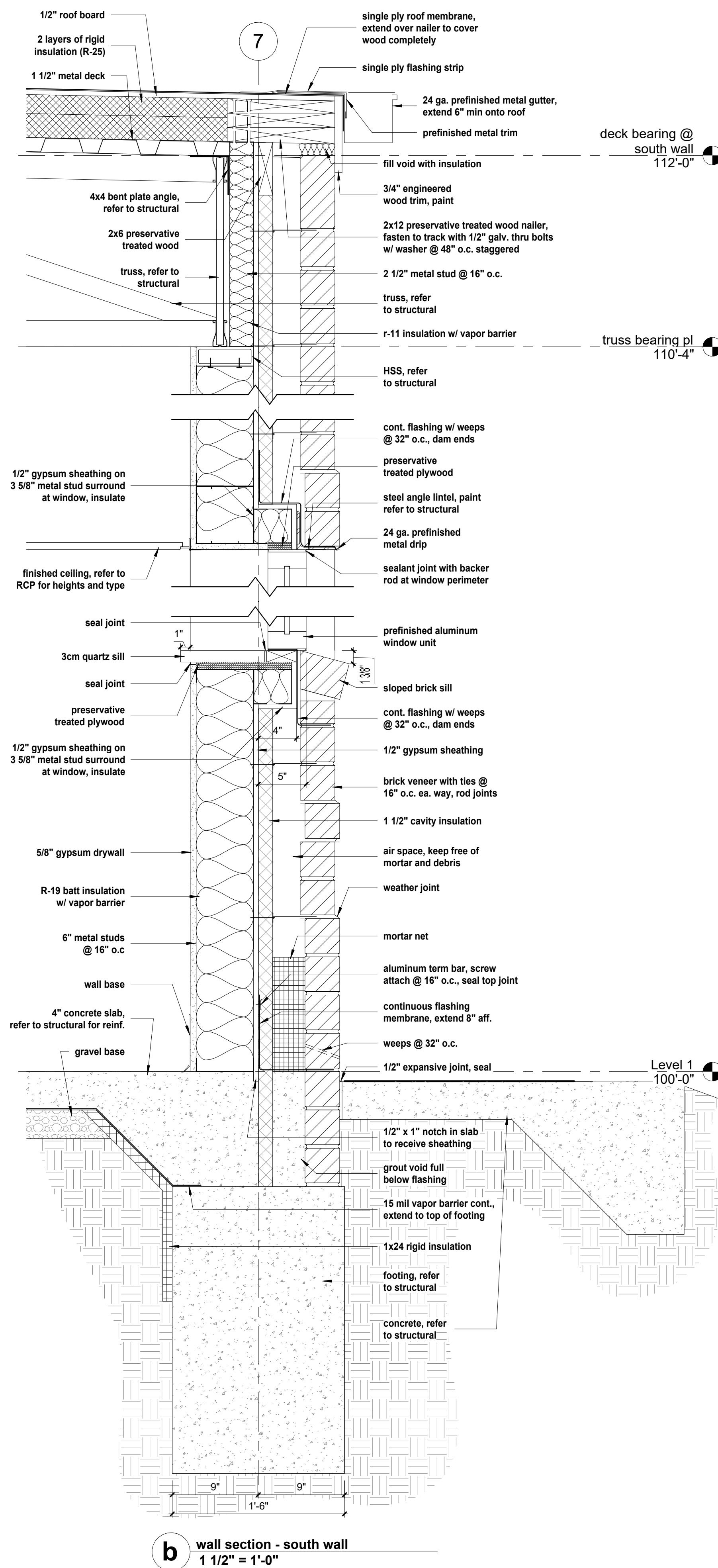
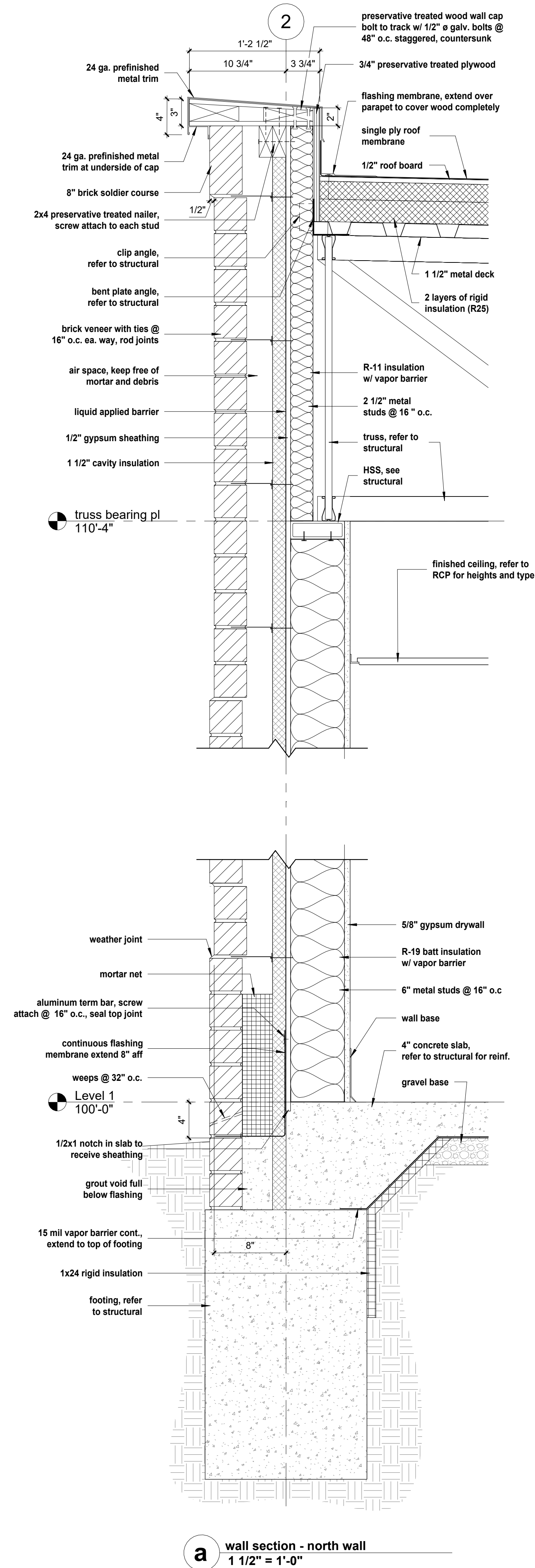
**g** roof access ladder at ff  
1 1/2" = 1'-0"

date issued: 03-03-23					

# Grant County Health Department (BID 2023-05) Lots 1-5, Block 20, Medford, OK







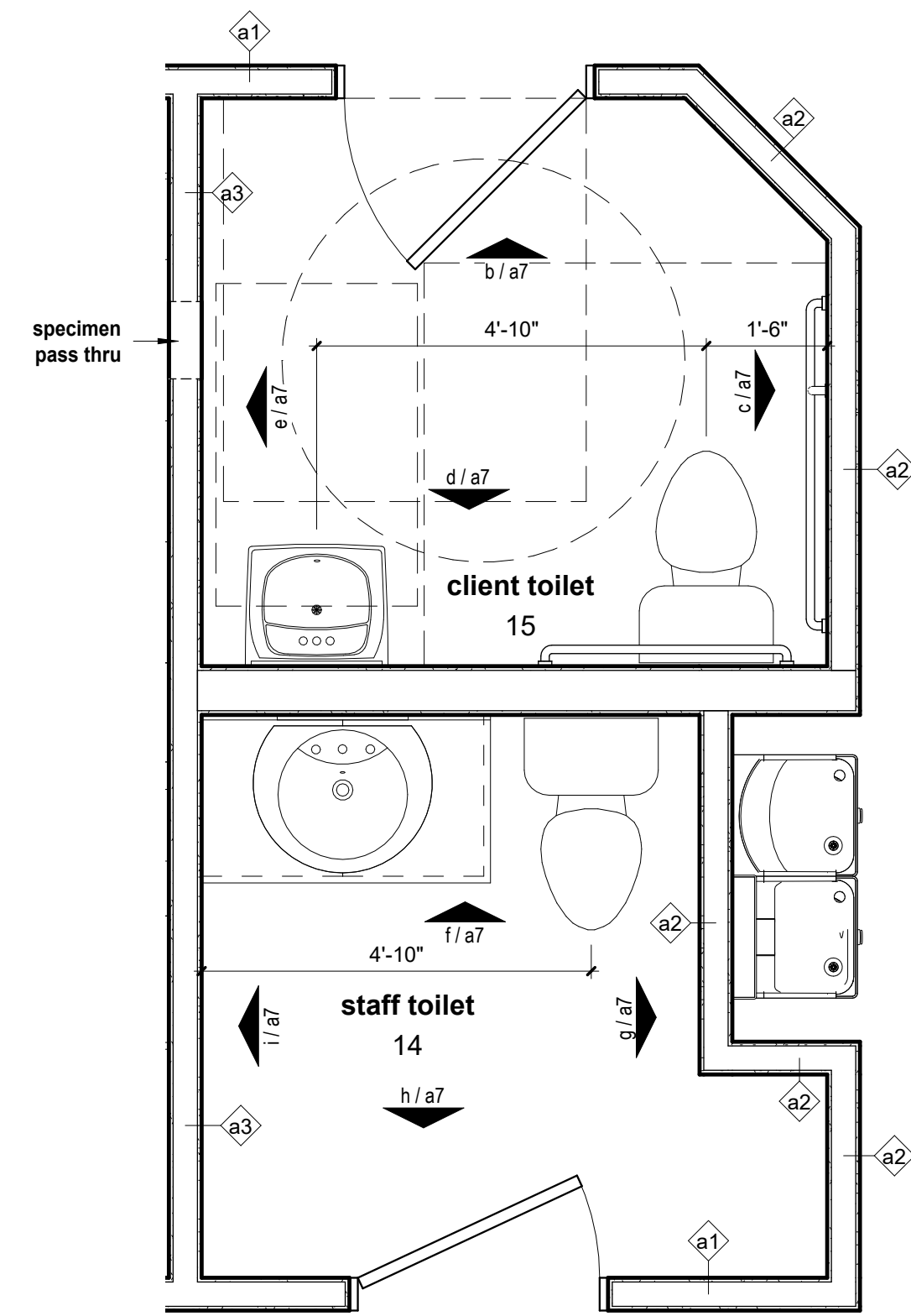
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# Grant County Health Department (BID 2023-05) Lots 1-5, Block 20, Medford, OK

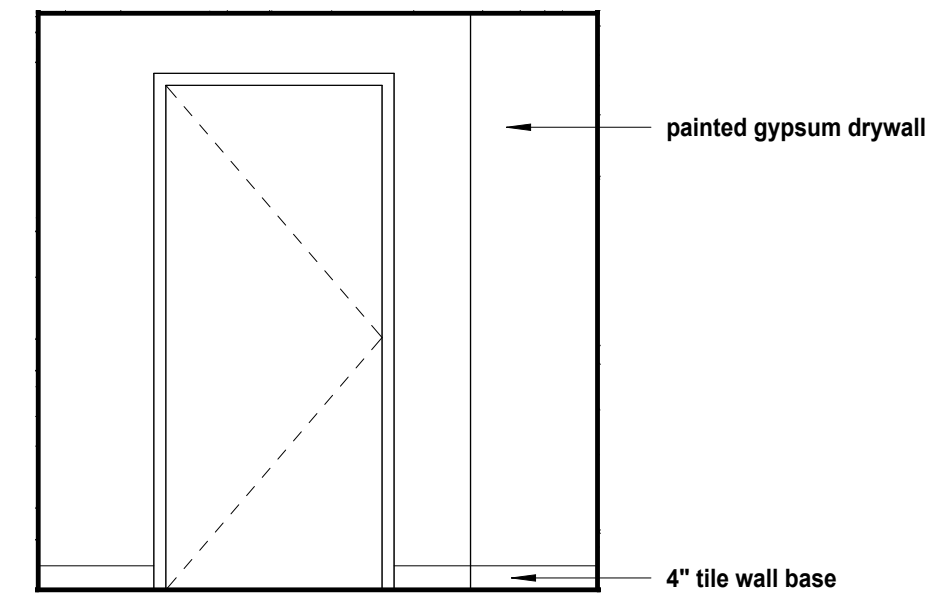




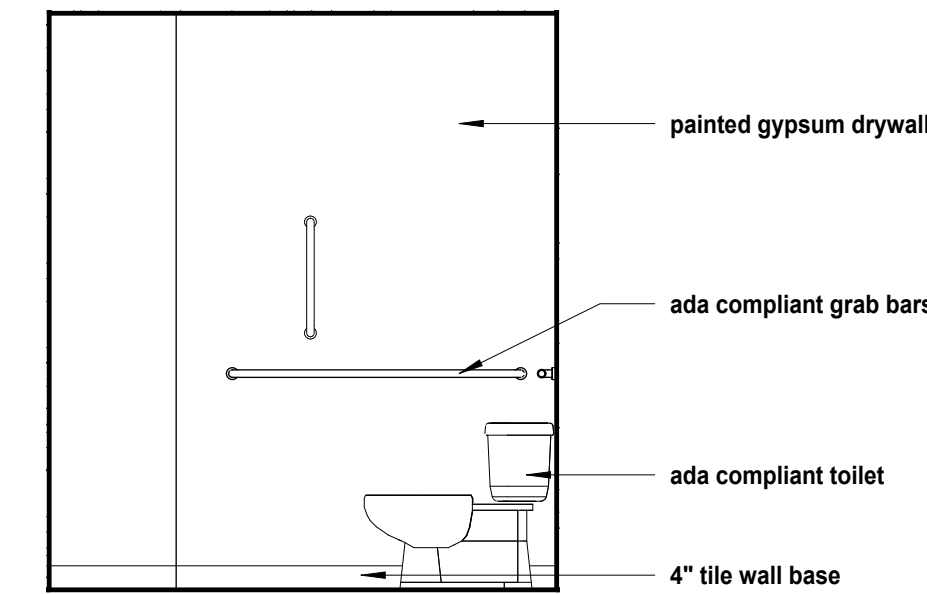




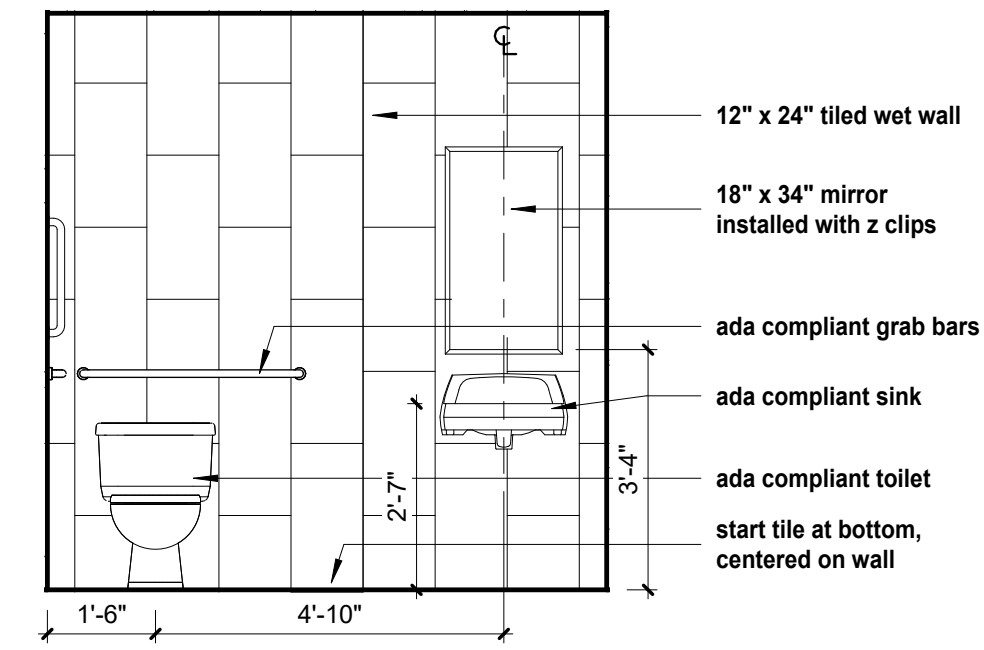
**a** enlarged floorplan - client/staff toilet  
1/2" = 1'-0"



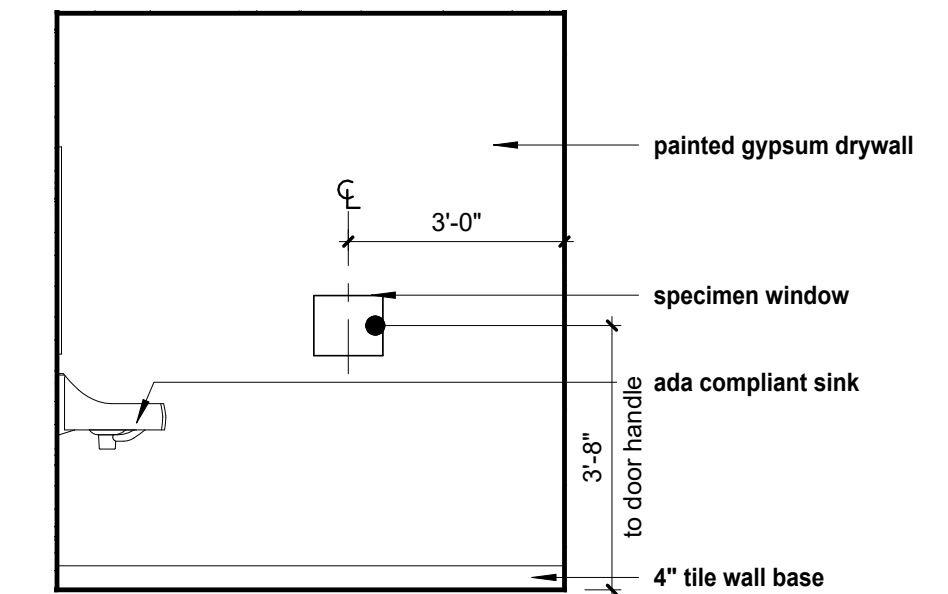
**b** client toilet looking north  
3/8" = 1'-0"



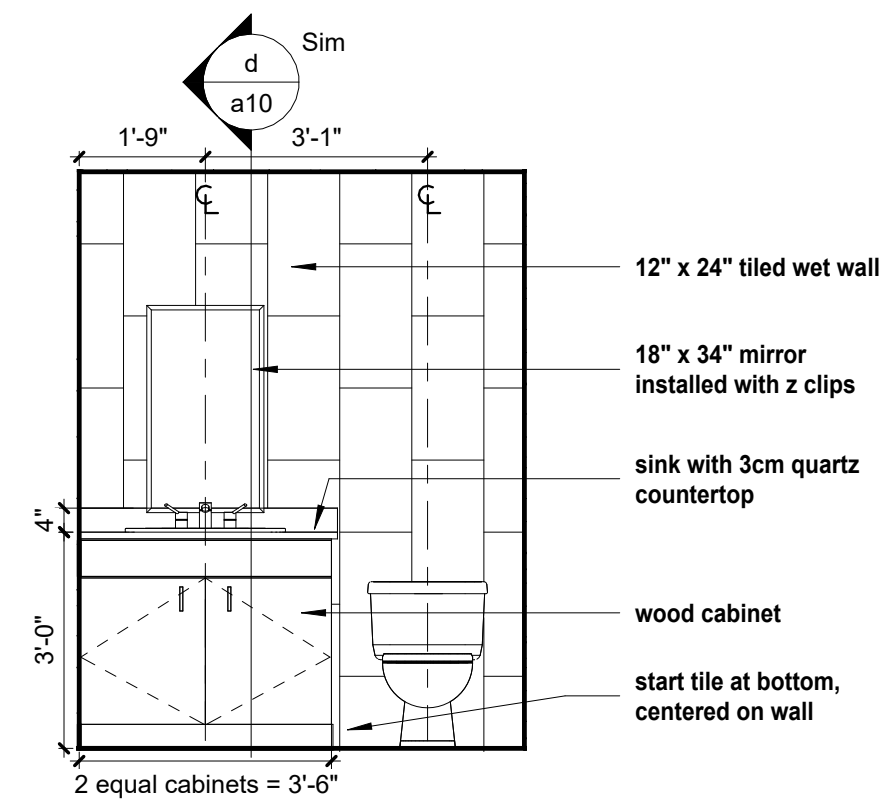
**c** client toilet looking east  
3/8" = 1'-0"



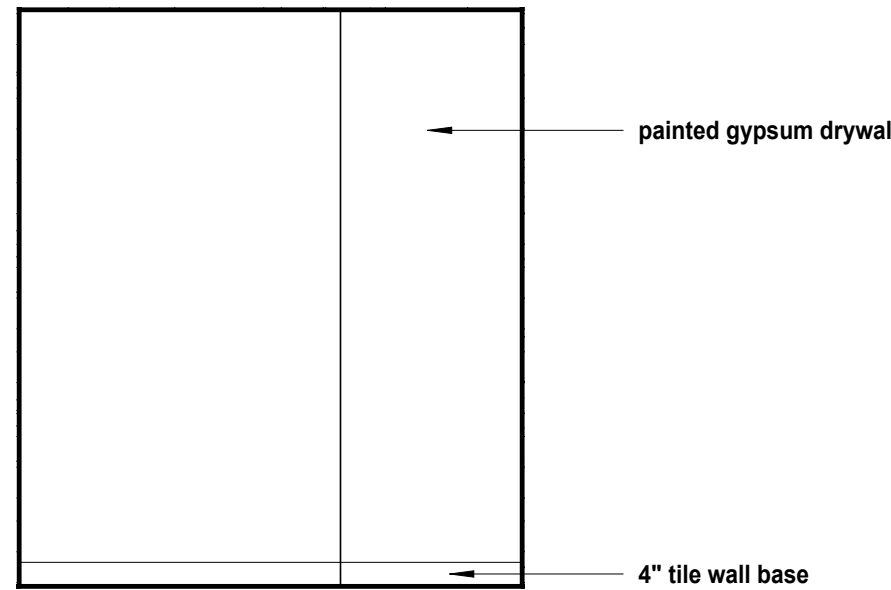
**d** client toilet looking south  
3/8" = 1'-0"



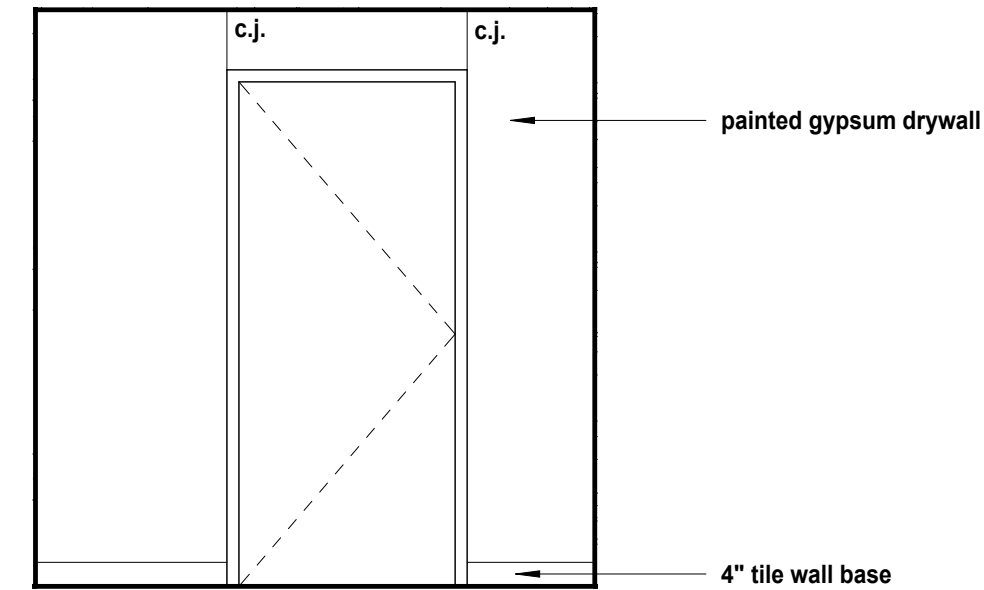
**e** client toilet looking west  
3/8" = 1'-0"



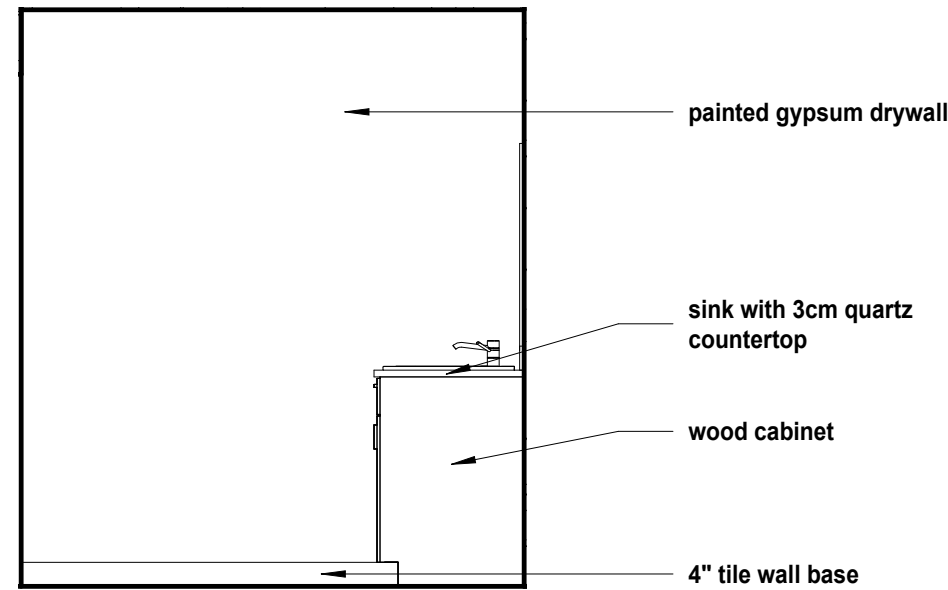
**f** staff toilet looking north  
3/8" = 1'-0"



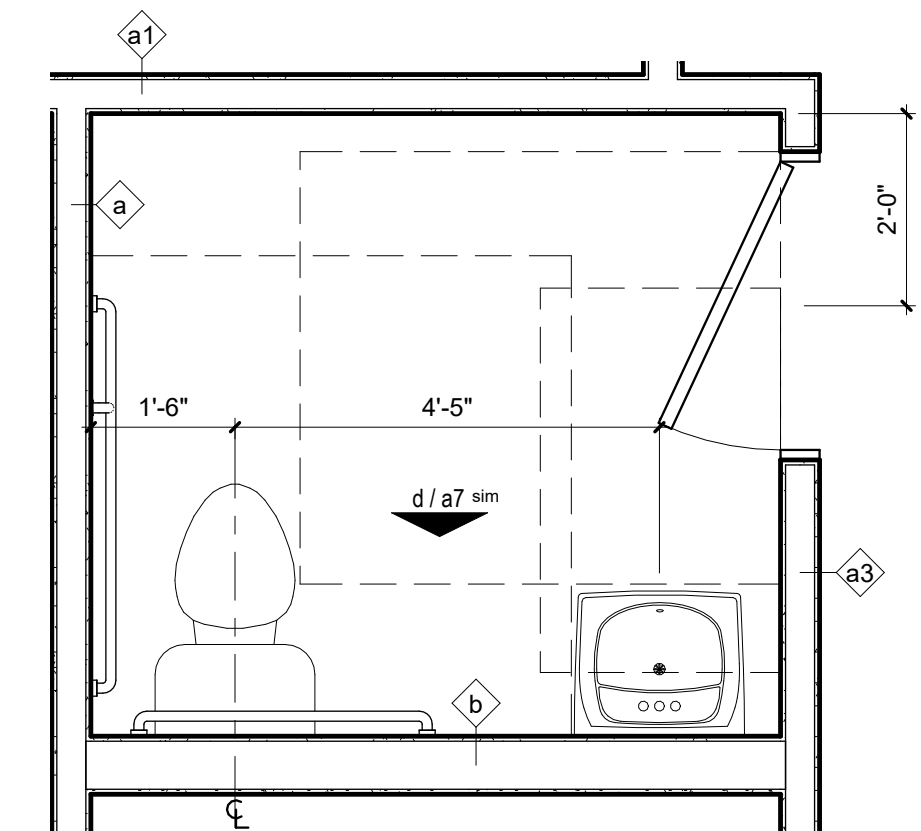
**g** staff toilet looking east  
3/8" = 1'-0"



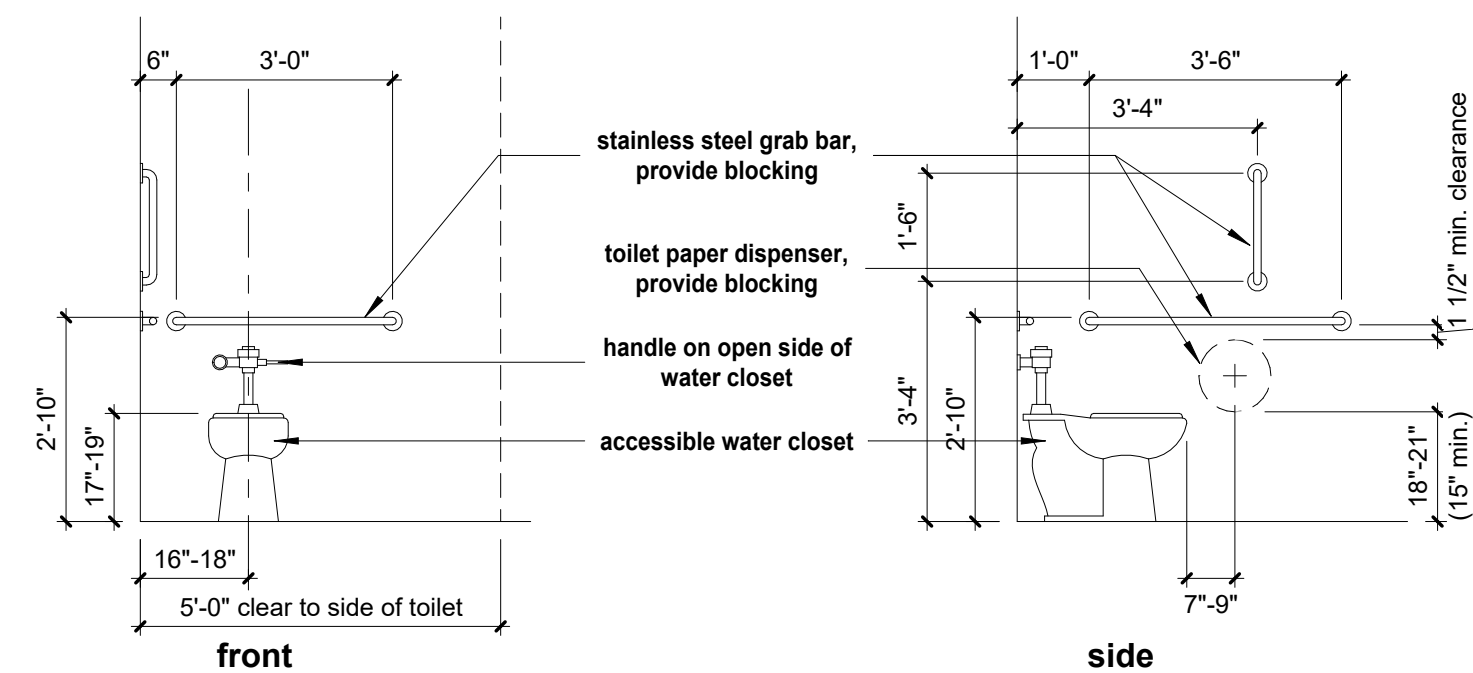
**h** staff toilet looking south  
3/8" = 1'-0"



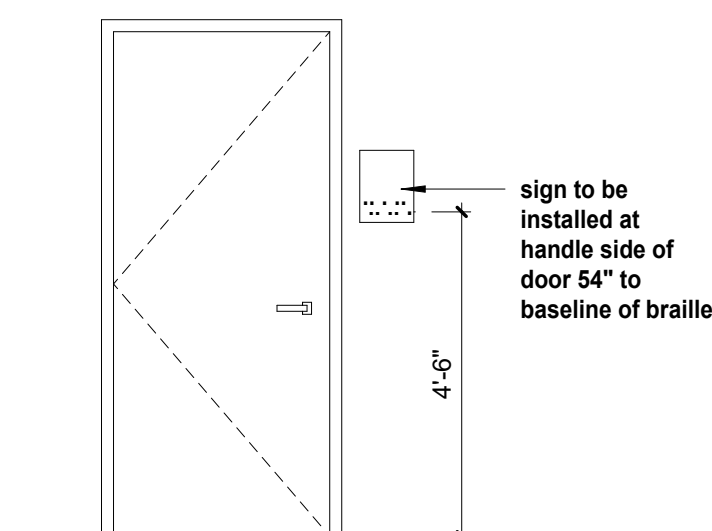
**i** staff toilet looking west  
3/8" = 1'-0"



**j** enlarged floorplan - client toilet  
1/2" = 1'-0"

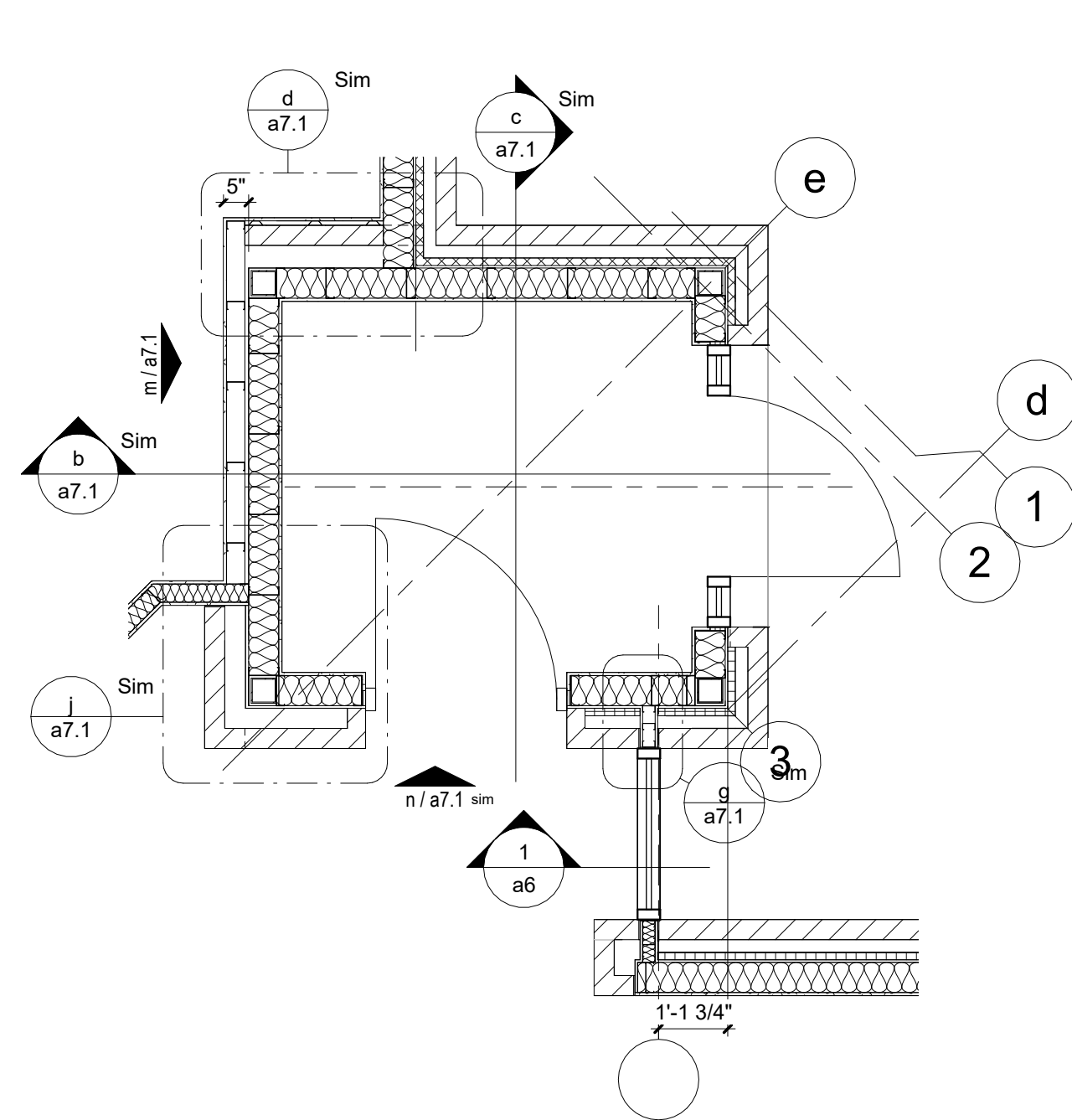


**k** typical accessible wc  
3/8" = 1'-0"

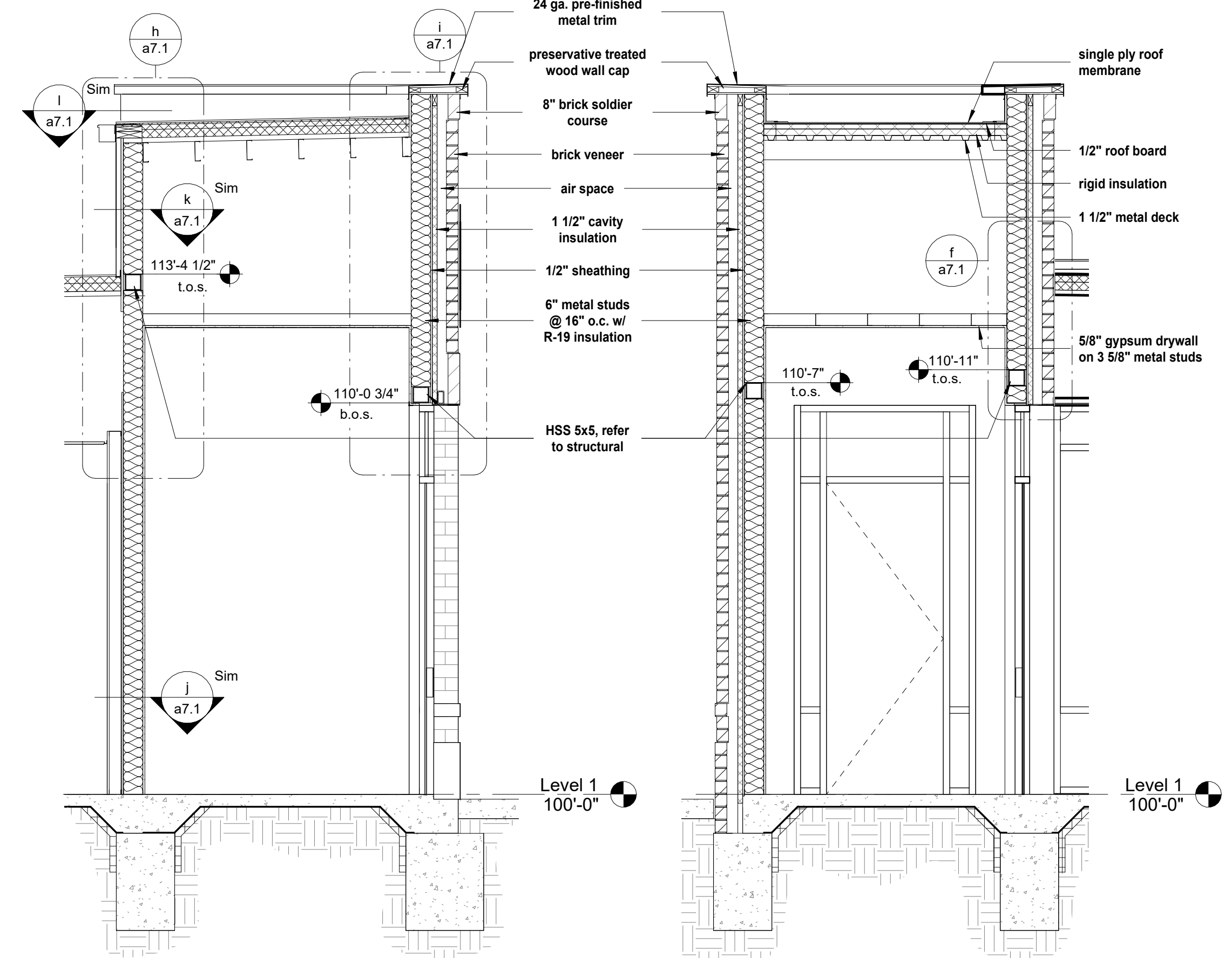


**l** ada signage  
3/8" = 1'-0"

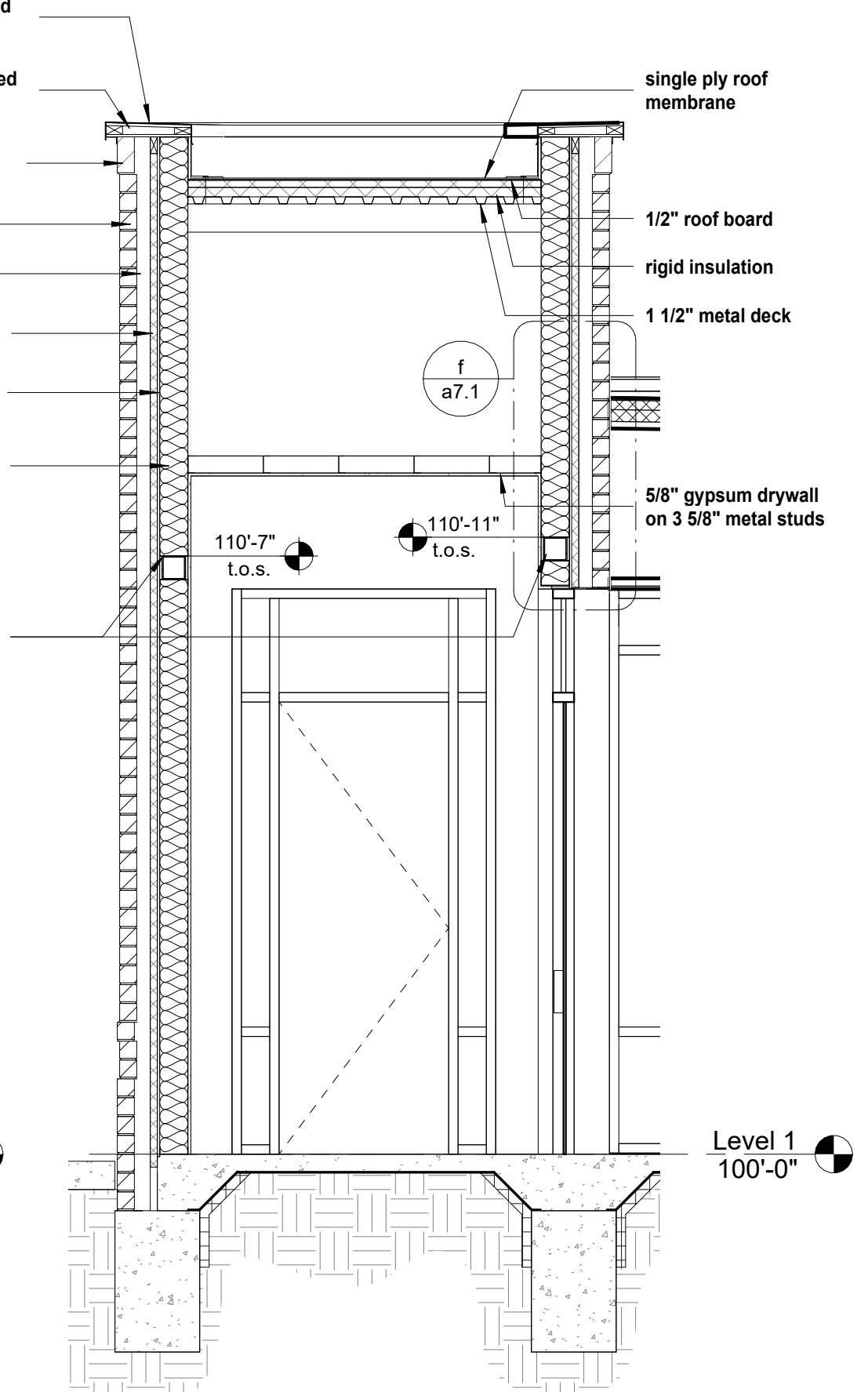




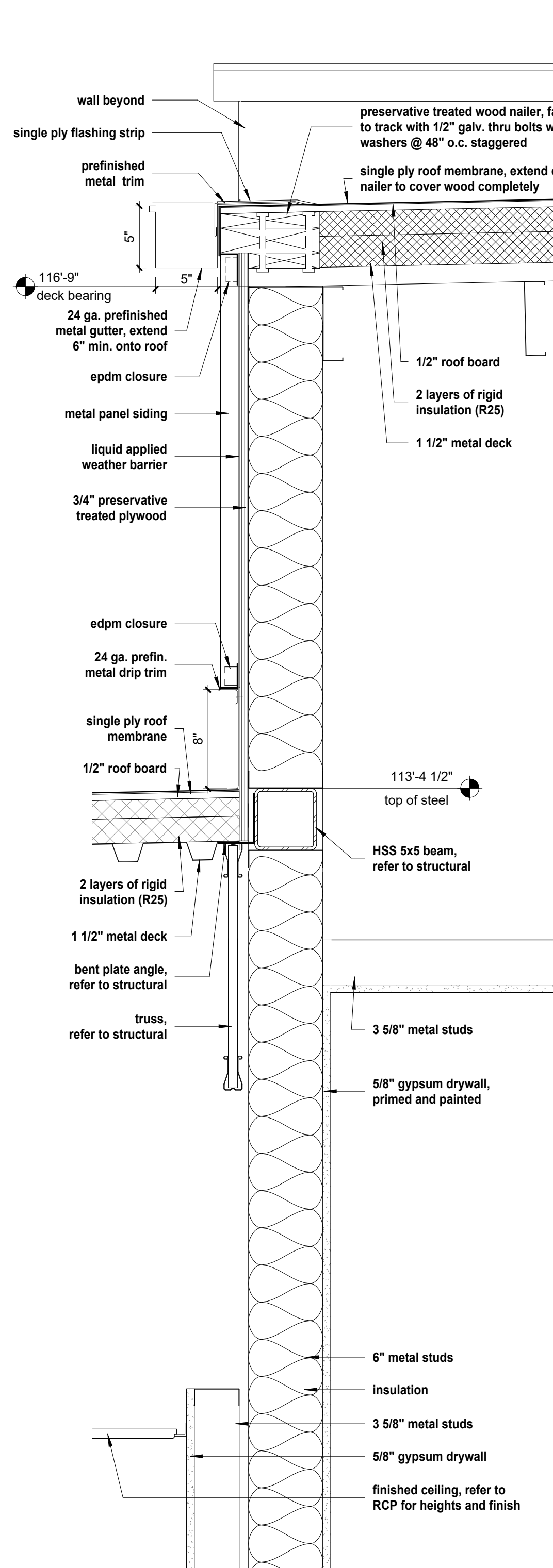
**a** Level 1 - vestibule entry  
3/8" = 1'-0"



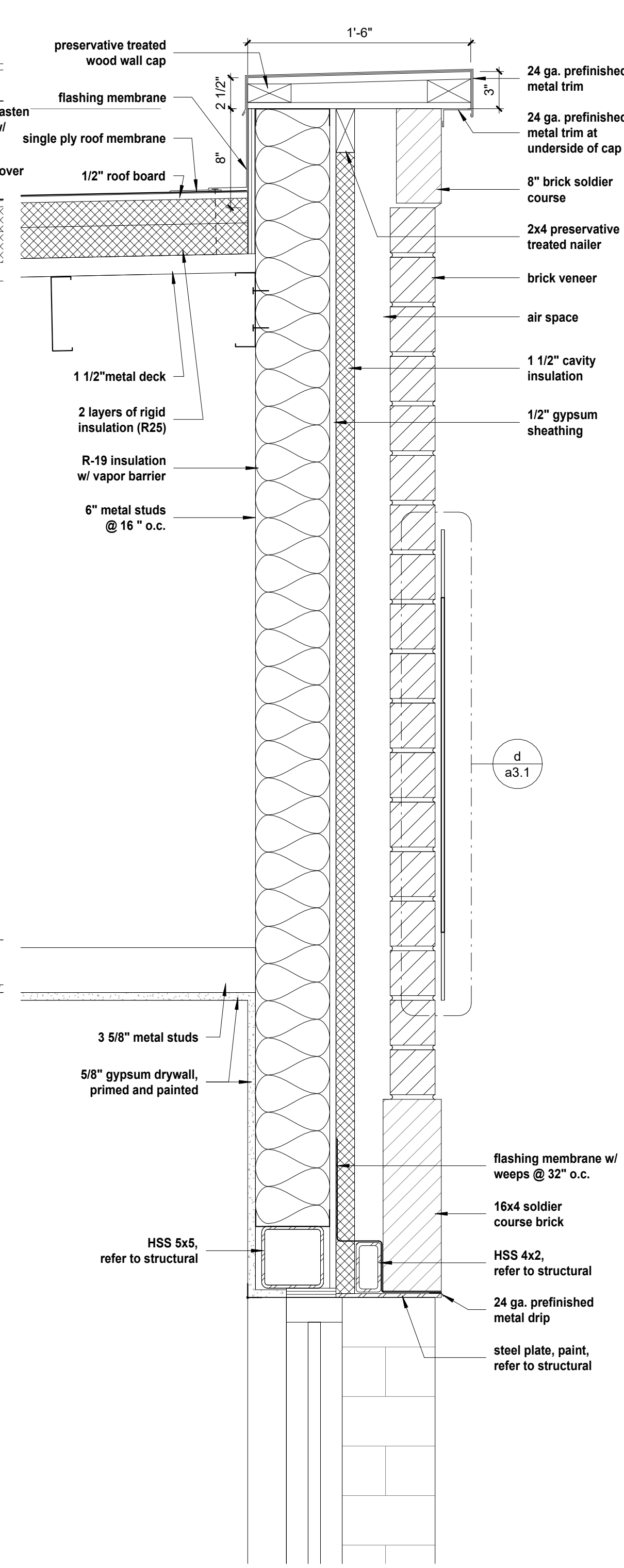
**b** section thru vestibule looking northwest  
3/8" = 1'-0"



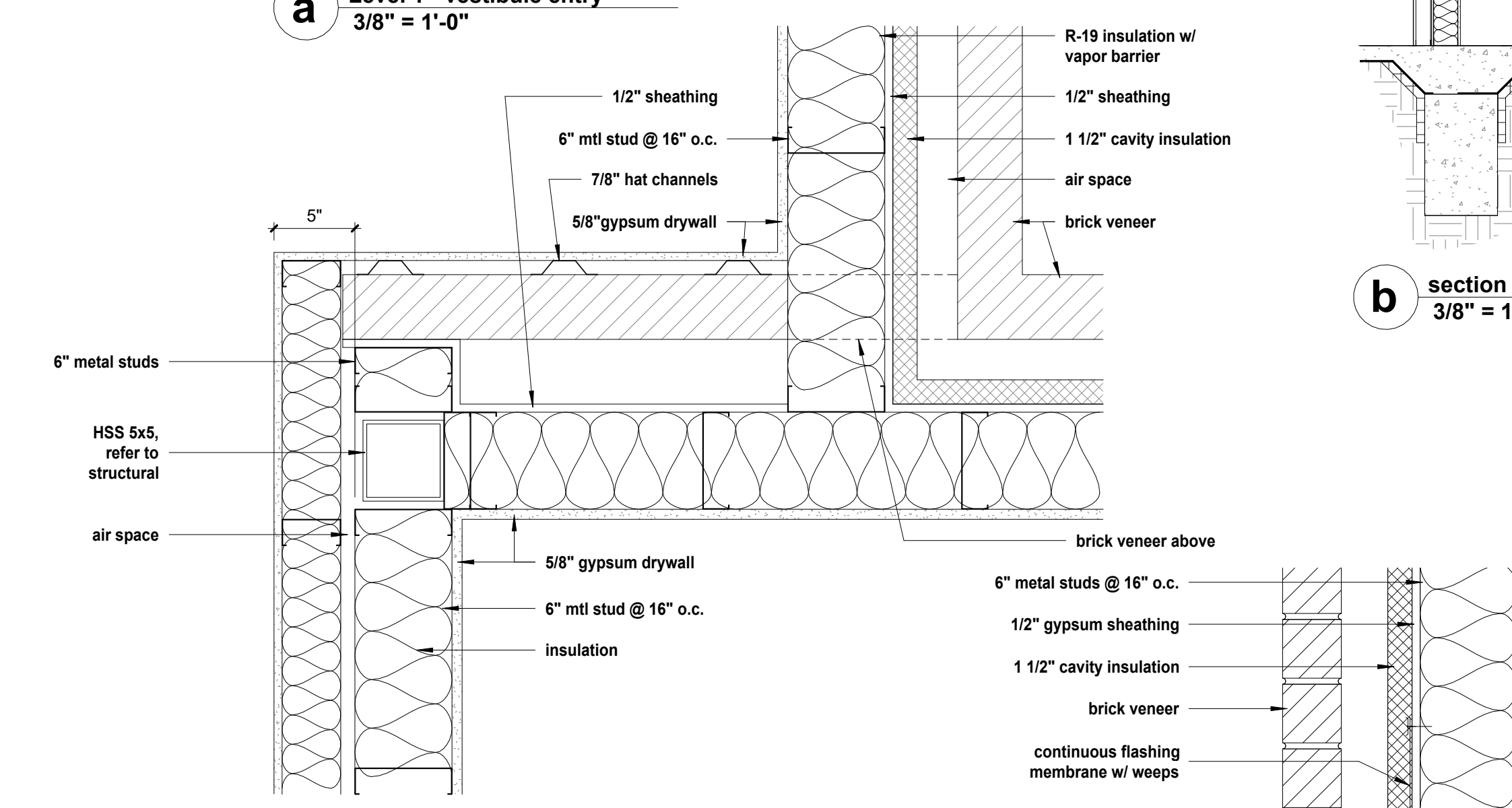
**c** section through vestibule looking northeast  
3/8" = 1'-0"



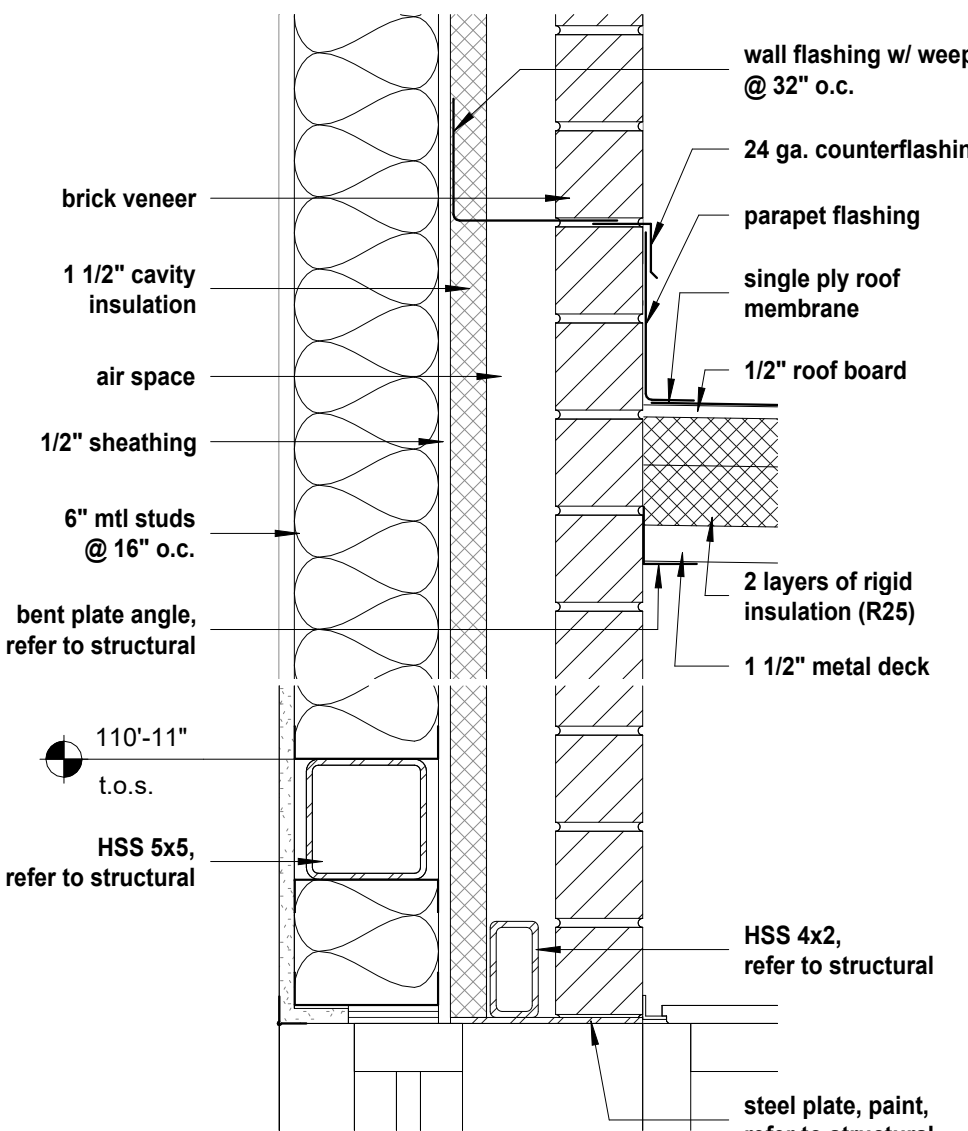
**h** entry vestibule - south wall  
1 1/2" = 1'-0"



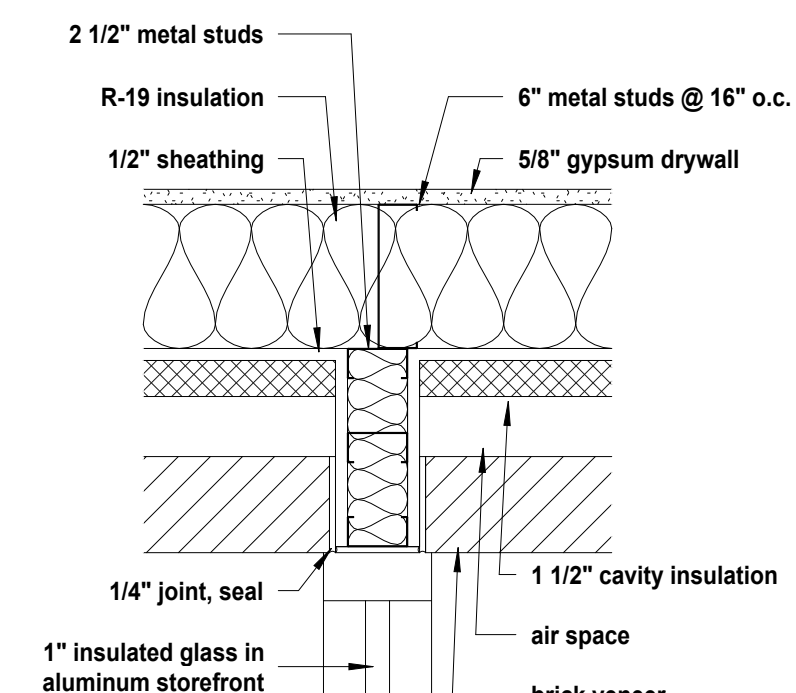
**i** entry vestibule - east parapet wall  
1 1/2" = 1'-0"



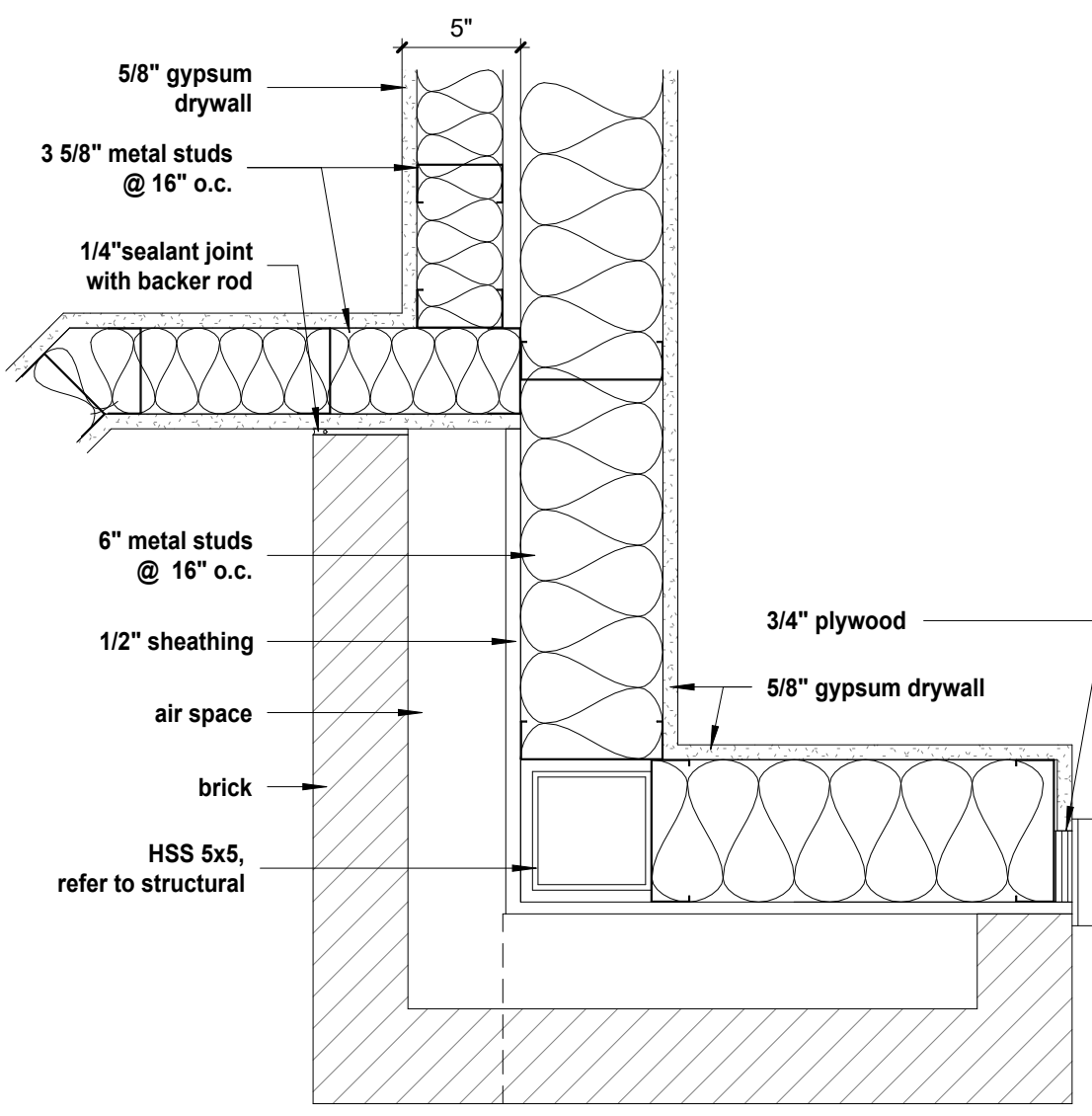
**d** enlarged plan - vestibule @ west corner  
1 1/2" = 1'-0"



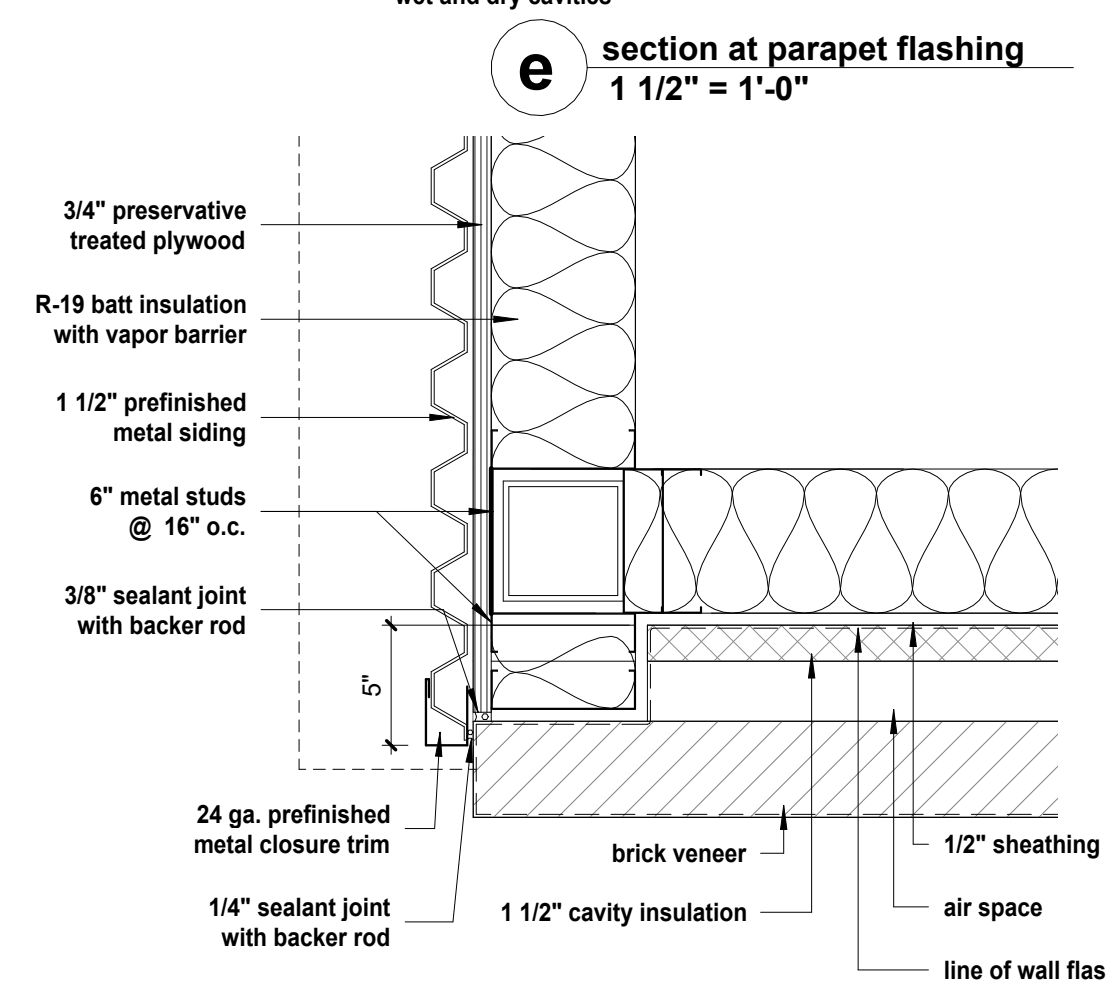
**f** detail at head  
1 1/2" = 1'-0"



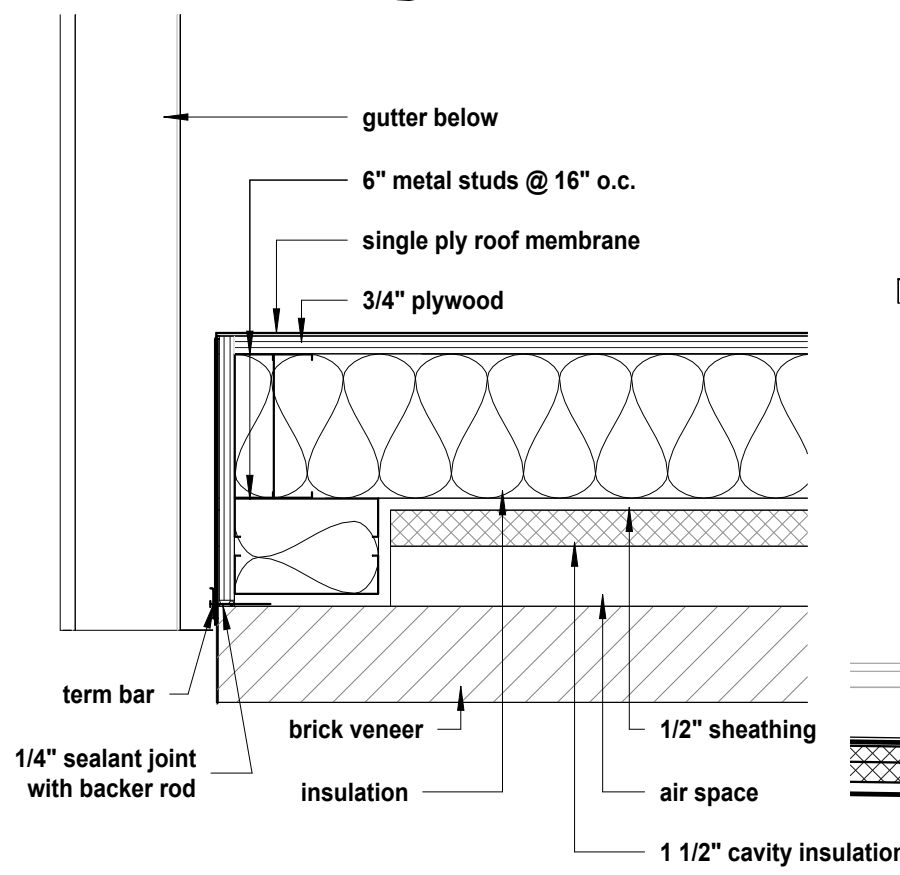
**g** enlarged plan - vestibule @ storefront  
1 1/2" = 1'-0"



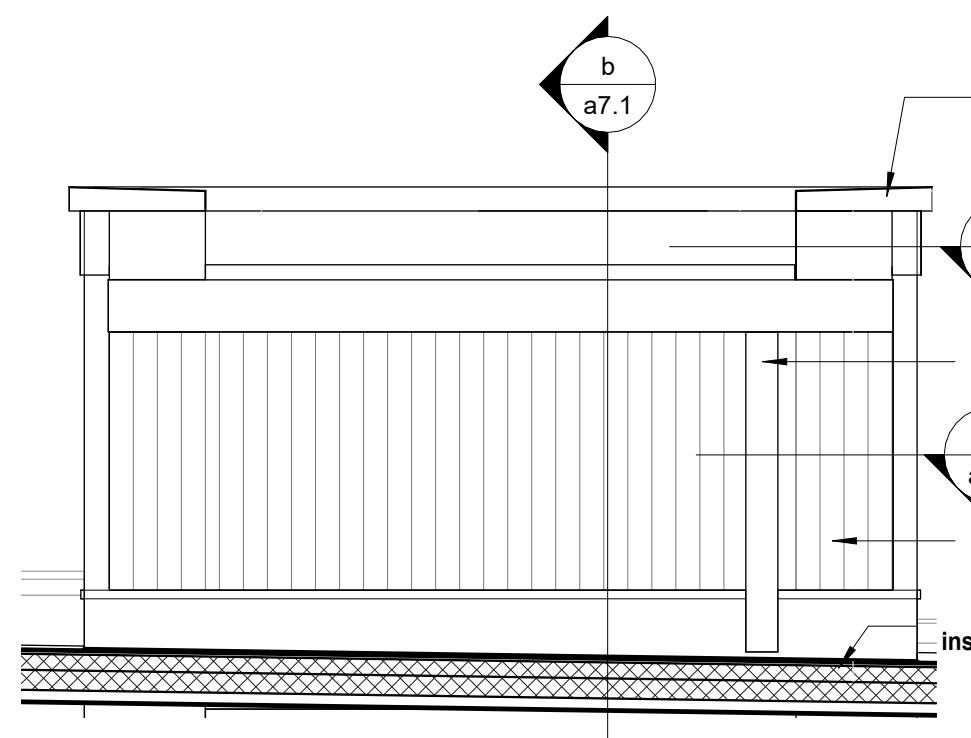
**j** enlarged plan - vestibule @ south corner  
1 1/2" = 1'-0"



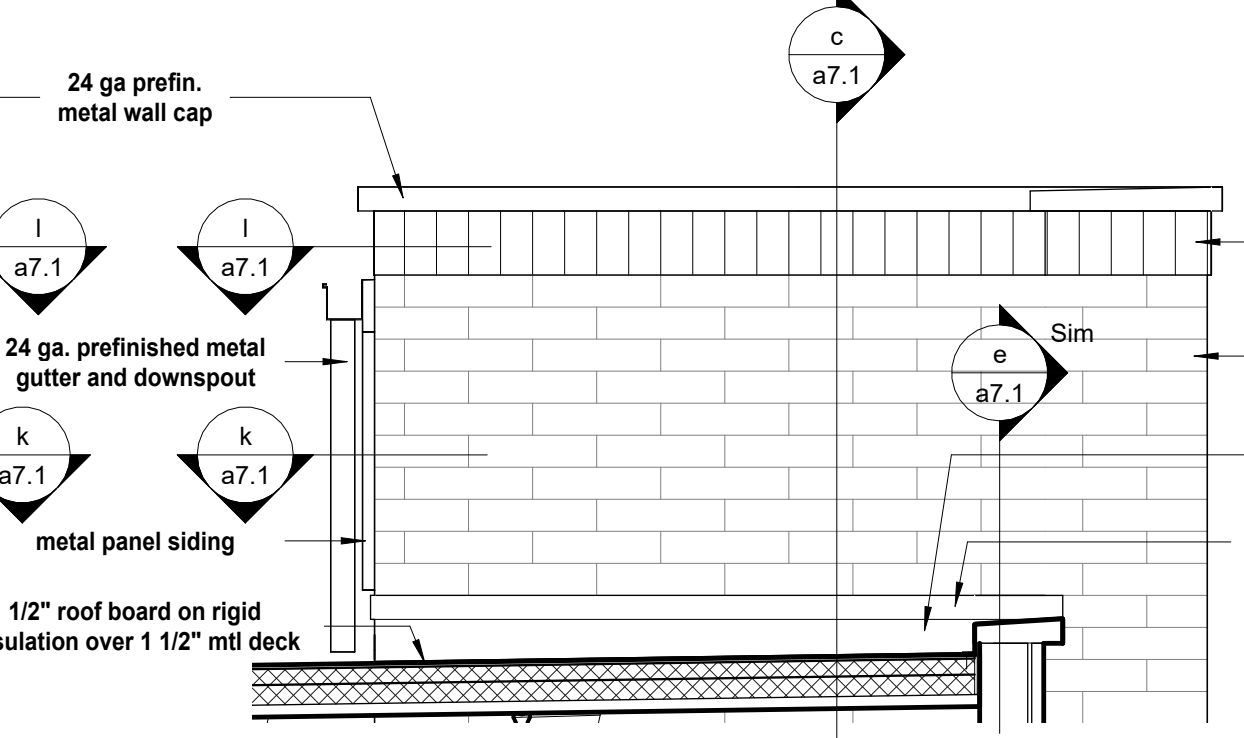
**e** section at parapet flashing  
1 1/2" = 1'-0"



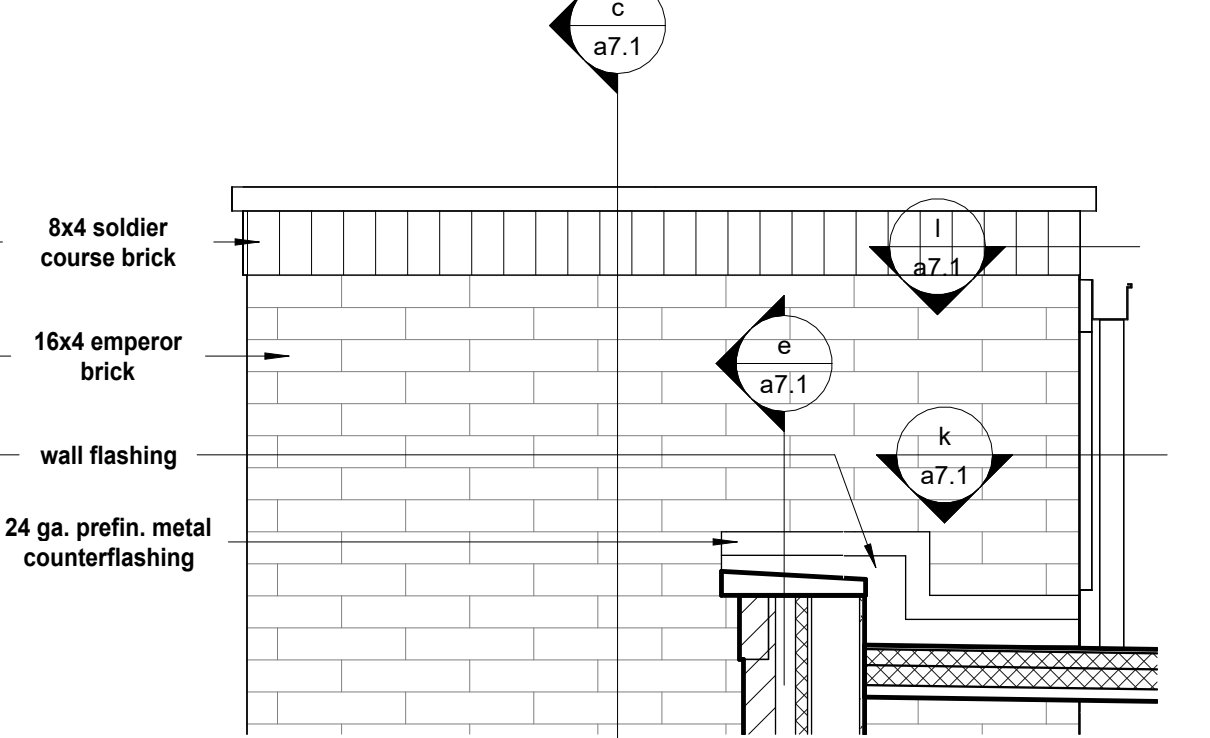
**l** enlarged plan vestibule above roof  
1 1/2" = 1'-0"



**m** entry tower - sw elevation  
1/2" = 1'-0"



**n** entry tower - se elevation  
1/2" = 1'-0"



**o** entry tower - nw elevation  
1/2" = 1'-0"

date issued: 03-03-23					

Grant County Health Department (BID 2023-05)  
Lots 1-5, Block 20, Medford, OK

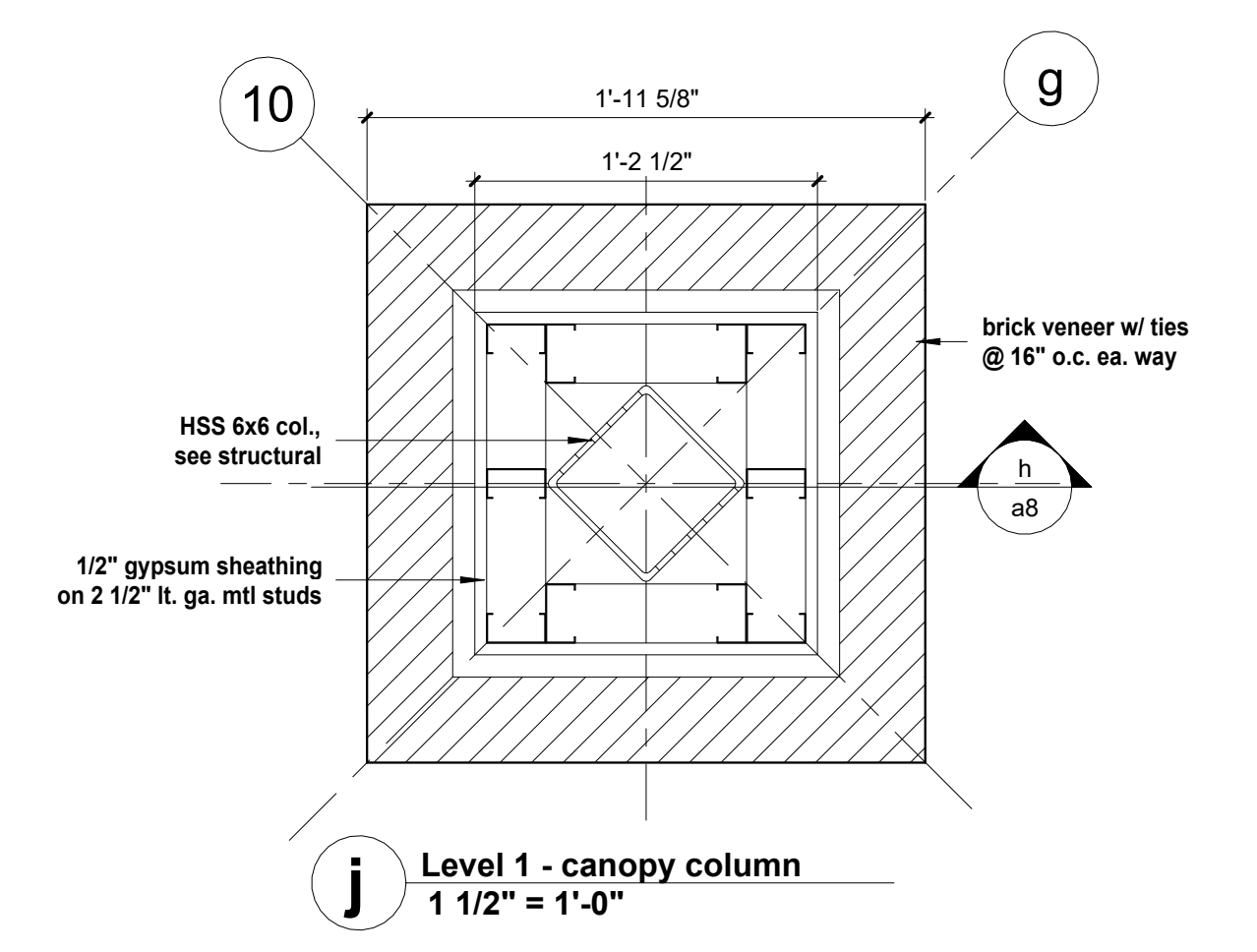
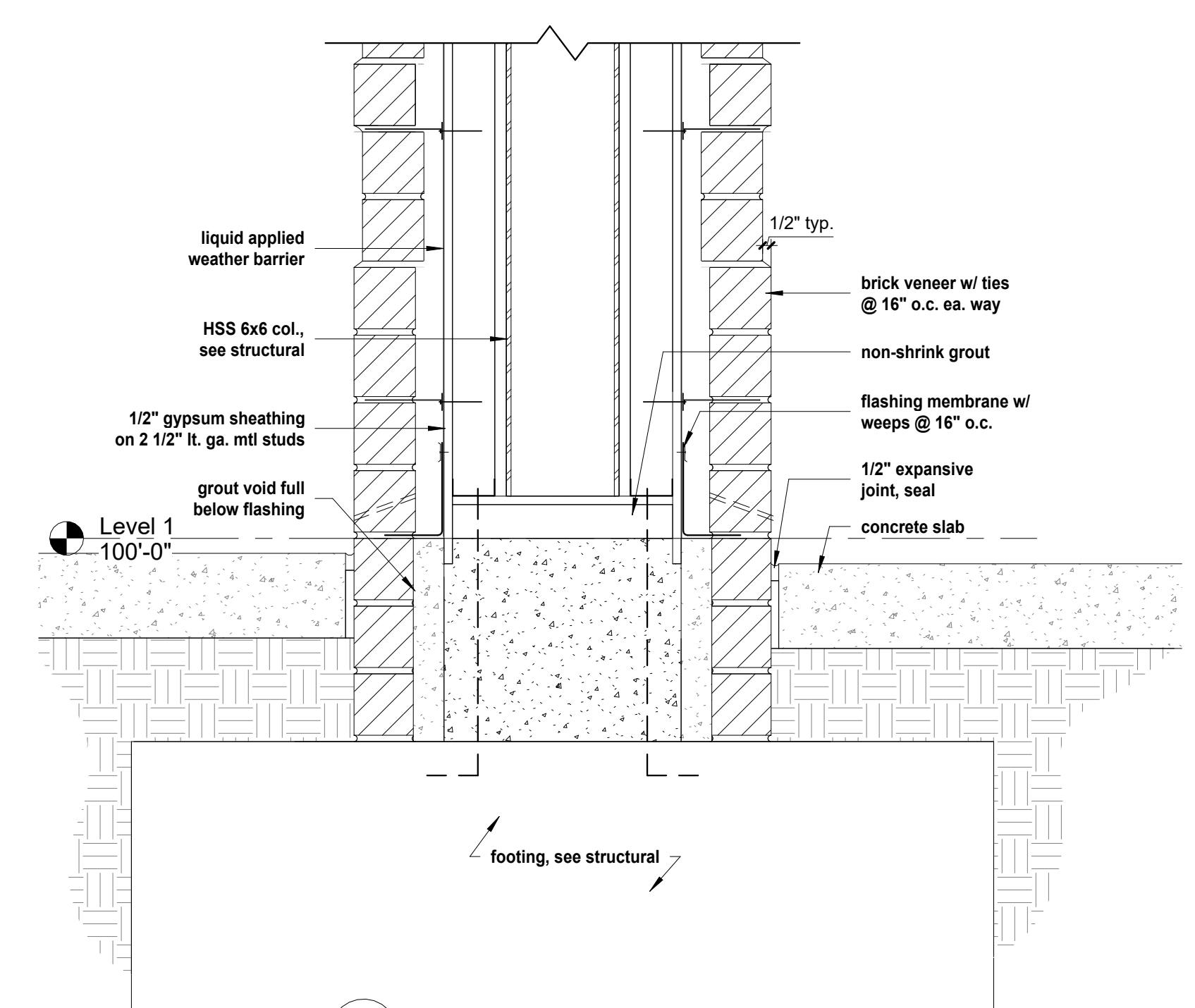
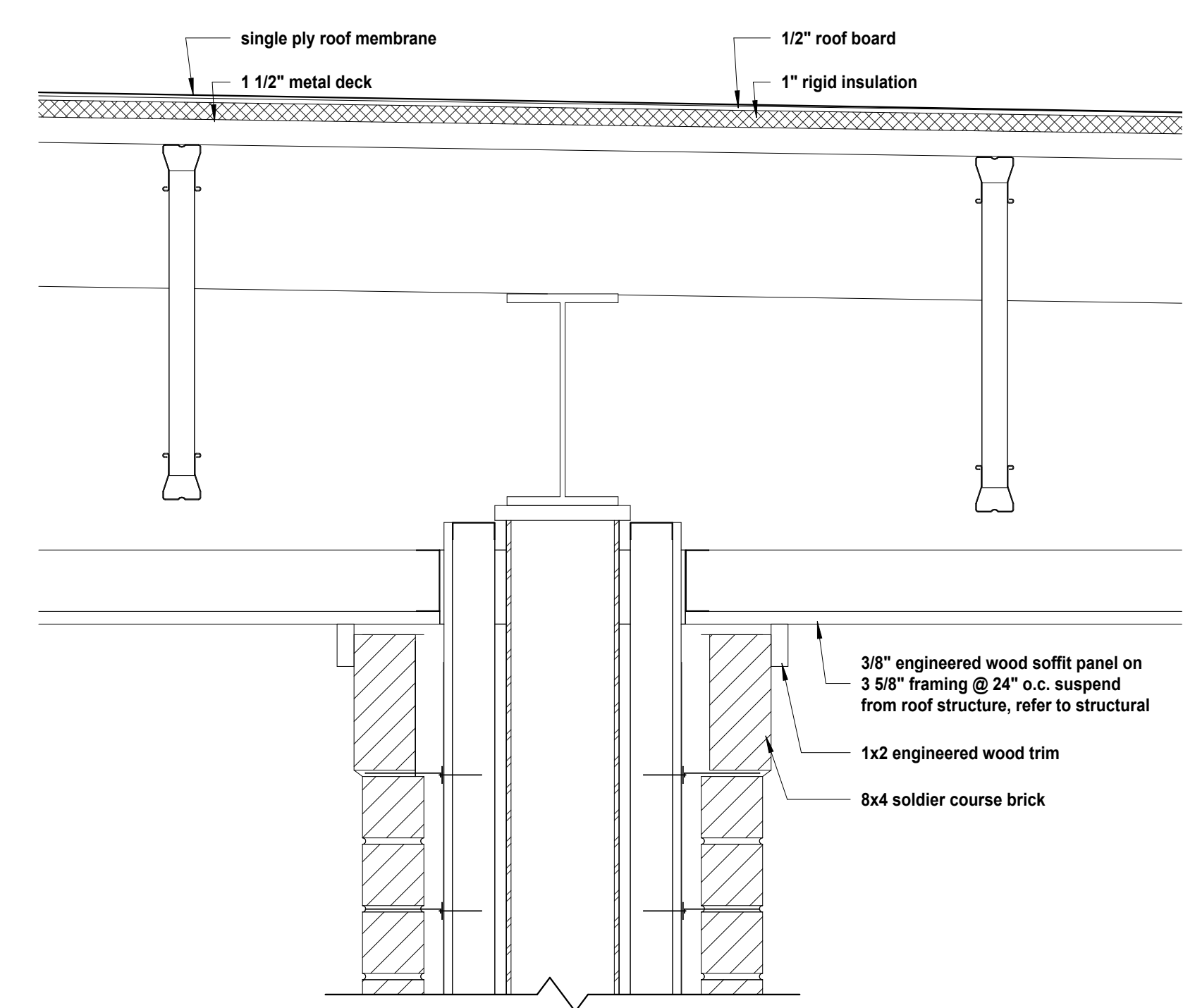
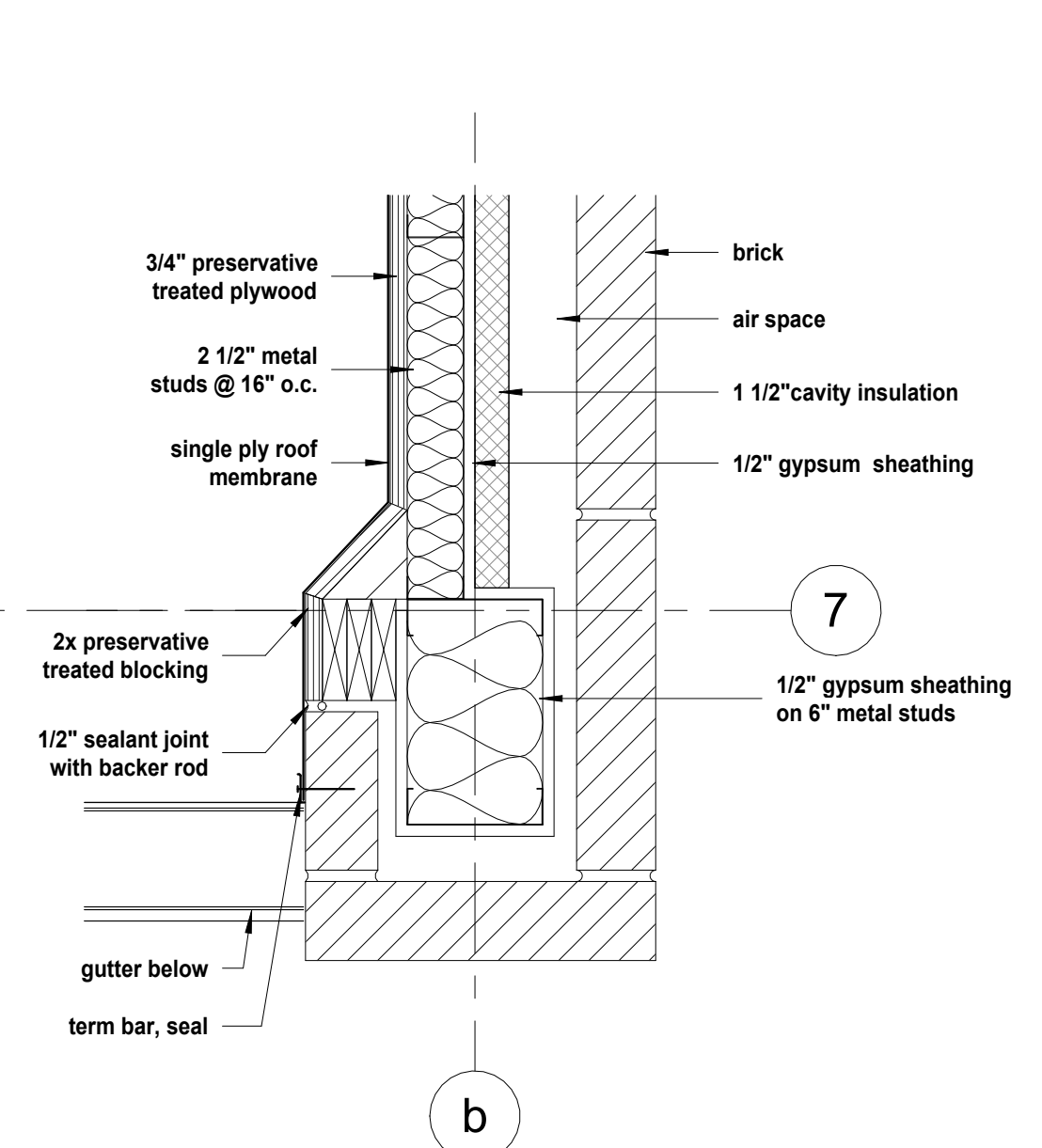
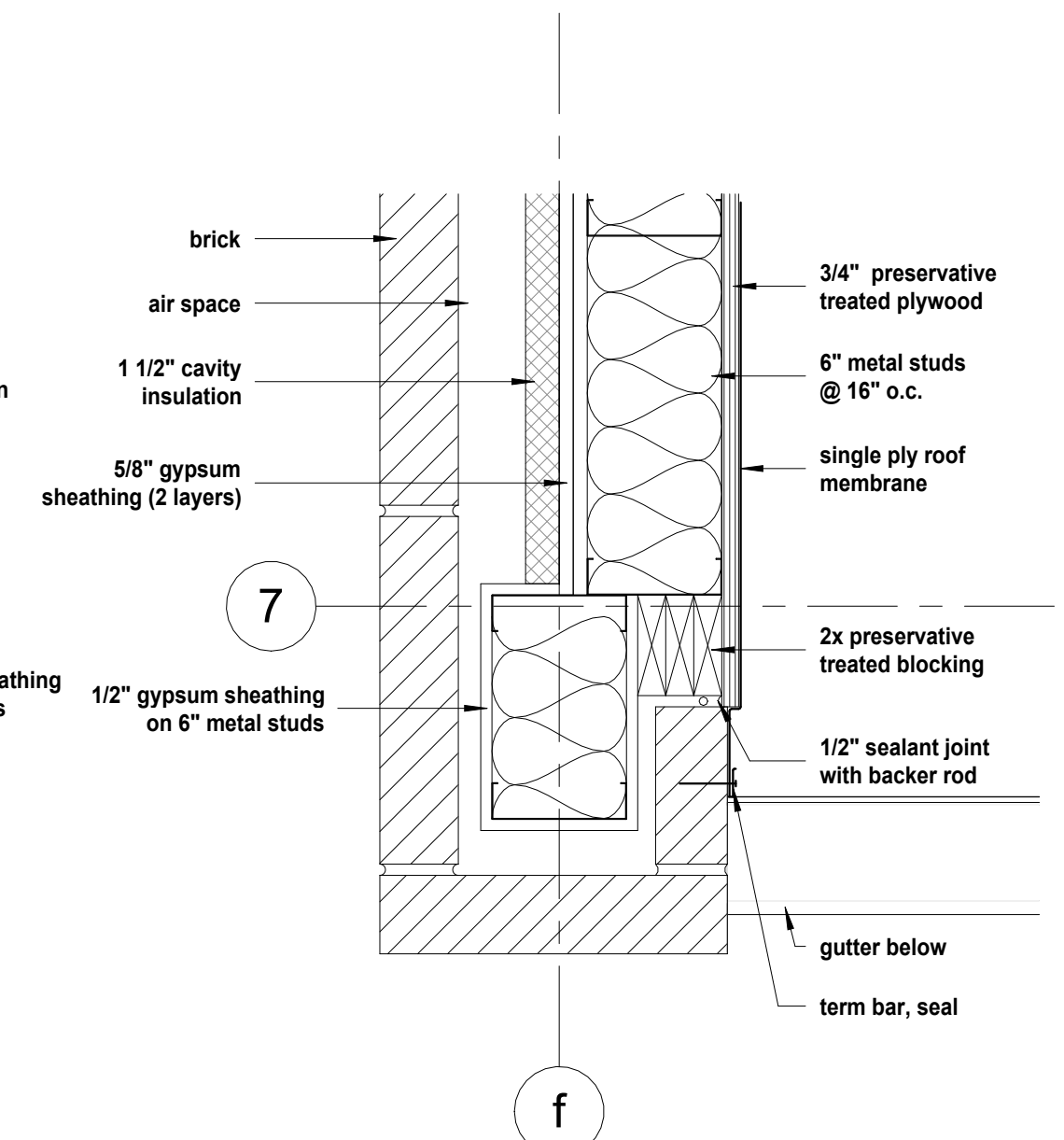
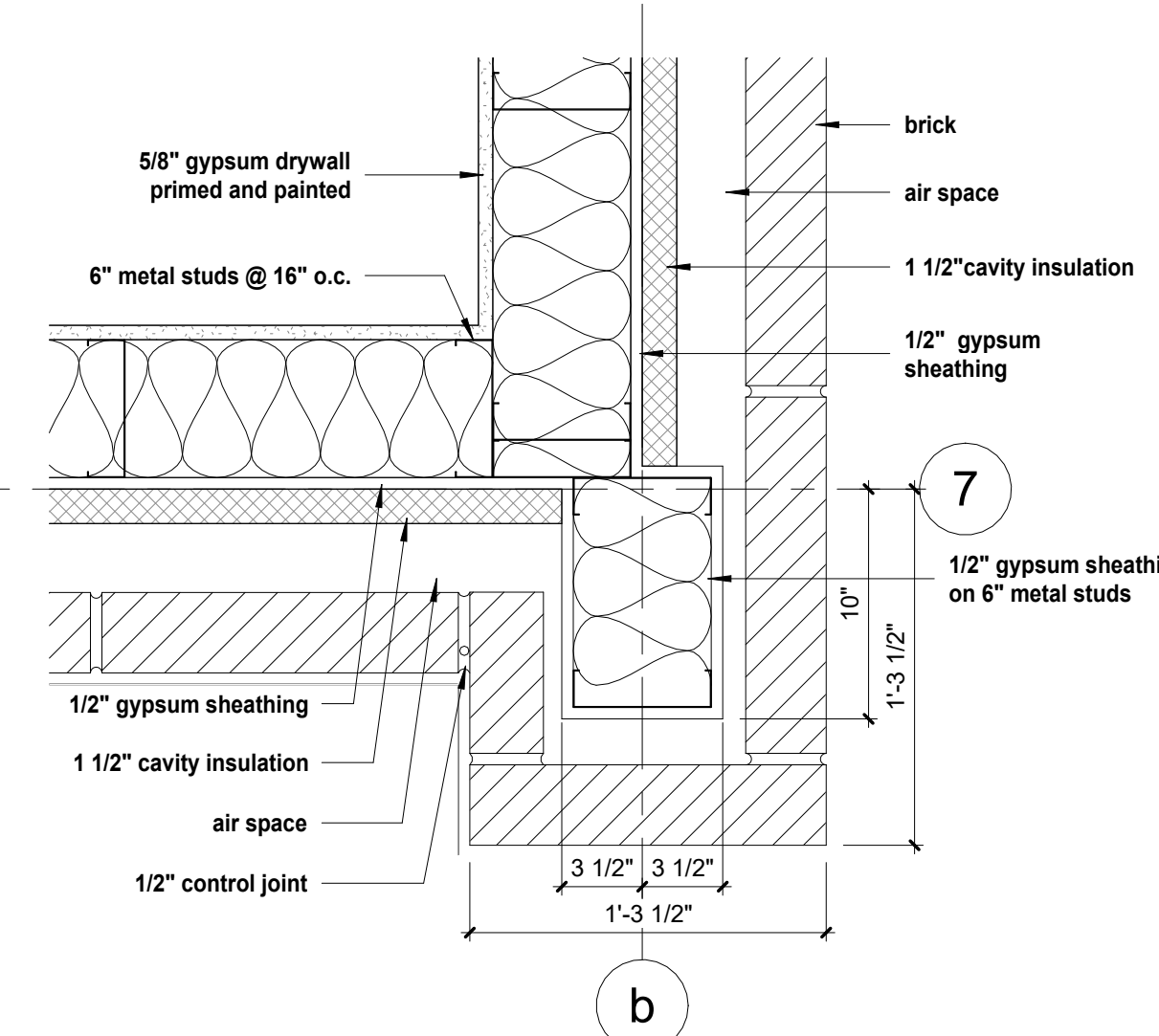
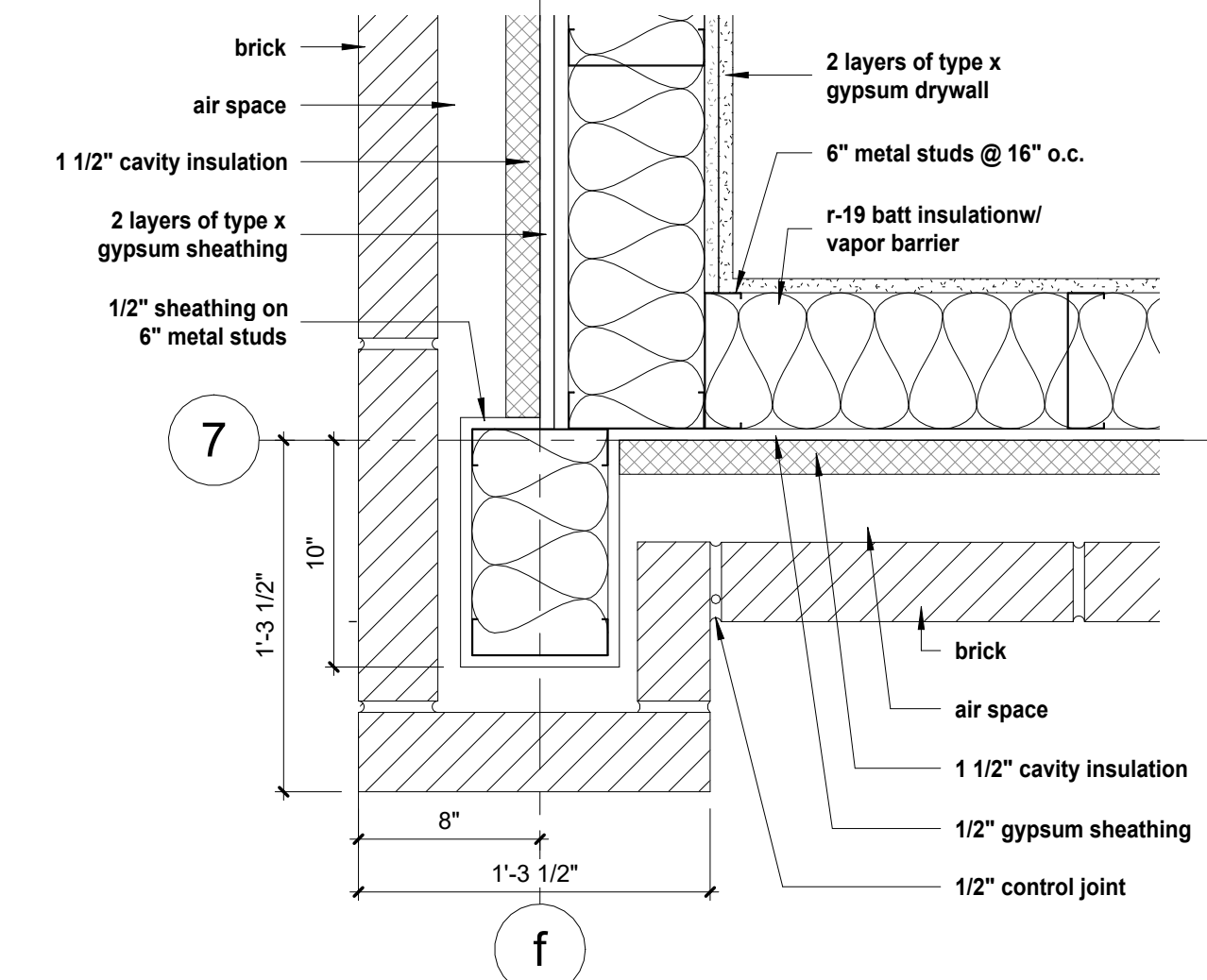
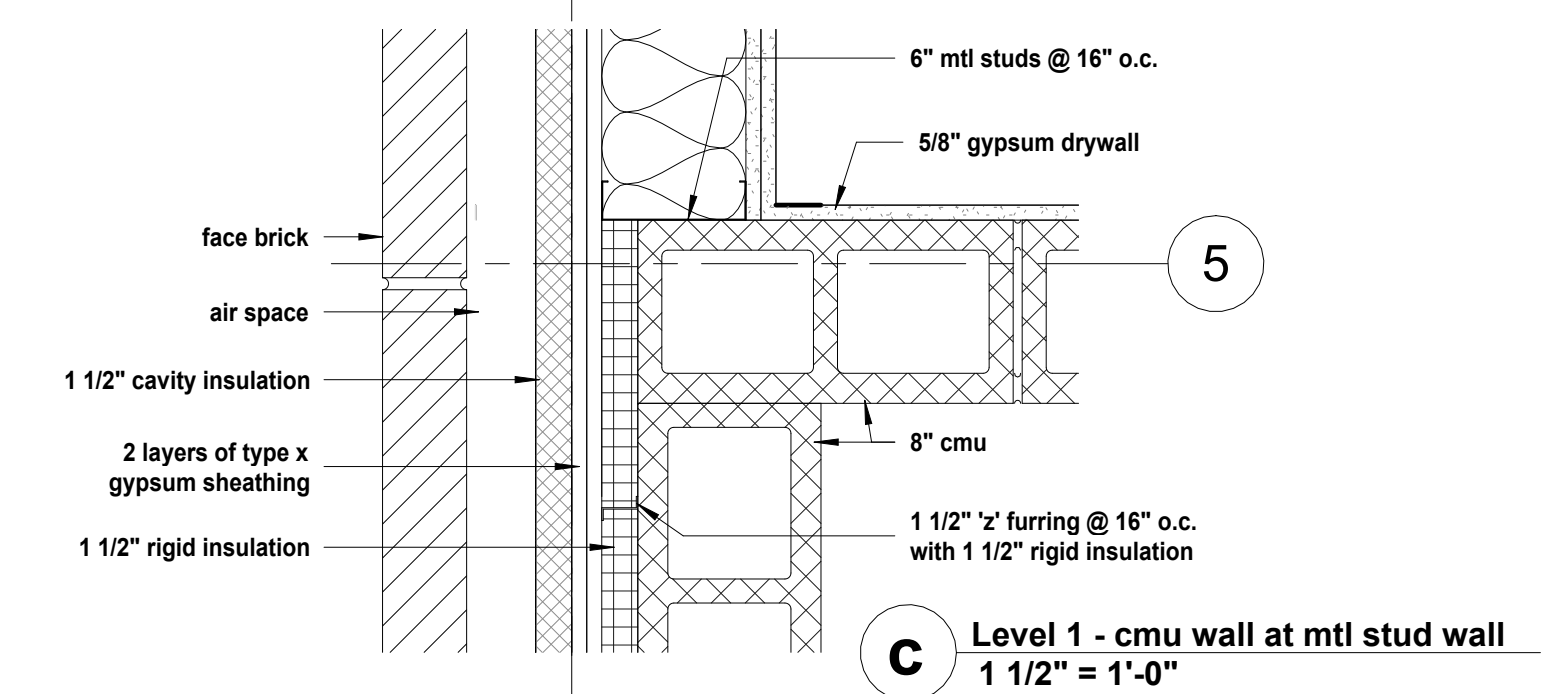
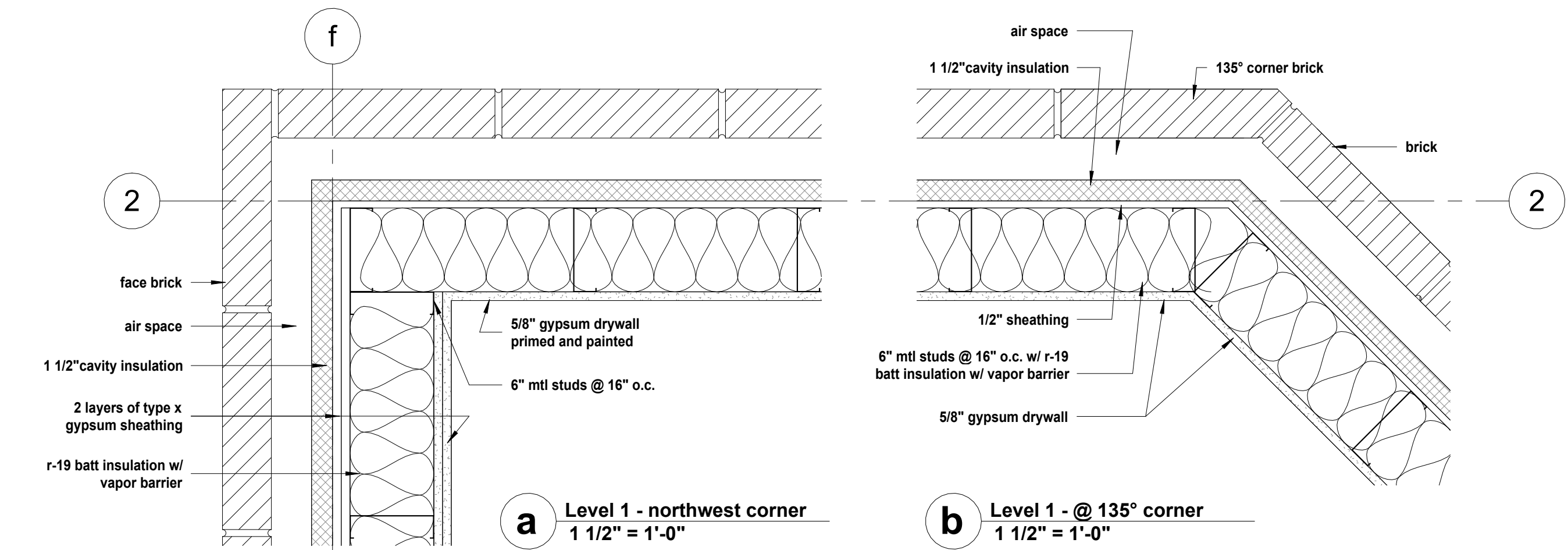
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ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701  
WWW.CORBINMERZHANEY.COM  
PH (580) 233-2362

a7.1



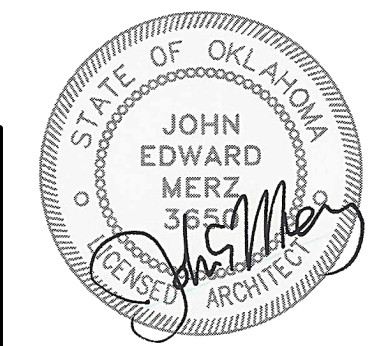




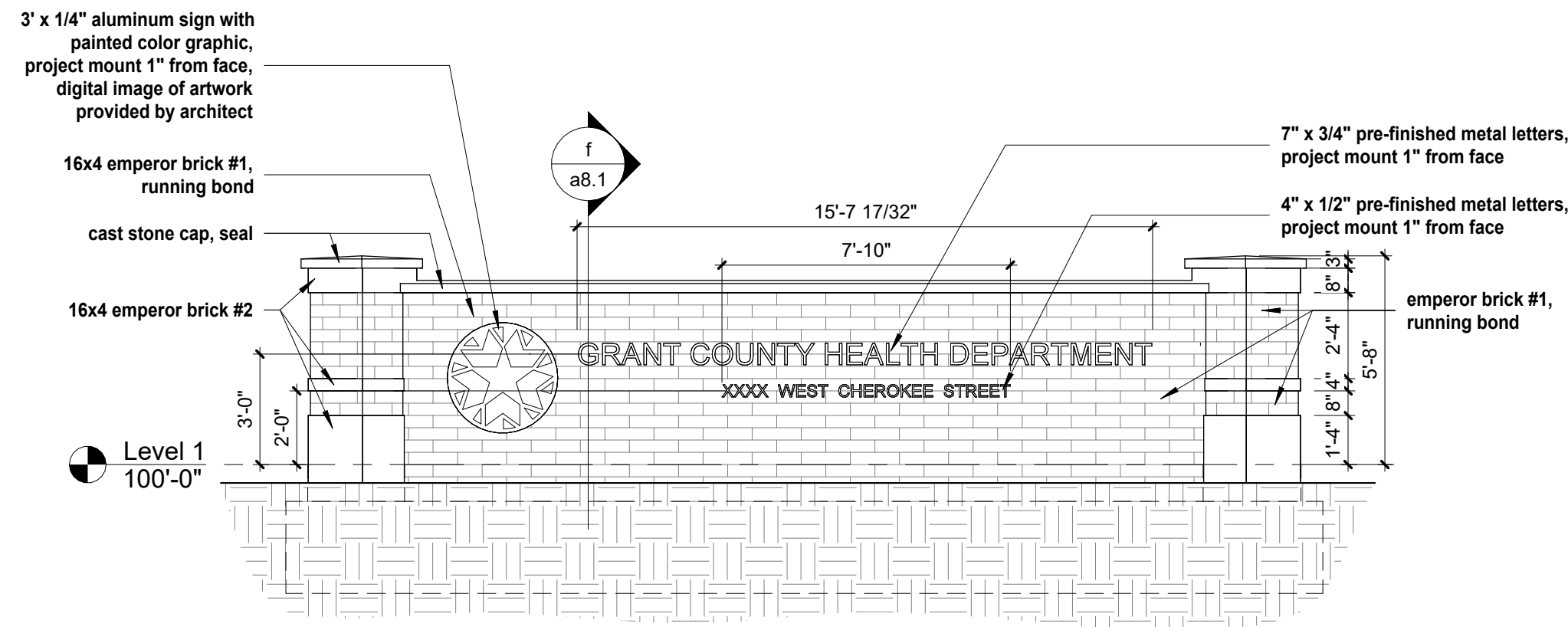


date issued: 03-03-23					

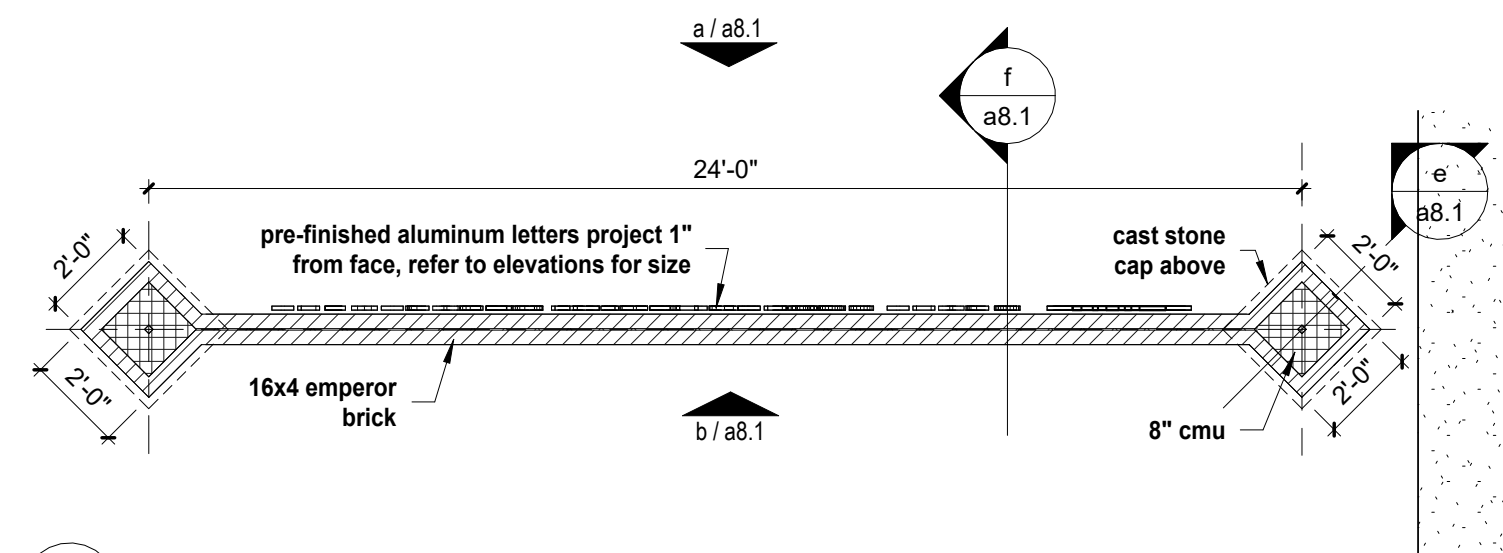
# Grant County Health Department (BID 2023-05) Lots 1-5, Block 20, Medford, OK



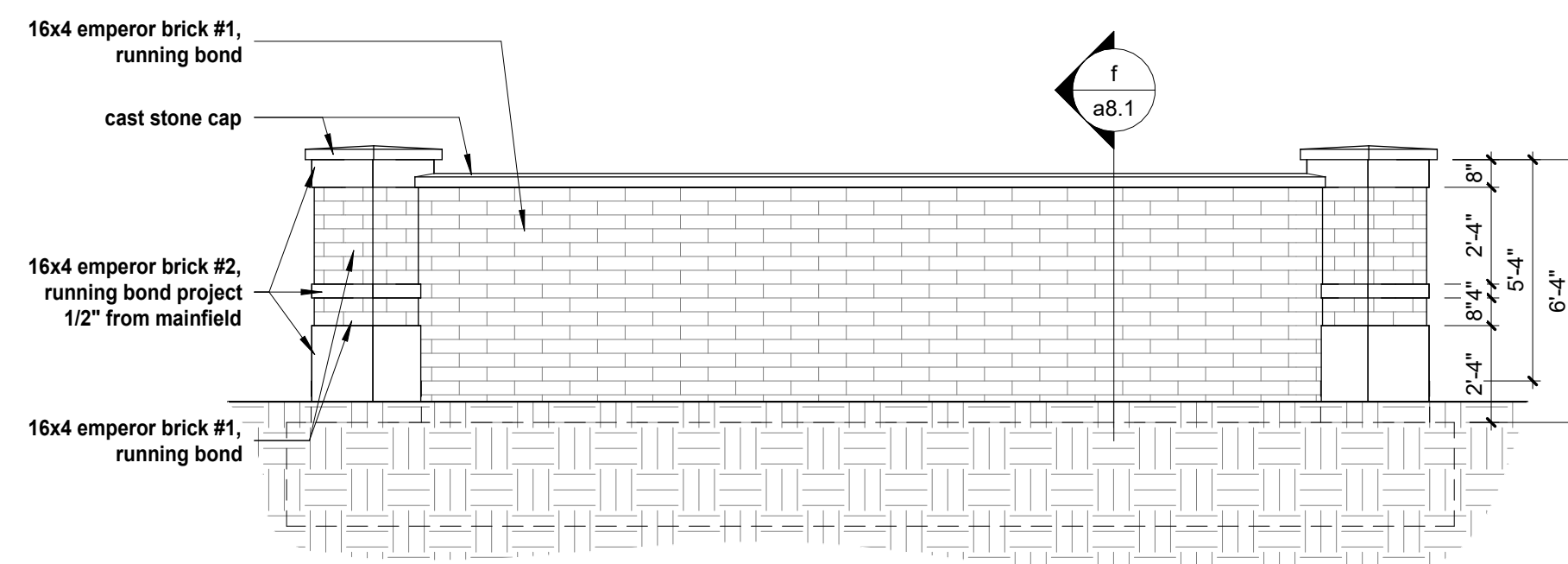




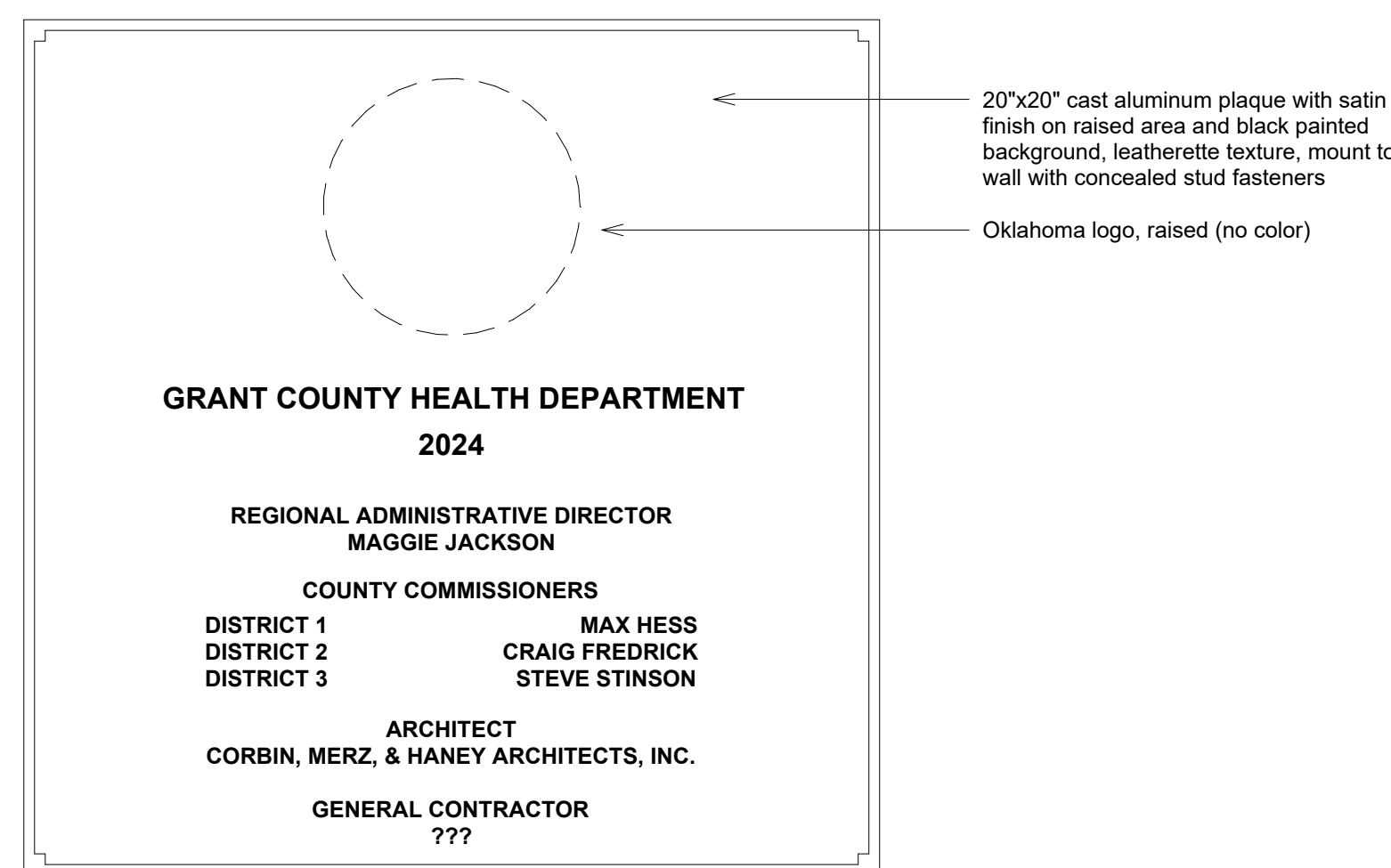
**a** sign wall looking south  
1/4" = 1'-0"



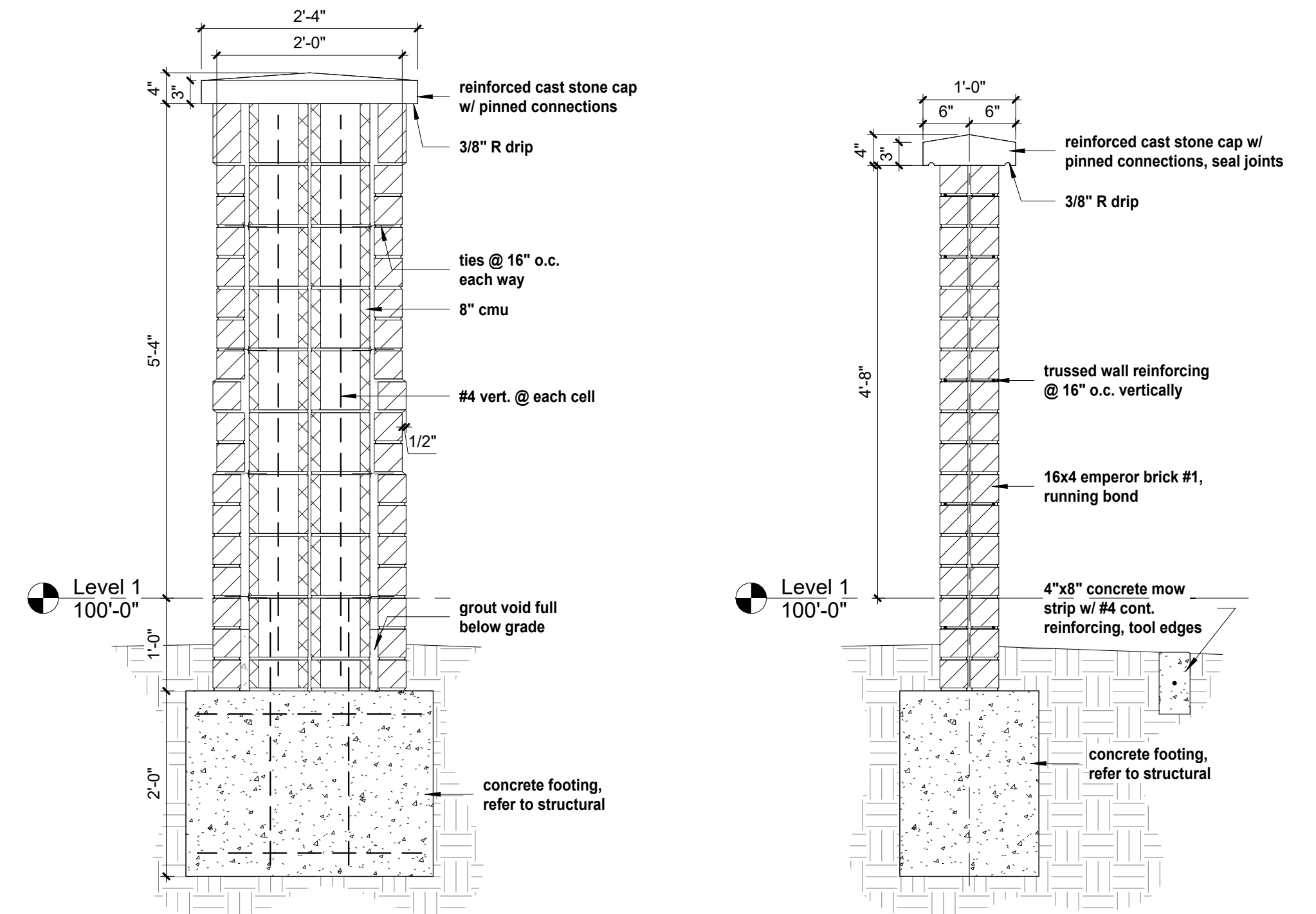
**c** sign wall enlarged plan  
1/4" = 1'-0"



**b** sign wall looking north  
1/4" = 1'-0"

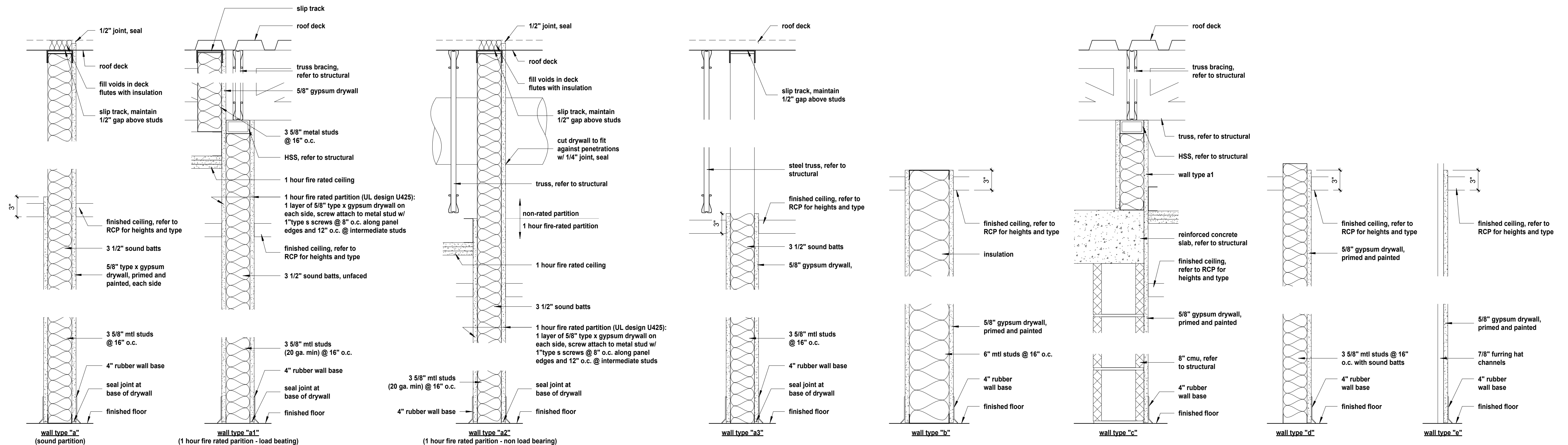


**d** GCHD building plaque  
3" = 1'-0"



**e** sign wall pilaster section  
3/4" = 1'-0"

**f** sign wall section  
3/4" = 1'-0"

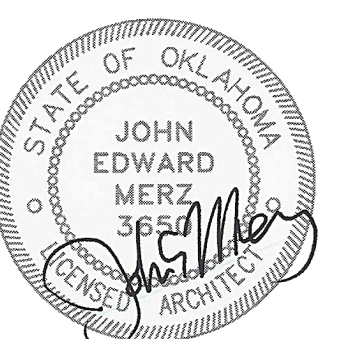


**g** wall types  
1 1/2" = 1'-0"

date issued: 03-03-23

Grant County Health Department (BID 2023-05)  
Lots 1-5, Block 20, Medford, OK

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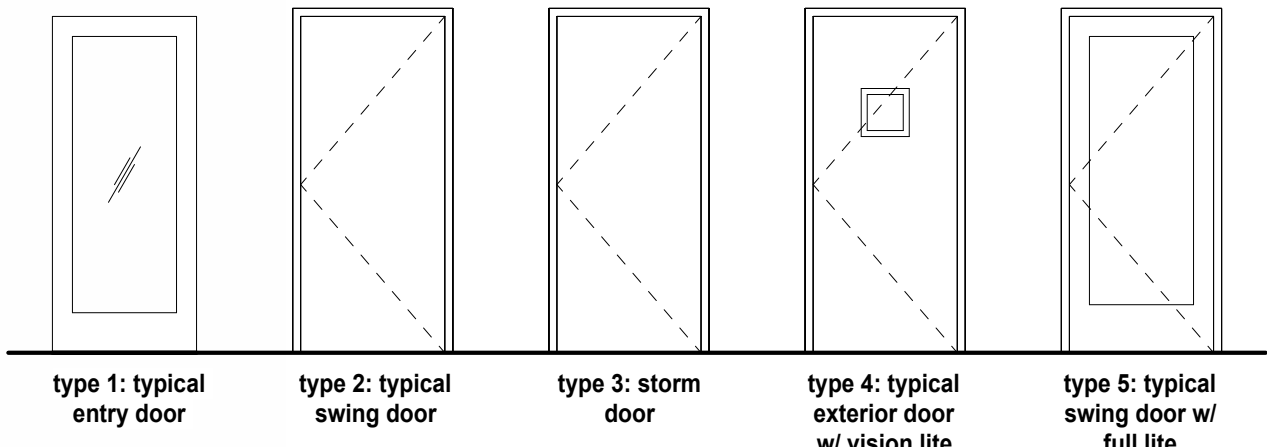
a8.1



Room Signage Schedule				
Description	Manufacturer	Size	Finish	Quantity
Accessible 'Restroom' ADA Braille Sign with Walnut Accent	OfficeSignCompany.com	6" x 9.75"	Deep blue/grey color with white lettering and pictographs	2
Restroom' Restroom Wall ADA Braille Sign with Walnut Accent	OfficeSignCompany.com	6" x 9.75"	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Exam 1	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Exam 2	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Exam 3	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Office 1	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Office 2	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Office 3	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Community Room	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	2
ADA Braille Sign with Walnut Accent - Housekeeping	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Break Room	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Laboratory	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	1
ADA Braille Sign with Walnut Accent - Storage	OfficeSignCompany.com	custom	Deep blue/grey color with white lettering and pictographs	3
Exterior "Clinic" sign at NW entrance	refer to specs	custom	tbd	1

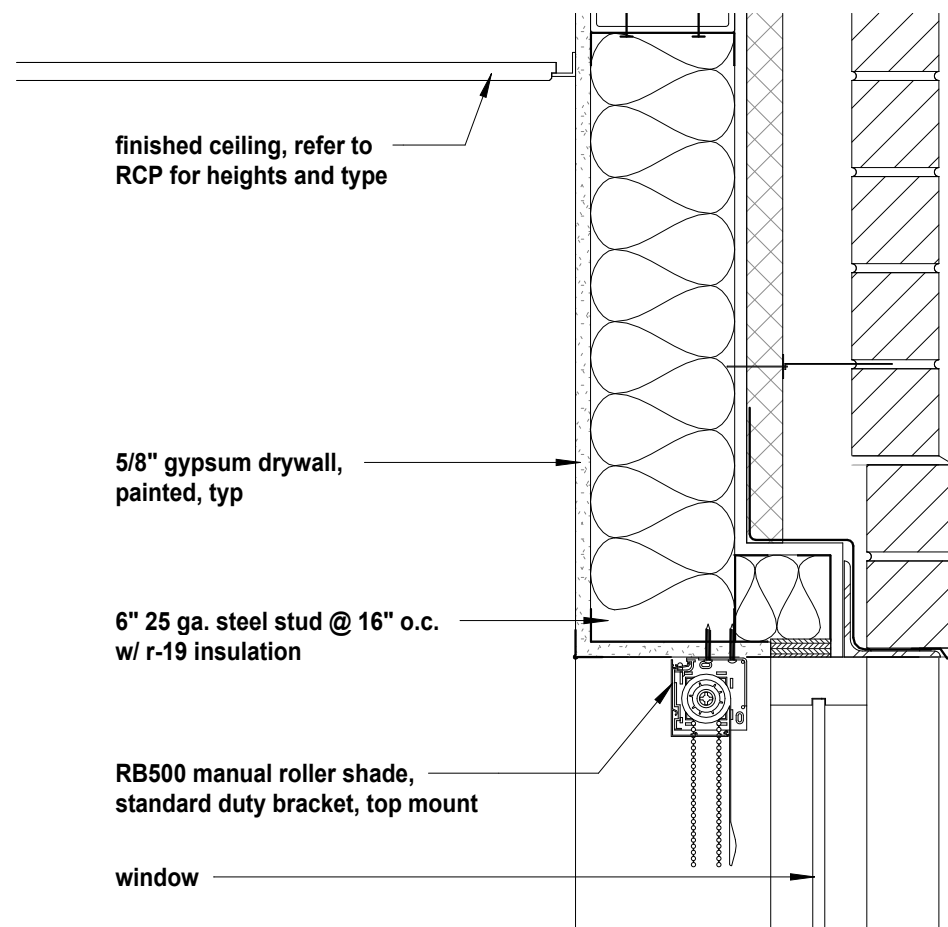
\* refer to specs for more information

Door Schedule						
Door Number	Type	Size: Width x Height x Thickness	Fire Rating	Material	Frame	Notes
1a	1	3'-0" x 8'-0" x 0'-1 3/4"	nr	al	al	1
1b	1	3'-0" x 8'-0" x 0'-1 3/4"	nr	al	al	
2	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	1
3	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	1
4	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
5a	5	3'-0" x 7'-0" x 0'-1 3/4"	nr	wd	hm	
5b	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	1
6	2	2'-8" x 7'-0" x 0'-1 3/4"	nr	wd	hm	
7	2	3'-0" x 7'-0" x 0'-1 3/4"	nr	wd	hm	
8	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
9	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
10	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
11	3	3'-0" x 7'-0" x 0'-1 3/4"	90 min	hm	hm	2
12	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
13	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
14	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
15	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
16a	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
16b	4	3'-0" x 7'-10" x 0'-1 3/4"	90 min	hm	hm	1,3
17	4	3'-0" x 7'-10" x 0'-1 3/4"	90 min	hm	hm	1,3
18	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
19	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
20	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	
21	2	3'-0" x 7'-0" x 0'-1 3/4"	20 min	wd	hm	4



**Legend**  
co - cased opening  
nr - not rated  
hm - hollow metal  
wd - wood, factory finish  
al - aluminum, prefinished  
st - steel  
fg - fiberglass

- Notes:
- controlled access door
  - storm shelter door
  - provide fire-rated insulated glass lite
  - provide 3/4" gap at bottom of door to finished floor

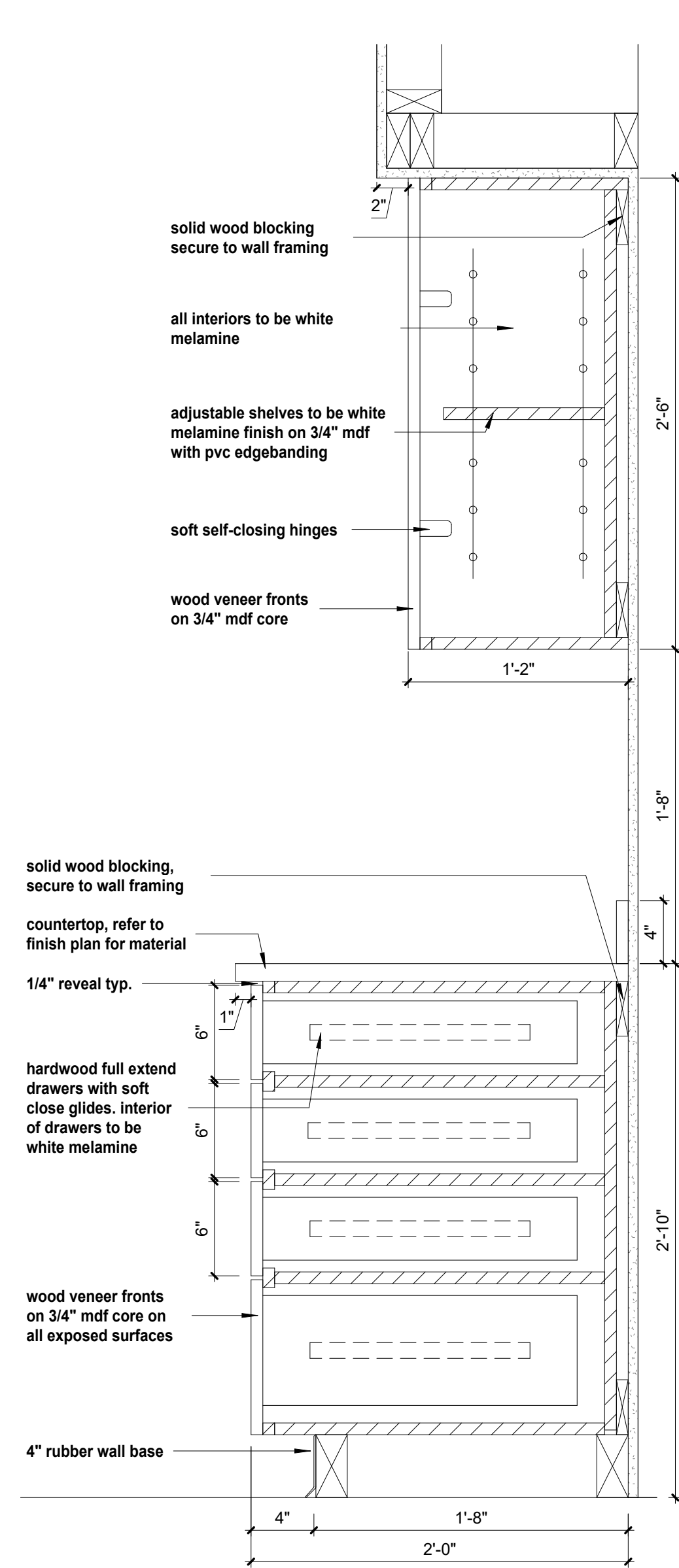


**a** window section @ roller shade  
1 1/2" = 1'-0"

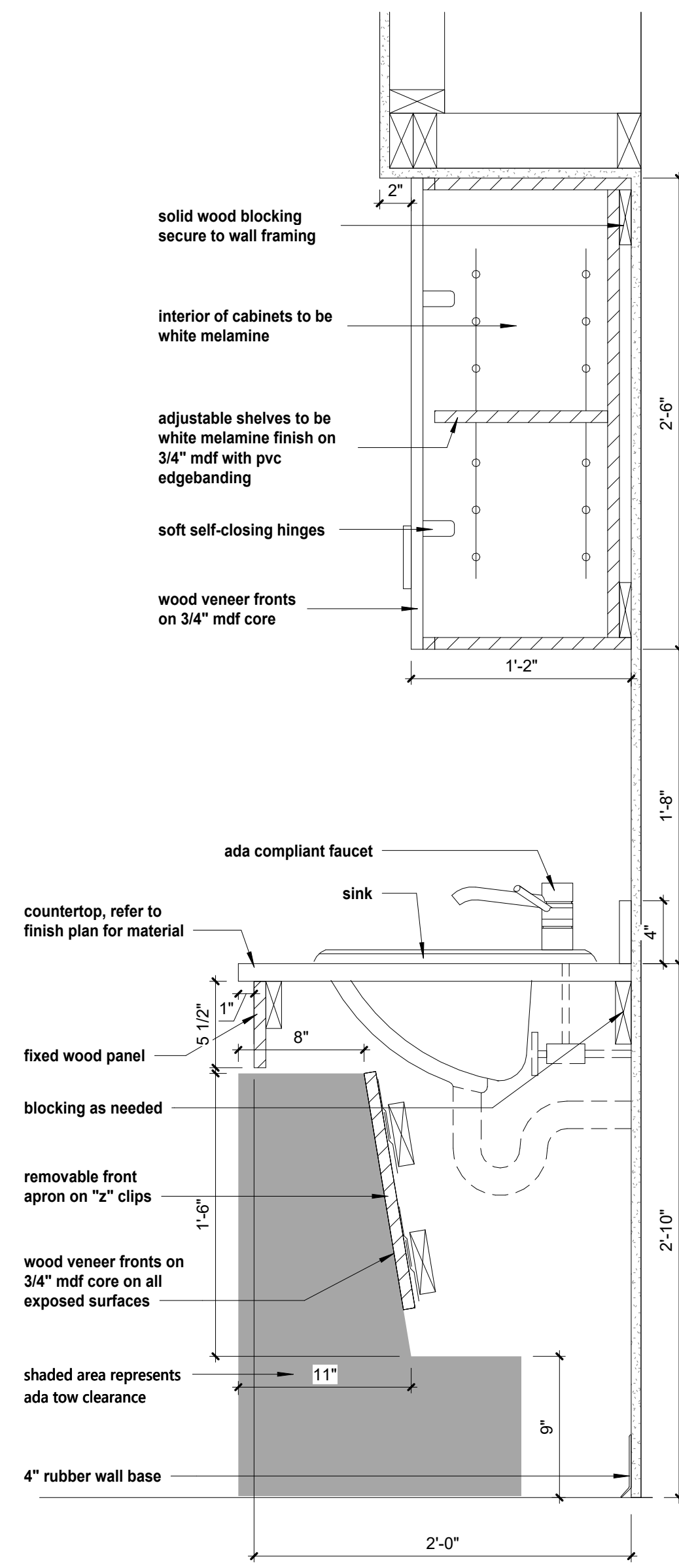
Window Treatment Schedule				
Room Name	Room Number	Window Size	Quantity of Windows	Type
Community Room	5	5'-0" w x 4'-0" h	2	A
<b>TYPE A</b>				
Base Spec: Hunter Douglas				
RB500 Standard manual roller shade, standard bracket, stainless steel chain				
3" bottom closer color to be chosen from manufacturer standard colors				
M Screen 8503 - 3% openness - color: white/stone - sealed hembar, matching valance				
**All window sizes to be verified in field before order				

Window Schedule						
Mark	Construction Type	R.O. Width	R.O. Height	Head Height	Room Number	Comments
a	fixed	5'-4"	2'-0"	8'-0"	8,18,19,20,21	
b	fixed	2'-0"	2'-0"	8'-0"	2	
c	fixed	5'-4"	4'-4"	8'-0"	5,10	

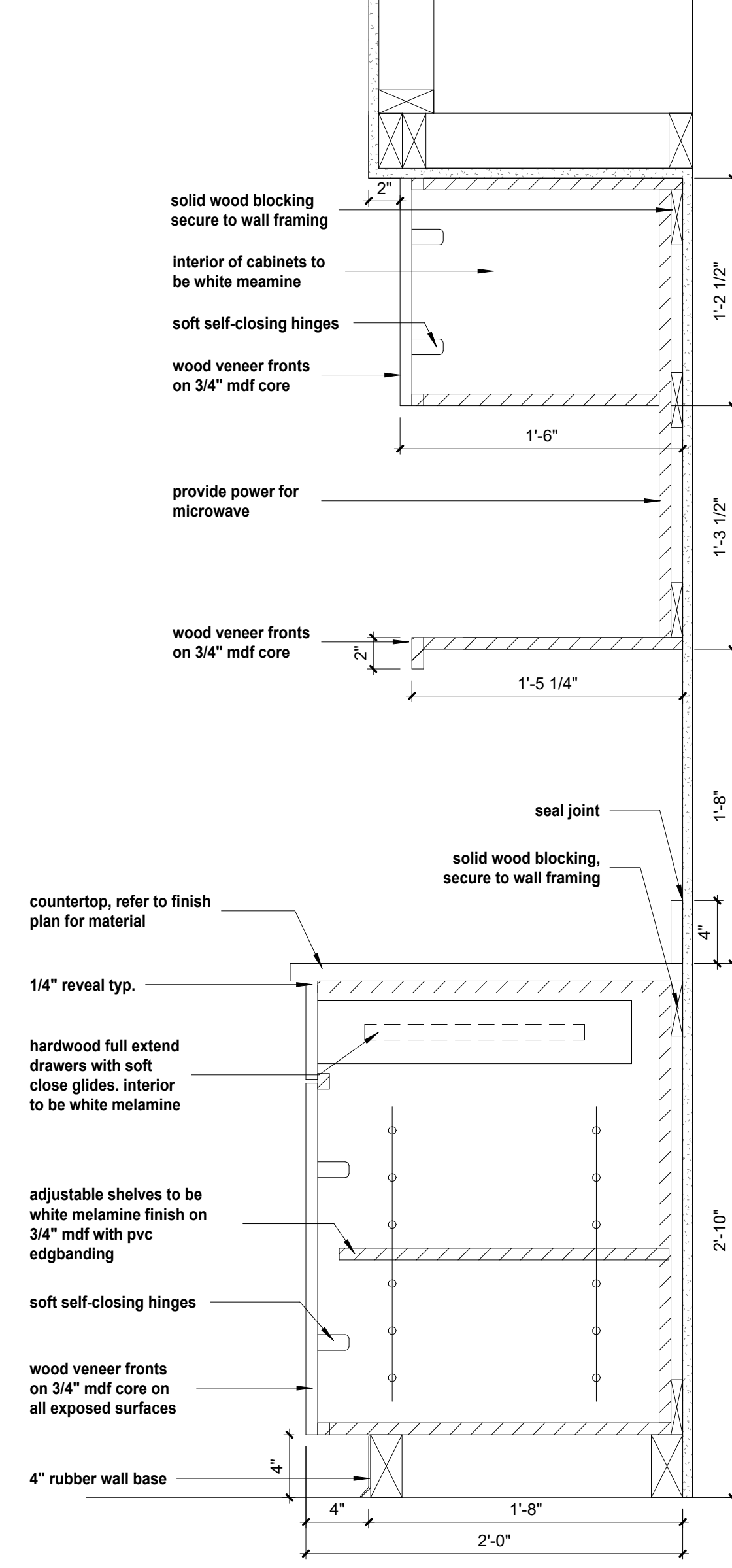




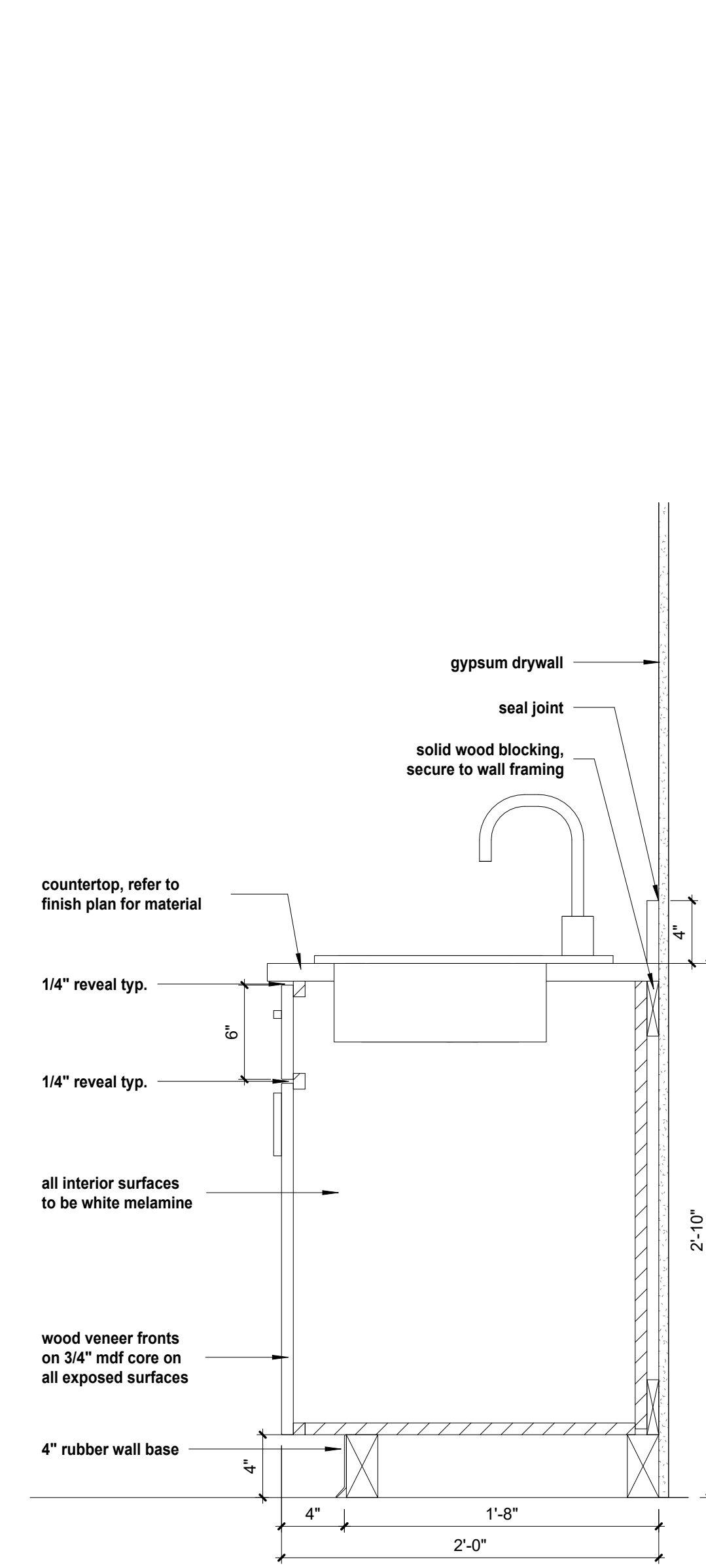
**a** section at drawers  
1 1/2" = 1'-0"



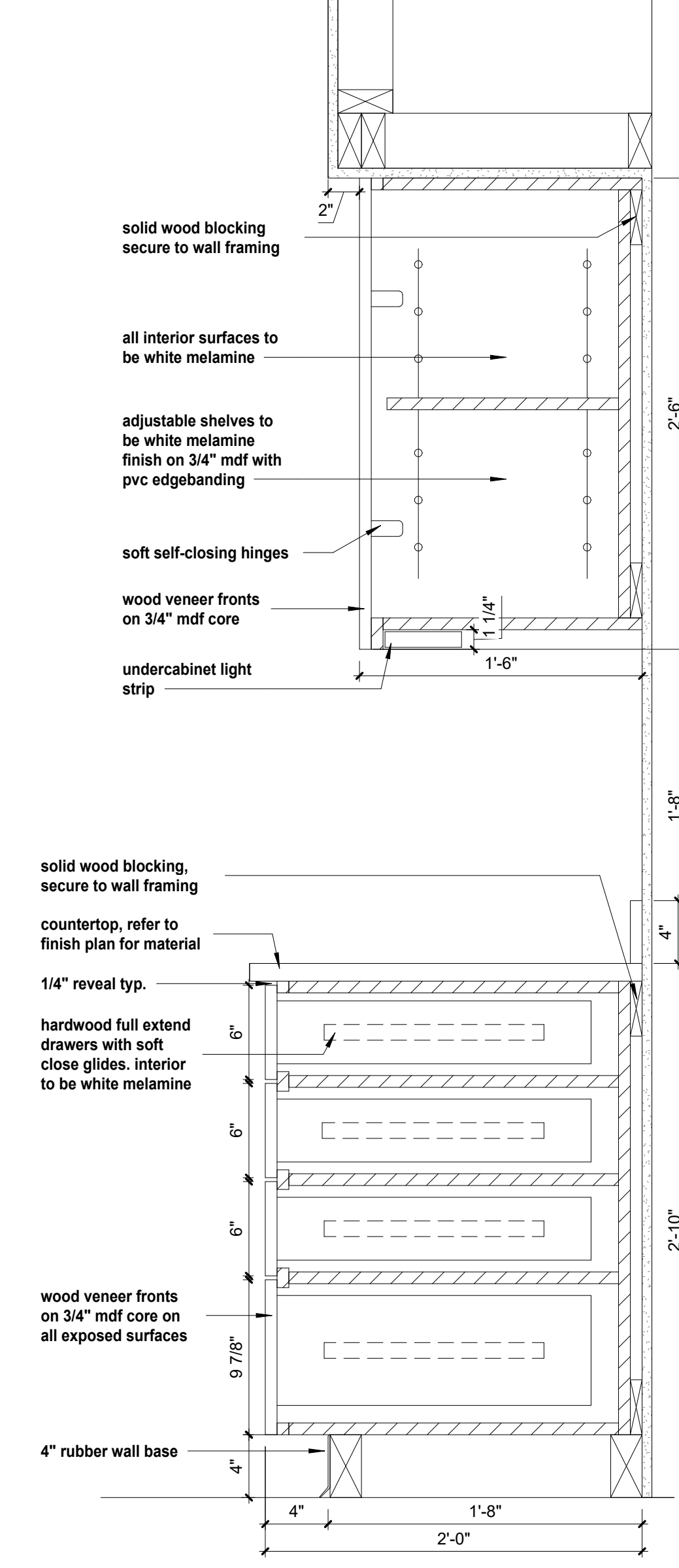
**b** section at ada sink  
1 1/2" = 1'-0"



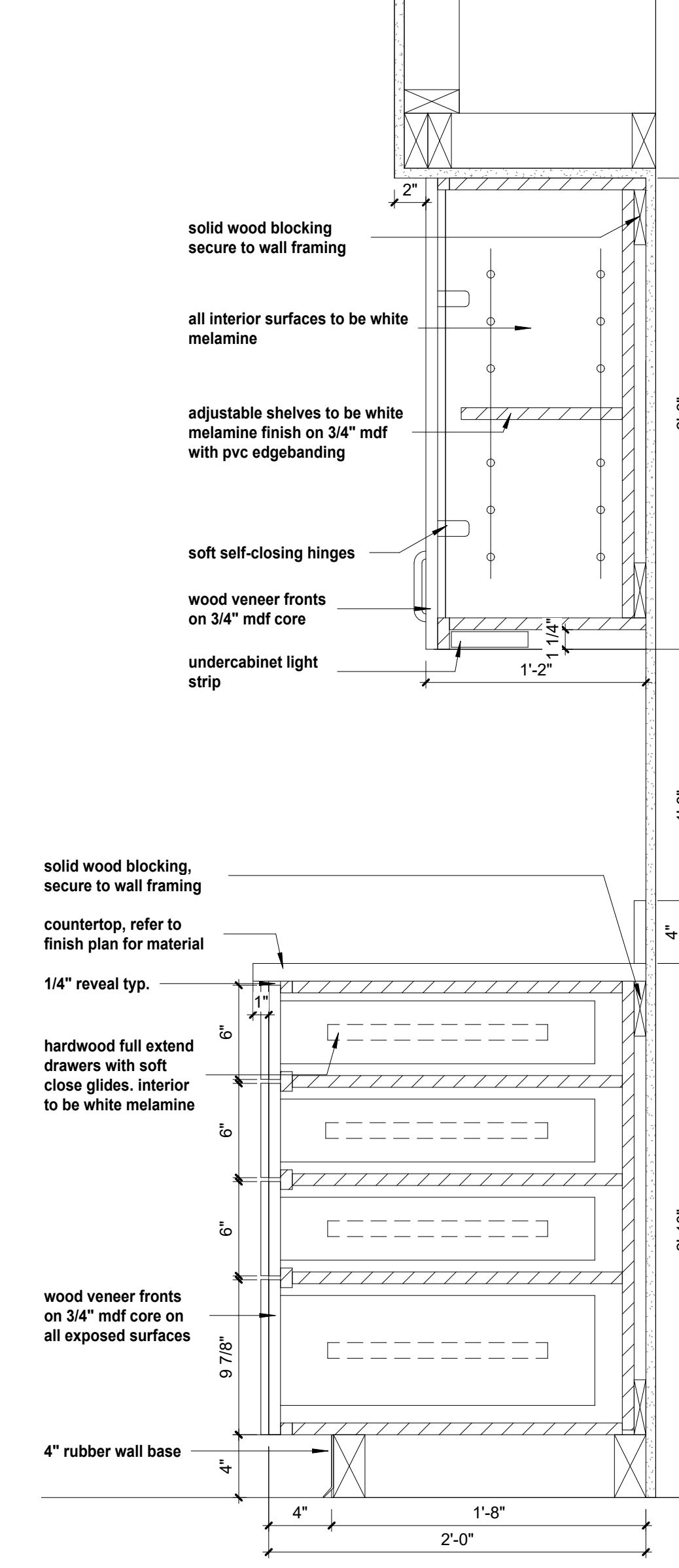
**c** millwork section at microwave  
1 1/2" = 1'-0"



**d** section at sink  
1 1/2" = 1'-0"

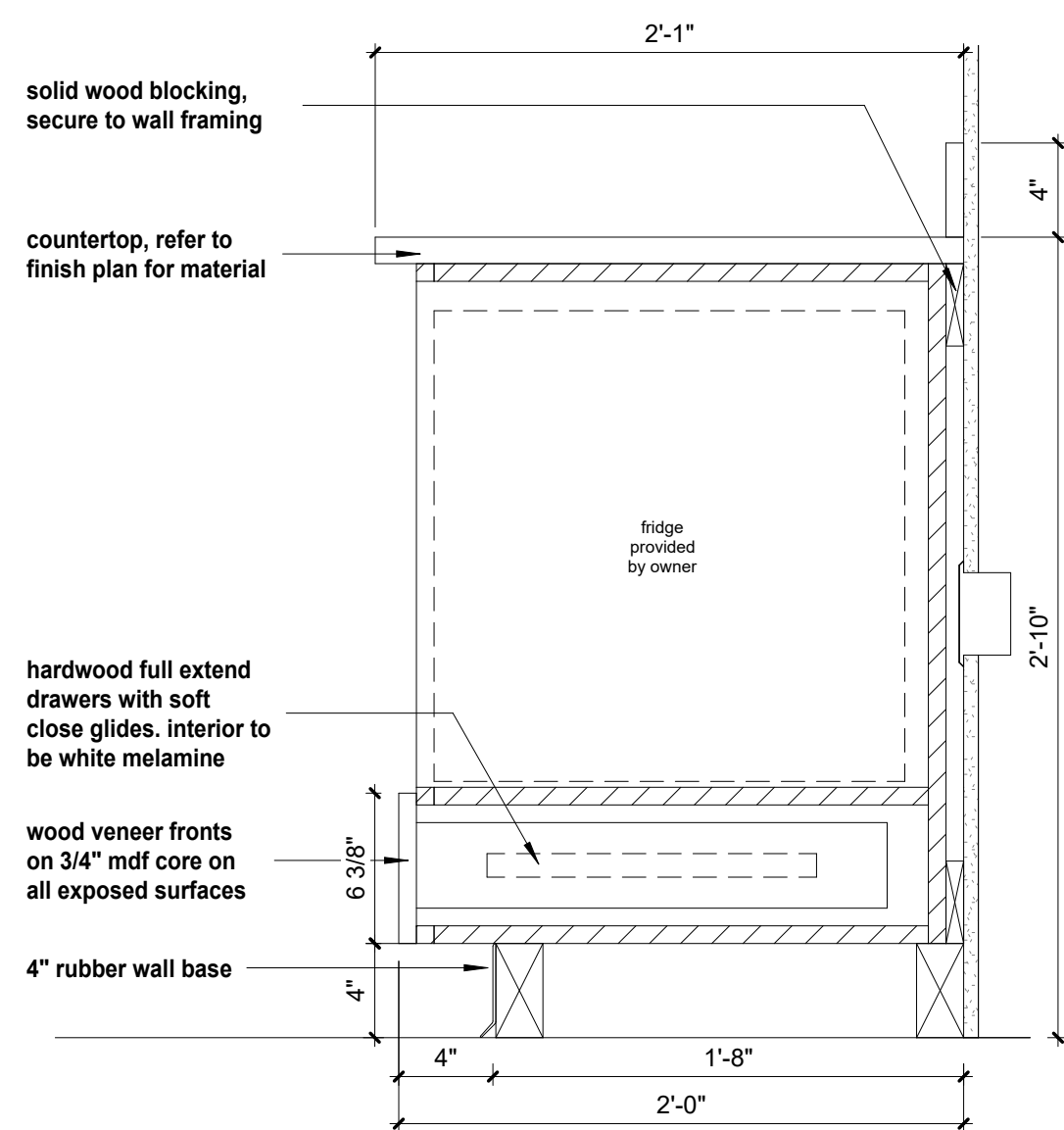


**e** section at lab drawers on east wall  
1 1/2" = 1'-0"

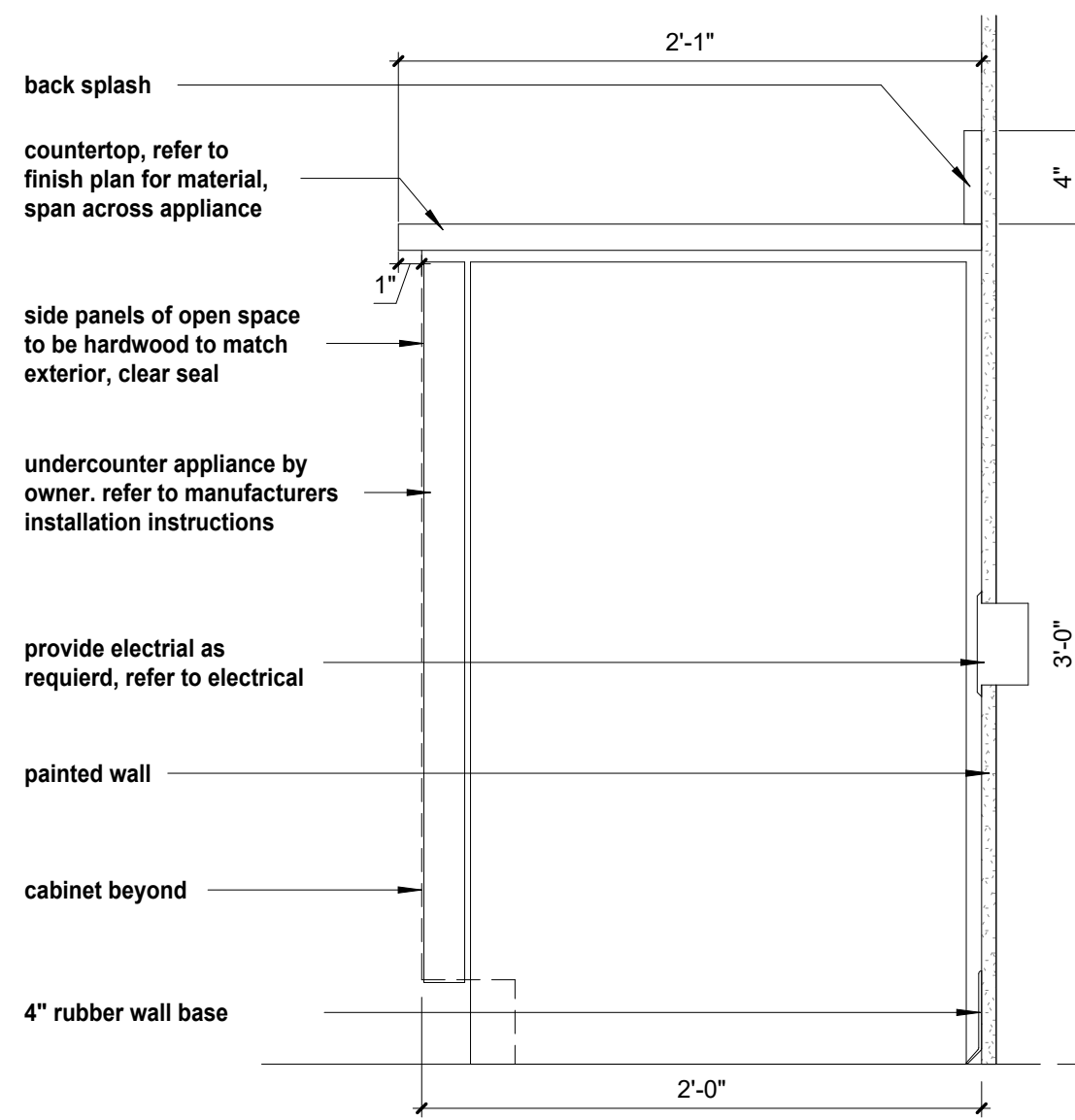


**f** section at lab drawers on west wall  
1 1/2" = 1'-0"

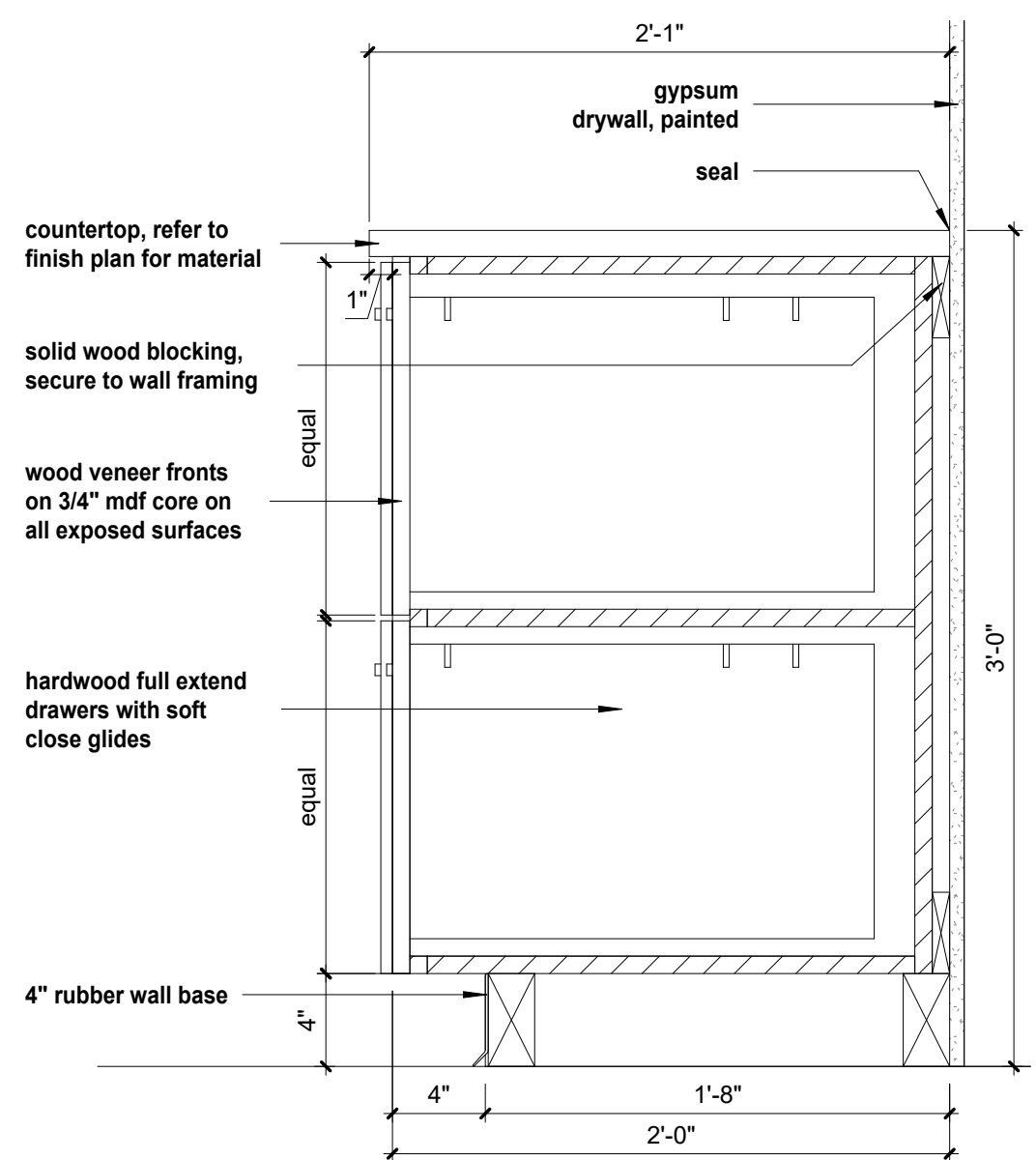




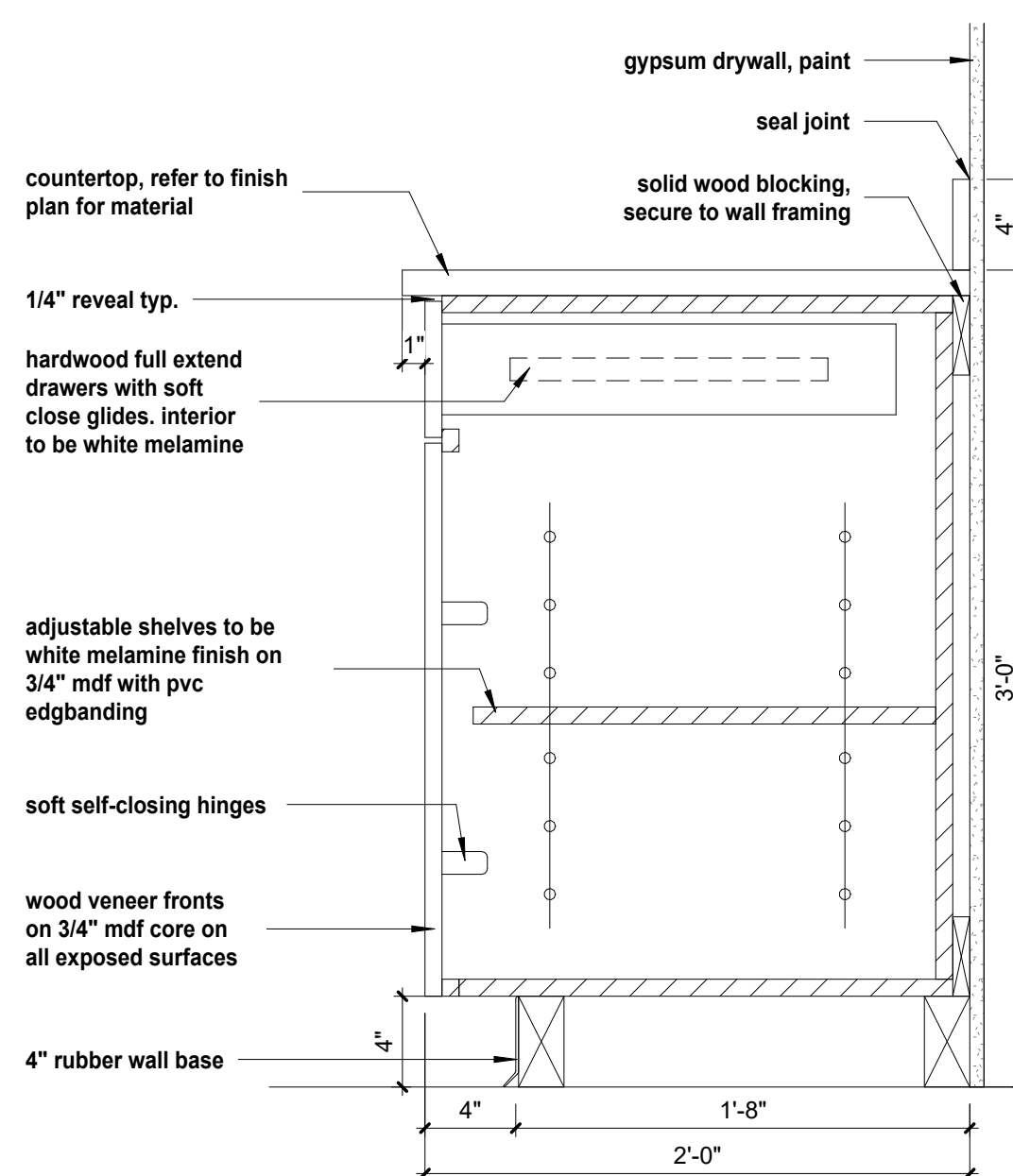
**a** section at appliance  
1 1/2" = 1'-0"



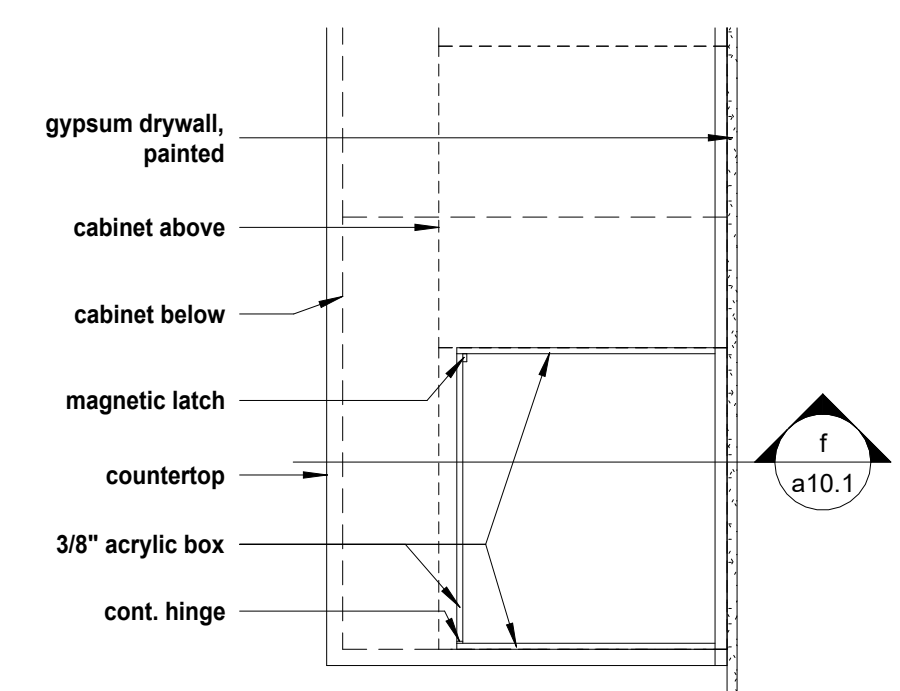
**b** section @ undercounter fridge  
1 1/2" = 1'-0"



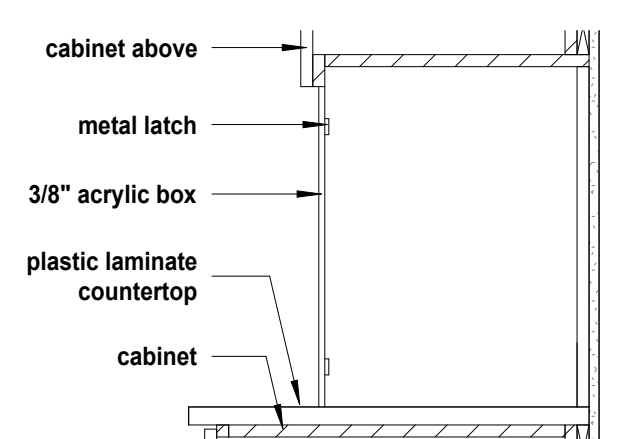
**c** section at file storage  
1 1/2" = 1'-0"



**d** section at cabinet  
1 1/2" = 1'-0"



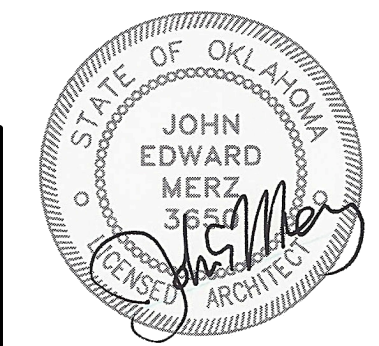
**e** enlarged plan at centrifuge  
1" = 1'-0"



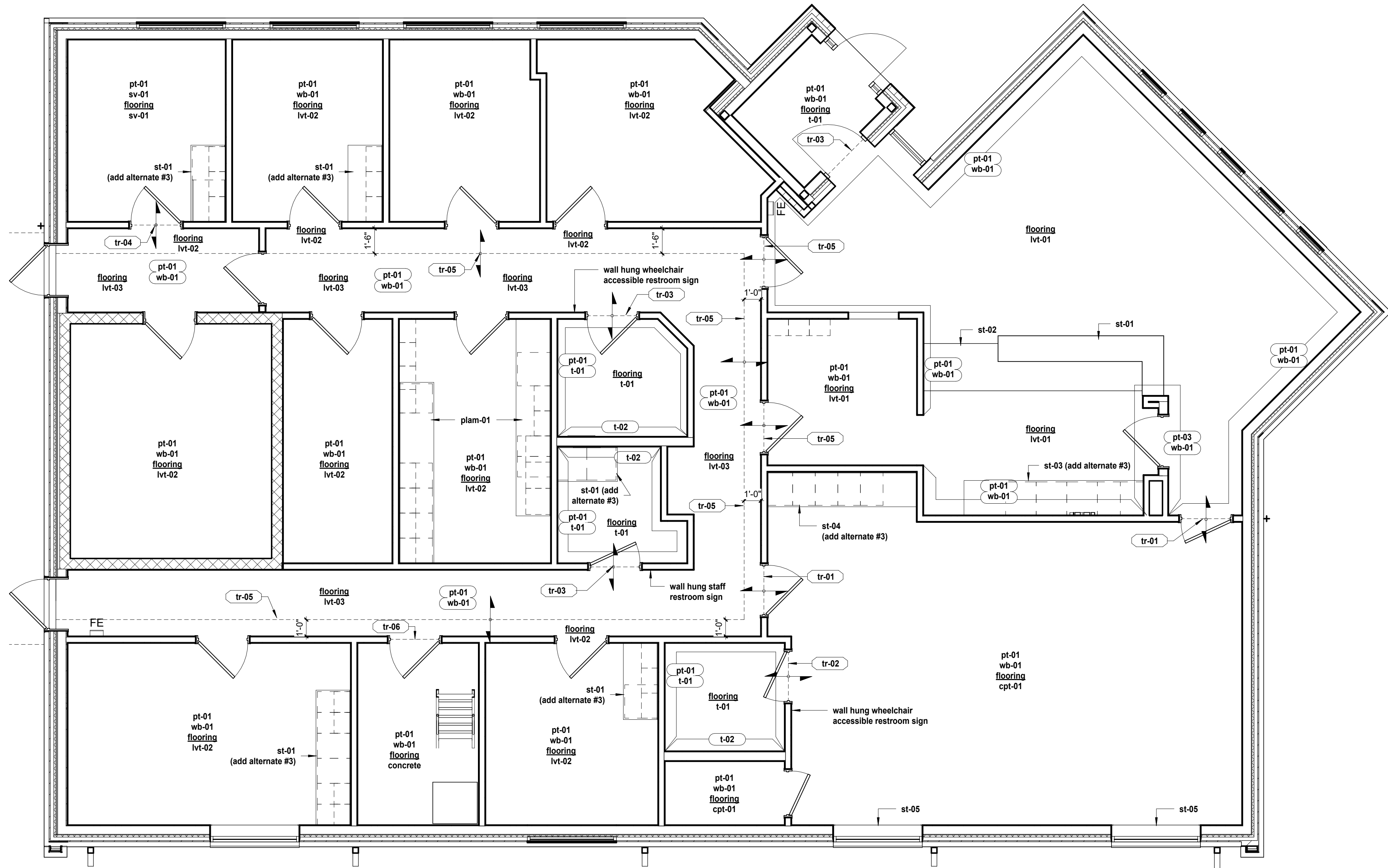
**f** section at centrifuge acrylic box  
1" = 1'-0"

date issued: 03-03-23					

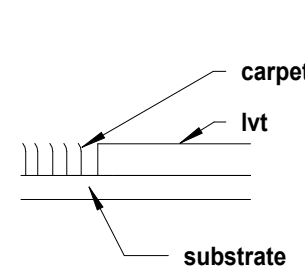
# Grant County Health Department (BID 2023-05) Lots 1-5, Block 20, Medford, OK



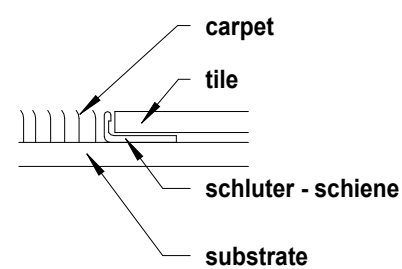




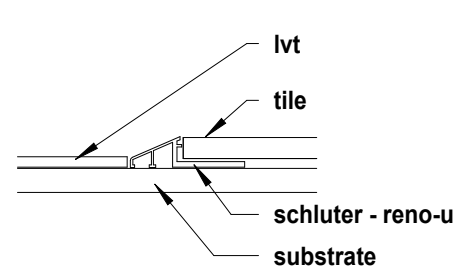
**a** Level 1 - finish plan  
1/4" = 1'-0"



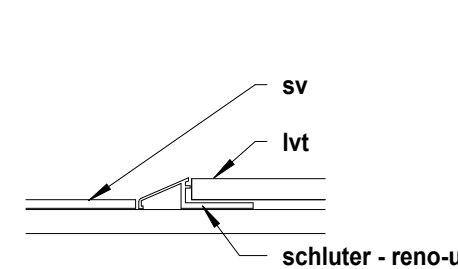
**b** tr-01  
3" = 1'-0"



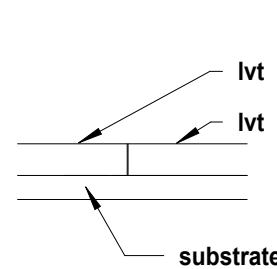
**c** tr-02  
3" = 1'-0"



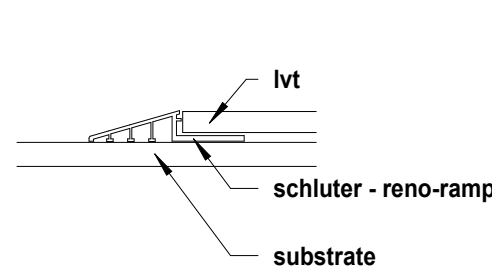
**d** tr-03  
3" = 1'-0"



**e** tr-04  
3" = 1'-0"



**f** tr-05  
3" = 1'-0"



**g** tr-06  
3" = 1'-0"

**Note:**  
All level changes are to meet ADA minimum standards.  
Changes in level between 1/4" and 1/2" shall be  
beveled with a slope no greater than 1:2

## Finish Schedule

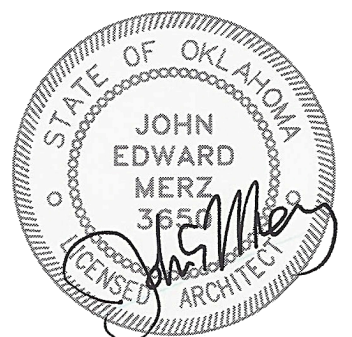
Grant County Health Department (BID 2023-05)  
Project Address

PAINT								
reference no.	description	manufacturer	color name	color no	sheen @ walls	Sheen @ ceilings & bulkheads	Installation Instructions	general notes
pt-01	general paint color at walls and bulkheads	Benjamin Moore	Nature's Essentials	1521	eggshell	eggshell		
pt-02	metal door frame and above reception bulkhead	Sherwin Williams	Iron Ore	7068	satin			
pt-03	accent color at reception bulkhead, ceiling and wall	Benjamin Moore	Champion Cobalt	2061-20	eggshell	eggshell		
CEILING TILE								
reference no.	description	manufacturer	type	style	size	color	suspension system	installation instructions
act-01	general acoustical ceiling tile	armstrong	ultima high NRC	15/16" tegular	24x24	white	prelude	refer to manufacturer's install instructions
CARPET TILE								
reference no.	description	manufacturer	type	style	color	size	notes	install method
cpt-01	carpet tile at community room	Patcraft	modular	patina	underlying layer	12x48		ashler
TILE								
reference no.	description	manufacturer	series	color	size	joint size	grout color	general notes
t-01	tile at vestibule and restroom floors	Metro Surfaces	Frammenti Macro	Nero	8x8	1/16" max	Mapei Flex Seal #10 Black	
t-02	tile at restroom wet walls	Daltile	rekindle	terracotta rk14	12x24	1/16" max	Mapei Flex Seal # 74 camel	tile installed floor to ceiling
t-03	tile at reception desk	Metro Surfaces	Aura	Jet Matte	4x12	1/16" max	Mapei Flex Seal #10 Black	tile installed in diagonal basketweave pattern
VINYL TILE								
reference no	description	manufacturer	series	color	size	installation method	**no floor finish transitions needed between new carpet and lvt or 2 types of lvt **Finish transition between LVT and tile to be Schluter Reno-U satin anod. alum.	
lvt-01	luxury vinyl tile at waiting, reception, admin asst.	Patcraft	Inset	Native Silver	18x36	ashlar		
lvt-02	luxury vinyl tile at patient rooms and hallway accent	Patcraft	Linocut	relief	9x36	ashler		
lvt-03	luxary vinyl tile at hallway	Patcraft	Linocut	baren	9x36	ashler		
SHEET VINYL								
sv-01	Sheet flooring at iso exam room	Patcraft	Holistic Shades	Radiant	sheet		Use with Altro 20mm Cove stick and Stainless steel cap strip at 4" aff. Refer to Manufacturer's Instructions.	
STONE								
reference no.	description	distributor/ manufacturer	type	color	size	thickness	finish	edge
st-01	Countertop at reception desk and exam rooms	Cambria USA	quartz	cherrybrook	vif	3 cm	polished	straight edge with mitered corners
st-02	countertop at reception writing surface	Ceasarstone	quartz	jet black	vif	3 cm	matte	straight with eased edges
st-03	countertop at reception back wall	Ceasarstone	quartz	jet black	vif	3 cm	polished	straight with eased edges
st-04	countertop at community room	Cambria USA	quartz	portrush	vif	3 cm	polished	straight with eased edges
st-05	window sills	Cambria USA	quartz	kirkstead	vif	3 cm	polished	straight with eased edges
PLASTIC LAMINATE								
reference no	description	manufacturer	color name/no	finish	edge trim/style			
plam-01	typical plam countertops	Wilsonart	rustic slate 4888-38	fine velvet finish	3mm PVC edgebanding to match surface pattern			
WALL BASE								
reference no.	description	manufacturer	color name	type	material	size		
wb-01	typical project wall base unless otherwise noted	johnsonite	burnt umber	traditional standard tow	rubber	4 1/2"		
WOOD TYPES								
wood type and stain to match designer's samples								

date issued: 03-03-23

Grant County Health Department (BID 2023-05)  
Lots 1-5, Block 20, Medford, OK

CORBIN MERZ HANEY  
ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701 WWW.CORBINMERZHANEY.COM PH (580) 233-2362

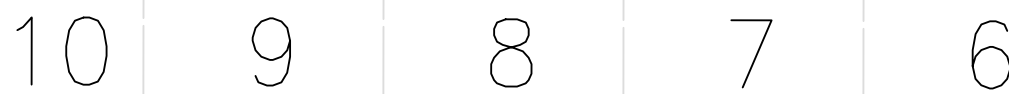


a11



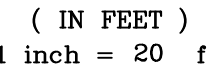


UTILITY WARNING



MAG NAIL WITH WASHER  
BENCHMARK PT#217  
NLY 657667.677  
ELY 2045687.727  
EL 1091.77

GRAPHIC SCALE



○ ~ Denotes an existing 1/2" iron pin found in place unless otherwise noted hereon.

● ~ Denotes 3/8" iron pin set with yellow plastic cap stamped CA 82 unless otherwise noted hereon.

1. NO RECORD TITLE SEARCH WAS FURNISHED TO OR PERFORMED BY THE SURVEYOR.
2. "CALL OKIE" TICKET WAS NOT SUBMITTED BUT UTILITIES THAT WERE PREVIOUSLY MARKED ARE SHOWN HEREON.

To the best of my knowledge, information and belief, a prudent survey was made under my supervision of the land shown hereon, which meets or exceeds the Oklahoma Minimum Standards for the Practice of Land Surveys adopted by the Oklahoma State Board of Registration for Professional Engineers and Land Surveyors on Nov. 1, 2020.


I, JAROD WATKINS, hereby certify that this project was completed under my direct supervision and responsible charge from an actual ground survey performed at the 95% confidence level to meet the Federal Geographic Data Committee Standards. I commenced obtaining the original data on Sept. 19, 2022 and completed obtaining the data on Oct. 13, 2022. The vertical data hereon is NAVD88. This topographic survey meets the requirements of a topographic survey as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors effective September 14, 2018.

NOTICE:  
UNDERGROUND UTILITIES SHOWN HEREON WERE  
LOCATED FROM UTILITY MARKERS FOUND ON  
THE GROUND, UTILITIES WERE NOT PHYSICALLY  
UNCOVERED BY THE SURVEYOR.

**NOTICE:**  
Only the R/W Easements and Building Lines furnished by the client after the job was authorized and or shown on the recorded plat of record are shown hereon.

**POSITIONAL ACCURACY**  
Unless otherwise noted hereon all monuments established by this survey have a minimum positional accuracy of 0.10 feet.

## TOPOGRAPHIC SURVEY



REVISIONS	
NUMBER	DATE

PROJECT NUMBERS:

SHEET TITLE: TOPOGRAPHIC SURVEY  
LOTS 1-5, BLOCK 20, ORIGINAL TOWN OF  
MEDFORD  
MEDFORD, OKI. AHOMA

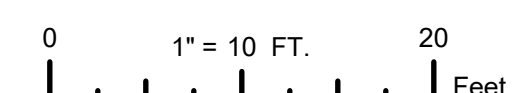
JAROD WATKINS  
P.L.S. NO. 2037

Date of Survey:	9-19-2022
Date Signed:	10-17-2022
Scale:	HORIZ. 1"=20'
Cod File:	20220169\BASEMAP
Drawn by:	JLW
Proofed by:	CMW
Drawing No:	1637
Sheet:	1 1



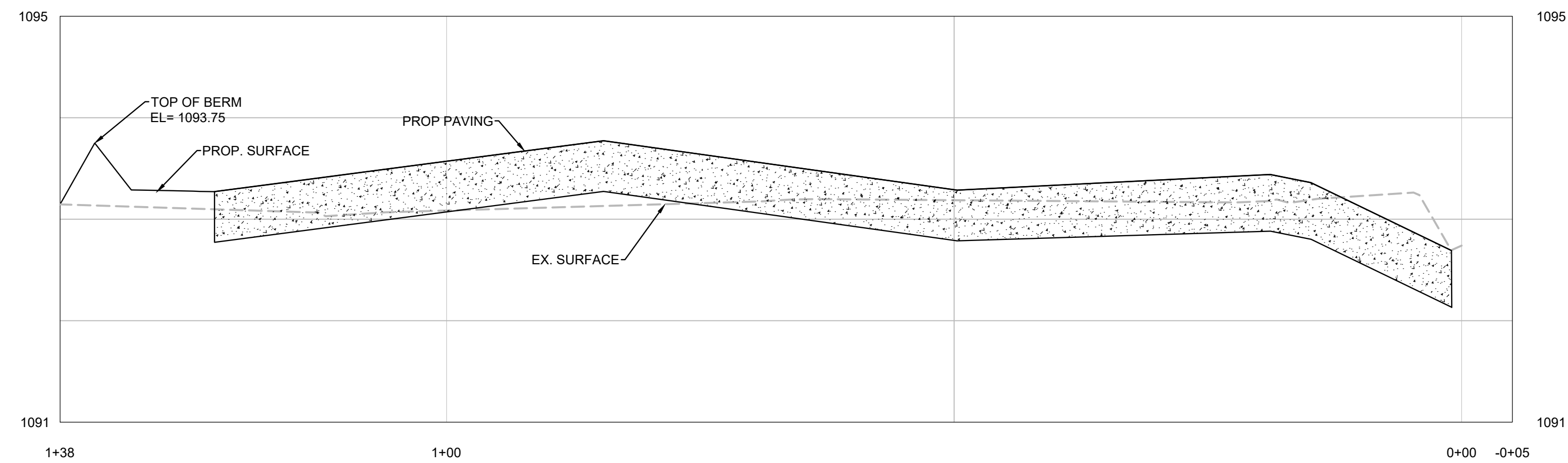






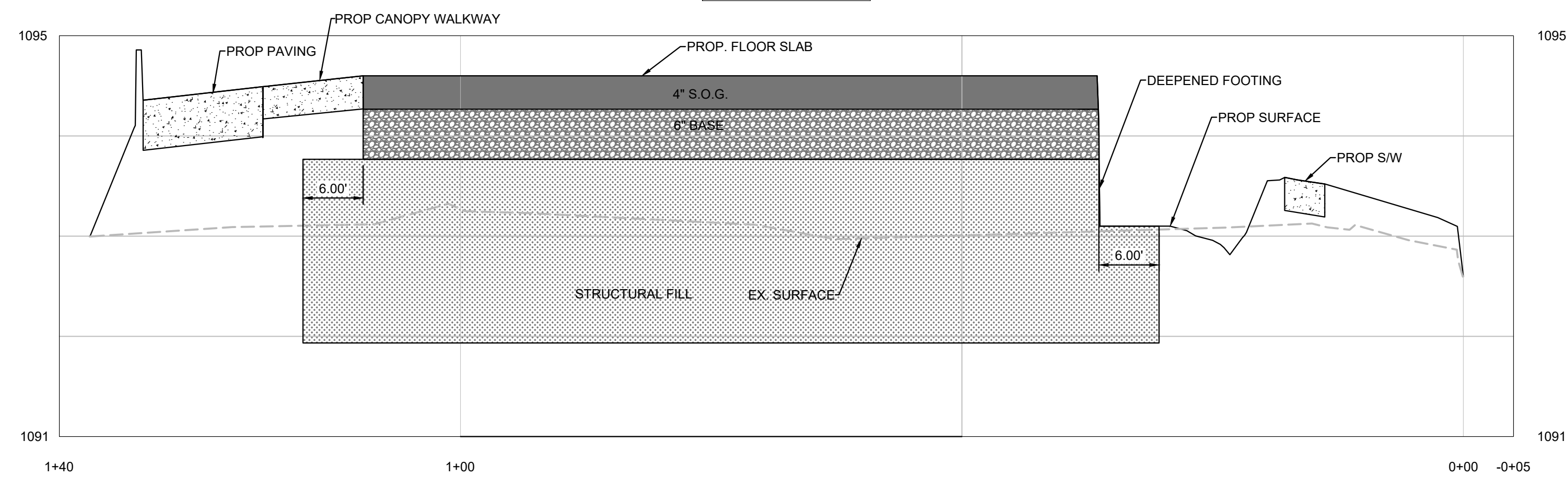


SECTION A PROFILE

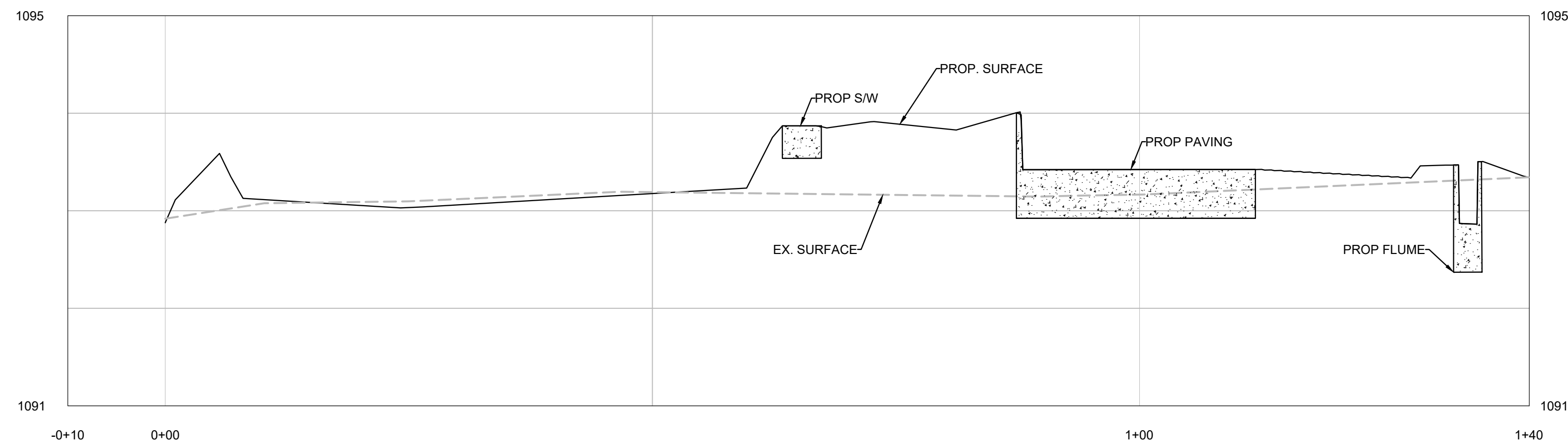


SCALE  
HORIZ.: 1"=10'  
VERT.: 1"=1'

SECTION B PROFILE



SECTION C PROFILE



date issued						
3/03/2023	REV0					

# Grant County Health Department

Lots 1-5, Block 20, Medford, OK

HEG PROJECT NO.: 22.041



C.A. #7050 EXP. 6/30/23  
302 N. INDEPENDENCE ST. STE. 1100  
ENID, OK 73701  
P. 580.233.8533 F: 580.540.8906  
[www.HoltzenEngineering.com](http://www.HoltzenEngineering.com)

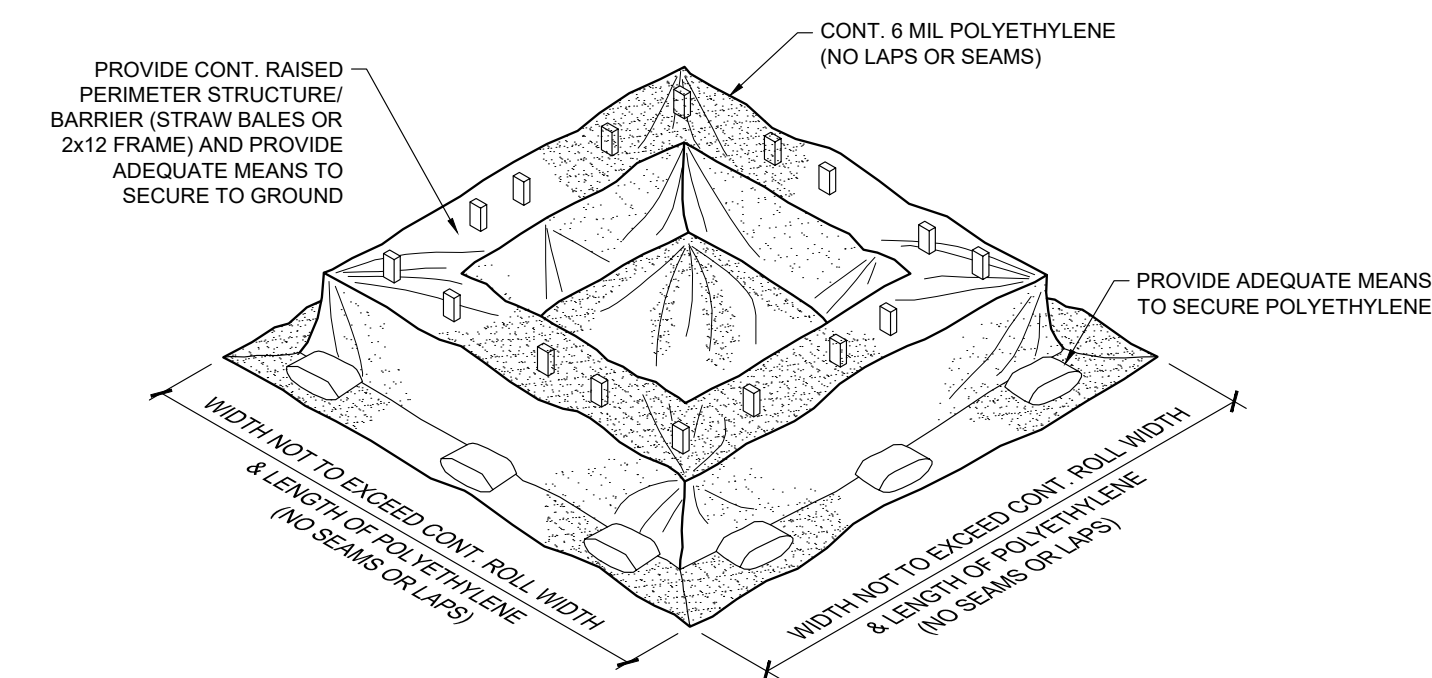
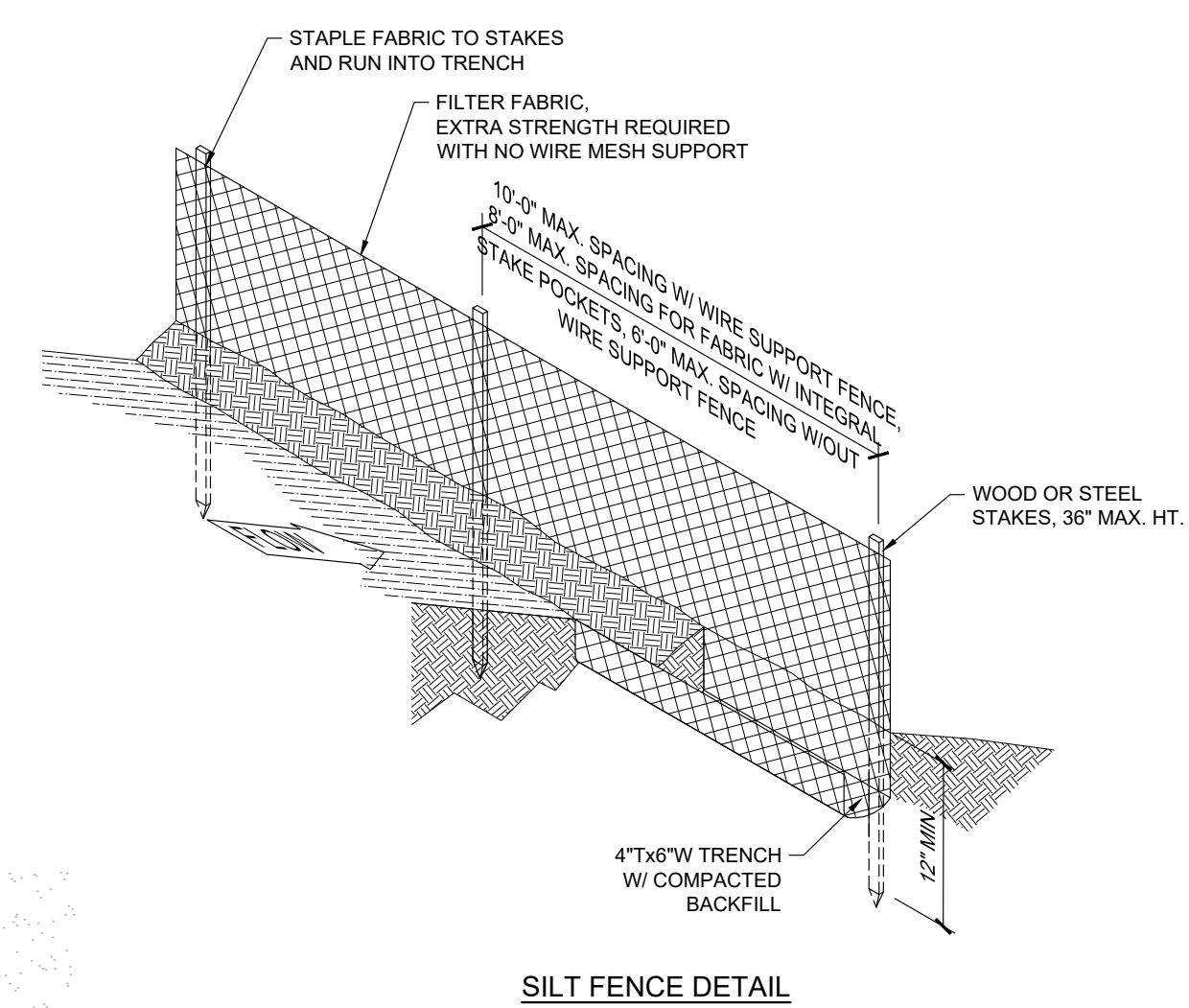


## GRADING PLAN SECTIONS

3

5 sheet(s)





CONTRACTOR TO COORDINATE WITH OWNER  
FOR LOCATION OF CONCRETE WASHOUT PIT.

1. THIS DOCUMENT USES COLOR HATCH AND LINE WORK TO IDENTIFY ITEMS. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN COLOR DOCUMENTS.
2. REFER TO SITE PLAN FOR HATCH LEGEND.

— [S] — SILT FENCE

 AGGREGATE CONSTRUCTION  
ENTRANCE

FIBER LOG

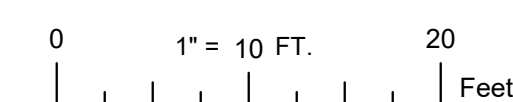
CWP CONCRETE WASHOUT PIT



INLET SEDIMENT BARRIER

 INLET PROTECTION

AGGREGATE CHECK DAM

Grant County Health Department

Lots 1-5, Block 20, Medford, OK

HEG PROJECT NO.: 22.041



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CORBIN MERZ HANEY  
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302 NORTH INDEPENDENCE BLVD., OX 73701 WWW.CORBINMERZHANEY.COM PH: (580) 283-2316



## **EROSION CONTROL PLAN**

4

of 5 sheet(s)







# GENERAL STRUCTURAL NOTES

ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS, SPECIFICATIONS AND NOTES LISTED BELOW. MINIMUM PROVISIONS OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION, AND LOCAL AMENDMENTS SHALL APPLY WHERE DETAILS ARE NOT SHOWN OR DESCRIBED. OTHER APPLICABLE CODES AND STANDARDS ARE GIVEN BELOW.

## DESIGN LOADS

UNIFORM DEAD LOADS AND LIVE LOADS			
1. DEAD LOADS	BUILDING MATERIALS		
3. ROOF LIVE LOADS	20 PSF (NON-REDUCIBLE)		
ROOF SNOW LOADS			
1. GROUND SNOW LOAD, Pg	15 PSF		
2. FLAT-ROOF SNOW LOAD, PI	15 PSF		
3. SNOW EXPOSURE FACTOR, Ce	1.0		
4. SNOW LOAD IMPORTANCE FACTOR, Is	1.0		
5. THERMAL FACTOR, Ct	1.1		
WIND DESIGN DATA			
1. ULTIMATE WIND SPEED	115 MPH		
2. NOMINAL WIND SPEED	90 MPH		
3. RISK CATEGORY	II		
4. WIND EXPOSURE CATEGORY	C		
5. INTERNAL PRESSURE COEFFICIENT	+/-0.18		
6. COMPONENT & CLADDING PRESSURE	RE: SCHEDULE		
EARTHQUAKE DESIGN DATA			
1. RISK CATEGORY	II		
2. SEISMIC IMPORTANCE FACTOR	1.0		
3. MAPPED SPECTRAL RESPONSE ACCELERATIONS	SD= 0.126, SD1= 0.057		
4. SITE CLASS	D		
5. DESIGN SPECTRAL RESPONSE ACCELERATIONS	SDS= 0.134, SD1= 0.091		
6. SEISMIC DESIGN CATEGORY	B		
7. BASIC SEISMIC-FORCE RESISTING SYSTEM	LIGHT-FRAMED WALL SYSTEM USING FLAT STRAP BRACING		
8. RESPONSE MODIFICATION FACTOR, R	3		
9. SEISMIC RESPONSE COEFFICIENT, Cs	0.045		
10. DESIGN BASE SHEAR	0.045W		
11. ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE		

## GENERAL NOTES

- THE STRUCTURAL DRAWINGS DEPICT THE STRUCTURE IN ITS FINAL CONSTRUCTED CONFIGURATION.
- NEITHER CONSTRUCTION MEANS AND METHODS, TECHNIQUES, CONSTRUCTION SEQUENCE NOR CONSTRUCTION SAFETY ARE PART OF THE STRUCTURAL ENGINEER'S RESPONSIBILITY OR SCOPE OF WORK.
- THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS ARE FULLY RESPONSIBLE FOR THE MEANS AND METHODS WHICH INCLUDE CONSTRUCTION BRACING AND TEMPORARY SUPPORTS USED TO CONSTRUCT THE STRUCTURE AND FOR FULL COMPLIANCE WITH ALL JOB SAFETY RELATED REGULATIONS AND CONDITIONS AT THE SITE.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TEMPORARY LATERAL BRACING FOR STRUCTURAL STABILITY. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL PERMANENT BRACING, ROOF AND FLOOR DIAPHRAGMS, AND WALL ARE COMPLETELY INSTALLED AND ALL CONNECTIONS COMPLETED.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE DURING ERECTION OF THE BUILDING ADDITIONAL TEMPORARY SHORING, BRACING, FORMING, GUYING, VERTICAL SUPPORTS, ETC., TO STABILIZE THE STRUCTURE, HOLD THE STRUCTURE IN PROPER ALIGNMENT, AND TO WITHSTAND CONSTRUCTION LOADING.
- OBSERVATION SITE VISITS, IF ANY BY STRUCTURAL ENGINEER OR A REPRESENTATIVE OF THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTIONS, SPECIAL INSPECTIONS, SAFETY INSPECTIONS, NOR REVIEW OR INSPECTIONS OF CONSTRUCTION MEANS AND METHODS. OBSERVATION SITE VISITS ARE SOLELY FOR THE PURPOSE OF ASSISTING WITH ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS, BUT DO NOT GUARANTY CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- ALL DETAILS ARE TYPICAL UNLESS NOTED OTHERWISE. DETAILS SHALL APPLY TO ALL SIMILAR AND LIKE CONDITIONS.
- CRANES, CONCRETE TRUCKS, AND ALL OTHER HEAVILY LOADED VEHICLES ARE NOT TO BE DRIVEN ACROSS FOUNDATION MEMBERS NOR BUILDING SLABS. VEHICLES DRIVEN ON BUILDINGS SLABS ARE AT THE RISK OF THE GENERAL CONTRACTOR.
- THE GENERAL CONTRACTOR SHALL COORDINATE ALL FLOOR AND ROOF PENETRATIONS WITH ARCHITECTURAL DRAWINGS, AND MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
- IF GENERAL STRUCTURAL NOTES OR PLANS CONFLICT WITH THE SPECIFICATIONS THE MORE STRINGENT SHALL CONTROL.

## FOUNDATIONS

FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS CONTAINED IN A SUBSURFACE EXPLORATION REPORT PREPARED BY BURGESS ENGINEERING AND TESTING, DATED 10-17-2022. BET. INC. PROJECT NO. 731-22175. H.E.G. IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OF THE INFORMATION PREPARED IN THE GEOTECHNICAL REPORT.

### FOOTING FOUNDATIONS

- MAXIMUM NET ALLOWABLE SOIL BEARING PRESSURE
  - A. SPREAD FOOTING = 2,200 PSF
  - B. CONTINUOUS FOOTING = 1,540
- FOOTINGS SHALL BEAR A MINIMUM OF 2'-0" BELOW FINISHED EXTERIOR GRADE AND ON APPROVED MATERIAL IN ACCORDANCE WITH THE SOILS REPORT.
- PROTECT BOTTOMS OF EXCAVATION AGAINST FROST AND KEEP FREE OF WATER, DEBRIS AND LOOSE MATERIAL. SOIL BECOMING UNSUITABLE FOR BEARING MUST BE REMOVED.
- PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT MOISTURE CHANGE IN FOOTING EXCAVATIONS.
- EXCESS EXCAVATION BELOW FOOTINGS SHALL BE FILLED WITH LEAN CONCRETE.

### EARTHWORK

- EARTHWORK AND SUBGRADE CONSTRUCTION AND INSPECTIONS SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE SOILS REPORT.
- PRIOR TO THE PLACEMENT OF FILL, THE EXISTING SUBGRADE SHALL BE:
  - A. STRIPPED OF ALL VEGETATION, TOPSOIL, AND ANY OTHER DELETERIOUS MATERIALS.
  - B. PROOF-ROLL INCLUDING REMOVING AND REPLACING ANY SOFT MATERIAL WHICH EXHIBITS RUTTING OR DEFLECTS EXCESSIVELY WHEN TRAVERSED BY A LOADED TRUCK WITH A REAR AXLE LOADED OF APPROXIMATELY 16,000 LBS.
  - C. SCARIFIED TO A DEPTH OF (8) INCHES, AND MOISTURE CONDITIONED (0% TO +3% OF OPTIMUM) AND COMPACTED TO 95 PERCENT OR MORE OF STANDARD PROCTOR MAXIMUM DRY DENSITY.
  - D. LIQUID LIMIT = 35 MAXIMUM
  - E. PLASTICITY INDEX (PI) = 5 TO 15
- ALL FILL AND NATURAL GRADES FOR THE CASE WHERE NO FILL IS USED IN THE BUILDING AREA SHALL BE:
  - A. COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT AT OR SLIGHTLY IN EXCESS OF THE OPTIMUM (I.E. 0% TO +3% OF OPTIMUM).
  - B. PLACED IN LIFTS NOT TO EXCEED (9) INCHES IN COMPACTED THICKNESS.
  - C. TESTED FOR FIELD DENSITY EVERY 5,000 S.F. PER LIFT UNDER STRUCTURE WITH A MINIMUM OF (3)-TESTS PER LIFT.
- STRUCTURAL FILL REQUIREMENTS:
  - A. AMOUNT FINER THAN 2-INCH SIEVE = 100%
  - B. AMOUNT FINER THAN NO. 200 SIEVE = 12% MINIMUM, AND IF P.1 ≤ 7, 60% MAXIMUM.
  - C. LIQUID LIMIT = 35 MAXIMUM
  - D. PLASTICITY INDEX (PI) = 5 TO 15
- SIX (6) INCHES OR MORE OF GRANULAR BASE, MEETING THE FOLLOWING REQUIREMENTS, SHALL BE PLACED OVER THE SUBGRADE:
  - a. GRAVEL, FREE OF SHARP CORNERS OR EDGES, NATURAL, STONE, WASHED, FREE OF CLAY, SHALE, ORGANIC MATTER
  - b. MINIMUM SIZE = 1/4"
  - c. MAXIMUM SIZE = 5/8"
- SUBGRADE MOISTURE SHALL BE MAINTAINED UNTIL CONCRETE SLAB IS POURED.
- THE CONTRACTOR SHALL CONTRACT WITH A QUALIFIED SOILS ENGINEER TO PERFORM TESTING, INSPECT THE FOOTING EXCAVATIONS, PROOF-ROLLING, AND COMPACTION TO VERIFY THE BEARING MATERIAL AND IDENTIFY SOFT AND YIELDING AREAS ON THE SITE.

### UTILITY TRENCH BACKFILL

- CONSTRUCT AN EFFECTIVE CLAY TRENCH PLUG AT ALL UTILITY TRENCHES THAT PENETRATE BENEATH THE BUILDING OR THROUGH A PERIMETER FOOTING.
- CLAY PLUG SHALL COMPLETELY SURROUND UTILITY LINE, EXTEND 5-FEET FROM FACE OF EXTERIOR PERIMETER FOOTING.
- COMPACTED CLAY PLUG AT A WATER CONTENT ABOVE OPTIMUM.
- BACKFILL, COMPACT, AND TEST UTILITY TRENCHES AS OUTLINED IN SOILS REPORT.

## ANCHOR BOLTS

- CAST-IN-PLACE ANCHOR BOLTS SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE.
  - A. STEEL COLUMN AND STEEL BEAM-TO-CONCRETE CMU ANCHOR BOLTS SHALL BE PLACED PRIOR TO CONCRETE INSTALLATION. WET SET STEEL COLUMN AND STEEL BEAM-TO-CONCRETE CMU ANCHOR BOLTS ARE PROHIBITED. CAST-IN-PLACE ANCHOR BOLTS SHALL NOT BE INSTALLED AFTER CONCRETE IS POURED. ANCHOR BOLT TEMPLATE SHALL BE USED TO HOLD ANCHOR BOLTS IN PLACE.
  - B. HEADED ANCHOR BOLTS: ASTM F1554 GRADE 36, Fy= 36 KSI, Fu= 58 KSI
  - C. STEEL PLATE WASHERS: ASTM A36
  - D. BENT L-BOLTS OR J-BOLTS SHALL NOT BE USED WITH STEEL COLUMNS, OR STEEL BEAM-TO-CONCRETE/CMU CONNECTIONS.
  - E. BENT L-BOLTS OR J-BOLTS USED WITH WOOD BOTTOM PLATE OR LIGHT GAUGE METAL BOTTOM TRACK CONNECTIONS SHALL MEET BENDING AND DIMENSION REQUIREMENTS OF ACI-318.
  - F. DEFORMED BAR ANCHORS:
    - a. ASTM A658 REQUIREMENTS FOR TYPE C STUDS, Fy= 70 KSI, Fu= 80 KSI
- POST-INSTALLED ANCHORS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATION. POST INSTALLED ANCHORS SHALL NOT BE USED IN-PLACE OF CAST-IN-PLACE ANCHORS UNLESS NOTED IN DRAWINGS.
  - A. ADHESIVE ANCHORS FOR CONCRETE/GROUTED CMU SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE:
    - a. HAS THREADED ROD BY HILTI OR EQUAL.
    - b. HILTI HIT-HY 200 ADHESIVE OR EQUAL.
- POWDER ACTUATED FASTENERS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
  - A. CONCRETE BASE: HILTI 0.177" DIA. DS. EMBEDEDMENT 1 1/2", UNLESS NOTED OTHERWISE.
  - B. STEEL BASE:
    - a. UP TO 1/2" THICK: HILTI 0.177 DIA. EDS, UNLESS NOTED OTHERWISE.
    - b. GREATER THAN 1/2" THICK: HILTI 0.177 DIA. EDS MINIMUM EMBEDEDMENT 1/2", UNLESS NOTED OTHERWISE.

## CAST-IN-PLACE CONCRETE

### MATERIALS

- ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 301, 304, ACI 318, AND ACI 347.
- ALL CONCRETE SHALL BE MADE WITH STONE AGGREGATE
- DO NOT ADD WATER TO CONCRETE DURING PLACEMENT.
- CONCRETE MIX SHALL MEET THE FOLLOWING UNLESS STATED OTHERWISE IN THE SPECIFICATIONS.
  - A. PORTLAND CEMENT: ASTM C150, TYPE II
  - B. FLY ASH: ASTM C618 CLASS C
  - C. NORMAL-WEIGHT AGGREGATE: ASTM C33, GRADED
  - D. WATER: ASTM 94 AND POTABLE
  - E. AIR-ENTRAINMENT: ASTM C260

CONCRETE MIX SCHEDULE							
TYPE OF CONSTRUCTION	28 DAY COMPRESSIVE STRENGTH (PSI)	*MAX. SLUMP (INCH)	MAX. AGGREGATE SIZE (INCH)	AIR ENTRAINMENT (±1 1/2%)	MAX. W/C RATIO	MIN. CEMENTITIOUS MATERIAL (lbs./C.Y.)	MAX. FLY-ASH (%)
FOOTINGS	3,000	5	1 1/2	4.5	0.53	470	20
ELEVATED STRUCTURAL SLAB	4,000	4	1 1/2	5	0.45	517	0
SLAB-ON-GRADE	3,500	4	1	0	0.475	470	20

\* SLUMP MAY BE INCREASED WHEN CHEMICAL ADMIXTURES ARE USED. PROVIDED THAT THE ADMIXTURE TREATED CONCRETE HAS THE SAME OR LOWER WATER-CEMENT RATIO AND DOES NOT EXHIBIT SEGREGATION POTENTIAL OR EXCESSIVE BLEEDING. MAXIMUM 8" SLUMP AFTER ADDING ADMIXTURES. MIX DESIGN SUBMITTAL SHALL IDENTIFY VALUE OF PRE-ADMIXTURE SLUMP VALUE.

### GENERAL

- PROVIDE ADMIXTURES CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND THAT WILL NOT CONTRIBUTE WATER-SOLUBLE CHLORIDE IONS EXCEEDING THOSE PERMITTED IN HARDENED CONCRETE. DO NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.
  - A. WATER-REDUCING ADMIXTURE: ASTM C494, TYPE A
  - B. RETARDING ADMIXTURE: ASTM C494, TYPE B
  - C. WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494, TYPE D
  - D. HIGH-RANGE, WATER-REDUCING ADMIXTURE: ASTM C494, TYPE F
  - E. HIGH-RANGE, WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C494, TYPE G
  - F. PLASTICIZING AND RETARDING ADMIXTURE: ASTM C 1017, TYPE II
  - G. WATER REPELLENT: BASF RHEOMIX 235 ADDED PER MANUFACTURERS RECOMMENDATION (SLAB-ON-GRADE ONLY)
- AGGREGATES SHALL BE PROPORTIONED SUCH THAT MIX DESIGN CONTAINS A MINIMUM OF 50% COARSE AGGREGATE PER THE GRADATION REQUIREMENT OF ASTM C33.
- ADDITION OF ANY ADMIXTURES SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.
- CURING COMPOUND: ASTM C309 MASTER BUILDER "MASTER SEAL" (OR APPROVED EQUAL)
- COLD WEATHER PLACEMENT: COMPLY WITH ACI 306
- HOT WEATHER CONCRETE: COMPLY WITH ACI 305
- VAPOR RETARDER SHALL MEET ASTM E 1745, CLASS A, AND REQUIREMENT BELOW (UNLESS STATED OTHERWISE IN THE SPECIFICATION OR ARCHITECTURAL DRAWINGS):
  - A. INSTALL PER MANUFACTURERS RECOMMENDATION (USE MANUFACTURERS RECOMMENDED TAPE)
  - B. STEGO INDUSTRIES, LLC.: STEGO WRAP (15 MIL CLASS A) OR EQUAL
- PROVIDE A RUBBED FINISH TO EXPOSED CONCRETE (EXCLUDING FLOOR SLABS), (UNLESS STATED OTHERWISE IN SPECIFICATIONS OR ARCHITECTURAL DRAWINGS).
- PROVIDE A BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS, RAMPS, AND WALKS, UNLESS STATED OTHERWISE IN SPECIFICATIONS OR ARCHITECTURAL DRAWINGS.
- CLEAN AND SEAL ALL JOINTS WITH CAULKING. AFTER CAULKING IS HARDENED TRIM FLAT WITH TOP OF JOINT.

### REINFORCING:

- CONCRETE POURED AGAINST EARTH = 3"
- CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH:
  - A. IF BARS ARE LARGER THAN #5 = 2"
  - B. IF BARS ARE #5 OR SMALLER = 1 1/2"
- CONCRETE NOT EXPOSED TO WEATHER OR EARTH:
  - A. STRUCTURAL SLABS AND WALLS = 3/4"
  - B. ALL BAR LENGTHS TO SCALE UNLESS NOTED OTHERWISE. REFER TO CONCRETE LAP SPLICES SCHEDULE FOR SPLICE LENGTHS OR AS SHOWN ON DRAWINGS WHICHEVER IS GREATER. PROVIDE CORNER BARS AT WALL FOOTING AND GRADE BEAM CORNERS, AND INTERSECTIONS. SIZE AND SPACING SHALL MATCH HORIZONTAL BARS.
- PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON THE PLANS IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL.
- REINFORCING BARS, HAIRPINS, AND TIE RODS/TIE BEAM REINFORCING SHALL CONFORM TO THE ASTM A615 GRADE 60. DO NOT WELD OR REBEND REINFORCING, UNLESS NOTED OTHERWISE.
- STIRRUPS SHALL CONFORM TO ASTM A615 GRADE 40. DO NOT WELD OR REBEND.
- ONLY ASTM A706 GRADE 60 REINFORCING BARS MAY BE WELDED AND WELDING SHALL CONFORM TO THE LATEST EDITION OF AWS D1.4.
- WIRE MESH REINFORCEMENT SHALL CONFORM TO ASTM A186. LAP ONE FULL MESH AT SIDE AND END LAPS AND WIRE TOGETHER. PLACE MESH AT MID-DEPTH OF SLAB.
- PROVIDE SLEEVES FOR ALL PIPES PLACED THROUGH CONCRETE WALLS OR SLABS. NO OPENINGS OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS WILL BE PERMITTED. UNLESS ARCHITECT/ENGINEER'S APPROVAL IS SECURED PRIOR TO PLACEMENT OF REINFORCING STEEL.
- REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR OPENINGS, PROVIDE REINFORCING BARS AT CORNERS AND EDGES OF OPENINGS AND PENETRATIONS IN ACCORDANCE WITH TYPICAL DETAILS.
- VERTICAL CONSTRUCTION JOINTS IN FOOTINGS AND GRADE BEAMS SHALL BE LOCATED WHERE APPROVED BY ARCHITECT/ENGINEER.

## CONCRETE MASONRY

- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, LIGHT WEIGHT, WITH A NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS OF 1,900 PSI, DESIGN BASED ON A MINIMUM COMPRESSIVE STRENGTH OF MASONRY F<sub>m</sub>= 1,500 PSI.
- MORTAR SHALL CONFORM TO ASTM C270, TYPE S.
- ALL GROUT SHALL CONFORM TO ASTM C476 WITH A MINIMUM 2,000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
- ALL MASONRY WALLS SHALL HAVE TRUSS TYPE HORIZONTAL JOINT REINFORCING WITH (2)-9 GAUGE WIRES AND WITH PREFABRICATED CORNER AND TEE UNITS AT CORNERS AND INTERSECTIONS.
- TYPICAL JOINT REINFORCING SHALL BE LOCATED AT 16" ON CENTER VERTICALLY.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
- SOLID GROUT ALL CELLS WITH REINFORCING.
- DO NOT USE SOLID BOTTOM BLOCKS FOR BOND BEAMS AT SOLID GROUTED WALLS OR AT CELLS WITH VERTICAL REINFORCING.
- VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CONTINUOUS CLEAR CELL OVERHANGING MORTAR OR OTHER OBSTRUCTIONS SHALL BE REMOVED FROM THE INSIDES OF CELL WALLS.
- REINFORCING SHALL BE CONTINUOUS OR LAPPED 48 BAR DIAMETERS OR AS SHOWN IN DRAWINGS WHICH EVER IS GREATER.
- VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 6'-0".
- GROUT SHALL BE POURED IN LIFTS OF 5-FEET MAXIMUM HEIGHT. STOP GROUT POUR 2-INCHES BELOW TOP OF BLOCK TO CREATE KEY FOR NEXT GROUT POUR. EXTEND REINFORCING BAR BEYOND GROUT POUR FOR A LENGTH EQUAL TO OR GREATER THAN THE BAR LAP LENGTH.
- ALL STEEL LINTELS ON MASONRY SHALL HAVE MINIMUM OF 8-INCHES BEARING.
- LOCATE VERTICAL WALL CONTROL JOINTS IN EXTERIOR MASONRY WALLS AT 24'-0" O.C. MAXIMUM. LOCATE BARS THROUGH JOINTS. DO NOT LOCATE JOINTS WITHIN 2-FEET OF AN OPENING.
- FURNISH AND HAVE IN PLACE ADEQUATE LATERAL BRACING AND VERTICAL SUPPORT FOR THE SAFE ERECTION AND TRUE ALIGNMENT OF THE MASONRY WALL UNTIL SUCH TIME AS THE FINAL CONNECTIONS ARE MADE AND THE ROOF AND DECKING IS IN PLACE.
- CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE IBC 2018, AND MASONRY INSTITUTE OF AMERICAN STANDARDS.

## LIGHT GAUGE COLD-FORMED STEEL FRAMING

CONTRACTOR SHALL SUBMIT STRUCTURAL CALCULATIONS AND SHOP DRAWINGS FOR COLD-FORMED STEEL FRAMING SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE THE PROJECT IS LOCATED IN.

### MATERIALS

- ALL GALVANIZED STUDS AND JOISTS SHALL MEET THE FOLLOWING REQUIREMENTS:
  - A. 12, 14, AND 16 GAUGE STUDS & TRACKS: ASTM A653, Fy, min = 50,000 PSI
  - B. 18 & 20 GAUGE STUDS, TRACK, BRIDGING AND ACCESSORIES: ASTM A653, Fy, min = 33,000 PSI
- METAL STUDS MEET THE FOLLOWING PROPERTIES:

SIZE	DEPTH	FLANGE	LIP	GAUGE	k <sub>y</sub> (IN <sup>4</sup> )	S <sub>x</sub> (IN <sup>3</sup> )
A. 362S162-43	3 5/8"	1 5/8"	1/2"	18	0.482	0.392
B. 362S162-54	3 5/8"	1 5/8"	1/2"	16	0.710	0.873
C. 600S162-43	6"	1 5/8"	1/2"	18	2.16	0.772
D. 600S162-54	6"	1 5/8"	1/2"	16	2.861	0.954
E. 600S200-97	6"	2"	1/2"	12	4.80	1.60
F. 800S162-43	8"	1 5/8"	1/2"	18	4.640	1.160
G. 800S162-54	8"	1 5/8"	1/2"	16	5.740	1.430
H. 800S200-97	8"	2"	1/2"	12	5.61	1.87

### GENERAL

- FASTENING OF COMPONENTS SHALL BE WITH SELF-DRIVING-SCREWS, WELDING, OR AS SHOWN ON DRAWINGS AND SHALL BE SIZED AS RECOMMENDED BY MANUFACTURER. FASTENING COMPONENTS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- SCREWS SHALL BE T1W BUILDUP TENS SELECT SELF-DRILLING STRUCTURAL FASTENERS (OR EQUAL). CONTRACTOR SHALL PROVIDE ADEQUATE SCREW LENGTH TO FULLY DEVELOP SCREW STRENGTHS, AND INSTALL PER MANUFACTURER RECOMMENDATIONS.
  - A. HEADED SCREWS: #10-16 HWH OR #12-14 HWH.
  - B. FLAT HEAD SCREWS SHALL BE #12-14 UPH.
  - a. USE FLAT HEADED SCREWS WHERE HEAD OBSTRUCTS FINISHES
- ALL WELDING SHALL BE PERFORMED IN CONFORMANCE WITH A.W.S. D1.3 USING E60 ELECTRODES, UNLESS NOTED OTHERWISE. MINIMUM MEMBER THICKNESS FOR WELDING IS 16 GAUGE.
- FIXED CLIPS SHALL BE 14 GAUGE UNCL-CLIP BY CLARK DIETRICH OR EQUAL. ATTACH TO MAIN MEMBER WITH MINIMUM (3)-FASTENERS
- SLIDE CLIPS SHALL BE 14 GAUGE FASTCUP SLIDE CLIP BY CLARK DIETRICH OR EQUAL. USE 3 1/2" FASTCUP FOR CONNECTION TO 3 5/8" AND 4" DEEP STUDS. USE 5 1/2" FASTCLIPS FOR CONNECTION TO STUDS 6" DEEP AND GREATER. ATTACH TO MAIN MEMBER WITH MINIMUM (3)-FASTENERS.
- WALL STUD BRIDGING AND JOIST BRIDGING SHALL BE PROVIDED AND SPACED AT 4'-0" ON CENTER OR PER MANUFACTURERS RECOMMENDATIONS IF LESS THAN 4'-0" ON CENTER. USE FLAT V STRAP, COLD ROLLED CHANNEL OR SOLID BRIDGING AS RECOMMENDED BY MANUFACTURER. ANCHOR BRIDGING PER AISI S100 AT A MAXIMUM OF 14'-0" O.C.
- X-STRAP BRACING SHALL BE INSTALLED TAUT AND REMAIN TAUT AFTER ALL DEAD LOADS HAS BEEN PLACED ON THE WALLS.
- AXIAL LOADED STUDS, AND BEARING WALL STUDS SHALL **NOT** BE LOADED UNTIL WALL STUD BRIDGING AND BRIDGING ROWS ARE ANCHORED.
- AXIAL LOADED STUDS AND BEARING WALL STUDS SHALL HAVE FULL END BEARING AGAINST TOP AND BOTTOM TRACKS PRIOR TO TRACKS BEING ATTACHED.
- AXIAL LOADED STUDS AND CURTAIN WALL STUDS SHALL NOT BE SPLICED.
- STUD WALLS SHALL HAVE CONTINUOUS SHEATHING OR GYPSUM BOARD ON EACH SIDE OF THE STUD AND CONNECTED TO EACH FLANGE WITH MINIMUM NO. 8 SELF-DRILLING SCREWS AT MAXIMUM 12-INCHES ON CENTER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER. SHEATHED AND GYPSUM BOARD SHEAR WALLS, AND OTHER WALL AREAS MAY REQUIRE CLOSER SPACING AND DIFFERENT SCREW TYPE OR SIZE. REFER TO PLANS FOR MORE STRINGENT REQUIREMENTS.
- JOISTS AND BEAMS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS UNLESS A STRUCTURAL STEEL LOAD DISTRIBUTION MEMBER IS PROVIDED AT THE TOP TRACK.
- PROVIDE DOUBLE STUDS AT EACH SIDE OF OPENINGS AT EXTERIOR WALLS. PROVIDE DOUBLE 14 GAUGE STUDS AT EACH SIDE OF OPENINGS 5'-0" WIDER OR GREATER UNLESS NOTED OTHERWISE.
- ZEE ROOF PURLINS AND EAVE STRUTS SHALL HAVE A YIELD STRENGTH OF 57.0 KSI.
- COORDINATE AND VERIFY ALL OPENINGS THROUGH FLOOR, ROOF AND WALLS WITH MECHANICAL AND ELECTRICAL CONTRACTOR.
- ALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL DRAWINGS.

## COLD FORMED STEEL TRUSSES

COLD FORMED STEEL TRUSSES (LIGHT GAUGE METAL TRUSSES) SHALL BE DESIGNED AND FABRICATED FOR THE FOLLOWING LOADS:

ROOF TRUSS DESIGN LOADS						
SPACING	TOP CHORD ROOF LIVE LOAD	SUPERIMPOSED TOP CHORD DEAD LOAD	SUPERIMPOSED BOTTOM CHORD DEAD LOAD	TOTAL DEAD LOAD FOR NET UPLIFT	LL DEFL. LIMIT	TOTAL LOAD DEFL. LIMIT
24"	20 PSF	15 PSF	5 PSF	7 PSF	L/480	L/360

NOTES: 1. SUPERIMPOSED TOP & BOTTOM CHORD DEAD LOADS DO NOT INCLUDE TRUSS SELF-WEIGHT.  
2. ADD 5 PSF TOP CHORD DEAD LOAD WHERE TRUSSES SUPPORT OVERFRAMING.  
3. USE CREEP FACTOR OF 2.0 FOR TOTAL DEFLECTION.

### GENERAL

- IN ADDITION TO GRAVITY LOADS, TRUSSES SHALL BE DESIGNED FOR A BASIC WIND SPEED. EXPOSURE 2. CATEGORY AND IMPORTANCE FACTOR SHALL BE SHOWN IN THE STATE THE PROJECT IS LOCATED IN.
- REVERSAL OF WIND LOADS SHALL BE CONSIDERED DURING DESIGN FOR WIND LOADING AND UNBALANCED SNOW LOAD.
- TRUSSES SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE PLANS. GIRDER TRUSSES AND GIRDER TRUSS CONNECTIONS SHALL BE DESIGNED & FABRICATED FOR THE ABOVE LOADS FOR THE TRIBUTARY AREA & LOADING CONDITIONS SHOWN ON THE FRAMING PLAN.
- FURNISH AND HAVE IN PLACE ADEQUATE LATERAL BRACING AND VERTICAL SUPPORT FOR THE SAFE ERECTION AND TRUE ALIGNMENT OF THE TRUSSES UNTIL SUCH TIME AS THE FINAL CONNECTIONS ARE MADE AND THE ROOF DIAPHRAGM AND LATERAL FORCE RESISTING SYSTEM ARE COMPLETELY IN PLACE.
- ALL TRUSSES SHALL BE SPACED AT A MAXIMUM OF 4'-0" O.C. UNLESS NOTED OTHERWISE.
- PROVIDE HOLD-DOWN ASSEMBLIES FROM TRUSSES TO STRUCTURAL MEMBER AT EACH BEARING LOCATION, DESIGNED BY TRUSS ENGINEER, INTALL PER MANUFACTURERS RECOMMENDATIONS.
- WHERE TRUSSES BEAR ON SUPPORTS FROM BOTH SIDES, TRUSS MANUFACTURER MAY STAGGER TRUSSES SIDE BY SIDE.
- TRUSS MANUFACTURER SHALL SUBMIT DESIGN CALCULATIONS AND FABRICATION DRAWINGS (FOR ALL TRUSSES) SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE THE PROJECT IS LOCATED IN.
- TRUSS MANUFACTURER SHALL SUBMIT AN ERECTION PLAN SHOWING TRUSS LAYOUT, TEMPORARY BRACING, PERMANENT BRACING, TRUSS CONFIGURATIONS, HANGER TYPES, AND BEARING CONDITIONS ALONG WITH SUPPORTING CALCULATIONS FOR TRUSS TYPES.

## SHOP DRAWINGS AND SUBMITTALS

- SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL ITEMS IN ACCORDANCE WITH THE SPECIFICATIONS AND SUBMITTED FOR REVIEW BY THE ENGINEER. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS.
- THE CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHALL CERTIFY THAT HE HAS DONE SO BY A STAMP NOTING THAT THE DRAWINGS HAVE BEEN "APPROVED" AND WHICH BEARS THE SIGNATURE (OR INITIALS) OF AN AUTHORIZED REPRESENTATIVE OF THE CONTRACTOR AND THE DATE. SUBMITTALS WHICH DO NOT REFLECT THE CONTRACTORS APPROVAL, SIGNATURE AND DATE MAY BE RETURNED WITHOUT REVIEW.
- CORRECTIONS OR COMMENTS ON THE SHOP DRAWINGS OR MANUFACTURER'S DATA SHEETS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. THE ENGINEERS SHOP DRAWING REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR THE DIMENSIONS AND QUANTITIES TO BE CONFIRMED AND CORRELATED AT THE JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO THE MEANS AND METHODS OF CONSTRUCTION, AND FOR THE COORDINATION OF THE WORK OF ALL TRADES.

## DEFERRED SUBMITTALS

PRIOR TO FABRICATION AND INSTALLATION THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND THE CITY OF MEDFORD BUILDING CODE REVIEW DEPARTMENT.

- METAL TRUSSES

## METAL DECK

- METAL ROOF DECK SHALL BE AS SHOWN ON DRAWINGS BY VULCRAFT OR EQUAL.
- REFER TO TYPICAL DETAILS FOR FASTENING.
- DECK SHALL BE CONTINUOUS OVER 3 OR MORE SPANS.
- LAY DECK PERPENDICULAR TO SUPPORTS.

## ABBREVIATIONS

• A.F.F.	ABOVE FINISHED FLOOR	• J.B.	JOIST BEARING
• A.E.	AIR ENTRAINED	• K	KIPS
• A.B.	ANCHOR BOLT	• L	LENGTH
• ACI	AMERICAN CONCRETE INSTITUTE	• LAP	LAP SPlice LENGTH
• AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	• Ldh	DEVELOPMENT LENGTH FOR HOOKED REIN
• ALT.	ALTERNATE	• LT	LENGTH OF REINFORCING HOOK
• APA	AMERICAN PLYWOOD ASSOCIATION	• LT. WT.	LIGHT WEIGHT
• ARCH	ARCHITECTURAL DRAWINGS	• L-OR-L	LIVE LOAD
• AWS	AMERICAN WELDING SOCIETY	• LLH	LONG LEG HORIZONTAL
• BM.	BEAM	• LLV	LONG LEG VERTICAL
• B.O.B.	BOTTOM OF BEAM	• LONG	LONGITUDINAL
• B.O.D.	BOTTOM OF DECK	• MAT'S	MATERIAL
• B.O.F.	BOTTOM OF FOOTING	• MAX.	MAXIMUM
• B.O.S.	BOTTOM OF STEEL	• MECH.	MECHANICAL
• BOT.	BOTTOM	• MEZZ.	MEZZANINE
• B.N.	BOUNDARY NAILING	• MFR.	MANUFACTURER
• BRG.	BEARING	• MIN.	MINIMUM
• BLDG.	BUILDING	• MPH	MILES PER HOUR
• CANT.	CANTILEVER	• MISC.	MISCELLANEOUS
• C.L.	CENTERLINE	• MTL	METAL
• CLR.	CLEAR	• N.S.	NEAR SIDE
• C.J.	CONTROL OR CONSTRUCTION JOINT	• N.T.S.	NOT TO SCALE
• CMU	CONCRETE MASONRY UNIT	• O.C.	ON CENTER
• COL.	COLUMN	• OPP	OPPOSITE
• C.F.S.	COLD-FORMED STEEL	• O.S.B.	ORIENTED STRAND BOARD
• CONC.	CONCRETE	• O.W.S.J.	OPEN WEB STEEL JOIST
• CONN.	CONNECTION	• P.A.F.	POWDER ACTUATED FASTENER
• CONST.	CONSTRUCTION	• PL	PLATE
• CONT.	CONTINUOUS	• P.T.	PRESSURE TREATED -OR- POST TENSIONED
• D.B.A.	DEFORMED BAR ANCHOR	• QTY.	QUANTITY
• DBL	DOUBLE	• REINF.	REINFORCEMENT
• D OR D.L.	DEAD LOAD	• REQD.	REQUIRED
• DIA.	DIAMETER	• R.S.	RING SHANK (DEFORMED SHANK)
• D.F.(S)	DOUGLAS FIR (SOUTH)	• RLL-OR Lr	ROOF LIVE LOAD
• DWGS	DRAWINGS	• RTU	ROOF TOP UNIT
• DWL	DOWEL	• SCHED.	SCHEDULE
• EA.	EACH	• SDS	SELF DRILLING SCREW
• E.W.	EDGE WAY	• SIM.	SIMILAR
• E.N.	EDGE NAILING	• S-OR-S.L.	SNOW LOAD
• ELEV.	ELEVATION	• S.P	SOUTHERN PINE
• EX.	EXISTING	• SPECS.	SPECIFICATIONS
• EXIST.	EXISTING	• S.O.G.	SLAB GRADE
• EXP.	EXPANSION	• SQ.	SQUARE
• EXT	EXTERIOR	• STD.	STANDARD
• Tc	CONCRETE COMPRESSIVE STRENGTH	• STIFF.	STIFFENER
• Tm	CONCRETE MASONRY COMPRESSIVE STRENGTH	• T&B.	TOP AND BOTTOM
• F.F.	FINISH FLOOR	• T.O.F.	TOP OF FOOTING
• FND.	FOUNDATION	• T.O.M.	TOP OF MASONRY
• F.S.	FOOTING	• T.O.S.	TOP OF STEEL, TOP OF STUD
• FT	FEET	• T.O.W.	TOP OF WALL
• FTG.	FOOTING	• T.P.	THE PLATE
• GA.	GAGE OR GAUGE	• TRANS.	TRANSVERSE
• GALV.	GALVANIZED	• TYP.	TYPICAL
• H.E.G.	HOLTZEN ENGINEERING GROUP, P.C.	• VERT.	VERTICAL
• H.S.A.	HEADED STUD ANCHOR	• W	WELD
• HORIZ.	HORIZONTAL	• W/W.F.	WELDED WIRE FABRIC
• HSS	HOLLOW STEEL SECTION	• W/	WITH
• IN.	INCH	• W/OUT	WITHOUT
• INFO.	INFORMATION		
• INSUL.	INSULATION		
• INT.	INTERIOR		



<b><u>STRUCTURAL STEEL - TABLE N5.4-1 INSPECTION TASKS PRIOR TO WELDING.</u></b>			
<b>INSPECTION TASKS PRIOR TO WELDING</b>		<b>QC</b>	<b>QA</b>
1.	WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	P
2.	MANUFACTURER CERTIFICATIONS OF WELDING CONSUMABLES AVAILABLE	P	P
3.	MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
4.	WELDER IDENTIFICATION SYSTEM (1)	O	O
5.	FIT-UP GROOVE WELDS (INCLUDING JOINT GEOMETRY)		
	- JOINT PREPARATION		
	- DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	O	O
	- CLEANLINESS (CONDITION OF STEEL SURFACES)		
	- TACKING (TACK WELD QUALITY AND LOCATION)		
	- BACKING TYPE AND FIT (IF APPLICABLE)		
6.	CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
7.	FIT-UP OF FILLET WELDS		
	- DIMENSIONS (ALIGNMENT, GAPS AT ROOT)		
	- CLEANLINESS (CONDITION OF STEEL SURFACES)	O	O
	- TACKING (TACK WELD QUALITY AND LOCATION)		
8.	CHECK WELDING EQUIPMENT	O	-

(1) THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE.

P - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

O - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER

<b><u>STRUCTURAL STEEL - TABLE N5.4-2 INSPECTION TASKS DURING WELDING.</u></b>			
<b>INSPECTION TASKS DURING WELDING</b>		<b>QC</b>	<b>QA</b>
1.	USE OF QUALIFIED WELDERS	O	O
2.	CONTROL AND HANDLING OF WELDING CONSUMABLES <ul style="list-style-type: none"> <li>- PACKING</li> <li>- EXPOSURE CONTROL</li> </ul>	O	O
3.	NO WELDING OVER CRACKED TACK WELDS	O	O
4.	ENVIROMENTAL CONDITIONS <ul style="list-style-type: none"> <li>- WIND SPEED WITHIN LIMITS</li> <li>- PRECIPITAION AND TEMPERATURE</li> </ul>	O	O
5.	WPS FOLLOWED <ul style="list-style-type: none"> <li>- SETTINGS ON WELDING EQUIPMEN</li> <li>- TRAVEL SP</li> <li>- SELECTED WELDING MATERIAL</li> <li>- SHIELDED GAS TYPE/FLOW RATE</li> <li>- PREHEAT APPLIED</li> <li>- INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)</li> <li>- PROPER POSITION (F, V, H, OH)</li> </ul>	O	O
6.	WELDING TECHNIQUES <ul style="list-style-type: none"> <li>- INTERPASS AND FINAL CLEANING</li> <li>- EACH PASS WITHIN PROFILE LIMITAIONS</li> <li>- EACH PASS MEETS QUALITY REQUIREMENTS</li> </ul>	O	O
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS P - PERFORM THESE TAKS FOR EACH WELDED JOINT OR MEMBER			

<b><u>STRUCTURAL STEEL - TABLE N5.4-3 INSPECTION TASKS AFTER WELDING.</u></b>			
<b>INSPECTION TASKS AFTER WELDING</b>		<b>QC</b>	<b>QA</b>
1.	WELDS CLEANED	O	O
2.	SIZE, LENGTH AND LOCATION OF WELDS	P	P
3.	WELDS MEET VISUAL ACCEPTANCE CRITERIA <ul style="list-style-type: none"> <li>- CRACK PROHIBITION</li> <li>- WELD/BASE-METAL FUSION</li> <li>- CRATOR CROSS SECTION</li> <li>- WELD PROFILES</li> <li>- WELD SIZE</li> <li>- UNDERCUT</li> <li>- POROSITY</li> </ul>	P	P
4.	ARC STRIKES	P	P
5.	K-AREA (1)	P	P
6.	BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P
7.	REPAIR ACTIVITIES	P	P
8.	DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P

(1) WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECTED THE WEB K-AREA WITHIN 3 IN. (75 MM) OF THE WELD

O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER

<b>TYPE</b>	<b>CONTINUOUS SPECIAL INSPECTION</b>	<b>PERIODIC SPECIAL INSPECTION</b>
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	-	X

<b><u>STRUCTURAL STEEL - TABLE N5.6-1 INSPECTION TASKS PRIOR TO BOLTING</u></b>			
<b>INSPECTION TASKS PRIOR TO BOLTING</b>		<b>QC</b>	<b>QA</b>
1.	MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR THE FASTENER MATERIALS	O	P
2.	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
3.	PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE.	O	O
4.	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
5.	CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
6.	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
7.	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION			

<b><u>STRUCTURAL STEEL - TABLE N5.6-2 INSPECTION TASKS DURING BOLTING</u></b>			
<b>INSPECTION TASKS DURING BOLTING</b>		<b>QC</b>	<b>QA</b>
1.	FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	O	O
2.	JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
3.	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
4.	FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION			

<b><u>STRUCTURAL STEEL - TABLE N5.6-3 INSPECTION TASKS AFTER BOLTING</u></b>		
<b>INSPECTION TASKS AFTER BOLTING</b>	<b>QC</b>	<b>QA</b>
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

Q - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.  
P - PERFORM THESE TASKS FOR EACH BOLTED CONNECTION

<b>TYPE</b>	<b>CONTINUOUS SPECIAL INSPECTION</b>	<b>PERIODIC SPECIAL INSPECTION</b>	<b>REFERENCED STANDARD (a)</b>	<b>IBC REFERENCE</b>
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	-
3. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS(b)				
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINE ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X		ACI 318: 17.8.2.4	-
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.		X	ACI 318, 17.8.2	
4. VERIFY USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	-	ASTM C172 ASTM C31 ACI 318: 26.4,...	1908.10
6. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.5.3-26.5.5	1908.9
7. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1,2(b)	-

(a) WHERE APPLICABLE, SEE ALSO SECTION 1705.12. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.  
(b) SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

TABLE 3.1.2 LEVEL B QUALITY ASSURANCE					
MINIMUM TESTS					
VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5B.1.b.3 FOR SELF CONSOLIDATING GROUT					
VERIFICATION OF fm AND f'ac IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE					
MINIMUM SPECIAL INSPECTION					
INSPECTION TASK	CONTINUOUS	PERIODIC	TMS402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6	
1. VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF CONSOLIDATING GROUT		X			
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE					
A. PROPORTIONS OF SITE-PREPARED MORTAR		X			ART. 2.1, 2.6 A
B. CONSTRUCTION OF MORTAR JOINTS		X			ART. 3.3 B
C. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X			ART. 2.4 B, 2.4 H
D. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X			ART. 3.4, 3.6 A
E. PRESTRESSING TECHNIQUE		X			ART. 3.6 B
F. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X (b)	X(c)			ART 2.1 C
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE					
A. GROUT SPACE		X			ART. 3.2 D, 3.2 F
B. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES		X	SEC. 6.1		ART. 2.4, 3.4
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X	SEC. 6.1, 6.2.1, 6.2.6, 6.2.7		ART. 3.2 E, 3.4, 3.6 A
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		X			ART. 2.6 B, 2.4 G.1.b
E. CONSTRUCTIONS OF MORTAR JOINTS		X			ART. 3.3 B
4. VERIFY DURING CONSTRUCTION					
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X			ART. 3.3 F
B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X	SEC. 1.2.1 (e), 6.1.4.3, 6.2.1		
C. WELDING OF REINFORCEMENT	X		SEC. 8.1.6.7.2,....		
D. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEGREES F (4.4 DEGREES C)) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEGREES F (32.2 DEGREES C))		X			ART. 1.8 C, 1.8 D
E. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X				ART. 3.6 B
F. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X				ART. 3.5, 3.6 C
G. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN BED MORTAR JOINTS	X(b)	X(c)			ART. 3.3 B.9, 3.3 F.1.b
7. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X			ART. 1.4 B.2.a.3,1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

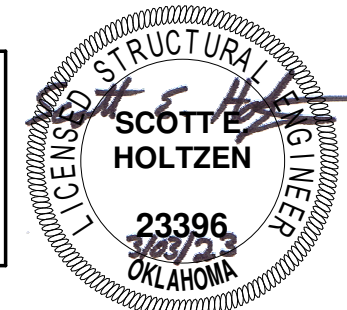
(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE LISTED TASK, AS DEFINED IN THE TABLE.

(b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF ACC MASONRY.

(c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF ACC MASONRY.

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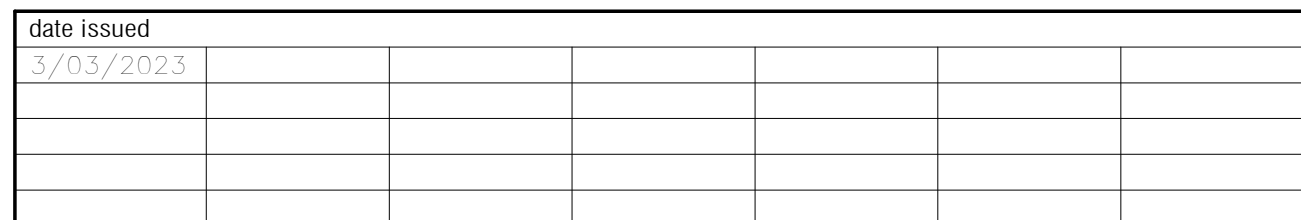
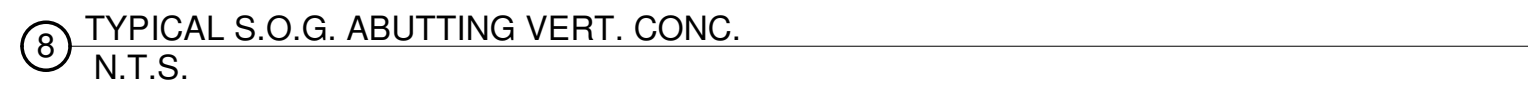
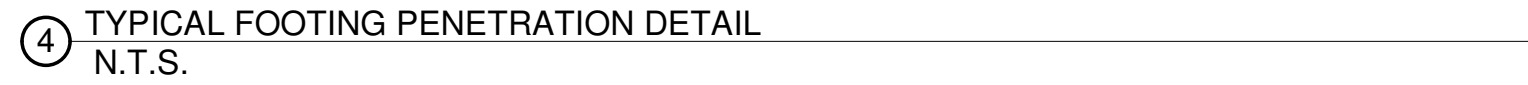
## SPECIAL INSPECTIONS

## S1.1

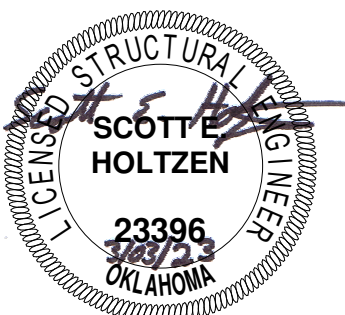
of 10 sheet(s)



① CONCRETE REINFORCING LAP SPLICE AND STANDARD HOOK DETAILS &  
SCHEDULE  
N.T.S.



HEG PROJECT NO.: 22.041

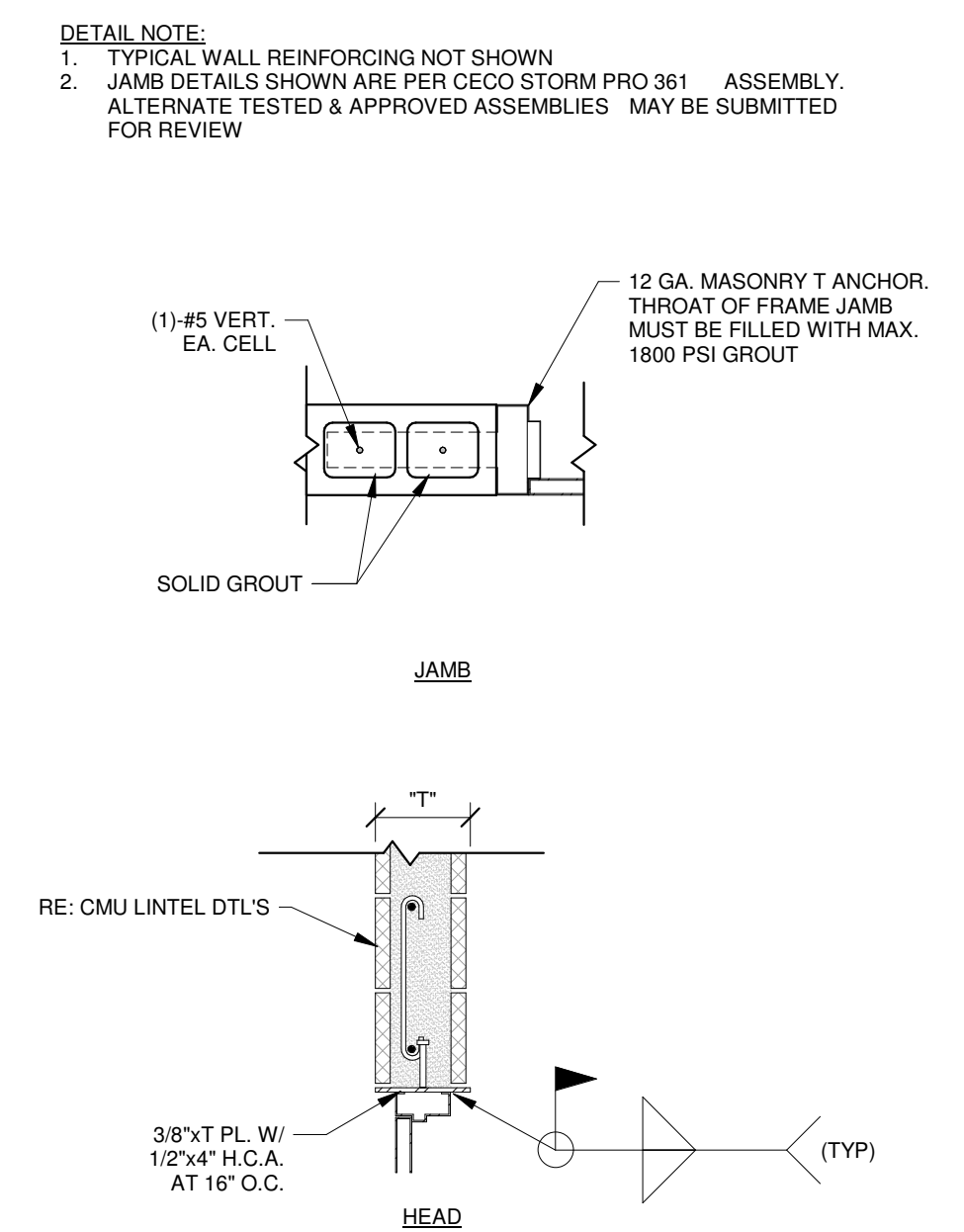
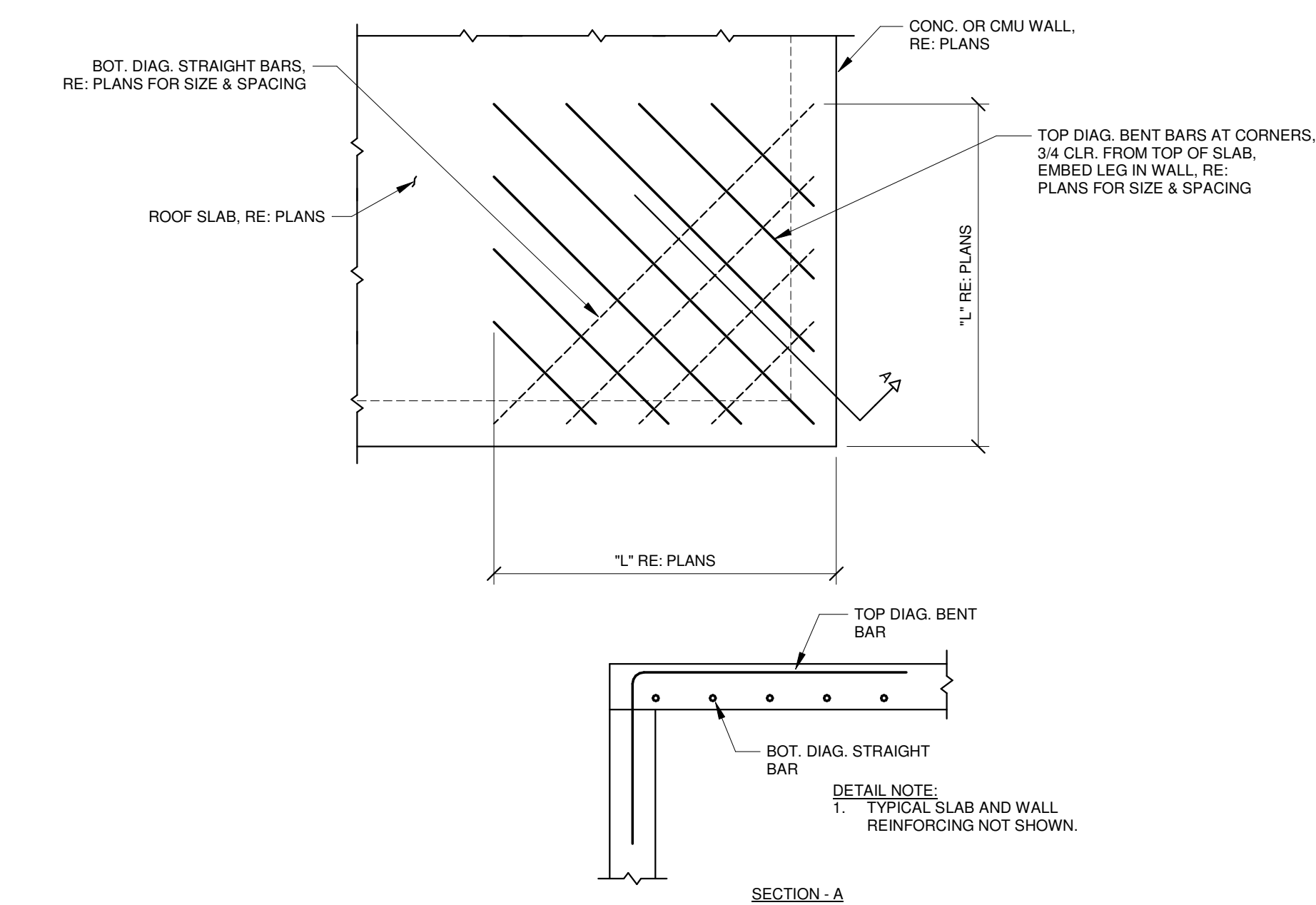
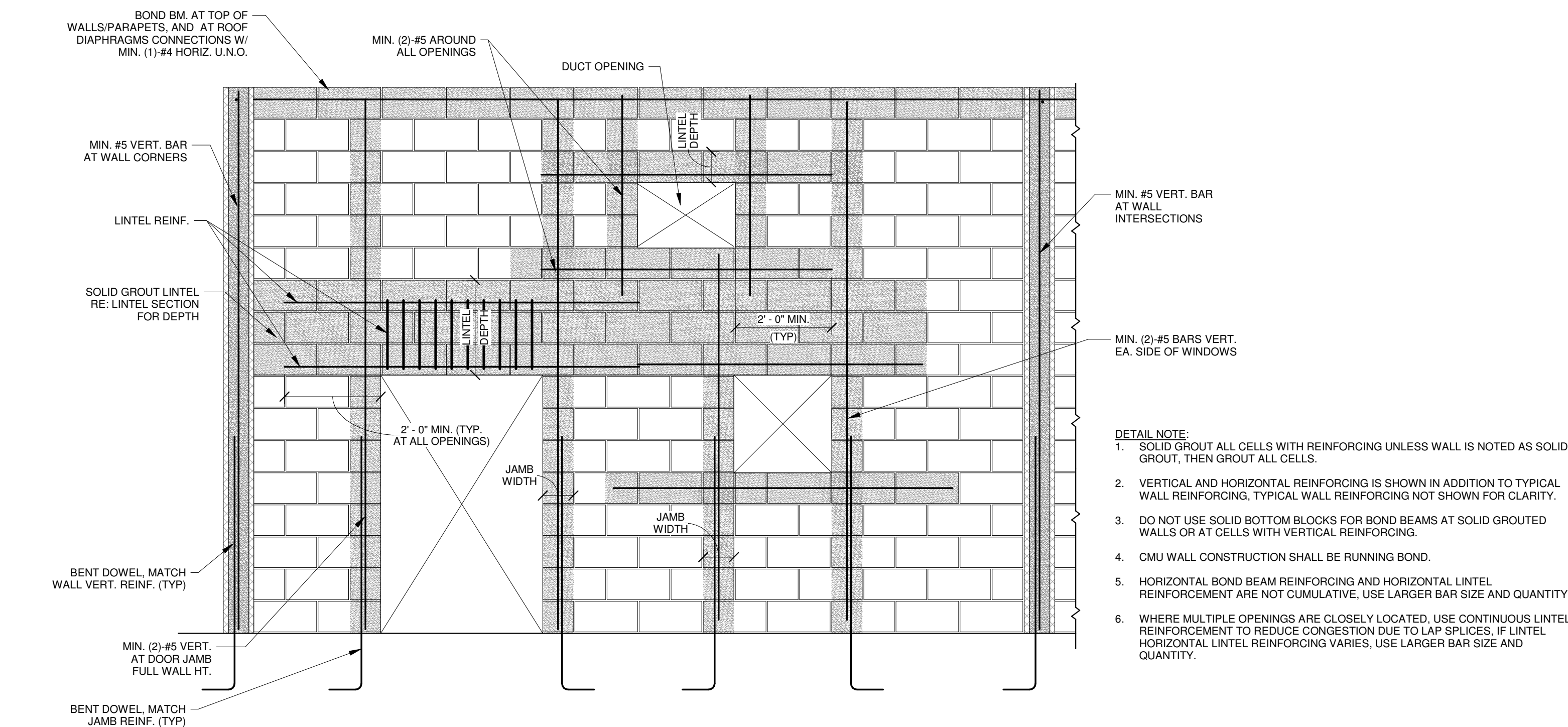


## TYPICAL DETAILS

S1.2

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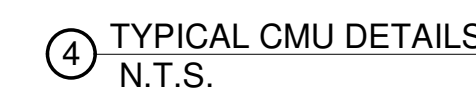
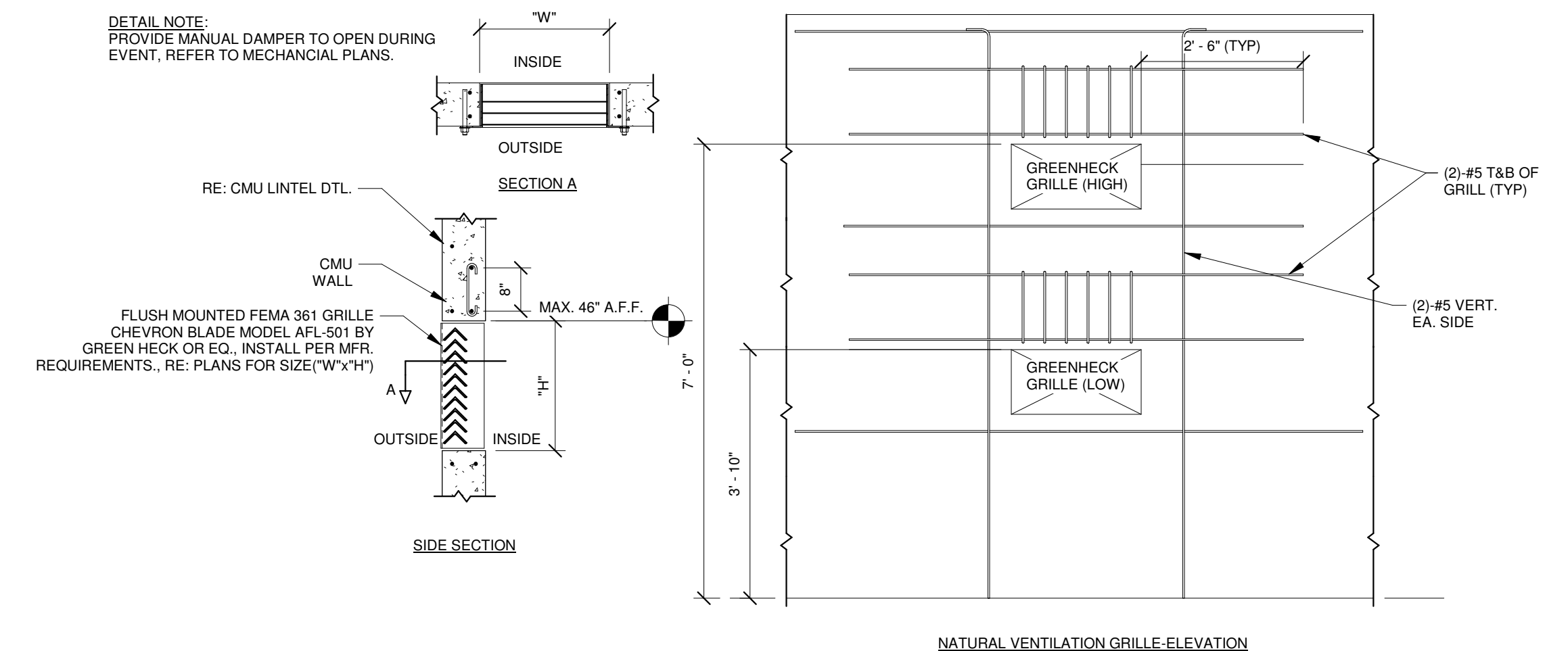
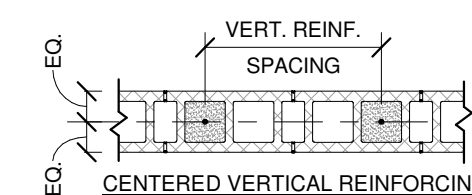
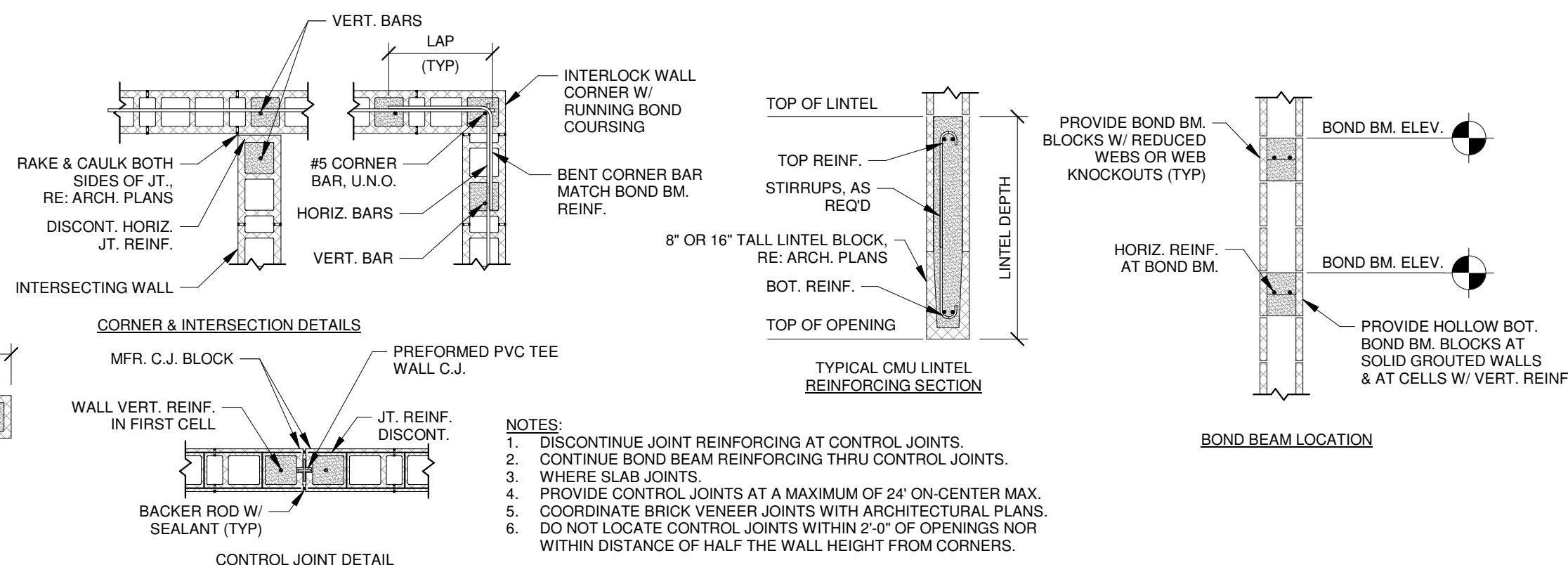
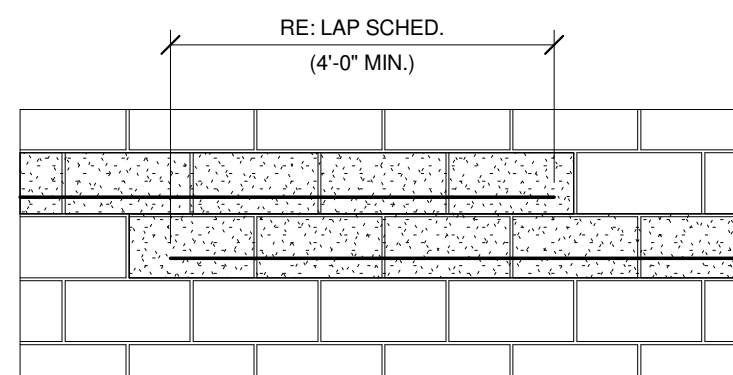
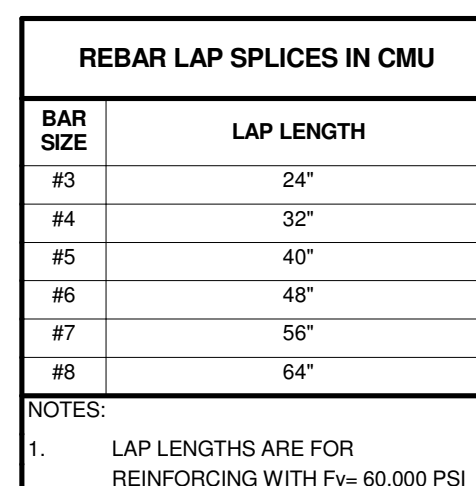




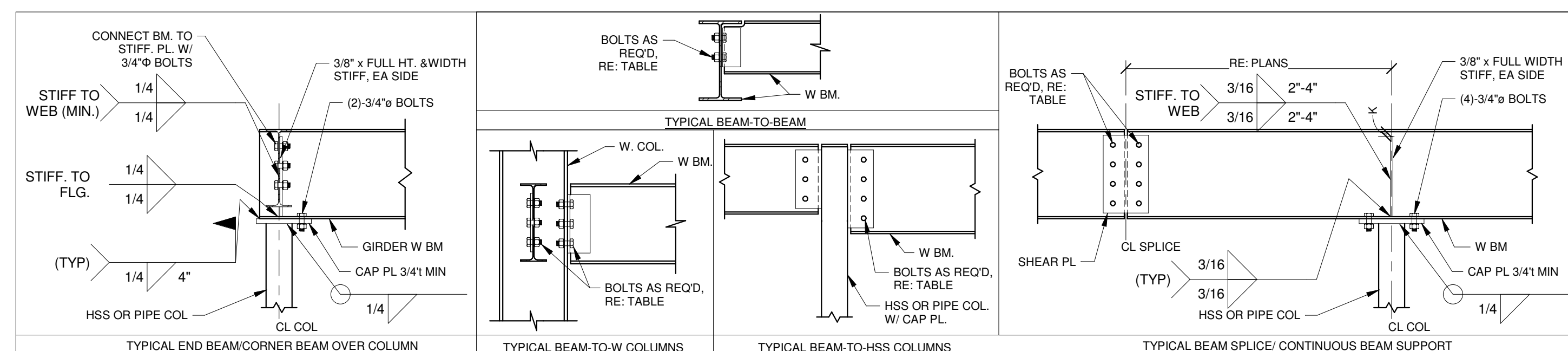
CMU STRUCTURAL LINTEL SCHEDULE					
LINTEL TYPE	LINTEL DEPTH	TOP REINFORCING	BOTTOM REINFORCING	STIRRUPS	JAMB WIDTH
L1	8"	(2)-#5	(2)-#5	-	8"

NOTES:

1. PROVIDE TEMPORARY SHORING FOR LINTELS.
2. SOLID GROUT FULL LINTEL DEPTH.



MINIMUM BOLT SCHEDULE	
BEAM	MINIMUM NO. OF BOLTS
W8	2
W10	2
W12	3
W14	3
W16	4
W18	4
W21	5
W24	6
W27	7
W30	7



- NOTES:
1. FABRICATOR'S ENGINEER SHALL DESIGN AND DETAIL ALL CONNECTIONS NOT EXPLICITLY DETAILED ON THE DRAWINGS PER AISC. CONNECTIONS SHALL BE DESIGNED FOR 125% OF THE REACTIONS SHOWN ON THE DRAWINGS.
  2. MINIMUM BOLT SCHEDULE IS REQUIRED FOR ALL BEAM CONNECTIONS UNLESS NOTED OTHERWISE ON THE DRAWINGS. SCHEDULE IS ALSO APPLICABLE TO CHANNEL SECTIONS.
  3. CONTRACTOR MAY USE SHORT SLOTTED HOLES IN SINGLE THRU PLATE WITH STANDARD WASHERS ON THE PLY WITH THE SLOTTED PLATE SHALL BE LIMITED TO 10% OF THE TOTAL BOLTS PER AISC UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  4. BOLTS SHALL BE A MINIMUM 3/4" DIAMETER, AND SINGLE PLATES SHALL BE A MINIMUM 3/8" THICK.



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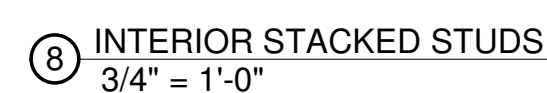
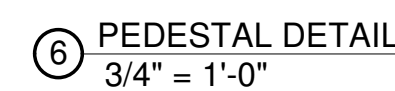
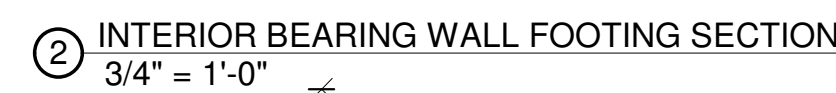






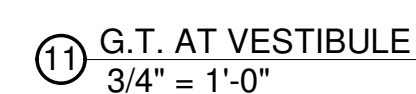
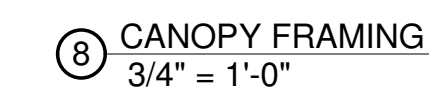
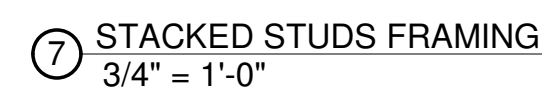
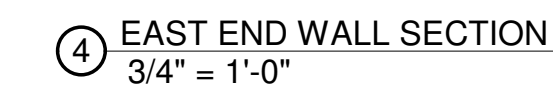
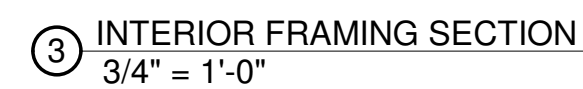
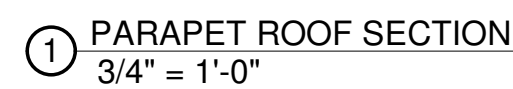






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DETAILS

**S3.2**

of 10 sheet(s)



PROJECT MECHANICAL DESIGN CRITERIA

PROJECT CITY: MEDFORD, OKLAHOMA PROJECT ELEVATION: 1,000 FT. ABOVE SEA LEVEL		COOLING WEATHER DESIGN DATA	
GOVERNING CODES		DESIGN WEATHER STATION: PONCA CITY - WAVERLY REGIONAL AP DESIGN WEATHER BASIS: ASHRAE 0.4	
BUILDING CODE:	2018 INTERNATIONAL BUILDING CODE	DESIGN DRY BULB:	100.9° F
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE	MEAN COINC. WET BULB:	74.4° F
PLUMBING CODE:	2018 INTERNATIONAL PLUMBING CODE		
ELECTRICAL CODE:	2020 NATIONAL ELECTRIC CODE	DESIGN WET BULB:	78.1° F
FUEL GAS CODE:	2018 INTERNATIONAL FUEL GAS CODE	MEAN COINC. DRY BULB:	86.1° F
FIRE CODE:	2018 INTERNATIONAL FIRE CODE		
		HEATING WEATHER DESIGN DATA	
		DESIGN WEATHER BASIS: ASHRAE 99.6 DESIGN DRY BULB: 10.8° F	
		ENERGY DATA	
		ASHRAE CLIMATE ZONE: 3A	
		COOLING DEGREE DAYS(65): 2,063	
		HEATING DEGREE DAYS(65): 3,807	

MECHANICAL GENERAL NOTES

- PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. PRIOR TO SUBMITTING BID CONTRACTOR SHALL VISIT JOB SITE AND BECOME FULLY ACQUAINTED WITH EXISTING CONDITIONS OF PROJECT. NOTIFY ARCHITECT AND/OR ENGINEER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE NEAT AND ORDERLY INSTALLATION.
- FIELD MEASURE FINAL DUCTWORK LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED. MAINTAIN MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
- ALL DIFFUSERS ARE 4-WAY BLOW UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- COORDINATE ACCESS TO EQUIPMENT, VALVES, AND DAMPERS INSTALLED ABOVE "INACCESSIBLE" CEILINGS AND IN CHASES, ETC. WITH GENERAL CONTRACTOR. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION BY GENERAL CONTRACTOR AS REQUIRED TO SERVICE CONCEALED EQUIPMENT, VALVES, AND DAMPERS. CEILING ACCESS DOORS FOR FIRE DAMPERS, AND FIRE SMOKE DAMPERS FURNISHED BY THIS CONTRACTOR AND INSTALLED BY GENERAL CONTRACTOR.
- MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST/VENT TERMINATIONS.
- A MAXIMUM LENGTH OF 5'-0" FLEX DUCT MAY BE USED AT EACH RUNOUT TO SUPPLY DIFFUSERS. FLEX DUCT SHALL NOT BE USED IN RETURN OR EXHAUST APPLICATIONS AND ONLY IN CONCEALED LOCATIONS.
- RECTANGULAR & ROUND DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS. SEE SPECIFICATIONS FOR DUCT LINER / INSULATION REQUIREMENTS.
- DO NOT ROUTE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR ELECTRICAL GEAR. COORDINATE ROUTING WITH OTHER TRADES.
- NEW HVAC EQUIPMENT SHALL NOT BE USED DURING CONSTRUCTION. CONTRACTOR SHALL FURNISH ALL NECESSARY TEMPORARY HEATING / COOLING EQUIPMENT AND CONTROLS AS REQUIRED.
- INSTALL BALANCING DAMPERS (UNLESS PROVIDED WITH GRILLES / DIFFUSERS) IN EACH GRILLE / DIFFUSER DUCT RUNOUT. LOCATE DAMPERS ABOVE ACCESSIBLE CEILINGS OR IN ACCESSIBLE AREAS.
- INSTALL TURNING VANES IN ALL RECTANGULAR DUCT ELBOWS.
- PROVIDE FIRE DAMPERS AT ALL RATED WALLS OR CEILINGS WHETHER IT IS NOTED ON PLANS OR NOT.
- ALL NEW THERMOSTATS SHALL BE PLACED AT 4'-0" MAXIMUM ABOVE FINISHED FLOOR PER ADA REQUIREMENTS. VERIFY HEIGHTS WITH OWNER PRIOR TO FINAL INSTALLATION.

PLUMBING GENERAL NOTES

- PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. PRIOR TO SUBMITTING BID CONTRACTOR SHALL VISIT JOB SITE AND BECOME FULLY ACQUAINTED WITH EXISTING CONDITIONS OF PROJECT. NOTIFY ARCHITECT AND/OR ENGINEER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- COORDINATE INSTALLATION OF PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE NEAT AND ORDERLY INSTALLATION.
- FIELD MEASURE FINAL PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED. MAINTAIN MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- COORDINATE ROUTING OF PLUMBING PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING.
- NO PIPING SHALL PENETRATE STRUCTURAL MEMBERS.
- WALL CLEANOUT AND ACCESS DOORS SHALL MATCH ADJACENT SURFACES.
- MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST/VENT TERMINATIONS.
- DO NOT ROUTE PIPING OR DUCTWORK ABOVE ELECTRICAL PANELS OR ELECTRICAL GEAR. COORDINATE ROUTING WITH OTHER TRADES.
- ALL WALL CAPS SHALL BE PAINTED TO MATCH WALL. ROOF CAPS AND VENTS SHALL BE PAINTED, COLOR SELECTED BY ARCHITECT.
- PROVIDE WCO AT BASE OF ALL WASTE STACKS INCLUDING LAVATORIES AND SINKS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR ROUTING AND CONNECTION OF SANITARY SEWER / WATER / GAS SERVICES. COORDINATE WITH LOCAL UTILITIES AND AUTHORITIES WHERE REQUIRED.
- REFER TO PLUMBING FIXTURE SCHEDULE FOR PIPING RUNOUT SIZES TO INDIVIDUAL PLUMBING FIXTURES.
- CONTRACTOR SHALL VERIFY ALL CONNECTION REQUIREMENTS TO EQUIPMENT PROVIDED BY OTHERS WITH ACTUAL EQUIPMENT PROVIDED ON SITE.
- CONTRACTOR TO COORDINATE WITH LOCAL UTILITY TO PROVIDE THE REQUIREMENTS FOR THE NEW GAS SERVICE. NEW BUILDING LOAD = 340 MBH.

MECHANICAL LEGEND

( NOT ALL SYMBOLS LISTED BELOW ARE BEING USED IN THIS SET OF MECHANICAL DRAWINGS )											
SYMBOL	ABBR	DESCRIPTION	SYMBOL	ABBR	DESCRIPTION	SYMBOL	ABBR	DESCRIPTION	SYMBOL	ABBR	DESCRIPTION
HVAC:			PLUMBING:			PLUMBING EQUIP.					
		DIFFUSER		CW	DOMESTIC COLD WATER			SHUT-OFF VALVE (GATE VALVE NOT ALLOWED)		F-1	PLUMBING FIXTURE NUMBER
	RAG	RETURN AIR GRILLE		HW	DOMESTIC HOT WATER			BALL VALVE		POC	POINT OF CONN. (CONN. NEW TO EXISTING)
		ARROWS INDICATE FLOW DIRECTION		140°	DOMESTIC 140° HOT WATER			BUTTERFLY VALVE			
		NEW DUCTWORK		HWC	DOMESTIC HOT WATER CIRCULATING			CHECK VALVE		DN	DOWN
		EXISTING DUCTWORK		SAN	SANITARY WASTE ABOVE FLOOR			GAS COCK		TOD	TOP OF DUCT (ABOVE FIN. FLOOR)
		EXISTING DUCTWORK TO BE REMOVED		SAN	SANITARY WASTE BELOW FLOOR			PIPING UNION		BOP	BOTTOM OF PIPE
		SUPPLY DUCT UP		V	SANITARY VENT			PIPE REDUCER		NTS	NOT TO SCALE
		ROUND DUCT UP		RD	ROOF DRAIN			VALVE IN RISER		A.F.F.	ABOVE FINISHED FLOOR
		SUPPLY DUCT DOWN		RD	ROOF DRAIN BELOW FLOOR		HB	HOSE BIBB		C.A.	COMBUSTION AIR
		RETURN OR EXHAUST DUCT DOWN		ORD	ROOF OVERFLOW		WH	WALL HYDRANT		O.A.	OUTSIDE AIR
		ROUND DUCT DOWN		FP	FIRE PROTECTION		FPWH	FREEZE PROOF WALL HYDRANT		E.A.	EXHAUST AIR
		RECTANGULAR VANED ELBOW		G	NATURAL GAS		RD	ROOF DRAIN		S.A.	SUPPLY AIR
		ROUND ELBOW		CWS	CHILLED WATER SUPPLY		ORD	OVERFLOW ROOF DRAIN		R.A.	RETURN AIR
		MITERED ROUND ELBOW		CWR	CHILLED WATER RETURN		AD	AREA DRAIN		R.A.G.	RETURN AIR GRILLE
		CONCENTRIC TRANSITION		HWS	HEATING WATER SUPPLY		BD	BOILER DRAIN		T.A.G.	TRANSFER AIR GRILLE
		ECCENTRIC TRANSITION		HWR	HEATING WATER RETURN		FD	FLOOR DRAIN		O.B.D.	OPPOSED BLADE DAMPER
		SQUARE TO ROUND TRANSITION		D	CONDENSATE DRAIN		WCO	WALL CLEANOUT		W.P.L.	WEATHER PROOF LOUVER
		DUCT DROP/RISE IN DIRECTION OF ARROW		GW	GREASE WASTE		FCO	FLOOR CLEANOUT		G.C.	GENERAL CONTRACTOR
		45° TAKEOFF FITTING		RL	REFRIGERANT LIQUID		FS	FLOOR SINK		M.C.	MECHANICAL CONTRACTOR
		45° TAKEOFF FITTING WITH MANUAL VOLUME DAMPER		RS	REFRIGERANT SUCTION		VTR	VENT THRU ROOF		P.C.	PLUMBING CONTRACTOR
	MVD	MANUAL VOLUME DAMPER WITH LOCKING QUADRANT		RHG	REFRIGERANT HOT GAS			ENLARGED PLAN CALLOUT		E.C.	ELECTRICAL CONTRACTOR
	MD	MOTORIZED DAMPER		S	STEAM SUPPLY (10 PSI)					Ⓣ	THERMOSTAT/SENSOR
	FD	FIRE DAMPER		CR	CONDENSATE RETURN					Ⓜ	HUMIDISTAT/SENSOR
	FS	COMBINATION FIRE/SMOKE DAMPER		A	COMPRESSED AIR					F.P.C.	FIRE PROTECTION CONTRACTOR
					ELBOW UP					T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
					ELBOW DOWN						
					TEE UP						
					TEE DOWN						
					PIPE CAP OR PLUG						

GAS LOAD SCHEDULE

				ICE
EQUIPMENT	GAS INPUT (MBH)	RUNOUT SIZE	NOTES	
RTU-1	120.0	1"	1. ALL REGULATORS, GAS-COCKS, UNIONS, ETC. SHALL BE LINE SIZE OF GAS PIPING (MINIMUM).  2. ALL LOW PRESSURE GAS PIPE SIZES ARE BASED ON NATURAL GAS: 7" W.C., 0.5 PSI (MAX.), 0.6 SPECIFIC GRAVITY AND 0.5" W.C. PRESSURE DROP.  3. IF DEVELOPED LENGTH (125 FT) OF GAS PIPING VARIES FROM DESIGN, PLUMBING CONTRACTOR SHALL NOTIFY ENGINEER FOR VERIFICATION OF ALL PIPE SIZING. P.C. SHALL VERIFY THAT GAS SYSTEM PRESSURE DOES NOT EXCEED ALLOWABLE LIMITS OF GAS UTILIZATION EQUIPMENT.	
RTU-2	80.0	3/4"		
GWH-1	75.0	3/4"		
RTH-1	65.0	3/4"		
TOTAL CFH		340.0		

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## PLUMBING FIXTURE SCHEDULE

FURNISHING MATERIALS SCHEDULE																							ICE
P.NO.	FIXTURE	MAN.	MODEL	SIZE	MATERIAL	MOUNTING	MOUNTING HEIGHTS	FLUSH VALVE/TANK	NO. OF FAUCET HOLE	ADA COMPLIANT	CARRIER	TRIM				ROUGH-IN SIZES				NOTES			
												FAUCET/ VALVE MAN.	FAUCET/ VALVE MODEL	STRAINER	HOSE & SPRAY SOAP DISP.	WASTE	VENT	WATER					
P1.1	WATER CLOSET	KOHLER	K-3979	N/A	VC	F	1	T	1	●	●	---	---	---	---	---	4"	2"	---	1/2"	1.2		
P2.1	LAVATORY	KOHLER	K-2005	21"x18"	VC	W	2	--	3	●	●	DELTA	22C531	1	--	1-1/2"	2"	1-1/2"	1/2"	1/2"	3.4		
P2.2	LAVATORY	KOHLER	K-2196-4	20"x17"	VC	C	--	--	3	●	●	DELTA	22C531	1	--	1-1/2"	2"	1-1/2"	1/2"	1/2"	3.4		
P3.1	SINGLE COMP. SINK	ELKAY	LRAD221965	22"x19"	SS	C	--	--	3	●	●	DELTA	27C2934-R7	1	--	1-1/2"	2"	1-1/2"	1/2"	1/2"	5		
P3.2	SINGLE COMP. SINK	ELKAY	LRAD152255	15"x22"	SS	C	--	--	3	●	●	DELTA	27C2934-R7	1	--	1-1/2"	2"	1-1/2"	1/2"	1/2"	5		
P3.3	SINGLE COMP. SINK	ELKAY	LRAD221965	22"x19"	SS	C	--	--	4	--	--	DELTA	27C4944-R5	1	--	1-1/2"	2"	1-1/2"	1/2"	1/2"	5.7		
P4.1	MOP BASIN	FIAT	MSB-2424	24"x24"x10"	MS	F	--	--	--	--	--	DELTA	28T9	--	--	--	3"	1-1/2"	3/4"	3/4"	6		
P5.1	ELEC. WTR. COOLER	ELKAY	EZSTL8WSLK	N/A	SS	W	3	--	--	●	●	---	---	--	--	1-1/2"	2"	1-1/2"	---	1/2"	8.9		

## SCHEDULE LEGEND

SCHEDULE LEGEND		MOUNTING HEIGHTS		STRAINER TYPE	
MATERIAL					
VC	VITREOUS CHINA	1.	TOP OF SEAT AT 19" MAX. (ADA)		1. GRID
SS	STAINLESS STEEL	2.	RIM AT 34" A.F.F. MAX. (ADA)		
MS	MOLDED STONE	3.	HIGH SPOUT OUTLET AT 38" MIN. A.F.F. AND 43" MAX. A.F.F. - LOW SPOUT OUTLET AT 36" A.F.F. (ADA)		
MOUNTING					
F	FLOOR MOUNTED				
W	WALL HUNG				
C	COUNTER MOUNTED				

NOTES:

1. PROVIDE WITH TRIP LEVER ON WIDE SIDE OF FIXTURE.
2. PROVIDE WITH WHITE OPEN-FRONT SEAT, LESS COVER.
3. PROVIDE AND INSTALL TRUEBRO MODEL 103 INSULATION, WITH ONE P-TRAP COVER, TWO ANGLE VALVE AND SUPPLY COVERS, AND ONE OFFSET TAILPIECE WHEEL CHAIR COVER. FIXTURES EQUIPPED WITH ARCHITECTURAL KNEE / UNDER-COUNTER SHROUDS DO NOT REQUIRE INSULATION.
4. PROVIDE LEAD-FREE POWERS LFE480 MIXING VALVE (OR EQUAL) TO MAINTAIN LAVATORY TEMPERATURE AT 110°F.
5. SUPPLY FAUCET WITH RIGID SPOUT.
6. PROVIDE MOP HANGER, HOSE AND HOSE BRACKET, AND STAINLESS STEEL WALL GUARD.
7. PROVIDE SINK WITH HAWS SINK MOUNT EYE WASH MODEL 7610S OR EQUAL. PROVIDE WITH OPTIONAL THERMOSTATIC MIXING VALVE MODEL 9201EFE AXION. INSTALL EYE WASH PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE REQUIRED HOLE DRILLING PRIOR TO ORDERING AND INSTALLATION.
8. PROVIDE OPTIONAL APRON INSTALLED BELOW UPPER UNIT TO COMPLY WITH ADA GUIDELINES.
9. INSTALL BOTTLE FILLING STATION ABOVE LOW CABINET UNIT.

## WATER HEATER SCHEDULE

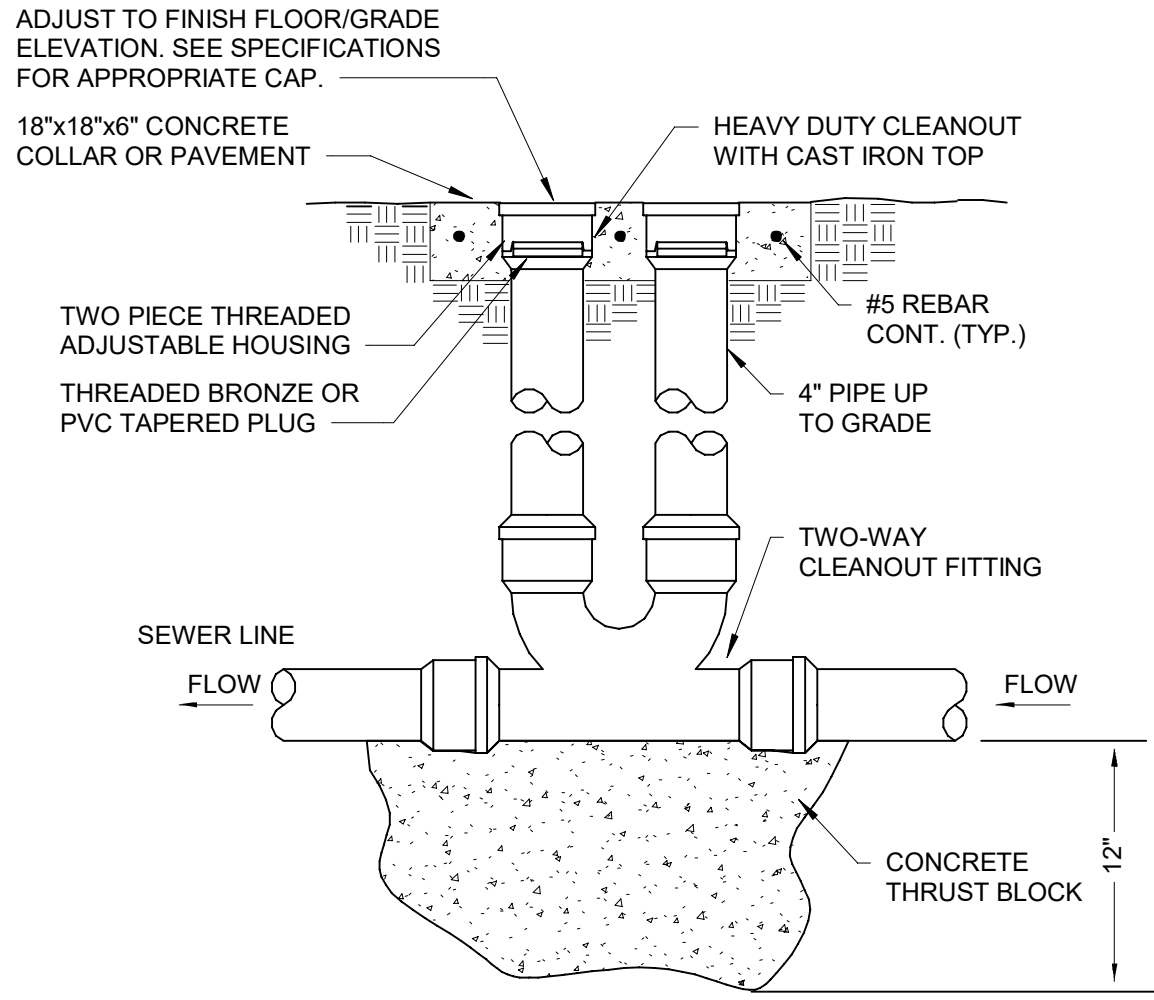
WATER HEATER SCHEDULE														ICE
MARK	TYPE	STOR. CAP. GALLONS	RECOVERY G.P.H. (G.P.M.)	DEG. RISE	GAS					ELECTRIC			EXP. TANK	MODEL
					INPUT MBH	VENT DIA.	INTAKE DIA.	BURNER		NO. OF ELEMENTS	ELEMENT KW	VOLTAGE		
								HP	AMPS					
GWH-1	TANK	75	73	100°	75.0	4"	4"	--	--	--	--	120/1□	ST-12	CGN075-075
NOTES: 1. GAS WATER HEATER SELECTION BASED ON LOCHINVAR COMMERCIAL GAS WATER HEATERS. 2. VERIFY VENT AND INTAKE DIAMETER WITH MANUFACTURER RECOMMENDATIONS AND FINAL ROUTING. 3. PROVIDE AMTROL ST-12 EXPANSION TANK.														

## ICE

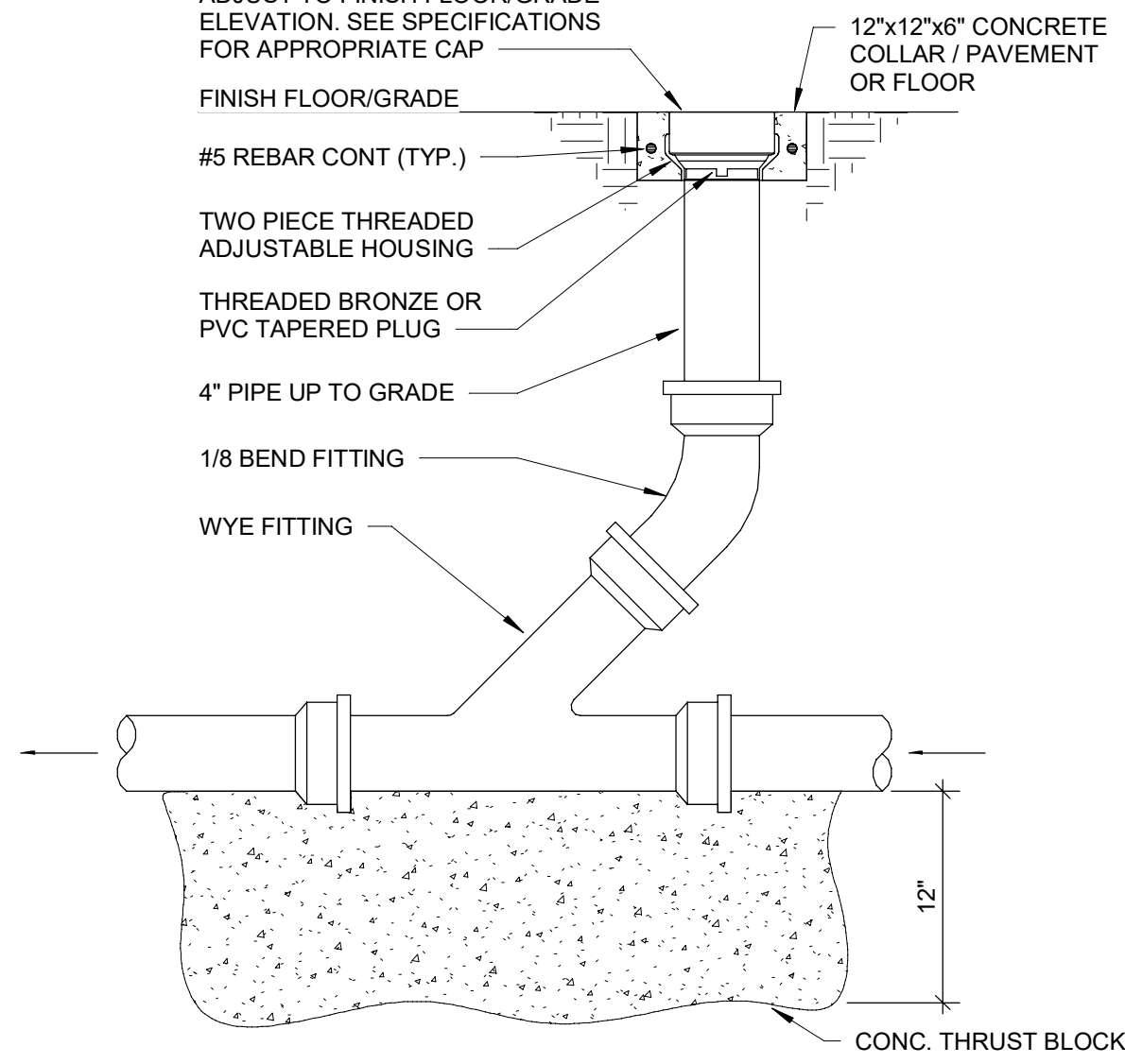
## INFRA-RED (RADIANT) TUBE HEATER SCHEDULE

NOTES:  
1. BASED ON BELL & GOSSETT RECIRCULATING PUMP

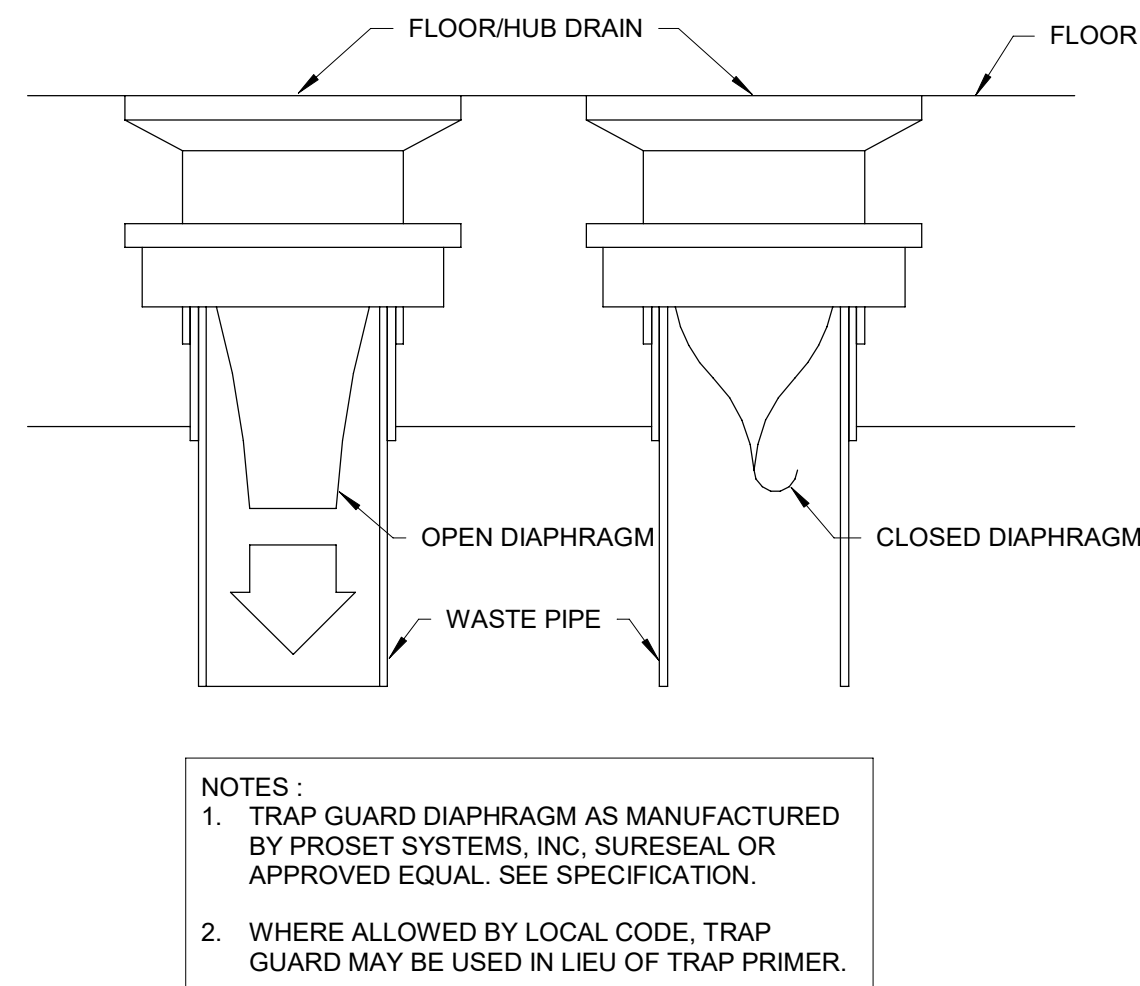




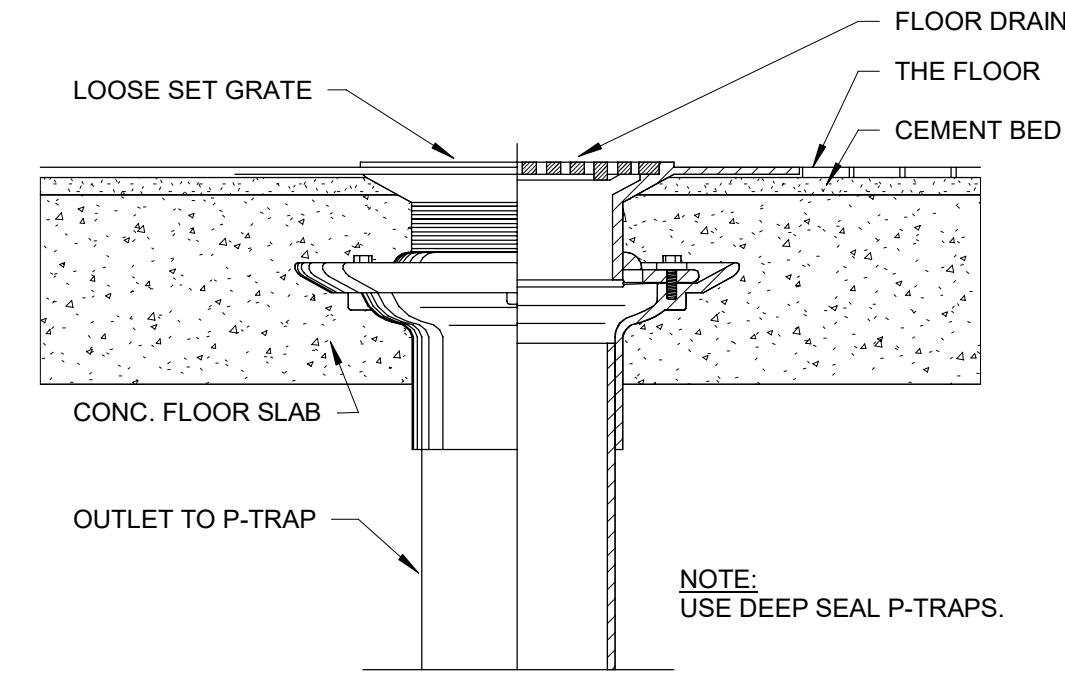
**1 2-WAY GRADE CLEANOUT**  
SCALE: N.T.S.



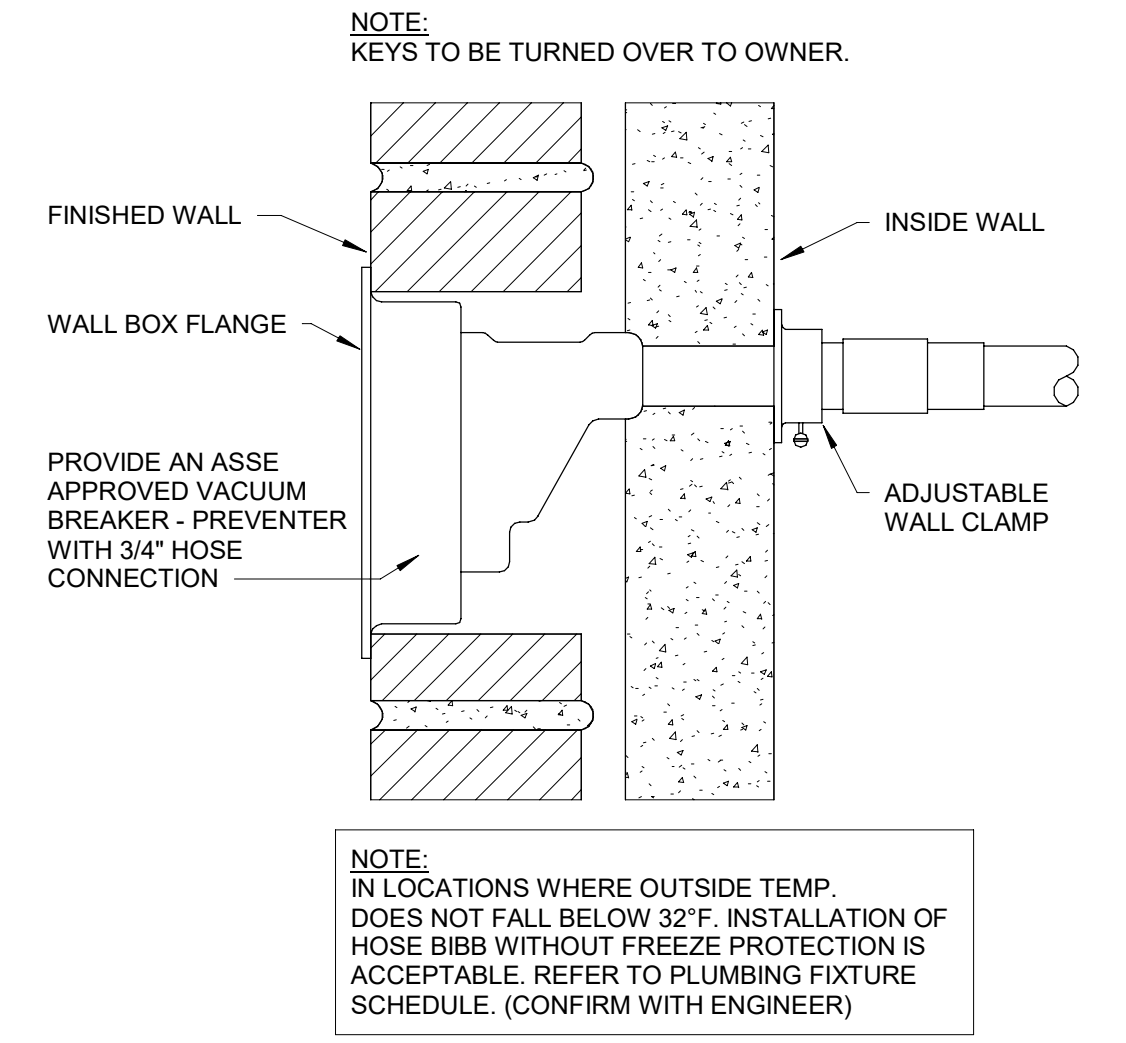
**2 1-WAY GRADE CLEANOUT DETAIL**  
SCALE: N.T.S.



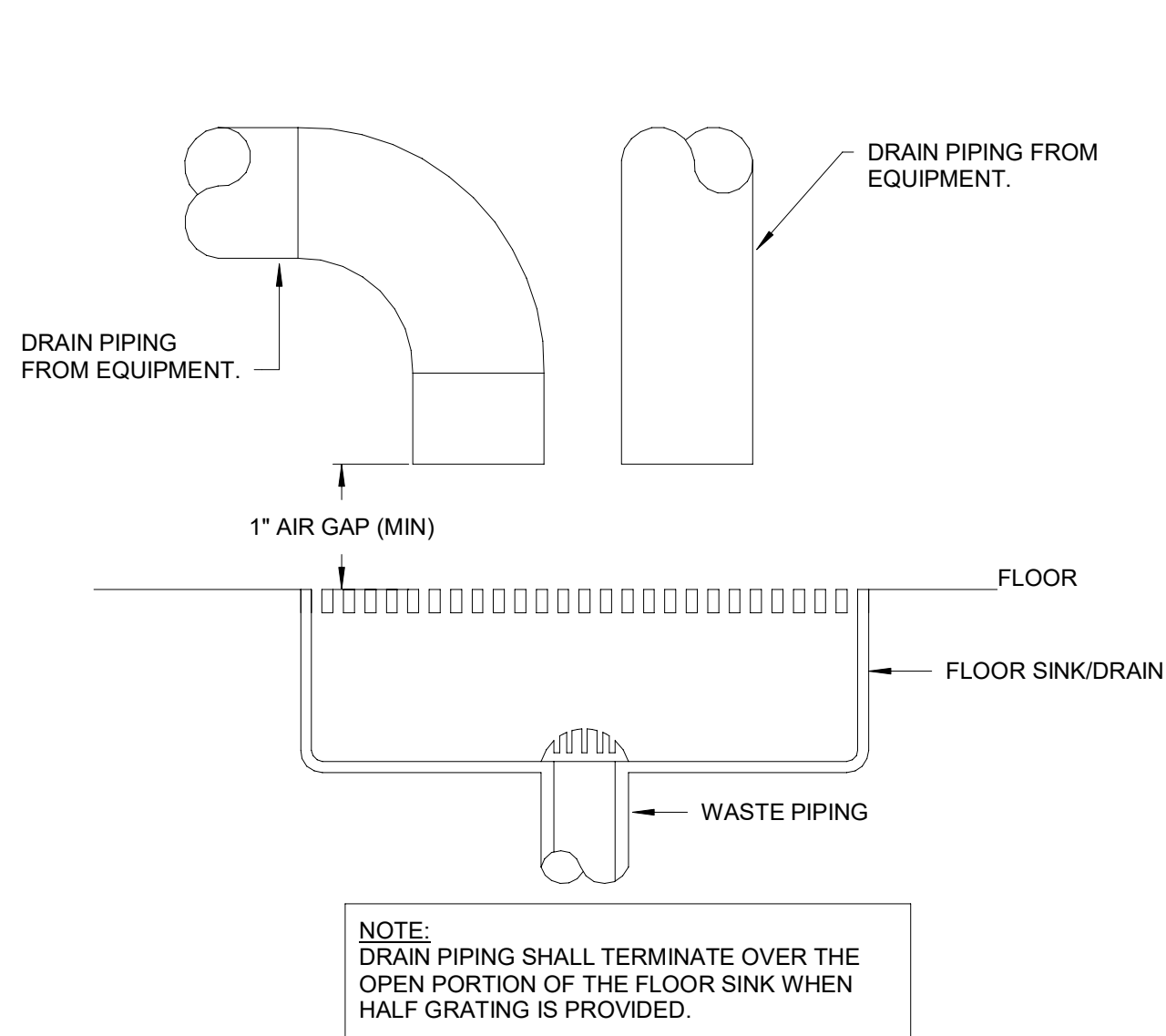
**3 TRAP GUARD DIAPHRAGM DETAIL**  
SCALE: N.T.S.



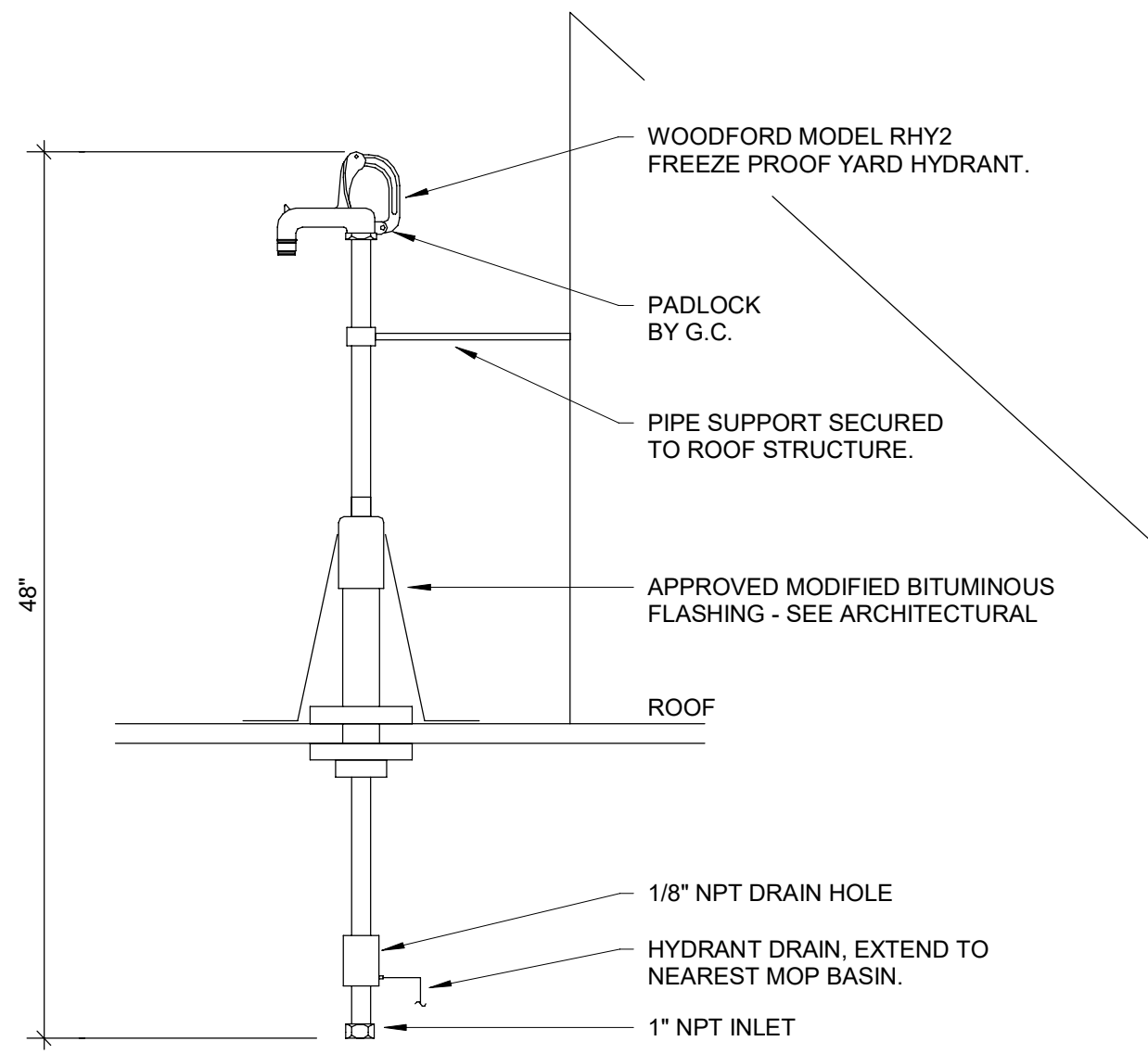
**4 FLOOR DRAIN**  
SCALE: N.T.S.



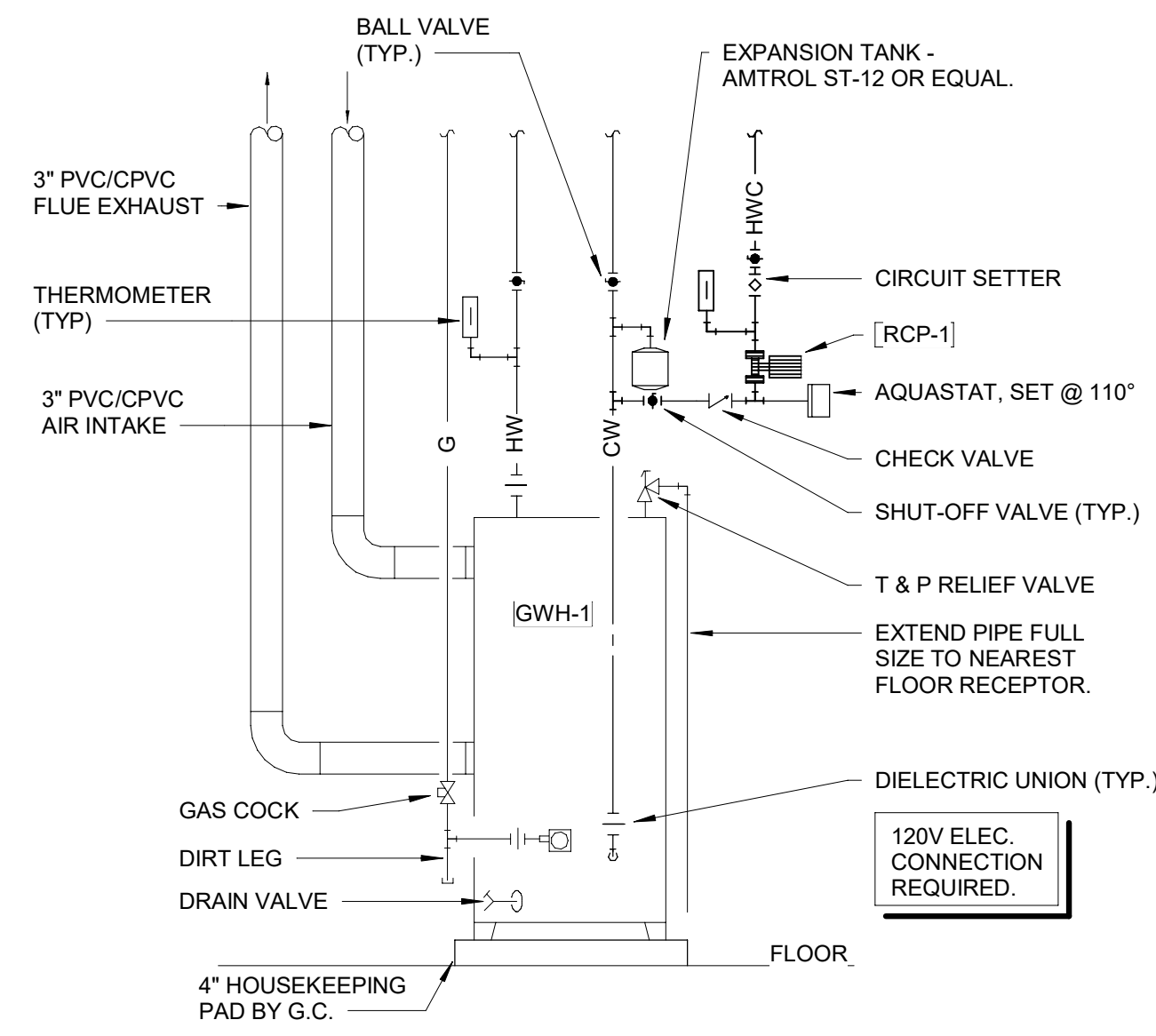
**5 FREEZE-PROOF WALL HYDRANT**  
SCALE: N.T.S.



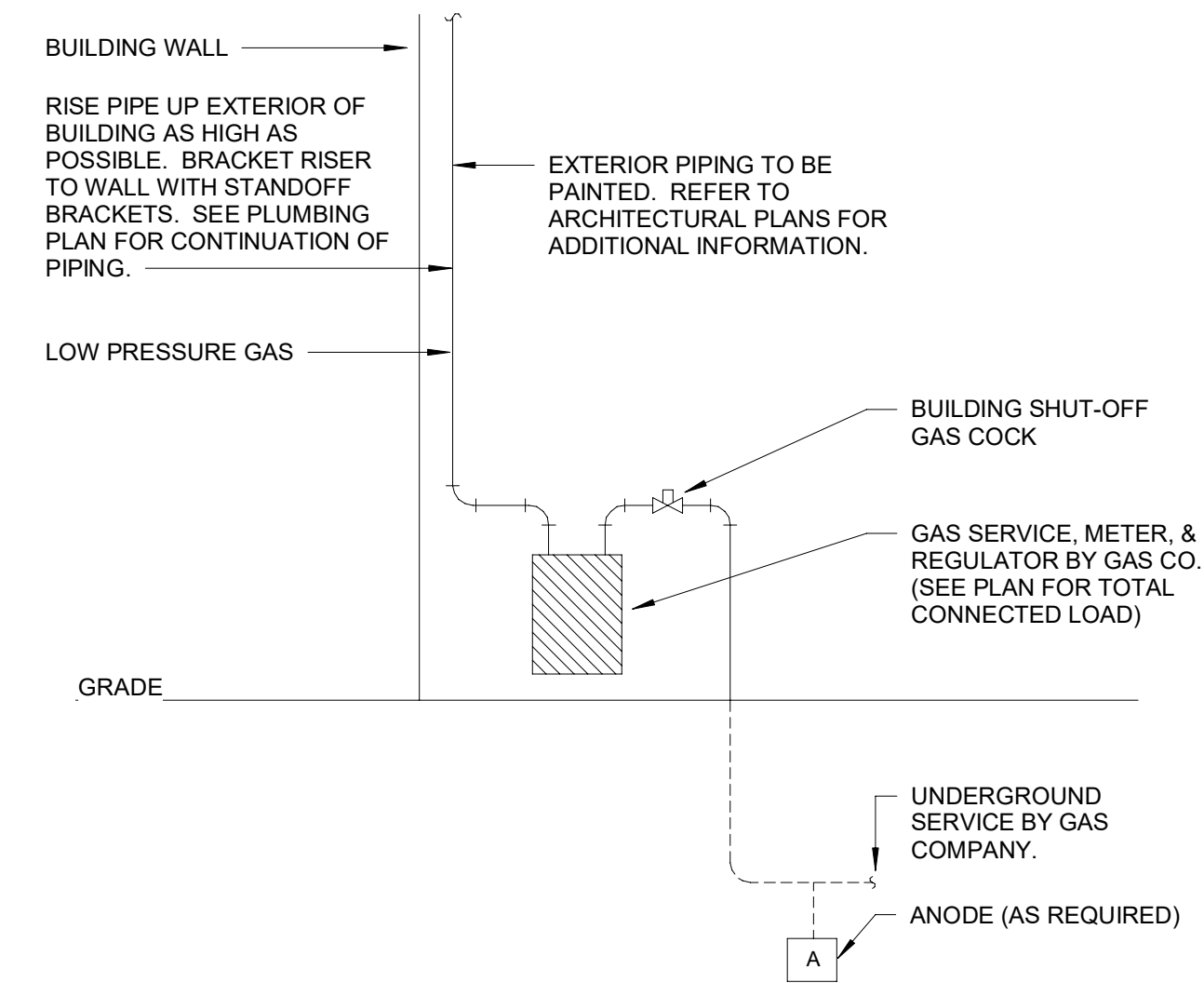
**6 INDIRECT WASTE CONNECTION**  
SCALE: N.T.S.



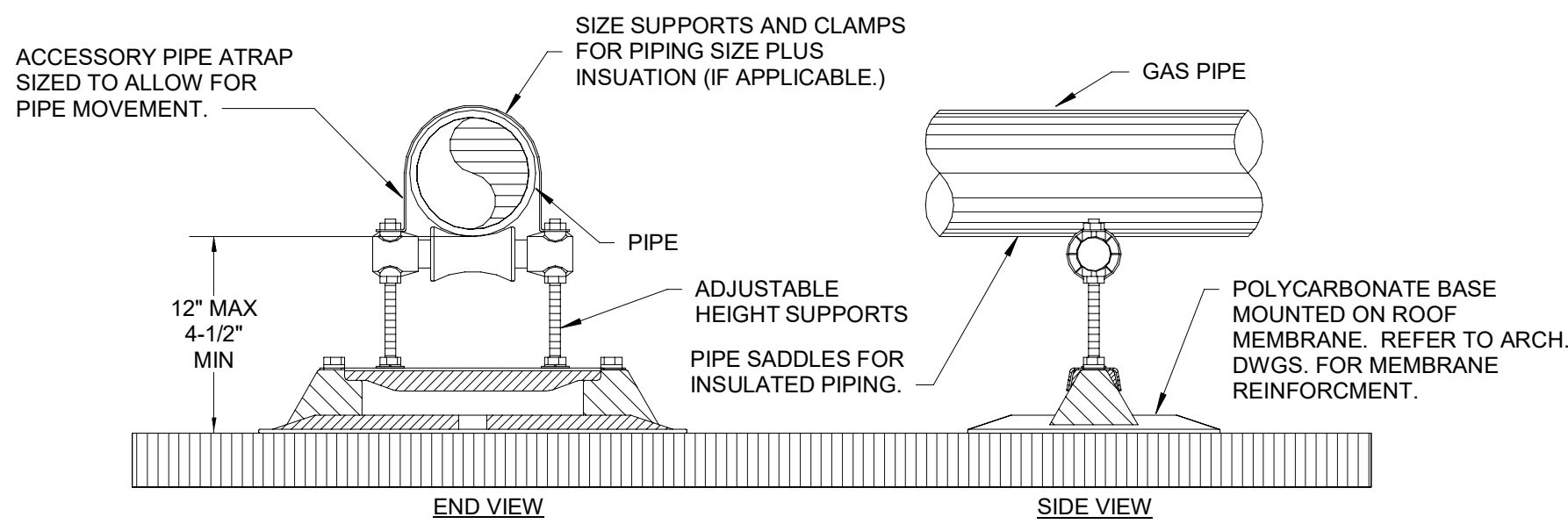
**7 ROOF POST HYDRANT DETAIL**  
SCALE: N.T.S.



**8 GAS WATER HEATER DETAIL**  
SCALE: N.T.S.

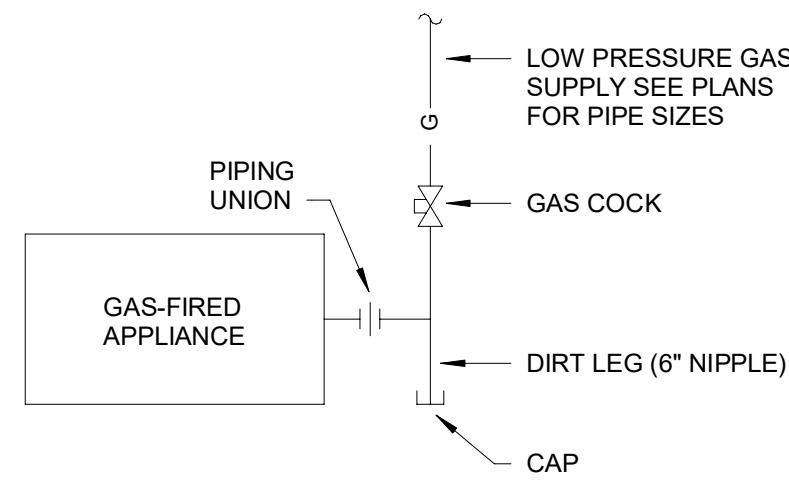


**9 GAS RISER PIPING SCHEMATIC**  
SCALE: N.T.S.



MIRO MODEL NUMBER			PIPE SUPPORT SPACING	
PIPE SIZE	UP TO 7" HIGH	UP TO 12" HIGH	GAS (STEEL)	CONDENSATE (COPPER)
3/4"	3-RAH-7.	3-RAH-12.	6'-0" O.C.	6'-0" O.C.
1" - 1 1/4"	3-RAH-7.	3-RAH-12.	7'-0" O.C.	7'-0" O.C.
1-1/2"	3-RAH-7.	3-RAH-12.	8'-0" O.C.	8'-0" O.C.
2"	3-RAH-7.	3-RAH-12.	10'-0" O.C.	9'-0" O.C.
3"	3-RAH-7.	3-RAH-12.	12'-0" O.C.	10'-0" O.C.
4"	4-RAH-7.	4-RAH-12.	12'-0" O.C.	--
6"	6-RAH-7.	6-RAH-12.	12'-0" O.C.	--
6"	8-RAH-18.	8-RAH-18.	12'-0" O.C.	--

**10 ROOF PIPING SUPPORT**  
SCALE: N.T.S.

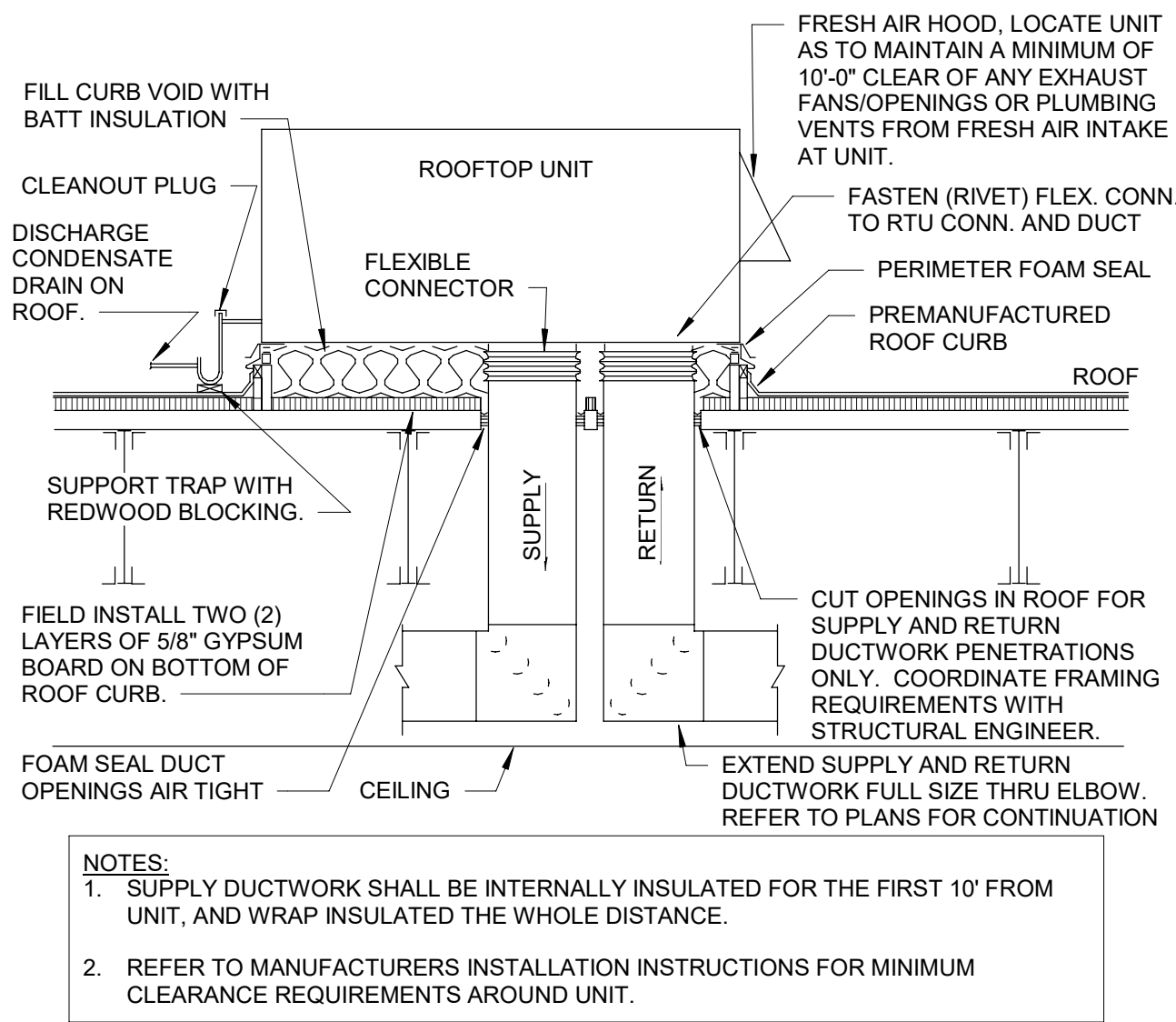


**11 GAS-FIRED APPLIANCE PIPING DETAIL**  
SCALE: N.T.S.

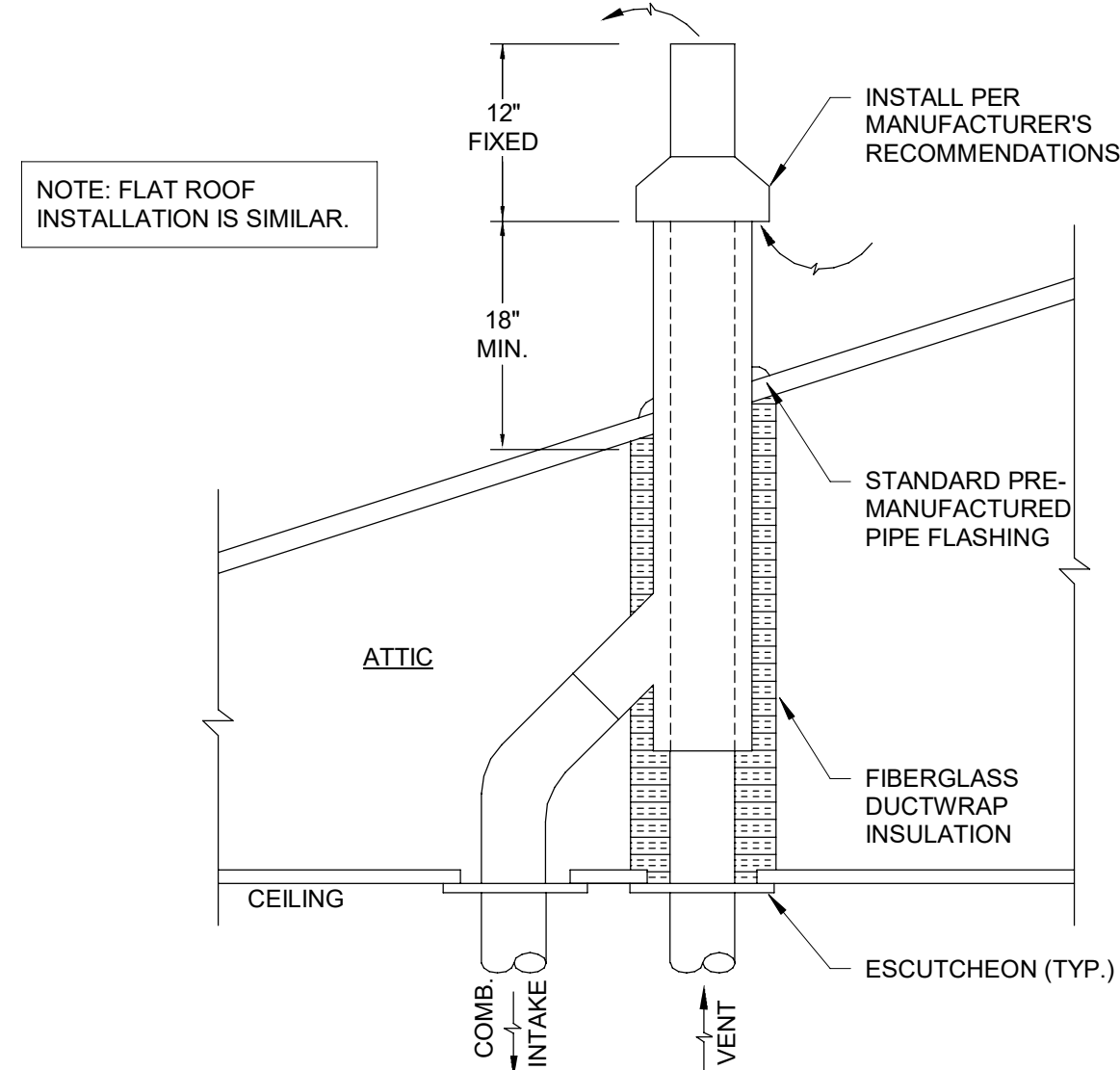
date issued:	03-03-2023				

**Grant County Health Department**  
Lots 1-5, Block 20, Medford, OK

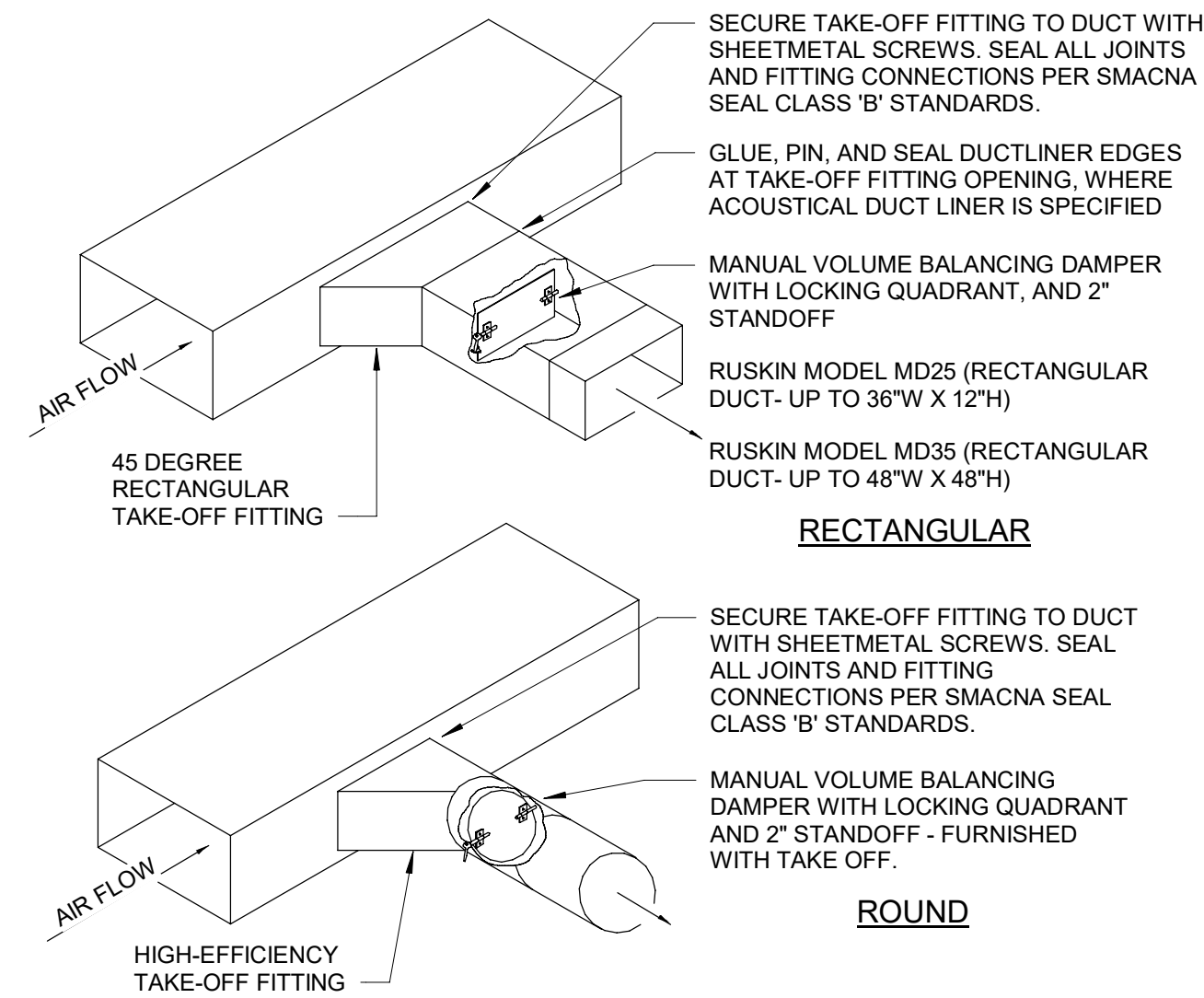




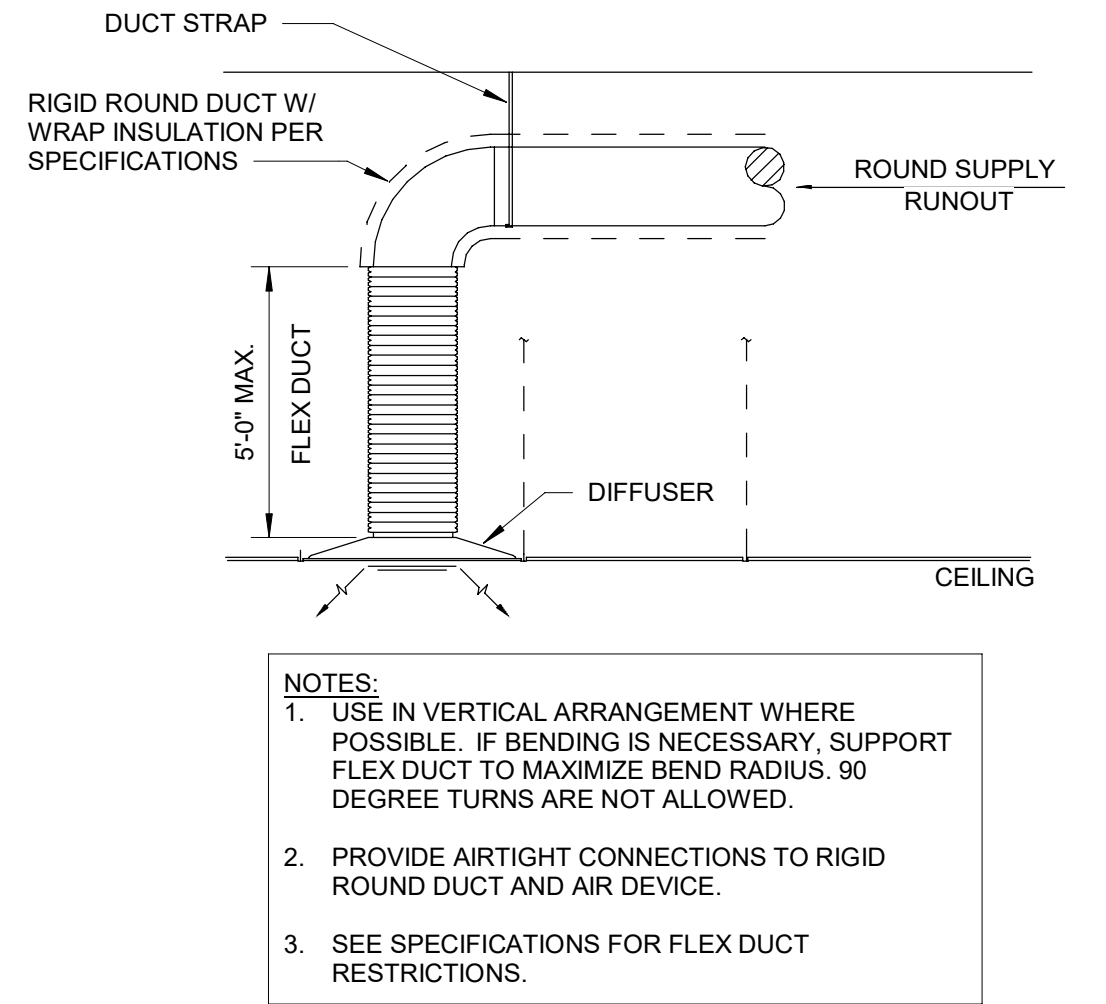
1 TYPICAL RTU INSTALLATION  
SCALE: N.T.S.



2 CONCENTRIC TERMINATION KIT (ROOF MOUNTED)  
SCALE: N.T.S.



3 DUCT TAKE-OFFS (RECTANGULAR & ROUND)  
SCALE: N.T.S.



4 FLEXIBLE DUCT TO DIFFUSER  
SCALE: N.T.S.

date issued: 03-03-2023

Grant County Health Department  
Lots 1-5, Block 20, Medford, OK

CORBIN MERZ HANEY  
ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701  
WWW.CORBINMERZHANEY.COM  
PH: (580) 233-2362

22277.00 - 622  
OKLAHOMA REGISTRATION NUMBER: 5682  
Integrated Consulting  
Engineers, Inc.  
349 South Hydraulic • Wichita, KS 67211  
316.264.3588 • 316.264.3948 • www.icengr.com



MP1.3



GENERAL PROVISIONS/15010

1.01 Furnish all labor, materials, equipment, fixtures, apparatus, special or occasional services, and other appurtenances required for installation of complete and operational heating, ventilating, air conditioning (HVAC) and plumbing systems as indicated on the drawings and as described in these specifications. This work shall include all materials, apparatus, and appliances not specifically mentioned herein or noted on the Drawings as being furnished and installed under another section.

1.02 Work Included: This work includes but is not limited to the following systems: Sanitary sewer and vent, domestic water, natural gas, plumbing fixtures and trim, unit condensate drainage, refrigerant, supply and return HVAC.

1.03 Related Requirements: Prime and protective painting is included in this section; finish painting is specified elsewhere. Temperature controls including low voltage wiring are included in this section. Power for temperature controls, interlocks and line voltage electrical power is specified elsewhere. Duct mounted access doors are included in this section; access doors in gyp board walls, ceilings, etc., is specified elsewhere.

Concrete mounting slabs and structural steel reinforcing is specified elsewhere.

Miscellaneous fittings, brackets, supports, etc. are included in this section; other metal work is specified elsewhere. Flashings, counter flashings, caulking, sealants, etc. as required for weatherproofing mechanical penetrations through walls, floors, and roofs are included in this section; other waterproofing is specified elsewhere.

1.04 Coordination with Other Trades: These drawings are diagrammatical in nature and show certain physical relationships which shall be established by the contractor. Install the system within the constraints of the building in an approved manner and coordinate with other trades to ensure harmonious working conditions and proper installation.

1.05 Permits and Inspections: Obtain all permits and inspections and pay all fees for completion of this work.

1.06 Codes and Standards: Comply with the latest adopted version of the International Mechanical and International Plumbing Codes including all local amendments, applicable sections of the NFPA, and other applicable current laws, codes, ordinances, etc. of all Federal, State, and Local authorities whether or not in the contract documents. All mechanical equipment shall be labeled by UL, ETL, AGA, or other approved independent testing authority. Air conditioning equipment shall be AHRI certified.

1.07 Submittals and Review of Materials, Samples, and Drawings: Provide submittals for all major mechanical equipment and other items where indicated. Identify each piece of equipment with designation indicated on the contract documents. Submit minimum of 3 copies for approval. Submit shop drawings showing any proposed deviation from the contract documents required for interface with the building. Electronic .pdf submittals of equipment and shop drawings may be provided in lieu of hard-copies at contractors' option.

Electronic .pdf copies shall be submitted and reviewed without requiring the utilization of contractor or job specific (not necessarily proprietary) job management or submittal software.

1.08 Guarantees and Warranties: Provide a one-year warranty starting at the date of acceptance by the owner for all systems and equipment installed under this contract.

1.09 Operations and Maintenance Data: Provide operation and maintenance data for all equipment. Identify each piece of equipment as indicated in the contract documents. Information shall include but is not limited to startup, service and maintenance and lubrication procedures. Bind information in 3-ring, loose leaf, hard back binder. At Contractors option, and with approval of owner, operations and maintenance data may be provided in electronic .pdf format.

1.10 Product Delivery, Storage and Handling: Protect all fixtures, material, equipment, and appurtenances from physical and weather damage. All damaged items will be restored to original condition or replaced at owner's option before final acceptance.

1.11 Temporary Services: Provide temporary services and utilities as required.

1.12 All materials exposed in return air plenum to comply with NFPA 90A flame spread under 25, smoke developed, and fuel contributed under 50 for return air plenums.

1.13 Provide access doors where indicated on drawings and/or as required to properly operate, adjust and maintain all equipment. Coordinate exact location with architect prior to installation.

1.14 Caulking and Flashing: Seal all floor, wall and roof penetrations through fire rated assemblies with minimum 1" thickness 3M brand fire barrier caulk CP-25 (or other approved manner) to maintain rating of assembly.

1.15 Openings, Cutting and Patching: Place all equipment in time to avoid cutting new construction. Coordinate required openings with other trades. Undertake no cutting without architect's approval. All patching shall be structurally and aesthetically equal to the surface surrounding the area patched.

1.16 Field verify exact location, size, routing, and availability of existing HVAC and plumbing systems. Verify sufficient space is available to install new equipment and systems as indicated on drawings. If changes are necessary, notify engineer as soon as possible and modify systems as instructed. Coordinate exact location of ceiling diffusers and recessed equipment with light fixtures, ceiling grid, etc.

1.17 Cleaning and Sterilization: Remove all construction debris from site and clean all mechanical equipment. Clean and disinfect all plumbing fixtures and trim required. Install deep seal traps and cleanout plugs at all equipment connections. Piping on roof shall flush system, refill system and ensure residual chlorine content of less than .20 ppm.

1.18 Testing of Piping: All piping shall be tested with hydrostatic or pneumatic pressure, or other means as directed and shall be proved tight as hereinafter specified in the presence of the local building inspector before it is concealed or covered in any way.

This Contractor shall furnish and install all plugs and make all temporary connections necessary to perform these tests. He shall furnish all labor, tools, and equipment necessary to perform such tests.

Duration of tests shall be of sufficient time to permit inspection of all joints by the local building inspector, and generally holding test pressure for a period of not less than 12 hours continuously without loss of any pressure.

Individual System Tests:

1. Domestic water piping tested under 100 PSI hydrostatic pressure.
2. Soil, waste, vent tested under 12" head of water pressure.
3. Natural gas piping tested under 30 PSI air pressure.
4. Refrigerant piping tested under 300 PSI nitrogen gas pressure.

1.19 Mounting Heights: Install all exposed equipment and piping as high as possible while maintaining access for service of piping and surrounding systems and equipment. Conceal piping and equipment unless indicated otherwise.

1.20 Freeze Protection: Piping and equipment located in areas subject to freezing shall be installed in a manner to prevent freezing. Install all piping on warm side of building insulation to prevent freezing.

1.21 Start-up Instructions: Start-up equipment in accordance with manufacturer's instructions. Review equipment and instruct owner in proper operation of the equipment.

1.22 Equipment and Systems Installation: Install equipment and systems in accordance with manufacturer's printed installation instructions and in accordance with accepted industry standards and all applicable codes. Meet all required clearances and provide all necessary equipment accessories, bases, supports, shields, etc. for a complete and operational installation.

1.23 All mechanical equipment shall be labeled with the equipment identification number. Identification shall be with laminated three-layer plastic nameplates, with engraved black letters on white background. Lettering size shall be 0.75-inches high.

1.24 Pipe Identification: Install pipe identification markers and direction arrows on all piping that is exposed and above ceilings. Markers to be color coded and identified per ANSI specifications. Install at valves and no further than thirty (30) feet apart along any run of pipe, except equipment rooms where spacing will be twenty (20) feet.

1.25 Balancing and Adjusting: The Mechanical Contractor shall obtain the services of an independent test and balance (TAB) agency that specializes in total system air and hydronic balancing, testing and commissioning - QTAG, Inc. or engineer pre-approved equal. The independent TAB agency shall adjust and balance the mechanical systems and check every operational piece of equipment. System shall be balanced to airflow quantities as indicated on drawings. Check, adjust and balance to provide a complete and operational system. A typewritten final balance report shall be provided to the engineer for record purposes.

PIPING SYSTEMS 15060

1.01 Work Included: Installation of all piping systems.

1.02 Water Service: The water department will provide the water main tap and furnish the water meter(s). Costs of such will be charged to the mechanical contractor. The mechanical contractor will install the water main extension, the water meter valve(s), the water meter(s), and all necessary valving per The City of Medford Oklahoma requirements and details. Extend water service to building as shown on plans. Install a building shut-off valve at riser in new building. Where local water pressure is in excess of eighty (80) pounds per square inch (PSI), an approved type pressure regulator preceded by an adequate strainer shall be installed. Regulator with integral by-pass is acceptable. Regulator and strainer shall be accessibly located and shall have the strainer readily accessible for cleaning without removing the regulator or strainer body or disconnecting the supply piping.

The water service shall be Type "L" copper or schedule 40 PVC installed a minimum of 48" below finish grade or 6" below local ground freeze level. Such service shall not be less than five (5) feet from any tree on public property. The water service pipe shall be laid in a trench separate from other underground pipes or conduits. There shall be not less than eighteen (18) inches of solid undisturbed earth between water service pipes and other underground pipes and conduits. Changes in direction in copper tubing may be made with bends having a radius of not less than six (6) diameters of the tubing, providing that such bends are made through the use of forming equipment which does not deform or create a leak in cross sectional area of the tubing.

Refer to Division 2 for excavation, trenching, and backfilling requirements. All buried PVC plastic piping shall be installed with metallic tracer wire accessible at both ends.

1.03 Domestic Water: Type "L" hard copper ASTM B88 pipe. Wrought copper ASTM B16.22 fittings. Sweat 95-5 tin antimony solder joints. Use Type "K" copper below grade. Plumbing installer shall minimize piping joints below floor. Where joints are necessary, all joints shall be brazed with silver bearing solder.

1.04 Condensate Drain Piping: Schedule 40 PVC ASTM D1784 pipe. Drainage pattern ASTM D2729 fittings. Solvent weld ASTM D2564 joints. Install pipe without sags or bow-ups. Provide intermediate hangers as required. Install deep seal traps and cleanout plugs at all equipment connections. Piping on roof shall be supported on pre-manufactured piping supports as noted and detailed on drawings or treated/redwood blocking if not noted otherwise. Do not use PVC

in return air plenums except where allowed by code. Piping in return air plenums shall be copper piping (flange same as shall be domestic water piping), except use drainage pattern fittings.

1.05 Sanitary Drain, Waste, and Vent Piping (Buried within 5 Feet of Building): ASTM D2665, Schedule 40 PVC DWV pipe with ASTM D3311 PVC drainage pattern fittings and ASTM D2564 solvent cement. Install pipe in a straight line and grade uniformly to slopes indicated by flow line elevations at the building and connection to sanitary sewer main on site. Plug open ends of piping when installation is not in progress.

Install pipe with barrel on firm undisturbed material for the entire length. Refer to Architectural and other division specifications for excavation, trenching, and backfilling requirements.

1.06 Sanitary Drain, Waste, and Vent Piping (Above Grade): ASTM D2665, Schedule 40 PVC DWV pipe with ASTM D3311 PVC drainage pattern fittings and ASTM D2565 solvent welded joints with ASTM D2564 solvent cement.

NOTE: Do not use plastic piping in return air plenums nor penetrate fire rated construction materials except where allowed by code. Piping in return air plenums and through fire rated construction materials shall be cast iron.

In lieu of cast iron piping and at contractors option: where allowed by code and local authority having jurisdiction, PVC piping may be installed with fire wrap equal to Fyre Wrap 0.5" plenum insulation as manufactured by UniFrix.

1.07 Natural Gas Piping: ASTM A53, Schedule 40 black steel Type E Grade B or Type S Grade B.

For piping up to and including 2 inches: ASME B16.11, 2000 psi forged steel, welded or threaded type; Class 150 black malleable iron, threaded, ASME B16.3 fittings, NFPA 54, threaded or welded to ANSI B31.2, ANSI B31.8 joints. ASME B16.11, forged steel, 3000 psi, threaded or welded; Class 150 black malleable iron, threaded, ASME B16.3 couplings.

For piping over 2 inches: ASME B16.9, steel, butt-welding type (wall thickness to match pipe) fittings, ANSI B31.2, ANSI B31.8, welded joints. Class 150 forged black steel, slip-on or weldneck, raised face, ASME B16.5 flanges. Use flat-faced flanges for connection to Class 125 flat-faced cast iron flanges, fittings, or valves. Non-metallic, self-centering or full face, ASME B16.21 gaskets. Flange bolts to be carbon steel, coarse thread, ASTM A307 Grade B, ASME B18.2.1; Heavy hex nuts, ASTM A563 Grade C, D, DH, DH3, ASME B18.2.2. Flange insulation to include insulating gasket, bolt tubes, insulating washers, steel washers; Electrically isolate underground piping from aboveground piping.

Provide a quarter turn lubricated cut-off cock at each piece of equipment. Teflon tape is not allowed in natural gas system piping. Underground piping shall be coated and wrapped with .04" thick polyethylene equal to AWWA C203 or C205. Provide cathodic protection as required. Coordinate with local gas utility company. Gas piping exposed on exterior of building shall be primed and painted with (2) coats of Rustoleum paint or equal. Piping on roof shall be supported on pre-manufactured piping supports as noted and detailed on drawings or treated/redwood blocking if not noted otherwise.

NOTE: Contractor may substitute polyethylene piping in lieu of coated black steel for the underground piping, if allowed by local code officials. Piping installation shall conform to all code requirements and include necessary tracer wire (18 ga. copper), and steel pipe risers.

1.08 Refrigerant Piping: Type "ACR" hard copper ASTM B-88 pipe. Wrought copper ASTM B16.22 fittings. Brazeed joints with Sil-Fos or equivalent silver bearing solder. Purge with dry nitrogen while brazing. Evacuate system for 12 hours minimum prior to charging with refrigerant. Refrigerant pipe sizing and pipe accessories shall be sized and selected by the equipment manufacturer providing the equipment. Install piping with adequate slope to prevent oil trapping. Furnish all suction accumulators, solenoid valves, traps, double suction risers, etc., as required by equipment manufacturer's installation instructions. Selection and sizing shall provide the necessary scheduled capacities per actual job conditions.

1.09 Pipe Hangers and Supports: Provide pipe hangers and supports designed to carry the load with a safety factor of 5 or larger. Hangers oversized to fit pipe and insulation on insulated lines. Copper hangers shall be used for support of copper piping.

Hangers of malleable iron split ring, clevis, or roller type.

Rods and adjustable turnbuckles suspended from inserts or supporting members in construction for overhead suspension. Heavy welded steel brackets for wall suspension. Furnish and install washers, rollers, insulation saddles, stands, anchor chairs and all required attachments. Wall supports bolt through wall with suitable back plate on back side of wall.

Pipe Hanger Spacing:

5'-0" for cast iron soil pipe, ABS & PVC plastic pipe. 8'-0" for copper, iron and steel piping up to 1" size. 10'-0" for copper, iron and steel piping above 1" size.

1.10 Exterior Piping and Equipment Supports: Field fabricated steel framing for support of mechanical equipment, piping, and duct systems shall be reviewed by a licensed Structural Engineer. A detailed shop drawing indicating the proposed design of the support framing system shall be submitted for structural engineer's review prior to installation.

1.11 Valves & Cocks:

A. General: All valves of a given type shall be of one manufacturer. Provide all valves where required for operation, service and maintenance of systems and equipment. 150 PSIG working pressure or for pressure and service specified herein. All valves shall be of a suitable type for intended service.

Sweat joints valves in copper piping. Protect valves from heat during installation. All valves in insulated piping system will be installed with operating handles above insulation through use of extension stems, extended necks, or rising stems.

B. Valve Connection: 1. Thread pipe sizes 2" and smaller 2. Flange and pipe sizes 2" and larger 3. Solder for copper tubing

C. Ball Valves: Bronze, swing-away design, full port, chrome plated bronze ball with teflon seals, 125 SWP, 40 WOG screwed or soldered ends.

D. Drain Valves: Bronze, compression stop with nipple and cap or hose thread.

1.12 Piping Specialties:

A. Circuit Setter: Bell & Gossett Series CB venturi type calibrated balance valve to measure flow of chilled water for compatibility with piping and drop. Bronze body construction with gauge ports. Adjusting valve with calibrated scale and indicator and memory stops. Pre-formed molded insulated covers to permit access for balance and measurement.

B. Shock Absorbers: Provide PDI WH-201 approved shock absorbers at all equipment subject to water hammer.

1.13 Floor Drains:

Zurn ZN-415-A or equal: Dura-coated cast iron body with bottom outlet, combination invertible membrane clamp and adjustable collar with seepage slots. Type S: polished nickel bronze, square head-proof, light duty strainer for installation in ceramic tile, quarry tile or terrazzo floors.

Zurn Z-611 or equal as marked B.D. on plans. 9" square top drain, dura-coated cast iron body with bottom outlet, seepage pan and combination membrane flashing clamp and frame for cast iron medium-duty sloped grate, with suspended sediment bucket. Drains marked A.D. (area drain) on plans are to be installed without trap when used in exterior applications.

Furnish Zurn Z-1724 or equal 4" round, type 304 stainless steel funnel with satin finish at all drains noted on plans as: "with funnel".

Deep seal P-trap. Furnish with trap primer connection as required by local codes or where shown on the plumbing drawings. Drains equipped with trap guard seals do not require trap primer connection.

General Contractor to locate and set elevations for drains, no deviation made from this with-out permission of the Architect.

1.14 Trap Primer:

A. J.R. Smith 2698, Sioux Chief 200/213 series, or equal. Chrome plated cast P-trap with ground joint connection and escutcheons. 1" primer tube with compression fitting connection at wall. Install per manufacturer's installation instructions. Tap/tee shall be certified by ASSE to the ASSE 1044 Standard and meet applicable drainage requirements set forth by ASSE 1044. Refer to plans for additional information.

B. Inline Floor Drain Trap Sealer: (Where allowed by local Authority Having Jurisdiction): Sure Seal, Pro-seal or equal. IAPMO listed; ASSE 1072 approved. 10-year limited warranty.

1.15 Cleanouts: Full size of pipe up to 4". Locate at base of vertical stacks, ends of mains, changes in directions greater than 135 degrees. Install cleanouts at a maximum of every 100 linear feet in all waste piping inside and outside of building.

Finished walls: Zurn Z-1468 stainless steel wall access cover complete with securing screw and bronze raised hex head plug.

Finished floors - Zurn Z-1400 - adjustable floor level cleanout - polished bronze top.

Carpeted floors - Zurn Z-1400 - adjustable floor level cleanout - polished bronze top - carpet marker.

Outside building - heavy-duty cleanout with cast iron top - threaded bronze or PVC tapered plug - set in reinforced concrete collar.

1.16 Traps: Furnish and install all traps required for fixtures or equipment, including traps not supplied with fixture or equipment.

Separately trap fixtures having waste connection as close to the fixture as possible. Deep seal traps where required.

Chromium plated cast brass exposed traps in finished areas.

1.17 Interior Hose Bibb: "Anti-siphon" automatic draining - integral vacuum breaker or 3/4" hose thread outlet - chrome finish on brass casing - metal wheel handle and loose tee key. Equal to Woodford Model 24.

1.18 Exterior Wall Hydrant: Non-freeze "anti-siphon" automatic draining - integral backflow preventer - chrome finish on brass casing - removable tee key - bronze interior parts with stainless steel stem - wall clamp - length to suit wall thickness. Equal to Woodford Model 67.

1.19 Wall Hydrant: Non-freeze "anti-siphon" automatic draining - integral backflow preventer - flush mounting wall box - chrome finish on brass casting - bronze interior parts with stainless steel stem - removable tee key - wall clamp - length to suit wall thickness. Equal to Woodford Model B60.

1.20 Piping Installation: Evenly spaced - run harmoniously with the building walls and ceilings. Installed in the desired location as indicated on drawings. Certain branch piping may be rerouted, providing rerouting does not alter intended design. Installed in strict accordance with best piping practice. Piping not sized on drawings shall be sized by the Engineer.

Provide unions and isolation valves at all equipment

to facilitate removal. Install gas piping in open or ventilated areas. Use non-conducting fittings where joining dissimilar metals. Slope all drainage piping 1/4" per foot (1/8" per foot for DWV piping 4" and larger). Arrange piping in a manner to allow for expansion and contraction. Thoroughly clean before installing - no sand, dirt, filings, etc.

PUMPS 15140

1.01 Work included: Installation of pumps and accessories

1.02 Submittals: A. Product Data: Submit product data for the following, as specified under Section 15010.

1. Pumps and Accessories

1.03 Acceptable Manufacturers:

1. Bell & Gossett
2. Armstrong
3. Grundfos
4. Taco

1.04 Domestic Hot Water Recirculating Pump:

See schedule on the drawings.

Bell & Gossett NBF Series as scheduled. In-line, horizontal, system lubricated circulating pump - bronze construction approved for potable water circulation - ceramic shaft supported by carbon bearings - suitable for 225 deg. F operation at 150 psig working pressure - Noryl impeller - quiet operating, non-overloading motor with built-in thermal overload protection - flanged pipe connections. Furnish 7-day adjustable automatic timer kit to turn pump "on" or "off" at selected times. Furnish and install adjustable aquastat with immersion well to cycle pump operation based on temperature when enabled by timer kit.

All line voltage wiring and disconnect switch by the Electrical Contractor.

1.05 Installation:

A. Install units as shown on drawings. Coordinate installation with Electrical and General Contractors.

B. Equipment shall be installed per manufacturer's installation instructions and shall accommodate minimum clearance and service requirements.

C. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25% of midpoint of published maximum efficiency curve.

INSULATION 15250

1.01 Work Included: All piping and duct system insulation and acoustical liner.

1.02 Acceptable Manufacturers:

- A. Fiberglass Insulation
  1. Owens Corning
  2. Johns-Manville
  3. Knaf
  4. Certainteed
- B. Foamed Plastic Insulation
  1. Armstrong-Armalex
  2. Rubatex

1.15 Cleanouts: Full size of pipe up to 4". Locate at base of vertical stacks, ends of mains, changes in directions greater than 135 degrees. Install cleanouts at a maximum of every 100 linear feet in all waste piping inside and outside of building.

Finished walls: Zurn Z-1468 stainless steel wall access cover complete with securing screw and bronze raised hex head plug.

Finished floors - Zurn Z-1400 - adjustable floor level cleanout - polished bronze top.

Carpeted floors - Zurn Z-1400 - adjustable floor level cleanout - polished bronze top - carpet marker.

Outside building - heavy-duty cleanout with cast iron top - threaded bronze or PVC tapered plug - set in reinforced concrete collar.

1.16 Traps: Furnish and install all traps required for fixtures or equipment, including traps not supplied with fixture or equipment.

Separately trap fixtures having waste connection as close to the fixture as possible. Deep seal traps where required.

Chromium plated cast brass exposed traps in finished areas.

1.17 Interior Hose Bibb: "Anti-siphon" automatic draining - integral vacuum breaker or 3/4" hose thread outlet - chrome finish on brass casing - metal wheel handle and loose tee key. Equal to Woodford Model 24.

1.18 Exterior Wall Hydrant: Non-freeze "anti-siphon" automatic draining - integral backflow preventer - chrome finish on brass casing - removable tee key - bronze interior parts with stainless steel stem - wall clamp - length to suit wall thickness. Equal to Woodford Model 67.

1.19 Wall Hydrant: Non-freeze "anti-siphon" automatic draining - integral backflow preventer - flush mounting wall box - chrome finish on brass casting - bronze interior parts with stainless steel stem - removable tee key - wall clamp - length to suit wall thickness. Equal to Woodford Model B60.

1.20 Piping Installation: Evenly spaced - run harmoniously with the building walls and ceilings. Installed in the desired location as indicated on drawings. Certain branch piping may be rerouted, providing rerouting does not alter intended design. Installed in strict accordance with best piping practice. Piping not sized on drawings shall be sized by the Engineer.

Provide unions and isolation valves at all equipment

Flame Spread 25  
Smoke Developed 50  
Fuel Contributed 50

Accessories, such as adhesives, mastics, cements, tapes, and glass cloth for fitting shall have the same

component ratings as listed above. All products or their shipping cartons shall bear a label indicating flame and smoke ratings in compliance with the listed ratings maximum. Any treatment of jackets or facings to impart flame and smoke-safety shall be permanent. The use of water-soluble treatments is prohibited. The Insulation Contractor shall certify, in writing, prior to installation, that all products to be used will meet the above criteria.

Edges of insulation and butt joints shall be taped with joint sealing tape. The vapor barrier for cold or dual temperature equipment and piping shall be secure at all times; no staples shall be used to close or secure jacket in these systems.

Adhesives, Sealers, Facings, and Vapor Barrier Coatings shall be compatible with material to which applied, and shall not corrode, soften, or otherwise attack the pipe or insulation materials in either the wet or dry state. Use only adhesives, sealers, facings, and vapor barrier coatings recommended by the approval manufacturers of insulation materials.

Thickness	System
1"	Domestic Hot Water (up to 1-1/4")
1-1/2"	Domestic Hot Water (1-1/2" and up)
1/2"	Domestic Cold Water (up to 1-1/4")
1"	Domestic Cold Water (1-1/2" and up)

1.05 Duct Insulation: Insulate all concealed round supply air ducts and outside air ducts with 1 1/2" thick R-6 minimum faced duct wrap fiberglass insulation (seal and tape all joints and seams). Round ductwork exposed in conditioned space does not require insulation.

1.06 Duct Liner: Line all rectangular supply and return air ducts and plenums with 1" thick, 1.5 pcf acoustical liner with a minimum R-value = 4.2. Liner to comply with ASTM C 1071, NFPA 90A, or NFPA 90B; and with NAIMA AH124, "Fibrous Glass Duct Liner Standard."

Apply antimicrobial erosion-resistant coating to the surface of the liner that will form the interior surface of the duct to act as a moisture repellent and erosion-resistant coating. Antimicrobial compound shall be tested for efficacy by an NRTL and registered by the EPA for use in HVAC systems.

Solvent or water-based primer adhesive to comply with NFPA 90A or NFPA 90B and with ASTM C 916.

Cupped-head, capacitor-discharge-weld pins shall consist of copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding. 0.135-inch dia. ASME B16.21, 1/2" length to suit depth of insulation indicated with integral 1-1/2-inch (38-mm) galvanized carbon-steel washer.

Insulation-retaining washers shall be self-locking formed from 0.016-inch-thick galvanized steel, aluminum or stainless steel with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.

Shop application of duct liner shall comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-19, "Flexible Duct Liner Installation."

PLUMBING SYSTEM COMPONENTS/PLUMBING FIXTURES 15400

1.01 Work Included: Installation of all plumbing system components including plumbing fixtures and trim.

1.02 Acceptable Manufacturers:

- A. Plumbing Fixtures (Vitreous China)
  1. Kohler
  2. American Standard
  3. Zurn
  4. Sloan
  5. Gerber

B. Plumbing Fixtures (Stainless Steel)

1. Elkay
2. Just

C. Faucets/Trim

1. Delta
2. Sloan
3. American Standard
4. Zurn

D. Closet Seats

1. Bernch
2. Chem

E. Mop Basin

1. Fiat (Molded Stone)
2. Williams (Terrazzo)

F. Ice Maker Box

1. Guy Gray

G. Gas-Fired Hot Water Heater

1. Lochinvar
2. State
3. A.O. Smith

1.03 Submittals: Submit shop drawings on plumbing fixtures, faucets, trim, and water heaters.

1.04 Plumbing Installation: Provide traps at all fixture waste connections. Provide stops at all individual plumbing fixtures and equipment. All exposed stops, wall escutcheons, and supplies shall be chrome plated. Install chrome plated escutcheons at all piping penetrations to finished materials. Install additional wall support framing for all wall hung fixtures (where carriers are not provided). Install offset P-traps from handicapped lavatories and sinks back at wall to allow maximum clearance for wheelchair access. Countertop handicapped sinks shall be supplied with rear center drain connection. Securely anchor all flush valves behind or within walls to be absolutely rigid and not subject to movement due to push or pull action of valve. All vitreous china fixtures shall be standard white color.

Certain fixtures installed for handicapped access may have different rough-in requirements. See the manufacturer's drawings for locations and mounting heights. All fixtures and accessories designated as handicapped shall conform to the Americans With Disabilities Act.

1.05 Plumbing Fixture Schedule: Refer to schedule on drawings for fixture and trim descriptions.

1.06 Gas-Fired Hot Water Heater:

Capacities as scheduled on the plans.

Standard Commercial Atmospheric Gas - Lochinvar CGN200-100 commercial atmospheric natural gas water heater with 80% thermal efficiency, glass lined steel tank, 150 PSI working pressure, tank saver anode rod, steel jacket with non-CFC foam insulation, multi-flue design, spark ignition, automatic reset high limit, motorized flow dampers, slide out burner tray, ASME T & P valve, 5 year limited warranty. ASME construction where specified.

Meets ASHRAE/IES 90.1, and UL listed, CSA certified.

REFRIGERATION/HEAT TRANSFER UNITS 15740

1.01 Work Included: Installation of packaged gas heating/DX electric cooling rooftop units and accessories.

1.02 Reference Standard: AHRI rated capacities. All equipment shall be UL or ETL approved. Gas fired equipment shall be AGA



AIR DISTRIBUTION 15840

1.01 Work Included: All duct distribution, grilles, registers, dampers, etc. required for a complete and operational system.

1.02 Reference Standards: Installation and fabrication of all ductwork shall conform with the latest edition SMACNA duct manuals, ASHRAE handbooks and local codes. Construct ductwork to NFPA 90A Standard for the Installation of Air Conditioning and Ventilating Systems, and NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems. Fans shall bear the AMCA Certified Ratings Seal and UL Label.

1.03 Acceptable Manufacturers:

- A. Ductwork (Rectangular)

1. Installing contractor

2. Wichita Sheetmetal

3. Engineer pre-approved equal
- C. Ductwork (Round Snap-Lock)

1. Wichita Sheetmetal

2. Engineer pre-approved equal
- D. Flexible Ductwork

1. Thermaflex Type M-KE

2. Atco
- F. Grilles, Registers, & Diffusers

1. Titus

2. Krueger

3. Carnes

4. Nailor

5. Greenheck
- G. Dampers & Duct Accessories

1. Ruskin

2. Pottorff

3. Price

4. Nailor

5. Greenheck

- H. Fans & Roof Hoods

1. Cook

2. Penn Ventilator Company

3. Greenheck

4. Carnes

5. Twin City

6. Greenheck

- I. Wall Louvers

1. Ruskin

2. Air Stream

3. Nailor

4. United Enertech

5. Greenheck

1.04 Submittals: Submit shop drawings of fans, roof hoods, grilles, registers and diffusers, flexible ductwork, dampers, fire/smoke dampers, and duct accessories.

1.05 Duct Sizes: All duct sizes indicated on plans are inside clear dimensions. Overall duct sizes shall be increased to accommodate duct liner (where specified). Where structural conditions deem it necessary to change the size or shape of any duct, the equivalent free area shall be maintained.

1.06 Duct Pressure Class: Low pressure class - static pressure in duct less than 2" wg and velocities less than 2400 fpm.

1.07 Duct Material: Galvanized steel lock-forming quality, having a zinc coating of 1.25 ounces per square foot for each side (coating Class G90). Concealed round ductwork shall be snap-lock (low-pressure only) or spiral construction. Exposed round ductwork shall be spiral construction. Low pressure elbows shall be 4-piece adjustable seam type with a radius of not less than (1) times width of duct on centerline.

1.08 Exposed Ductwork: All exposed ductwork shall be mill phosphatized metal. Finish of all exposed ductwork shall be suitable for painting by the General Contractor.

1.09 Joints: Seal all longitudinal and transverse joints on concealed ductwork, with foil back tape (Hardcast Foil-Grip 1402 as manufactured by Carlisle Coating and Waterproofing, Inc., Design Polymetrics DP 1010 duct sealant or equal. Screw or rivet all round duct joint connections. [Exterior ductwork shall be sealed water-tight with commercial duty waterproof sealant and insulated per specification section 15250.]

1.10 Flexible Ducts: Flexible round ducts, not to exceed five (5) foot length, may be used at connection to supply air ceiling diffusers and where shown on the drawings. NOTE: Flex duct shall not be used when connection is to a fire damper and shall only be used in concealed, accessible areas. Install with only one elbow and support with strap hanger (do not lay on ceiling). Fiberglass insulating blanket with vapor barrier.

1.11 Flexible Duct Connections to Fan Powered Mixing Boxes: UL 181, Class I air duct that meets the requirements of NFPA 90A and 90B. All metal non-combustible inner core constructed of heavy gauge corrugated aluminum with air-tight continuous lock seams. The flexible inner core is wrapped in a thick blanket of fiberglass insulation (R-4.2) and sheathed in a durable polyethylene jacket. Equal to ATCO UPC #018.

1.12 Grilles, Registers, and Diffusers: Provide in accordance with schedule or notations on drawings.

1.13 Dampers: Provide balance dampers at all duct branches to individual diffusers, grilles, and registers (unless scheduled with diffuser). Dampers shall be locking quadrant type.

Provide damper rod extension and ceiling flange where dampers are concealed and inaccessible.

1.14 Dampers and Duct Accessories:

- A. Balancing Dampers: Balancing dampers shall be provided for each supply, return, and exhaust grille and diffuser as indicated on the schedule or as shown on the plans.

Manual volume balancing dampers shall be locking quadrant type and built in accordance to SMACNA standards for low pressure duct systems. Blades and frames shall be galvanized steel construction with molded synthetic bearings. Dampers shall be single or opposed blade type.

Ruskin Model MD25 or approved equal (rectangular duct - up to 36"W x 12"H).

Ruskin Model MD35 or approved equal ( rectangular duct - up to 48"W x 48" H).

Ruskin Model MDRS25 or equal (round duct - up to 20" dia.).

B. Fire Dampers: Provide dynamic fire dampers of size indicated on drawings. Each fire damper shall be 1 1/2-hour fire rated under UL Standard 555, and consequently labeled as such. Fire dampers shall be provided with integral 20 ga. galvanized steel factory sleeve and mounting angles. Curtain Type 24 ga. galvanized steel blades shall be compactly grouped in the head of the frame out of the airstream. 212 Degree F. fusible link (provide elevated temperature rating where required). Fire dampers shall be approved for vertical or horizontal installations. See drawings for correct airflow configuration.

Complete installation shall conform to manufacturers installation details and UL requirements. Install necessary break-away duct/sleeve connections as required.

Ruskin Model DIBD20 Style B or approved equal (rectangular duct).

Ruskin Model DIBD20 Style LR or approved equal (round duct).

Ruskin Model DIBD20 Style G or approved equal (grille connection).

C. Ceiling Fire Dampers: Provide ceiling fire dampers of size indicated on drawings. Each ceiling damper shall be 3-hour fire rated for UL fire rated floor/ceiling and roof/ceiling assemblies. 20 ga. galvanized steel frame and integral blades. UL classified insulation as required. 212 Degree F. fusible link (provide elevated temperature rating where required). Furnish and install a UL listed thermal insulating blanket on all ceiling grilles or diffusers having horizontal surfaces exposed through the ceiling membrane. Complete installation shall conform to manufacturers installation details and UL requirements. Provide with extended frame as required. Install with blades parallel to airflow to prevent obstructing flow of air.

Ruskin Model CFD or approved equal (Rectangular Duct). Ruskin Model CFDR or approved equal (Round Duct).

D. Backdraft Dampers: Provide backdraft dampers of size indicated on drawings. 4" Deep extruded aluminum (.081" thickness) frame with aluminum vinyl edged blades and dustproof shaft bearings. Blades shall incorporate an adjustable counterbalance and shall be suitable for horizontal or vertical mounting. Ruskin Model CBD4 or approved equal.

E. Control Dampers: Provide automatic control dampers of size indicated on drawings. Automatic dampers, where not furnished under Temperature Control Section (15900) shall be equal to Ruskin Model CD36 or approved equal. Outside air, low leakage type dampers, shall be equal to Ruskin Model CD50 or approved equal. Dampers shall be parallel blade type action with factory installed 120-volt electric actuator. Actuator shall be a normally closed two-position (open/closed) type with a maximum duration from full close to full open of 20 seconds. A maximum travel adjustment shall be provided for field balancing. See electrical plans for wiring and interlocks.

All wiring by the Electrical Contractor.

F. Access Doors: Access doors shall be double skin, insulated, hinged type with locking latches. 22 Ga. galvanized steel double skin door, 1" fiberglass insulation, continuous piano hinge, foam gasketing between door and frame, and between duct connection and frame. Maximum leakage of .25 CFM/sq. ft. at 1" W.G. static pressure. Built to SMACNA standards.

Ruskin Model ADH22 or approved equal.

1.15 Fans: See schedule on the drawings. Model numbers below are based on Cook to establish minimum criteria - equals by listed acceptable manufacturers.

Provide fans of the type, capacity and size as scheduled/indicated on the drawings. Provide complete wiring diagrams for field wiring and controls connections.

Heavy duty 1750 RPM motors - vibration eliminators.

Type I - Cook Gemini - centrifugal cabinet fan - ceiling or in-line installation - high quality permanently lubricated motor - removable motor and blower assembly - acoustically insulated heavy gage galvanized steel housing - adjustable mounting brackets - outlet flange (see drawings for discharge arrangement) - integral backdraft damper - white painted steel perforated face ceiling grille.

NOTES:

1. All direct drive motors shall be provided with factory or field mounted speed controllers (for balancing purposes).
2. All fans shall be supplied with internal anti-vibration mounts.
3. All fans shall be supplied with factory mounted disconnect switches.
4. All prefabricated factory curbs shall be minimum 12" high. Curbs shall match roof slope and be compatible with roof construction (see architectural plans).
5. See electrical drawings for fan interlocks and control of fans. All electrical wiring by Electrical Contractor.

All electrical wiring by Electrical Contractor.

1.16 Roof Hoods: See notes on the drawings.

Type I - Cook Type PR or approved equal - low profile type gravity intake/relief ventilator - all aluminum construction - weatherproof - bird screen - factory curb (curb shall match roof slope and be compatible with roof construction).

1.17 Wall Louvers: 4" Deep extruded aluminum (.125" thickness) frame with stationary fixed 45-degree weatherproof drainable blades at approximately 5" centers. Factory assembled components/sections. Minimum 54" free area design. Architecturally styled with hidden mullions. Wall flange. Bird screen. Factory prime coat for field painting. Ruskin Model ELF375DXH or approved equal.

date issued: 03-03-2023

Grant County Health Department

Lots 1-5, Block 20, Medford, OK



22277.00 - 622  
OKLAHOMA REGISTRATION NUMBER: 5682  
Integrated Consulting  
Engineers, Inc.  
349 South Hydraulic • Wichita, KS 67211  
316.264.3588 • 316.264.3948 • www.icengrngineers.net



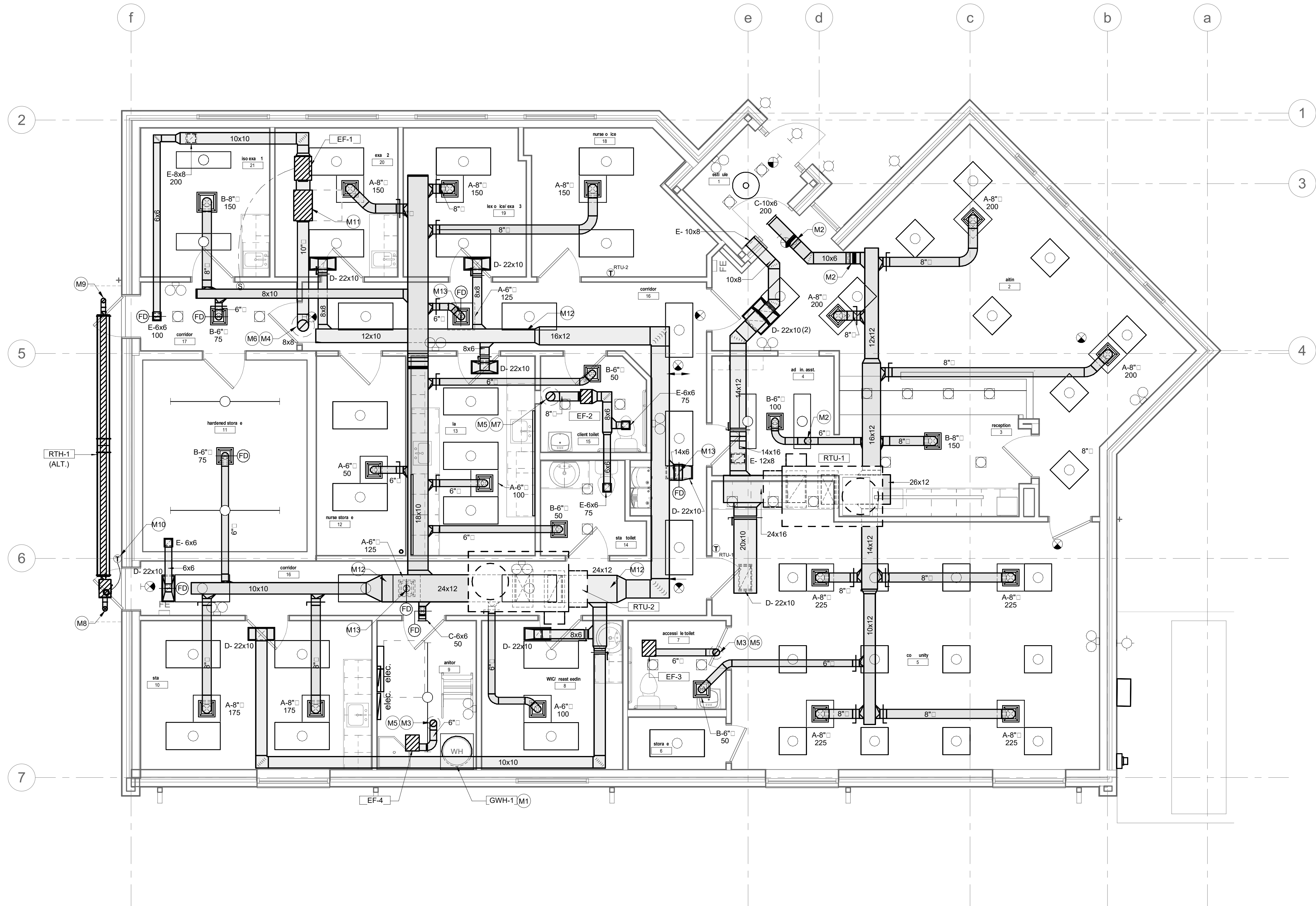
MP1.5



MECHANICAL PLAN NOTES

- M1 EXTEND GAS WATER HEATER VENT / INTAKE PIPING UP THROUGH ROOF AND TERMINATE WITH CONCENTRIC TERMINATION KIT PER MANUFACTURER RECOMMENDATIONS. MAINTAIN MINIMUM OF 10'-0" CLEARANCE FROM ANY O.A. INTAKES. COORDINATE EXACT LOCATION WITH G.C. PRIOR TO INSTALLATION.
- M2 OFFSET DUCT AS NEEDED TO AVOID DUCTWORK / STRUCTURE IN THIS AREA. COORDINATE ROUTING WITH ARCHITECTURAL SOFFIT.
- M3 EXTEND 6" E.A. DUCTWORK UP THROUGH ROOF AND TERMINATE WITH COOK ROOF HOOD MODEL PR-8. SEAL ROOF PENETRATION WEATHER TIGHT.
- M4 MAINTAIN A MINIMUM OF 25'-0" FROM ANY O.A. INTAKE.
- M5 MAINTAIN A MINIMUM OF 10'-0" FROM ANY O.A. INTAKE.
- M6 EXTEND 10" E.A. DUCTWORK UP THROUGH ROOF AND TERMINATE WITH COOK ROOF HOOD MODEL PR-12. SEAL ROOF PENETRATION WEATHER TIGHT.
- M7 EXTEND 8" E.A. DUCTWORK UP THROUGH ROOF AND TERMINATE WITH COOK ROOF HOOD MODEL PR-8. SEAL ROOF PENETRATION WEATHER TIGHT.
- M8 EXTEND INTAKE PIPING UP THROUGH ROOF AND TERMINATE PER MANUFACTURER RECOMMENDATIONS.
- M9 EXTEND VENT PIPING UP THROUGH ROOF AND TERMINATE PER MANUFACTURER RECOMMENDATIONS.
- M10 PROVIDE THERMOSTAT SUITABLE FOR OUTDOOR ENVIRONMENT.
- M11 PROVIDE MAGNA / PACK HEPA FILTER HOUSING OR EQUAL. FILTER SIZE TO FIT 12"x12" FILTERS. USE FILTER 12XH-12212Z12 OR EQUAL.
- M12 COORDINATE DUCTWORK ROUTING WITH STRUCTURAL JOISTS.
- M13 COORDINATE SUPPLY / RETURN GRILLE INSTALLATION WITH FIRE RATED LID AND LAY-IN CEILING.

NOTE:  
ISOLATION ROOM EXHAUST FAN TO RUN CONTINUOUSLY WHILE OCCUPIED. FAN TO RUN FOR AN ADDITIONAL 30 MINUTES WHEN UNOCCUPIED.



A HVAC PLAN  
0 2 4 1/4" = 1'-0"  
NORTH

date issued: 03-03-2023

Grant County Health Department  
Lots 1-5, Block 20, Medford, OK

CORBIN MERZ HANEY  
ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701  
WWW.CORBINMERZHANEY.COM  
PH: (580) 233-2362

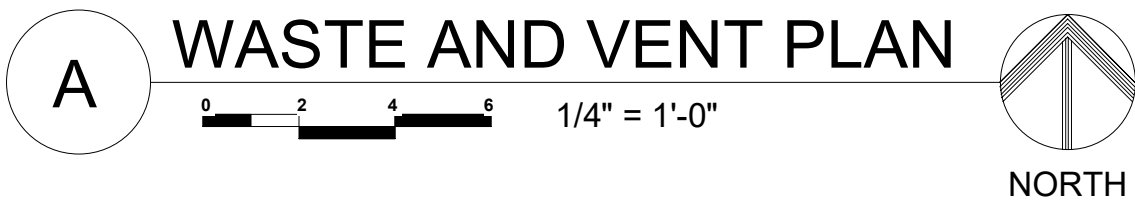
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M1.1



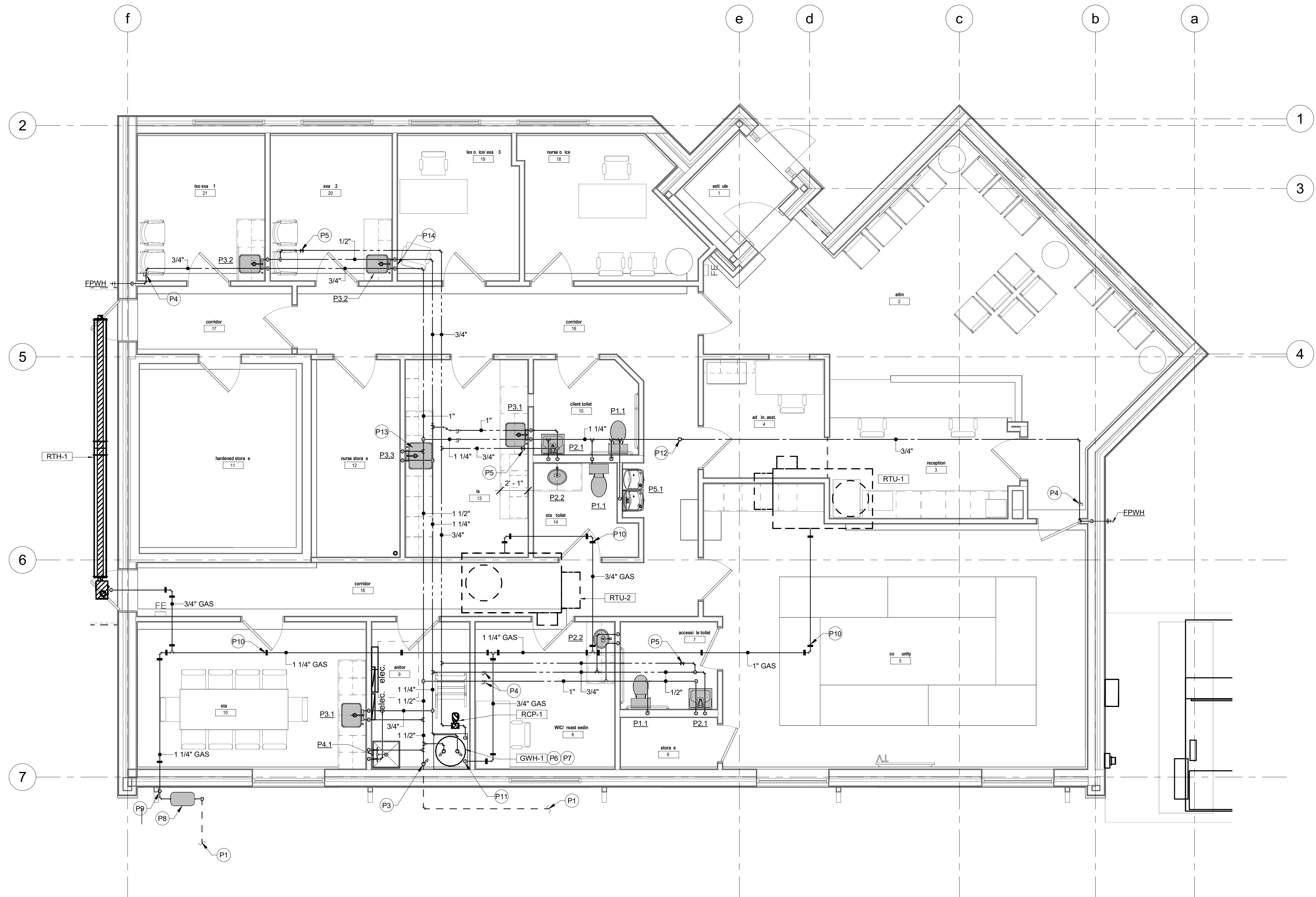
P1	SEE CIVIL SITE PLAN FOR CONTINUATION.
P2	EXTEND T&P VALVE PIPING TO FLOOR DRAIN AND TERMINATE WITH 2" AIR GAP.
P14	PROVIDE ROUGH-INS FOR FUTURE BAR SINK. COORDINATE LOCATION WITH ARCHITECTURAL.
P15	FLOOR DRAIN TO HAVE SQUARE STRAINER, COORDINATE WITH ARCHITECTURAL FINISHES FOR EXACT DIMENSION REQUIREMENTS.





PLUMBING PLAN NOTES

- P1 SEE CIVIL SITE PLAN FOR CONTINUATION.
- P3 PROVIDE AND INSTALL BUILDING SHUT OFF VALVE IN PIPE RISER.
- P4 PROVIDE BALL VALVE, (TYPICAL).
- P5 PROVIDE CIRCUIT SETTER BALANCED TO 0.5 GPM.
- P6 G.C. TO PROVIDE 4" EQUIPMENT PAD BELOW WATER HEATER. REFER TO WATER HEATER DETAIL FOR ADDITIONAL INFORMATION.
- P7 PROVIDE BALL VALVES IN 1-1/4" CW / HW PIPING PRIOR TO CONNECTION TO WATER HEATER.
- P8 GAS METER SHALL BE INSTALLED PER UTILITY PROVIDER STANDARDS. SEE GAS LOAD SCHEDULE FOR TOTAL CONNECTED LOAD.
- P9 ROUTE 1-1/4" GAS UP EXPOSED ON EXTERIOR WALL TO ROUTE ALONG ROOF.
- P10 PROVIDE MIRO SUPPORT FOR ROOF MOUNTED GAS PIPING. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
- P11 DROP 3/4" GAS PIPING DOWN THROUGH ROOF TO SERVE WATER HEATER.
- P12 EXTEND 3/4" CW PIPING UP THROUGH ROOF TO WOODFORD ROOF HYDRANT MODEL SRHMS. INSTALL PER MANUFACTURER RECOMMENDATIONS. SEAL PENETRATION WEATHER TIGHT.
- P13 LAB SINK TO BE PROVIDED WITH SINK MOUNTED EYE WASH STATION. REFER TO PLUMBING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION AND INSTALL EYE WASH PER MANUFACTURER RECOMMENDATIONS. CONTRACTOR IS TO COORDINATE REQUIRED HOLE DRILLING FOR FAUCET HOLES BETWEEN SINK, FACUET, AND EYE WASH PRIOR TO INSTALLATION OF SINK.
- P14 PROVIDE ROUGH-INS FOR FUTURE BAR SINK. COORDINATE LOCATION WITH ARCHITECTURAL.



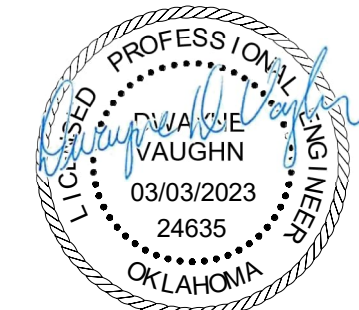
A PLUMBING PLAN  
0 2 4 6 1/4" = 1'-0"  
NORTH

date issued: 03-03-2023

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Lots 1-5, Block 20, Medford, OK

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ARCHITECTURE INTERIOR DESIGN  
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P2.1










# EQUIPMENT CONNECTION SCHEDULE NOTES

LIGHT FIXTURE SCHEDULE NOTES	
ICE	
GENERAL NOTES:	
a.	GENERAL CONTRACTOR SHALL PROVIDE FIREPROOFING AROUND RECESSED FIXTURES INSTALLED IN FIRE RATED CEILING PER U.L. REQUIREMENTS. ELECTRICAL CONTRACTOR SHALL COORDINATE.
b.	SEE SPECIFICATIONS FOR LAMP AND BALLAST TYPE. VERIFY LAMP COLOR WITH ARCHITECT PRIOR TO ORDERING.
c.	PROVIDE ARROWS AND FACES AS INDICATED BY THE DRAWINGS.
d.	MANUFACTURERS LISTED IN THIS SCHEDULE OR BY WRITTEN ADDENDUM WILL BE THE ONLY APPROVED MANUFACTURERS TO BID THE LIGHTING FIXTURES FOR THIS PROJECT. CONTRACTORS AND SUPPLIERS USING PRICING FROM MANUFACTURERS NOT LISTED ON SCHEDULE OR BY ADDENDUM DO SO AT THEIR OWN RISK.
e.	ALTERNATE LIGHT FIXTURE PACKAGES SHALL BE CONSIDERED FOR APPROVAL PENDING THE FOLLOWING INFORMATION IS PROVIDED TO THE ENGINEER OF RECORD SIX BUSINESS DAYS PRIOR TO THE PROJECT BIDDING: FIXTURE CUT SHEETS FOR ALL PROPOSED EQUAL FIXTURES. THE CUT SHEETS SHALL HAVE THE SPECIFIC MODEL NUMBER INDICATED ON EACH INDIVIDUAL CUT SHEET PROVIDE A COVER PAGE WITH ALL FIXTURE MODEL NUMBERS LISTED THE COVER PAGE AND ALL INDIVIDUAL FIXTURE CUT SHEETS SHALL BE COMBINED INTO A SINGLE PDF.
	PACKAGES THAT ARE SUBMITTED THAT DO NOT MEET THE CRITERIA ABOVE WILL NOT BE REVIEWED FOR APPROVAL.
f.	EC TO PROVIDE ALL LOW VOLTAGE WIRING FOR 0-10V DIMMABLE FIXTURES. PROVIDE PINK AND PURPLE PAIR OF WIRES TO CONNECT LUMINAIRES, DRIVERS AND DEVICES.
LIGHT FIXTURE SCHEDULE NOTES:	
①	EC SHALL PROVIDE A 90-MINUTE BATTERY BACKUP.
②	COORDINATE FIXTURE FINISH WITH ARCHITECT PRIOR TO ORDERING.
③	FIXTURE SHALL BE MOUNTED ON A 1" ROUND TAPERED STEEL POLE. THE POLE SHALL BE PROVIDED WITH VIBRATION DAMPER. REFER TO POLE BASE DETAIL B/E.1.2 FOR ADDITIONAL INFORMATION. COORDINATE FINISH OF POLE WITH ARCHITECT PRIOR TO ORDERING.
④	EC SHALL COORDINATE FIXTURE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
⑤	TAPE LIGHT SHALL BE PROVIDED WITH AN EXTRUDED ALUMINUM MOUNTING CHANNEL. PROVIDE WITH FROSTED LENS. COORDINATE EXACT LENGTH WITH ARCHITECT PRIOR TO ORDERING. PROVIDE ALL ACCESSORIES FOR A FULLY FUNCTIONING SYSTEM.
⑥	EC SHALL PROVIDE (1) E26 SCREW-IN LAMP. THE LAMP SHALL BE PROVIDED WITH A MINIMUM OF 500 LUMENS.

# GENERAL NOTES

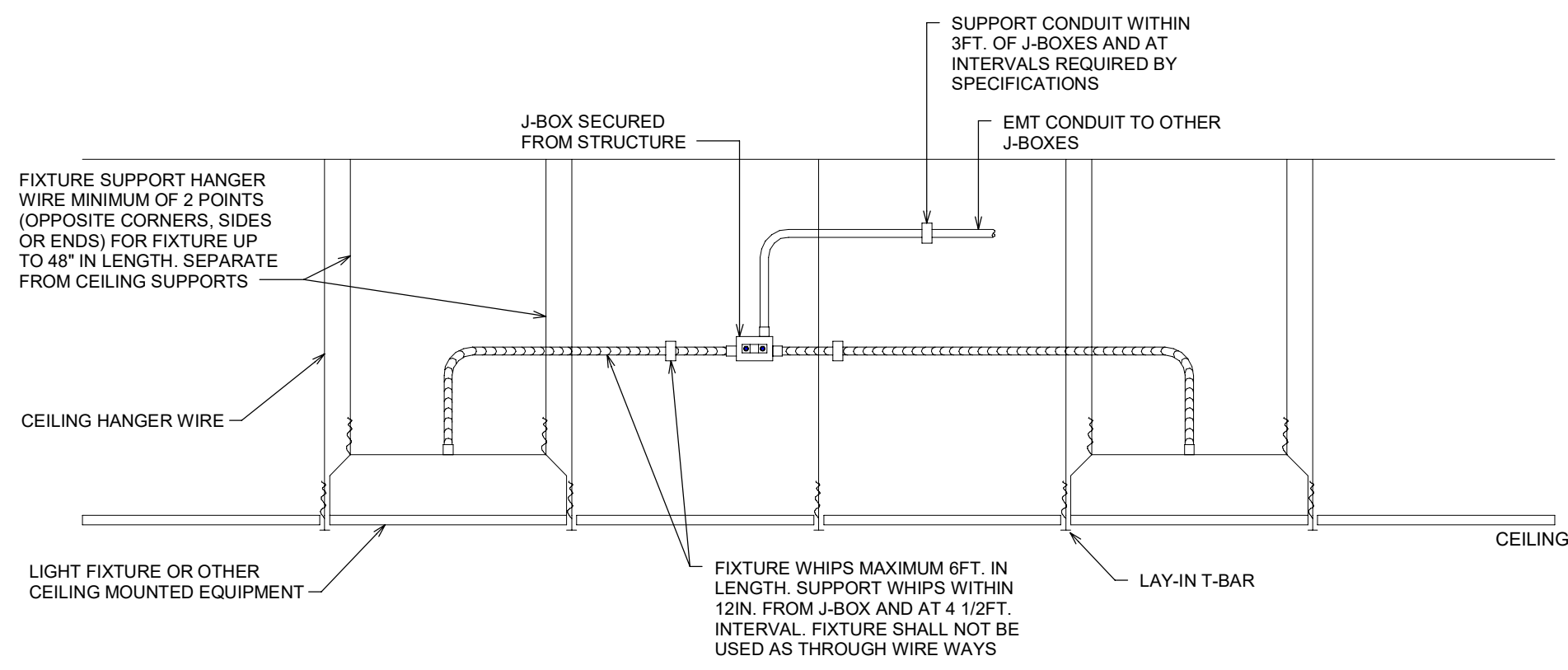
ICE	
1.	VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.
2.	REFER TO RELATED ARCHITECTURAL, MECHANICAL, AND STRUCTURAL DRAWINGS FOR RELATED INFORMATION.
3.	REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
4.	COORDINATE OUTLET BOX LOCATIONS WITH MASONRY TO MINIMIZE CUTTING OF BRICK OR BLOCK.
5.	WALL MOUNTING HEIGHTS TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED.
6.	E. C. SHALL REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.
7.	CONDUIT RUN W/CONDUCTORS AS INDICATED, CONDUIT SIZE AS REQUIRED. CONDUIT RUN IN PANEL DEVICES/SIZE AS INDICATED (AMP/ POLE). CIRCUIT WITHOUT INDICATION IS ROUTED TO 20A, 1P. BREAKER, CIRCUIT COUNTER COUNT IS NOT SHOWN ON THE DRAWINGS FOR #12 SIZE CONDUCTORS. ELECTRICAL CONTRACTOR SHALL PROVIDE NUMBER OF CONDUCTORS AS REQUIRED FOR CIRCUITING. SWITCHING AND/OR CONTROL AS REQUIRED. ALL REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE SHALL BE FOLLOWED FOR CONDUIT FILL AND CONDUCTOR DE-RATING IF APPLICABLE.
8.	EXIT LIGHTS AND EMERGENCY LIGHT FIXTURES WITH BATTERY BACKUP SHALL BE CIRCUITED WITH UNSWITCHED HOT CONDUCTOR FROM AREA LIGHTING CIRCUIT FOR POWER SENSING AND CHARGING. IN ADDITION, PROVIDE SWITCHED CIRCUITS TO ANY REQUIRED EMERGENCY LIGHT FIXTURES REQUIRING SAME FOR LOCAL AREA CONTROL.
9.	"C" INDICATED ADJACENT TO DEVICE INDICATES DEVICE IS MOUNTED ABOVE BACKSPLASH OF COUNTER TOP. VERIFY EXACT HEIGHT WITH ARCHITECTURAL PLANS AND ELEVATIONS.
10.	A GROUND CONDUCTOR SIZED PER N. E. C. ARTICLE 250 IS REQUIRED IN ALL POWER, RECEPTACLE, AND LIGHTING CIRCUITS. GROUND CONDUCTORS ARE NOT SHOWN ON DRAWINGS.
11.	WHERE AREA SMOKE DETECTORS ARE SHOWN ON THE DRAWINGS ELECTRICAL CONTRACTOR SHALL NOT LOCATE SMOKE DETECTORS CLOSER THAN 4 FEET FROM ANY MECHANICAL AIR SUPPLY OR RETURN DIFFUSER, GRILL OR REGISTER PER NFPA. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR LOCATION OF DETECTOR.
12.	AT EVERY SMOKE OR FIRE/SMOKE DAMPER ELECTRICAL CONTRACTOR SHALL INSTALL A DUCT SMOKE DETECTOR AND RELAY TO CLOSE DAMPER AND SHUT DOWN ASSOCIATED MECH UNIT ON ACTIVATION OF DETECTOR. REFER TO MECHANICAL PLANS AND SPECIFICATIONS AND/OR MECHANICAL CONTRACTOR FOR LOCATIONS AND CONTROL REQUIREMENTS. PROVIDE 120V. CONTROL POWER AT DAMPER IF PROVIDED. IF REQUIRED, THE FIRE/SMOKE DAMPER SYSTEM SUPPLIER, MECHANICAL CONTRACTOR SHALL MODIFY DUCTWORK WHERE FIRE/SMOKE DAMPERS ARE LOCATED AS REQUIRED TO INSTALL DUCT SMOKE DETECTOR IN THE DUCTWORK AT THE FIRE/SMOKE DAMPER. IF DAMPERS ARE NOT LOCATED AT THE DUCTWORK DAMPERS MAY BE SHOWN ON THE DRAWINGS. HOWEVER, ALL SMOKE OR FIRE/SMOKE DAMPERS SHALL BE PROVIDED WITH ABOVE REQUIREMENTS.

SPECIAL OUTLET SCHEDULE	
ICE	
SYMBOL	DESCRIPTION
 A	PROVIDE A RECESSED TV BOX WITH (2) DUPLEX RECEPTACLES AND (1) 1" CONDUIT STUBBED UP TO AN ACCESSIBLE CEILING. THE BOX SHALL BE EQUAL TO ARLINGTON TVBSS07. COORDINATE MOUNTING HEIGHT WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN. PROVIDE WITH A CUSTOM COVERPLATE AS REQUIRED.
 B	PROVIDE A FLOOR BOX WITH (2) DUPLEX RECEPTACLES AND A 1" EMPTY CONDUIT STUBBED UP TO AN ACCESSIBLE CEILING FOR FUTURE OWNER PROVIDED DATA. THE FLOOR BOX SHALL BE EQUAL TO WIREMOLD RFBA SERIES 4-GANG. COORDINATE COVER FINISH WITH THE ARCHITECT PRIOR TO ORDERING. COORDINATE FINAL FLOOR BOX LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN.
 C	PROVIDE A 5-30R, 30A RECEPTACLE FOR CONNECTION TO OWNER PROVIDED DATA RACK. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
 D	THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A GFCI DEAD FRONT DEVICE AHEAD OF THE RECEPTACLE FEEDING A PIECE OF EQUIPMENT. THE DEAD FRONT DEVICE SHALL BE EQUAL TO HUBBELL GFBFST20. VERIFY THE FINISH WITH THE ARCHITECT PRIOR TO ORDERING.

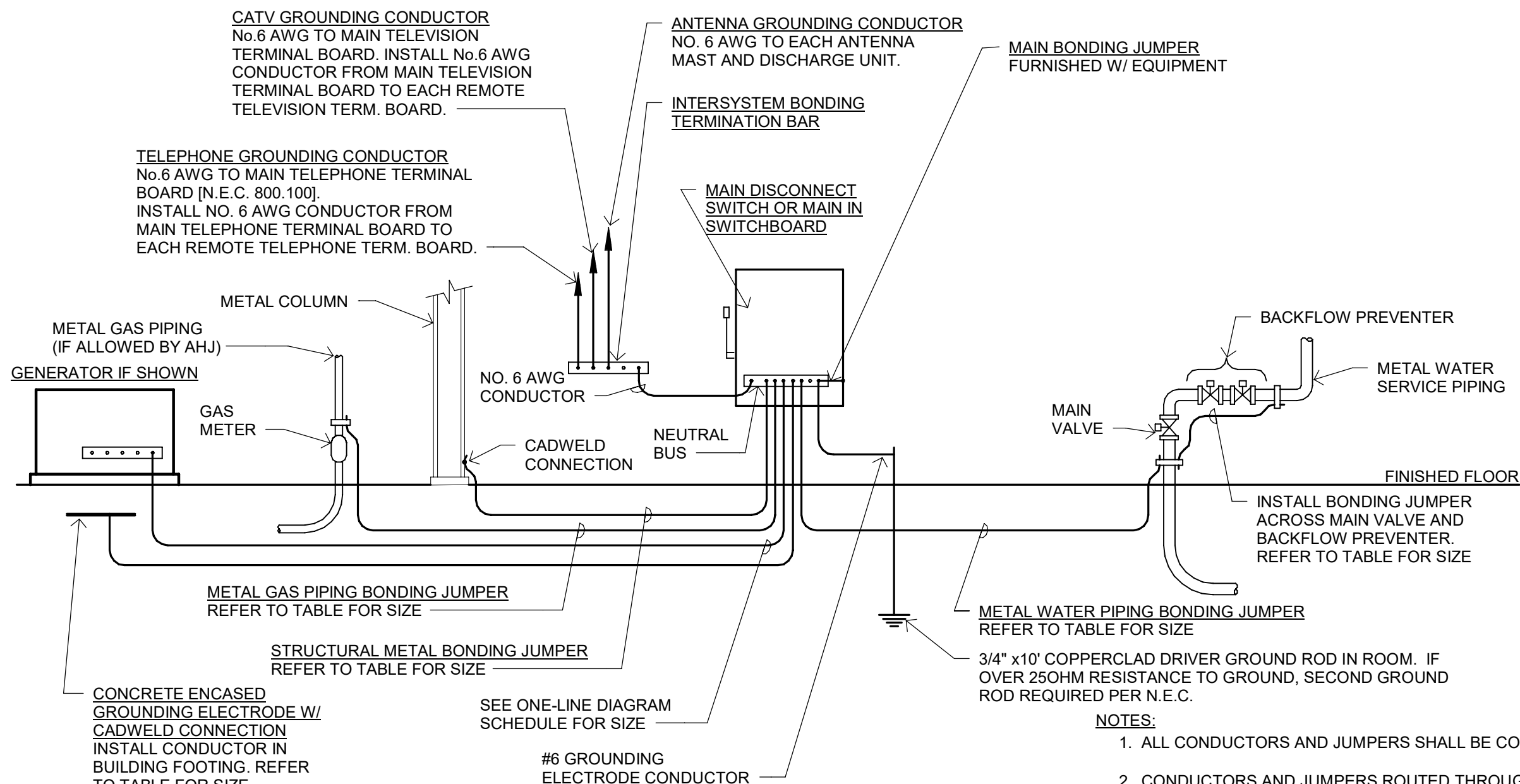
LIGHTING MANAGEMENT DEVICE SCHEDULE	
ICE	
SYMBOL	DESCRIPTION
 A	FURNISH AND INSTALL A WALL MOUNTED LINE VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSOR. DEVICE SHALL BE EQUAL TO STEINEL DT VS 1. COORDINATE COLOR WITH OWNER/ARCHITECT PRIOR TO ORDER.
 B	FURNISH AND INSTALL A WALL MOUNTED LINE VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSOR WITH DIMMER SWITCH. DEVICE SHALL BE EQUAL TO STEINEL DT VS DIM. COORDINATE COLOR WITH OWNER/ARCHITECT PRIOR TO ORDER.
 C	PROVIDE A CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR EQUAL TO STEINEL DT QUATTRO DIM-24. PROVIDE POWER PACK AND LOW VOLTAGE WIRING AS REQUIRED.







**C LIGHT FIXTURE MOUNTING DETAIL**  
SCALE: N.T.S.



SERVICE SIZE	SIZE OF CONDUCTOR
≤90A	8
100-150A	6
200A	4
225A-300A	2
400A	1/0
425-500A	2/0
≥525A	3/0

- NOTES:**
1. ALL CONDUCTORS AND JUMPERS SHALL BE COPPER.
  2. CONDUCTORS AND JUMPERS ROUTED THROUGH FLOOR SLABS AND IN EARTH SHALL BE INSTALLED IN RIGID PVC CONDUIT.
  3. ALL GROUNDING AND BONDING CONNECTIONS SHALL BE ACCESSIBLE AND LOCATED ADJACENT TO VALVES, BACKFLOW PREVENTER AND GAS METER AS SHOWN.
  4. CONDUCTOR OR JUMPER INSTALLED IN METALLIC RACEWAY SHALL BE BONDED TO RACEWAY AT EACH END.

<b>Panel: A</b>		Load Type:		Voltage:	208/120	A.I.C. Rating:	10000A
		L- Lighting, R-Receptacle, M-Motors, HO- Hotel K-Kitchen, H-HVAC, MI- Misc		Phase:	Three	Mains Rating:	400A
				Wires:	4W + G	Main Breaker Size:	N/A
				Enclosure:	Type 1	Panel Lugs:	Main Lug Only
				Sections:	Two	Mounting:	Surface

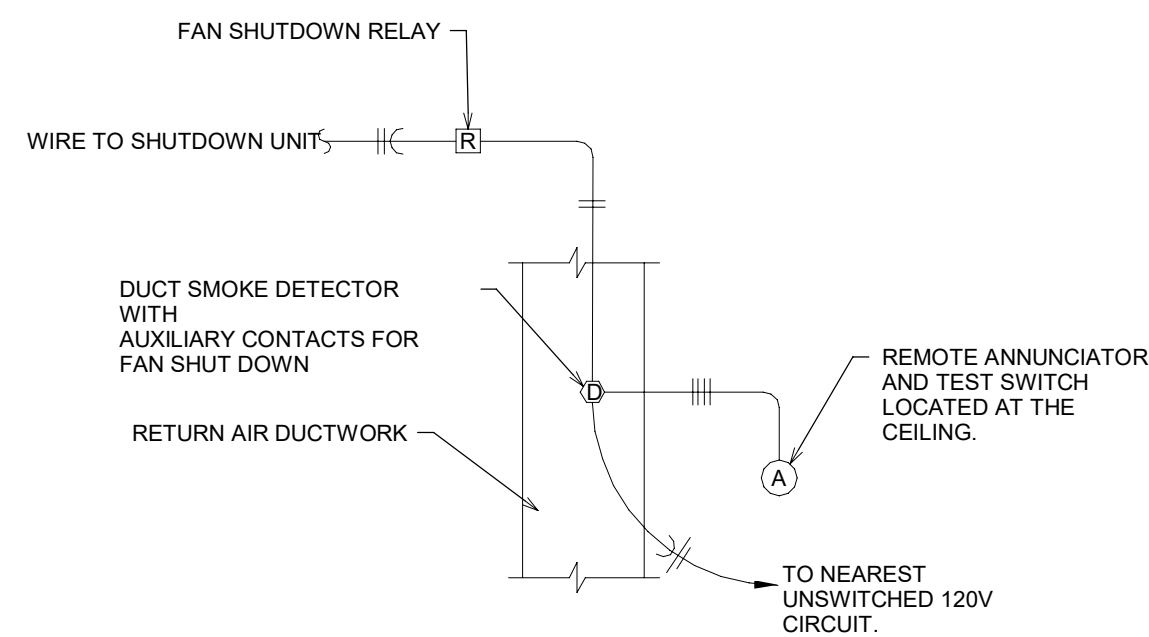
  

Circ No.	Load Description	Trip	Poles	Load	A	B	C	Load	Poles	Trip	Load Description	Circ No.
1	RCPT - STAFF CT	20	1	R	360	500		MI	1	20	TELEPHONE BOARD	2
3	RCPT - STAFF CT	20	1	R				MI	1	30	DATA RACK	4
5c	MICROWAVE - STAFF	20	1	R			1500	H	3	50	RTU-1	6
7c	FRIDGE - STAFF	20	1	R	500	4558		H				8
9	RCPT - STAFF	20	1	R			1260	H				10
11	RCPT - JANITOR/ WIC	20	1	R			1260	H	3	45	RTU-2	12
13	RCPT - COMMUNITY	20	1	R	1260	3958		H				14
15	RCPT - COMMUNITY	20	1	R			1260	H				16
17	RCPT - COMMUNITY CT	20	1	R			360	M	1	20	EF-1	18
19	RCPT - ADMIN ASST	20	1	R	900	360		H	1	15	RTH-1	20
21	RCPT - RECEPTION	20	1	R			900	MI	1	20	GW-1/RCP-1	22
23	RCPT - RECEPTION CT	20	1	R			360	L	1	20	LTG - SITE	24*
25	RCPT - RECEPTION CT	20	1	R	360	1150		L	1	20	LTG - EXAM/HALLWAY/STAFF	26
27	SHREDDER - RECEPTION	20	1	R			500	L	1	20	LTG - LOBBY/COMMUNITY	28
29	COPER - RECEPTION	20	1	R			1500	L	1	20	LTG - CANOPY/EXTERIOR	30*
31	RCPT - WAITING	20	1	R	900	600		L	1	20	LTG - LAB/STORAGE/TOILET	32
33	RCPT - NURSE OFFICE	20	1	R			1260	MI	2	40	GENERATOR AUXILIARY LOADS	34
35	RCPT - EXAM 2/ EXAM 3	20	1	R			1440	MI				36
37	RCPT - ISO EXAM	20	1	R	900	500		MI	1	20	EXTERIOR SIGNAGE	38
39	RCPT - CANOPY	20	1	R			360	MI	1	20	SPARE	40
41	RCPT - RX/HALL/LAB	20	1	R			1260	MI	1	20	SPARE	42
43	RCPT - LAB	20	1	R	360			MI	1	20	SPARE	44
45	MINI FRIDGE - LAB	20	1	R			500	MI	1	20	SPARE	46
47	RCPT - LAB	20	1	R			360	MI	1	20	SPARE	48
49	RCPT - LAB	20	1	R	360			MI	1	20	SPARE	50
51	RCPT - LAB	20	1	R			500	MI	1	20	SPARE	52
53	FREEZER - LAB	20	1	R			1000	MI	1	20	SPARE	54
55	RCPT - LAB	20	1	R	500			MI	1	20	SPARE	56
57	FRIDGE - LAB	20	1	R			500	MI	1	20	SPARE	58
59	RCPT - LAB	20	1	R			360	MI	1	20	SPACE	60
61	RCPT - LAB	20	1	R	360			MI	1	20	SPACE	62
63	RCPT - LAB	20	1	R			500	MI	1	20	SPACE	64
65	RCPT - ROOF TOP	20	1	R			180	MI	1	20	SPACE	66
67	WATER COOLER	20	1	R	500			MI	1	20	SPACE	68
69	FRIDGE - COMMUNITY	20	1	R			500	MI	1	20	SPACE	70
71	RCPT - LAB	20	1	R			500	MI	1	20	SPACE	72
73	RCPT - LAB	20	1	R	5000			MI	1	20	SPACE	74
75	SPARE	20	1	L				MI	1	20	SPACE	76
77	SPARE	20	1	L				MI	1	20	SPACE	78
79	SPARE	20	1	L				MI	1	20	SPACE	80
81	SPARE	20	1	L				MI	1	20	SPACE	82
83	SPARE	20	1	L				MI	1	20	SPACE	84
a - Arc Fault Breaker				Total (KVA)	23.886	23.148	23.44521333					
b - Shunt Trip Breaker				Total Connected (KVA):	70.48							
c - GFCI Breaker				Total Connected (Amps):	195.63							

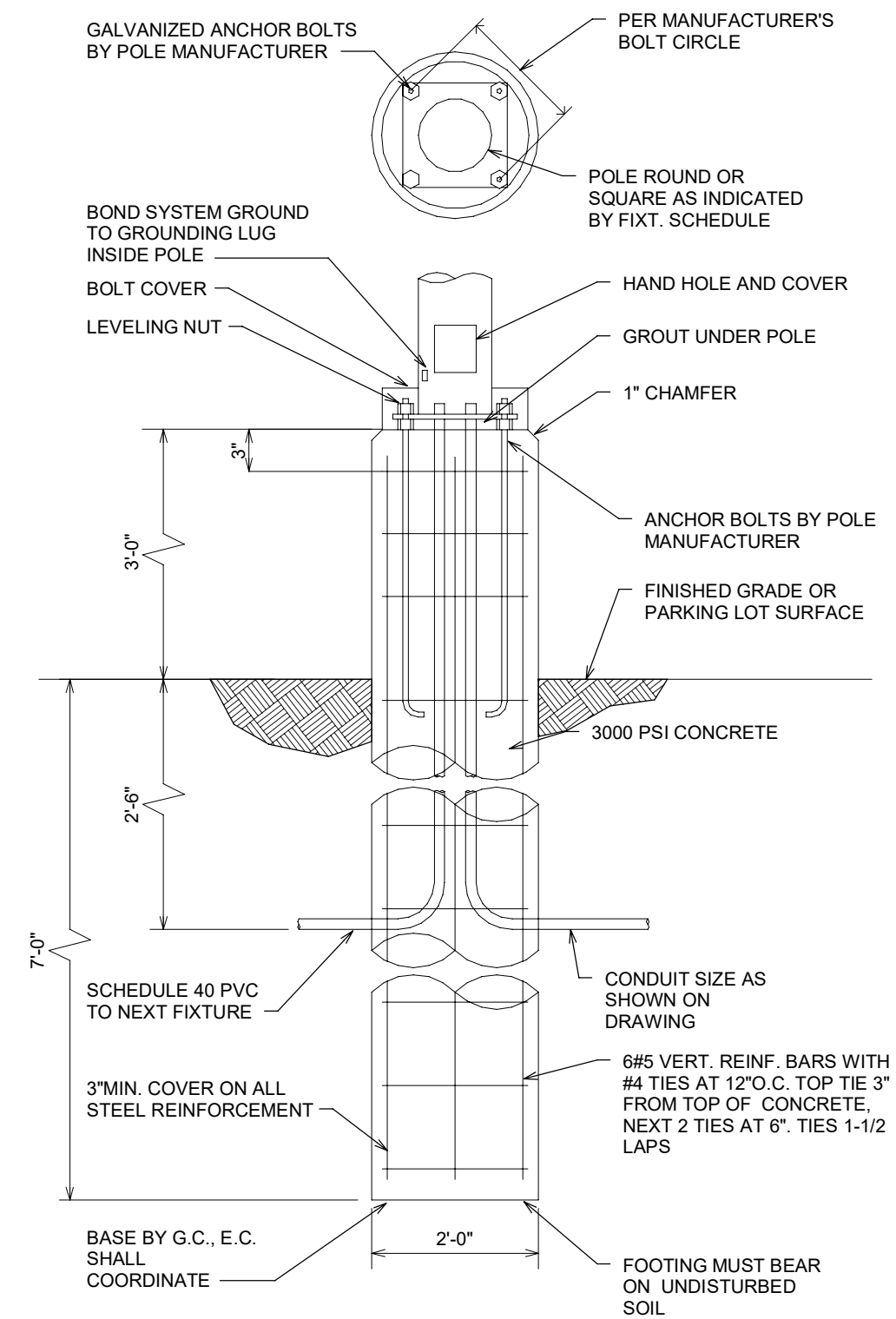
Notes: \* VIA LIGHTING CONTACTOR

Per NEC, Article 220 for Lighting and General Receptacle Loads				
Load Summary				
Load Classification	Connected Load (KVA)	Demand Factor	Demand (KVA)	Panel Totals
Lights	3.2	1.25 Continuous	4.0	
Receptacles	30.7	Per NEC 220	20.4	Total Demand (KVA): 60.9
Motors	1.1	Per NEC 220	1.1	Demand Amps: 169.1
Hotel	0.0	Per NEC 220	0.0	
Kitchen	0.0	Per NEC 220	0.0	
HVAC	25.9	Per NEC 220	25.9	
Misc	9.5	1.00	9.5	



**D DUCT SMOKE DETECTOR DIAGRAM**  
SCALE: N.T.S.



**B POLE BASE DETAIL**  
SCALE: N.T.S.

date issued:	03-03-2023

**Grant County Health Department**  
Lots 1-5, Block 20, Medford, OK



DIVISION 16 ELECTRICAL

SECTION 16010  
GENERAL REQUIREMENTS

PART 1 - GENERAL EXTENT OF WORK

1.01 The General Conditions, General Requirements, and Special Conditions shall be and are hereby made a part of this section. The Electrical Contractor shall furnish all labor, materials, tools, transportation, equipment, services and facilities required to complete, proper and substantial installation of all electrical work shown on the drawings and/or outlined in these specifications. The installation shall include all materials, appliances and apparatus not specifically mentioned herein or noted on the drawings, but which are necessary to make a complete working installation of all electrical systems.

1.02 The Contractor shall consult and be guided by the General Conditions and all other divisions referred to herein and relative thereto in performing the work covered under this division of the specification.

1.03 All of the electrical related work required for this project (unless specified otherwise) is a part of the electrical contract price and is not necessarily specified under this division of the specifications or shown on the drawings. Therefore, all divisions of the specifications and all drawings shall be consulted.

1.04 The drawings showing the layout of the work indicate the approximate locations of outlets, apparatus and equipment. The drawings are schematic only and are not intended to show the exact routing of conduits, etc. The final determination as to the routing shall be governed by structural conditions and other conditions. Such approval may be given during the progress of the system may be changed, it merely refers to the exact run of a raceway between given points. The Contractor shall consult all contract drawings which may affect the location of any outlet, apparatus or equipment to avoid possible interference and permit full coordination of all the work. The right to make any reasonable change in the location of apparatus, outlets and equipment up to the time of roughing-in is reserved by the Architect without involving any additional expense to the Owner.

1.05 The approval by the Architect or his representative of any materials, drawings, etc., submitted by the Contractor will be considered as general only and to aid the Contractor in carrying out his work. Such approval may be given during the progress of the Contractor from the necessity of furnishing the materials and performing all the work as required by the drawings and the specifications.

1.06 The work specified under this division of the specifications shall include the furnishing of all labor, materials, apparatus and tools necessary for the complete installation of all conduit and wiring, devices for lighting, power and control systems, and such other work and equipment as are indicated on the drawings or as noted herein.

1.07 The entire installation shall be made in a workman like manner, left completely connected, and ready to give proper and continuous service.

1.08 All materials and work in connection with the foregoing items shall be as specified herein, or called for on the drawings.

1.09 The complete installation shall be in accordance with the latest rules and regulations of the National Fire Protection Association and all other Boards and Departments having jurisdiction. Any time in requirements noted herein or shown on the drawings in excess of code requirements, but permitted under the code, shall take preference unless special permission is obtained from the Architect to the contrary.

1.10 The light and power installation shall operate with the electrical energy obtained from outside sources. Such part of the system may be regulated by rules of the local utility company which shall, insofar as method of construction, workmanship and materials are concerned, be in full accordance with the standard practice and rules and regulations of the local utility company.

1.11 This Contractor shall coordinate his work under this division of the specifications with the work of other trades wherein it may be interrelated. His work shall be done in such an order that there will be no interference in installing, not delay in completion, of any part or parts of each respective trade, thereby permitting all construction work to proceed in its natural sequence without unnecessary delay.

1.12 Before submitting his bid, the Contractor shall familiarize himself with the rules of all governing bodies having jurisdiction and shall notify the Architect in submitting his bid. If in his opinion, any work or material specified is contrary to such rules. Otherwise, the Contractor shall be responsible for the approval of all work and materials and, in case the use of any material specified is not permitted, a substitute shall be approved by the Architect and shall be provided at no increase in cost.

1.13 Unless noted otherwise on the Drawings, or elsewhere in these Specifications, the singular words "Provide", "Furnish", or "Install" shall be construed to mean that the Contractor shall mean to completely furnish, install, and connect each item, and if such is a part or component of a system the entire system shall be functional with all items and components provided.

PART 2 - RULES AND REGULATIONS

2.01 All work under this heading shall comply with the latest rules and regulations of the National Electrical Code Standard of the National Fire Protection Association and with all laws, regulations and ordinances of the utility company, City, County and State.

2.02 Drawings and specifications indicate the minimum standards of construction. Should any work indicate be substantially to any ordinance, law, code or regulation bearing on work, the Contractor shall execute work accordingly, without increased cost to the Owner, but not until he has referred such variances to the Architect for his approval.

2.03 This Contractor shall provide and install only the brands of materials and equipment specified herein, or equipment approved by the Architect-Engineer as equal. All material and equipment shall be listed and labeled by Underwriters Laboratories, Inc., indicating compliance with nationally recognized standards and/or test.

PART 3 - PERMITS, FEES AND INSPECTIONS

3.01 Secure and pay for all necessary and usual permits, fees, inspections and certificates required for this work and deliver permits and certificates to the Architect for transmittal to the Owner before final acceptance of the project.

PART 4 - SERVICES

4.01 This Contractor shall pay for all expenses, deposits, reimbursements, etc., required by the local rules and codes for the service to the building, complete and ready for use.

4.02 This Contractor shall bear all expenses involved for the complete installation of the electrical service (both temporary and permanent) to the building ready for operation, except as specifically excluded on the drawings. All temporary wiring shall be installed per the National Electrical Code. This shall include stand posts around transformers and pedestals per utility company standards. Verify complete installation and locations of pad mount or pole mount transformers with the local electric utility company and bid installation to comply with their requirements.

4.03 This Contractor shall consult all local departments to verify requirements and bid installation of service in accordance with local codes and utility company standards.

4.04 This Contractor shall bear all expenses involved for the complete telephone service conduit installation and steel or nylon pull wire ready for cable installation. Verify complete wiring with the local telephone company and bid installation to comply with their requirements.

PART 5 - TEMPORARY ELECTRICAL

5.01 Electrical Contractor/Subcontractor shall:

A. Make arrangements with electric utility for temporary service.

B. Provide materials, equipment, labor to install, modify, maintain (and upon completion of project, remove) safe, temporary electrical power and lighting systems per OSHA standards.

C. Provide sufficient capacity for construction tools, equipment, temporary ventilation and lighting.

D. Distribute systems throughout building and construction area of site such that an extension cord no longer than 100' will reach any work area. Open branch systems permitted where permitted by the National Electrical Code and OSHA. Provide temporary services to all construction offices as required.

E. Employ permanent systems as they are completed and available.

F. Provide metering of temporary service. All temporary utility costs will be paid by the General Contractor.

PART 6 - MATERIALS OF APPROVED EQUAL

6.01 Where items of equipment and/or materials are specifically identified herein by a manufacturer's name, model or catalog number, only such specific items may be used in the base bid, except as hereinafter provided.

6.02 Unless requests for changes in base bid specifications are received and approved and written addendum prior to the opening of bids, the successful contractor will be held to furnish specified items.

6.03 After contract is awarded, changes in specifications shall be made only as defined under "Substitution of Equipment."

PART 7 - SUBSTITUTION OF EQUIPMENT

7.01 After execution of the contract, substitution of equipment of makes other than those specifically named in the contract documents may be approved by the Engineer only if the equipment named in the specifications cannot be delivered to the job in time to complete work in proper sequence to work of other contractors, due to conditions beyond control of the contractor.

7.02 Requests for substitutions must be accompanied by documentary proof of equality of difference in price and delivery, if any, in form of certified quotations from suppliers of both specified and proposed equipment.

7.03 The Owner shall receive all benefits of the difference in cost involved in any substitution, and the contract altered by change order to credit Owner with any savings so obtained.

PART 8 - SUBMITTALS

8.01 Contractor shall, within 15 days after award of contracts begin sending to the General Contractor for review submittals containing the following:

8.02 Shop Drawings:

A. Submit three master sets of "Shop Drawings" in the form of bond paper 8 1/2" x 11" or 11" x 17" size. Data shall be reduced on drawings as required to leave 5" x 3" clear on each drawing for Engineer's stamp.

B. Architect and consultants will retain copies of the master set of the work records obtained from outside sources. Such part of the system may be regulated by rules of the local utility company which shall, insofar as method of construction, workmanship and materials are concerned, be in full accordance with the standard practice and rules and regulations of the local utility company.

C. Contractor(s) shall, upon receipt of reviewed shop drawings, obtain and distribute copies of reviewed master set as necessary to coordinate work. (Contractor's file, job site file, record documents, etc. prior prime contractors, subcontractors and suppliers.)

D. Shop Drawings are custom prepared data and shall show and identify item(s) to be furnished and give location, arrangement, scale, details, sizes, dimensions, performance characteristics, capacities, wiring diagrams, finish and other pertinent information. Each individual item shall have its own separate sheet provided for approval. (Example: Separate sheets for each panelboard.)

E. All shop drawings shall be checked and signed by the Contractor and General Contractor prior to submittal to the Architect-Engineer. SHOP DRAWINGS SUBMITTED WITHOUT THE CONTRACTOR'S STAMP OF APPROVAL AND VERIFICATION WILL BE RETURNED BEFORE THE ENGINEER WILL REVIEW SAME. Equipment, materials, etc., not meeting specifications and/or drawing requirements shall be returned to the supplier for corrections before they are submitted to the Architect. This Contractor is reminded that only those materials specified, approved or otherwise indicated by the project specifications, drawings, or addenda will be permitted to be used in constructing the electrical work for this project. The first review of submittals (shop drawings) will be provided as indicated at no charge to the Contractor. However, subsequent review(s) of resubmittals required by "Rejected" status from the original review will necessitate the Electrical Contractor being charged by the electrical consultant a fee of \$85 per hour, with a minimum charge of \$100 for each item resubmitted. It is intended that all electrical submittals be made in a complete and timely fashion such as to permit a comprehensive and thorough review of same.

F. Each shop drawing sheet shall indicate job name.

G. Shop drawings submitted without contractor's signatures or approval and verification will not be reviewed.

H. Shop drawings shall be submitted on wire, devices, fixtures (including distribution curves), gear, systems, conduit, etc.

8.03 Product Data: Product Data includes manufacturer's printed specifications, instructions, recommendations, pertinent catalog pages and similar information. Such data shall be marked to identify the data applicable to the Project. Submit three copies. Architect and consultants will review, note and record action and make copies for their files. One submitted copy then will be returned to the Contractor who shall reproduce and distribute copies needed for Project Work.

8.04 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.05 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.06 Product Data: Product Data includes manufacturer's printed specifications, instructions, recommendations, pertinent catalog pages and similar information. Such data shall be marked to identify the data applicable to the Project. Submit three copies. Architect and consultants will review, note and record action and make copies for their files. One submitted copy then will be returned to the Contractor who shall reproduce and distribute copies needed for Project Work.

8.07 Product Data: Product Data includes manufacturer's printed specifications, instructions, recommendations, pertinent catalog pages and similar information. Such data shall be marked to identify the data applicable to the Project. Submit three copies. Architect and consultants will review, note and record action and make copies for their files. One submitted copy then will be returned to the Contractor who shall reproduce and distribute copies needed for Project Work.

8.08 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.09 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.10 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.11 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.12 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.13 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.14 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.15 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.16 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.17 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

8.18 Quantities of materials will not be verified by the Architect or Engineer. Submittal Review stamp on shop drawings does not constitute review of quantities listed on shop drawings.

8.19 Engineer's review of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor, has in writing, called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any review by Engineer relieve Contractor from responsibility for errors and/or omissions in Compliance Submittals. No work shall be fabricated until the Architect's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be the responsibility of the Contractor.

9.04 The Contractor shall keep in a safe place all keys and special wrenches furnished with equipment under this contract and shall give same to the Architect at the completion of the project.

9.05 The Contractor shall prepare (3) complete brochures covering all systems and equipment furnished and installed under his contract. Brochures shall be submitted to the Architect-Engineer for review and delivery to the Owner and Engineer. The Contractor will retain (1) copy. The cost of these brochures shall be included in the contract cost. Brochures shall contain the following:

A. Certified equipment drawings and/or catalog data clearly marked for equipment furnished as required for approval submission under previously detailed section of these specifications.

B. Complete operating and maintenance instructions for each item of equipment.

C. Complete parts list for each equipment item.

D. Any special emergency operating instructions and a list of service organizations (including addresses and telephone numbers) capable of rendering emergency service to the various parts of the system.

E. Riser diagrams on special systems.

9.06 Brochures shall be bound in hard fiberboard covers or loose-leaf binders. If loose-leaf binding is used, each sheet shall be reinforced to prevent tearing from continued use. Each brochure shall have the following information clearly printed on its front cover:

A. Project name and address.

B. Section of work covered: "Electrical Work".

C. Name and address of Architect.

D. Name and address of Engineer.

E. Name and address of Contractor.

F. Telephone number of Contractor, including night or emergency number.

9.07 In addition to the written instructions, each respective Contractor shall fully and carefully instruct the Owner, or his representatives, as to the proper operation, care and maintenance of each system and its equipment.

PART 10 - COORDINATION AND BUILDING CONDITIONS

10.01 The Contractor shall visit the site and determine all existing local conditions affecting work in his contract. He shall examine architectural drawings and specifications to familiarize himself with the type of construction to be used for all work and how it will affect the installation of work in his contract.

10.02 Failure to determine existing conditions or the nature of existing or new construction will not be considered as a basis for the granting of additional compensation.

10.03 The drawings have been prepared to cover all electrical work under this contract. The Contractor is referred to all other contract drawings to guide him in the proper installation of his work.

10.04 The Contractor shall fully familiarize himself with the floor drawings, elevations, details of construction, feeders, fixtures, conduits, service, etc., insofar as it may affect the installation of work under this specification in order that all necessary materials and labor may be provided even though not specifically referred to on the drawings or called for in the specifications.

10.05 As the drawings are generally diagrammatic, the final layout of the work shall be subject to the approval of the Architect and the Contractor shall be responsible without increase in contract price for the coordination of all work under various divisions of the specifications.

10.06 This Contractor shall confer with other contractors installing work which may affect his work and must arrange for its completion, in proper relation to such work. Any damage resulting from his neglect to do so must be paid for by the Contractor.

10.07 Where necessary to fit and center with paneling of ceilings and wall spaces, the Contractor must, at his own expense, shift the location of outlets or other outlets as required by the Architect.

10.08 All outlets shall be set in such a manner as to finish flush with wall and ceiling lines unless marked to be exposed or surface mounted on the drawings. The height of brackets, switches, outlets, etc., are to be as directed.

10.09 The Contractor shall obtain from the Architectural and Structural drawings the exact location and size of spaces available for his apparatus and material and shall install them accordingly. In case the space allowed is not sufficient, or an obstruction interferes with placing them as shown or specified, the Contractor shall obtain instructions from the Architect and shall install them as directed without extra charge.

10.10 The above provisions refer only to the exactness of positions that cannot be determined from the drawings and do not permit placing apparatus distinctly different from that shown on the drawings.

10.11 This Contractor shall do all cutting and patching of building material required for the installation of work herein specified. No structural member shall be cut without the approval of the Architect and all such cutting shall be done in a manner directed by him.

10.12 All patching shall be done in a neat and workman-like manner, meeting with the approval of the Architect, by mechanics of the particular trade involved. Any penetrations through roof or floor shall be made with "Stonemaster" flashing connections as manufactured by Stoneman Engineering and Manufacturing Co., Ingwood, Calif., and any penetrations made in exterior or basement foundation walls shall be sealed with Thunderbolt "Link-Seal" connections, as manufactured by Thunderbolt Corporation, Wayne, Michigan.

10.13 Any holes or voids created in floors, ceilings and walls, including any spaces or gaps around conduit or equipment passing through such areas, which compromise the applicable rating of the floors, ceilings or walls, shall be sealed with an intumescent material equal to "3M Fire Barrier Caulk, Putty or Slip Sheet", "Carborundum Fibrefrax Fire Putty", "Tremco X-termo Fire Products", or "Rectoseal Metacalk". Material equal to the above and meeting U.L. 1479 may be used. All installations shall be per manufacturer's exact instructions.

10.14 All drilling of holes through concrete shall be accurately and carefully done by using a "Concrete Terner" drill. The use of a star drill or air hammer for this work shall not be permitted.

10.15 This Contractor shall do all painting and finishing of all electrical equipment installed in finished areas. All work shall be performed in accordance with the Architectural specification section on "Painting and Finishing". All colors and finish applications shall be as directed by the Architect. (Painting is not required of receptacles, switches, circuit breakers, etc., unless specifically so noted on the drawings.)

10.16 The Electrical Contractor shall confirm the exact electrical requirements for all equipment supplied by others and installed or provided by the Electrical Contractor. The specific work performed for the installation of any equipment shall be in conformance with the requirements established by the shop drawings of the equipment supplied. In the event of any discrepancies, drawings establish requirements distinctly different than the requirements shown in the contract documents, the Contractor shall be entitled only to an adjustment and rectify the problem in the work shown with the work required with full credit for labor and materials shown on the original drawings.

10.17 The Electrical Contractor shall provide all trenching and backfilling for underground conduits. Unless noted otherwise in other divisions of these specifications, all trenches shall be back-filled and compacted with material defined by the United Soil Classification as ML or CL (silt and clay of low to medium plasticity). Compaction shall be to 90 % of ASTM D698.

PART 11 - PERFORMANCE

11.01 Provide as part of the work of this contract, in addition to the first year guarantee on equipment and materials, the following: (The one year period will not start until each and every item is complete in accordance with drawings and specifications and accepted by the Owner. The Contractor shall be responsible for the cost of any transformers, etc., correct and adjust same. This service to be provided during the guarantee period.

PART 12 - SYSTEM

12.01 System: Distribution characteristics shall be as indicated on drawings.

PART 13 - GROUNDING

13.01 All conductors, motor frames, etc., that require grounding shall be grounded in accordance with the requirements of the National Electrical Code, local power company and local electrical codes. All ground connections to ground rods shall be with U.L. approved ground clamps. Provide additional ground rods as required to achieve a resistance of 25 ohms or less per N.E.C.

13.02 Measurements on job and shop layouts required for installation of work shall be the responsibility of the contractor and acceptance of work is subject to approval of shop drawings by the Architect.

13.03 The Contractor shall furnish all hoists, scaffolds, staging, runways and equipment necessary for the completion of this work.

13.04 Obtain and pay for all required electrical permits and licenses.

13.05 Maintain lights and guards required for safety.

13.10 Remove temporary service after use.

PART 16 - CONTRACT CHANGES

16.01 All changes or deviations from the contract, including those for extra or additional work, must be submitted in writing for the approval of the Architect/Engineer. No verbal orders will be recognized.

PART 19 - RUBBISH/CLEANUP

19.01 All rubbish resulting from the work herein specified shall be periodically removed by this Contractor.

19.02 Clean all electrical equipment and materials of all foreign matter (both inside and out). Clean all light fixtures using only methods and materials as recommended by the manufacturer.

PART 20 - PROPOSALS

20.01 The Contractor shall consult the General Conditions and the Proposal Form for proposals and subdivisions of the work required.

PART 21 - EXTENT OF WORK

21.01 The extent of the work under this heading of the contract shall be the furnishing of all plant, labor, materials, and equipment as required to complete work as shown on the drawings and as specified under this heading, and all plant, labor, materials and equipment not shown on the drawings or specified, but necessary to make installation complete in accordance with the intent of the contract, to provide first class, complete, and operative installation throughout.

PART 22 - TAXES

22.01 Contractor shall include all applicable local, state and federal taxes in his bid. Consult the Supplementary Conditions of these specifications relative to any and all tax exemptions permitted for this project.

PART 23 - "AS-BUILT DRAWINGS"

23.01 E.C. shall prepare and submit to the Engineer, upon completion of the work, one complete set of reproducible "As Built" drawings for the electrical portion of the project.

23.02 Drawings shall clearly indicate any and all approved deviations (i.e. addendum items, change order data, etc.) from the Project Bid Documents.

23.03 These drawings will become the property of the Owner and will be for his future reference file, record document.

PART 24 - PROTECTIVE DEVE COORDINATION STUDY

24.01 Any Project that has breakers that are provided with an automatic tripping setting, those settings must be provided with a coordination study that is provided by the gear manufacturer. The coordination study shall include a time-current curve drawing with the electrical Contractor's name and No. 10 gauge and smaller may be solid or stranded, unless noted otherwise on the drawings. Stranded conductors shall only be used on devices and lugs that are U.L. listed for use with stranded conductors.

2.02 Wire smaller than No. 12 gauge shall not be used unless specifically called for on the drawings.

2.03 Unless noted otherwise on the Electrical drawings or herein on the drawings, all wiring shall be routed within conduit, shall be of the same insulation type and shall be continuous between outlets and boxes (with no splices or taps into conduit). Splices and taps in outlet boxes shall be twisted joints. U.L. approved pre-insulated spring pressure connectors shall be used for branch circuit connections. Connectors shall be installed so that all conductors are properly insulated.

2.04 All control wiring shall be copper, solid or stranded, #14 Ga. or larger depending upon current requirements, with insulation type RMC, EMT, or equivalent. Rigid conduit and EMT shall be provided with spade type insulated copper terminals. Unless noted otherwise on the Mechanical drawings or herein, all mechanical control wiring for all systems shall be routed within conduit, shall be of the same insulation type and shall be continuous between outlets and boxes (with no splices or taps into conduit).

2.05 See riser diagrams and/or other sections of the Specifications for types and ratings for sound, fire alarm, control and other special cables.

2.06 Wires for general use within the building shall be type THHN or type THWN, degree rated except where called otherwise on the drawings. Type THHN or type THWN shall be used at the temperature rating of equipment termination lugs, environmental conditions, and the ambient temperature of the system design. He shall use as hereinafter specified for specific services.

2.07 A "green" insulated ground conductor, sized per N.E.C. 250-95 and as shown on the drawings, shall be installed in each conduit containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.08 Where quantities of conductors in a raceway system are not specifically indicated, provide the number as required to maintain function, control and number of circuits as indicated.

2.09 All conductors shall be identified at all termination points and in all pull and junction boxes by the following method of color coding (I.M.C.), or U.L. approved schedule 40 P.V.C. conduit.

2.10 E.M.T. (thinwall) conduit shall be minimum 1/2" trade size, as manufactured by Triangle PWC, Inc., Allentown, Pa. or equivalent. EMT with Thomas and Betts, or equal, U.L. listed steel or die-cast type fittings. Indenter type fittings shall not be used. Contractor may use Allied "Kwik-Fit" fittings in lieu of individual fittings. A "green" ground wire, sized per NEC 250-95, shall be installed in all conduits containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.11 A "green" insulated ground conductor, sized per N.E.C. 250-95 and as shown on the drawings, shall be installed in each conduit containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.12 Where quantities of conductors in a raceway system are not specifically indicated, provide the number as required to maintain function, control and number of circuits as indicated.

2.13 Unless noted otherwise on the Electrical drawings or herein on the drawings, all wiring shall be routed within conduit, shall be of the same insulation type and shall be continuous between outlets and boxes (with no splices or taps into conduit). Splices and taps in outlet boxes shall be twisted joints. U.L. approved pre-insulated spring pressure connectors shall be used for branch circuit connections. Connectors shall be installed so that all conductors are properly insulated.

2.14 All control wiring shall be copper, solid or stranded, #14 Ga. or larger depending upon current requirements, with insulation type RMC, EMT, or equivalent. Rigid conduit and EMT shall be provided with spade type insulated copper terminals. Unless noted otherwise on the Mechanical drawings or herein, all mechanical control wiring for all systems shall be routed within conduit, shall be of the same insulation type and shall be continuous between outlets and boxes (with no splices or taps into conduit).

2.15 See riser diagrams and/or other sections of the Specifications for types and ratings for sound, fire alarm, control and other special cables.

2.16 Wires for general use within the building shall be type THHN or type THWN, degree rated except where called otherwise on the drawings. Type THHN or type THWN shall be used at the temperature rating of equipment termination lugs, environmental conditions, and the ambient temperature of the system design. He shall use as hereinafter specified for specific services.

2.17 A "green" insulated ground conductor, sized per N.E.C. 250-95 and as shown on the drawings, shall be installed in each conduit containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.18 Where quantities of conductors in a raceway system are not specifically indicated, provide the number as required to maintain function, control and number of circuits as indicated.

2.19 All conductors shall be identified at all termination points and in all pull and junction boxes by the following method of color coding (I.M.C.), or U.L. approved schedule 40 P.V.C. conduit.

2.20 E.M.T. (thinwall) conduit shall be minimum 1/2" trade size, as manufactured by Triangle PWC, Inc., Allentown, Pa. or equivalent. EMT with Thomas and Betts, or equal, U.L. listed steel or die-cast type fittings. Indenter type fittings shall not be used. Contractor may use Allied "Kwik-Fit" fittings in lieu of individual fittings. A "green" ground wire, sized per NEC 250-95, shall be installed in all conduits containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.21 A "green" insulated ground conductor, sized per N.E.C. 250-95 and as shown on the drawings, shall be installed in each conduit containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.

2.22 Where quantities of conductors in a raceway system are not specifically indicated, provide the number as required to maintain function, control and number of circuits as indicated.



10.06 Receptacles: (Verify colors)

Manuf.	DUPLEX GFCI (20A,125V)	DUPLEX GFCI (20A,125V)	DUPLEX ISOLATED GPD (15A,125V)	CLOCK
P & S	5362A	2091S	IG5300	S3733-SS
Hubbell	HBL5362	GF5352	IG5362	HBL5235
Leviton	5362A	6899	5362-IG	5621-CH
Arrow	Hart	5362	IG5342	IG5362
				5708

Once device manufacturer has been selected, all receptacles, switches, and plates in the project shall be by the same manufacturer, unless noted otherwise on the Drawings or in the Specifications.

10.07 Where tamperproof receptacles are indicated on the drawings to be provided, provide all switches shall be equal to Hubbell #CS520, 20 amp, 125 volt. Provide tamper proof receptacles in all areas indicated per 2017 NEC section 408.12.

10.08 Install receptacles to clear all cabinets, equipment, etc.

10.09 All receptacles shall have High-Impact Thermoplastic or Nylon (not Thermoset), smooth surface, wall plates. Where plates are noted to be engraved or labeled, provide stainless steel wall plates in color to match other plates and provide engraved filled letters. If approved by the Engineer, high-impact thermoplastic plates with filled letters may be used for engraving provided that a sample plate is submitted for approval. Plates shall be set plumb and parallel with the wall. Stainless steel plates used on wood or specified shall be .032 nominal thickness, non-magnetic.

10.10 Color of receptacles and plates as selected by the Architect. Verify color prior to ordering.

10.11 Provide duplex receptacle on separate circuit beside each telephone terminal board location and other communications equipment requiring 120 volt power.

10.12 Provide GFCI protection as required in 2017 NEC 210.8.

10.13 Combination USB/Duplex receptacle shown on floor plans shall be equal to Hubbell USB220.

#### PART 11 - FLOOR BOXES

11.01 Unless noted otherwise on the drawings, flush floor boxes shall be equal to Steel City #68 Series floor box with P-60-DS cover plate for power and P-60-12 cover plate for telephone and data outlets. Provide with carpet flange for floors with carpet. Verify exact location with Architect prior to rough-in.

11.02 All floor boxes shall be cleaned of all construction debris and dirt.

11.03 Where fire rated "poke-through" devices are specified, Contractor shall install devices after concrete pour and after final verification of location with Owner. Fire rated "poke-through" devices shall be spaced apart from each other as required by the manufacturer and U.L.

11.04 PVC floor boxes may be used in lieu of floor boxes indicated above. PVC floor boxes shall be equal to Walker, Wiremold, Hubbell, Garton, with metal covers. Receptacle covers shall be double flap, inserts and data covers shall be combination 2/12 inserts. Unless noted otherwise on the drawings, all floor boxes for similar devices shall be either metal or PVC, no intermingling of same types of floor boxes will be allowed.

#### PART 12 - CONTACTORS AND RELAYS

12.01 Shall be as manufactured by Cutler-Hammer, General Electric, Siemens, Allen Bradley, or Square "D". They shall be as sized on the drawings.

12.02 All contactors and relays shall be "T" (Tungsten) rated.

#### PART 13 - TIME SWITCHES

13.01 Time switches by Tork, Intermatic, or Paragon equal to those shown on the drawings or specified below, and approved by the Engineer, will be acceptable.

13.02 Exterior lighting or interior time switches shall be Intermatic ET7701TSC Series, 7 day with carry-over, unless specified otherwise. Set time switch per Owners Requirements.

13.03 All time switches shall be provided with momentary contacts if required.

13.04 All time switches shall be provided with manual bypass switches and standby battery systems.

#### PART 14 - PHOTO ELECTRIC CONTROLS

14.01 Photo Electric Controls by Tork, Intermatic, or Paragon equal to those indicated below and approved by the Engineer will be acceptable.

14.02 Photo Electric Controls (Photo Switches-Photo Cells) shall be Intermatic #K4133 rated at 3000V, 277 Volts, or #K4121 rated at 1800V, 120 volts, weatherproof and oriented photo electric controls to the north. Photo-electric controls supplied as a part of a fixture assembly shall be as provided by Fixture Manufacturer.

14.03 All photoelectric housings supplied as part of the light fixture assembly or mounted on the light fixture shall be painted to match the light fixture finish.

#### PART 15 - STARTERS (SEPARATELY MOUNTED)

15.01 Starters for all devices shown on all drawings shall be supplied by the Electrical Contractor unless specifically noted otherwise on the drawings.

15.02 Starters shall have melting alloy relays or bimetallic overload relays (as required for load served). Starter housing shall have NEMA rating for the location (general purpose, weatherproof, etc.). Each starter shall have an H-O-A switch in cover and control transformer (if required) for controls. See drawings for multispeed starter requirements.

15.03 Coil voltage shall be as required for controls as shown on all drawings and control power transformer size shall be adequate to provide control functions as shown.

15.04 Provide each starter with a spare set of auxiliary contacts. One closed when the starter is deactivated and one closed when the starter is activated.

15.05 Overload thermal units shall be sized on the basis of actual nameplate current. Overloads shall be non-adjustable NEMA standard trip and shall be available in sizes covering the complete NEMA horsepower. Starters shall be Class 20 (Class 10 not acceptable).

15.06 Starters shall be fully NEMA rated; I.E.C. design starters will not be acceptable.

15.07 Separately mounted starters shall be by the same manufacturer as the distribution equipment, or Allen Bradley or Furnas.

#### PART 16 - DISCONNECT SWITCHES

16.01 The Contractor shall furnish and install externally operated, non fused and/or fused (with Class R rejection features), heavy duty, horsepower rated, disconnect switches at all points indicated on the drawings or required by code. These switches shall be by the same manufacturer as the distribution equipment.

16.02 All disconnect switches shall be fused except for disconnect switches that have individual fuse protection at point circuit receives its supply.

16.03 Provide dead front type for all exterior disconnects on grade level when so required by local code.

16.04 All fused disconnect switches shall have a minimum rating of 100,000 A.I.C. with fuses installed unless noted otherwise on the drawings.

16.05 All disconnect switches shall be provided with grounding kits.

#### PART 17 - FUSES

17.01 Cartridge type fuses of proper size as required shall be furnished and installed for all switches and panelboards throughout, and an additional supply of three (3) spare fuses of each size shall be furnished in original packages to the Owner. Furnish a NEMA enclosure with hinged cover equal to Bussmann type SFC for storing all spare fuses and locate adjacent to main service equipment. Fuses for motor and mechanical equipment shall be sized from the nameplate data per N.E.C. requirements.

17.02 Fuses shall be manufactured by Bussmann Mfg. Co., Gould-Shawmut Co., Littelfuse or approved equal by Engineer. Fuse types shall be installed as follows:

Main Service and Distribution Feeder Protection:	Bussman	Littelfuse	Gould Shawmut
601 amps and larger	KRP-CIKTN	KLPC	A48Q
			Gould
	Bussman	Littelfuse	Shawmut
600 volts and less (Class L)			
250 volts and less (Class RK1)	LN-RK	A2D-R	
600 volts and less (Class RK1)	LLS-RK	A6D-R	
600 volts and less (Class RK1)			

#### Motors and Primary Feeders for Transformers:

250 volts and less (Class RK5)	FRN-R	FLN-R	TR-R
600 volts and less (Class RK5)	FRS-R	FLS-R	TRS-R

17.03 Class T fuses will not be accepted, unless they are a part of a manufacturer assembly approved by the Engineer. Class J fuses may be used as an alternate to the Class R fuses listed above.

17.04 Fuses installed on project shall be by one manufacturer only. (Do not intermix Manufacturers.)

#### PART 18 - EQUIPMENT CONNECTIONS

18.01 For 120 volt motors 1/2 HP- and less, 15 amperes and less, Contractor shall provide Bussmann "SSY" box cover unit for indoor application and "SSN" box cover unit for outdoor applications, or equal by Perfect-Line, with fustat plug fuse and integral toggle switch, all floor boxes for similar devices shall be either metal or PVC, no intermingling of same types of floor boxes will be allowed.

18.02 For 3/4 HP-120V, motors, Contractor shall provide (1) 20 amp 1 pole 120 volt toggle disconnect switch with "FNO" fuse holder and "FNO" fuse at each unit. For 3/4 HP-120V, motors that are provided with cord and plug, Contractor shall provide 20 amp 120 volt duplex receptacle with (1) 20 amp 1 pole 120 volt toggle disconnect switch on line side of receptacle, and Bussmann "HPD" fuse holder and "FNO" fuse on line side of receptacle. Switch, receptacle, and fuse holder to be mounted in cover of a 4: square junction box at each unit. Fuses for motors shall be sized based upon 125 of manufacturer's nameplate full load amperage unless otherwise indicated on drawings.

18.03 For connections to 277 volt equipment, Contractor shall provide (1) 20 amp 1 pole 277 volt toggle disconnect switch with a Bussmann "HPD" fuse holder and "FNO" fuse at each unit. Switch and fuse holder to be mounted in cover of a 4: square junction box at each unit. Fuses for motors shall be sized based upon 125 of manufacturer's nameplate full load amperage unless otherwise indicated on drawings.

18.04 All time switches shall be provided with momentary contacts if required.

18.05 Overload thermal units shall be sized on the basis of actual nameplate current. Overloads shall be non-adjustable NEMA standard trip and shall be available in sizes covering the complete NEMA horsepower. Starters shall be Class 20 (Class 10 not acceptable).

18.06 Starters shall be fully NEMA rated; I.E.C. design starters will not be acceptable.

18.07 Separately mounted starters shall be by the same manufacturer as the distribution equipment, or Allen Bradley or Furnas.

18.08 All disconnect switches shall be provided with grounding kits.

18.09 Fuses shall be manufactured by Bussmann Mfg. Co., Gould-Shawmut Co., Littelfuse or approved equal by Engineer. Fuse types shall be installed as follows:

18.10 Class T fuses will not be accepted, unless they are a part of a manufacturer assembly approved by the Engineer. Class J fuses may be used as an alternate to the Class R fuses listed above.

18.11 Fuses installed on project shall be by one manufacturer only. (Do not intermix Manufacturers.)

18.12 For 120 volt motors 1/2 HP- and less, 15 amperes and less, Contractor shall provide Bussmann "SSY" box cover unit for indoor application and "SSN" box cover unit for outdoor applications, or equal by Perfect-Line, with fustat plug fuse and integral toggle switch, all floor boxes for similar devices shall be either metal or PVC, no intermingling of same types of floor boxes will be allowed.

18.13 For connections to 277 volt equipment, Contractor shall provide (1) 20 amp 1 pole 277 volt toggle disconnect switch with a Bussmann "HPD" fuse holder and "FNO" fuse at each unit. Switch and fuse holder to be mounted in cover of a 4: square junction box at each unit. Fuses for motors shall be sized based upon 125 of manufacturer's nameplate full load amperage unless otherwise indicated on drawings.

18.14 All time switches shall be provided with momentary contacts if required.

18.15 Overload thermal units shall be sized on the basis of actual nameplate current. Overloads shall be non-adjustable NEMA standard trip and shall be available in sizes covering the complete NEMA horsepower. Starters shall be Class 20 (Class 10 not acceptable).

18.16 Starters shall be fully NEMA rated; I.E.C. design starters will not be acceptable.

18.17 Separately mounted starters shall be by the same manufacturer as the distribution equipment, or Allen Bradley or Furnas.

18.18 All disconnect switches shall be provided with grounding kits.

18.19 Fuses shall be manufactured by Bussmann Mfg. Co., Gould-Shawmut Co., Littelfuse or approved equal by Engineer. Fuse types shall be installed as follows:

18.20 Class T fuses will not be accepted, unless they are a part of a manufacturer assembly approved by the Engineer. Class J fuses may be used as an alternate to the Class R fuses listed above.

18.21 Fuses installed on project shall be by one manufacturer only. (Do not intermix Manufacturers.)

18.22 For 120 volt motors 1/2 HP- and less, 15 amperes and less, Contractor shall provide Bussmann "SSY" box cover unit for indoor application and "SSN" box cover unit for outdoor applications, or equal by Perfect-Line, with fustat plug fuse and integral toggle switch, all floor boxes for similar devices shall be either metal or PVC, no intermingling of same types of floor boxes will be allowed.

18.23 For connections to 277 volt equipment, Contractor shall provide (1) 20 amp 1 pole 277 volt toggle disconnect switch with a Bussmann "HPD" fuse holder and "FNO" fuse at each unit. Switch and fuse holder to be mounted in cover of a 4: square junction box at each unit. Fuses for motors shall be sized based upon 125 of manufacturer's nameplate full load amperage unless otherwise indicated on drawings.

18.24 All time switches shall be provided with momentary contacts if required.

18.25 Overload thermal units shall be sized on the basis of actual nameplate current. Overloads shall be non-adjustable NEMA standard trip and shall be available in sizes covering the complete NEMA horsepower. Starters shall be Class 20 (Class 10 not acceptable).

18.26 Starters shall be fully NEMA rated; I.E.C. design starters will not be acceptable.

18.27 Separately mounted starters shall be by the same manufacturer as the distribution equipment, or Allen Bradley or Furnas.

18.28 All disconnect switches shall be provided with grounding kits.

18.29 Fuses shall be manufactured by Bussmann Mfg. Co., Gould-Shawmut Co., Littelfuse or approved equal by Engineer. Fuse types shall be installed as follows:

18.30 Class T fuses will not be accepted, unless they are a part of a manufacturer assembly approved by the Engineer. Class J fuses may be used as an alternate to the Class R fuses listed above.

18.31 Fuses installed on project shall be by one manufacturer only. (Do not intermix Manufacturers.)

18.32 For 120 volt motors 1/2 HP- and less, 15 amperes and less, Contractor shall provide Bussmann "SSY" box cover unit for indoor application and "SSN" box cover unit for outdoor applications, or equal by Perfect-Line, with fustat plug fuse and integral toggle switch, all floor boxes for similar devices shall be either metal or PVC, no intermingling of same types of floor boxes will be allowed.

18.33 For connections to 277 volt equipment, Contractor shall provide (1) 20 amp 1 pole 277 volt toggle disconnect switch with a Bussmann "HPD" fuse holder and "FNO" fuse at each unit. Switch and fuse holder to be mounted in cover of a 4: square junction box at each unit. Fuses for motors shall be sized based upon 125 of manufacturer's nameplate full load amperage unless otherwise indicated on drawings.

18.34 All time switches shall be provided with momentary contacts if required.

18.35 Overload thermal units shall be sized on the basis of actual nameplate current. Overloads shall be non-adjustable NEMA standard trip and shall be available in sizes covering the complete NEMA horsepower. Starters shall be Class 20 (Class 10 not acceptable).

18.36 Starters shall be fully NEMA rated; I.E.C. design starters will not be acceptable.

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ALL CIRCUITS INDICATED ON DRAWINGS SHALL BE 20A, 120V CIRCUITS WITH (2)-#12'S AND (1)-#12 G. IN 0.5" CONDUIT U.O.N.

LABEL ALL SNAP SWITCH COVERPLATES WITH THE PANEL AND CIRCUIT NUMBER.

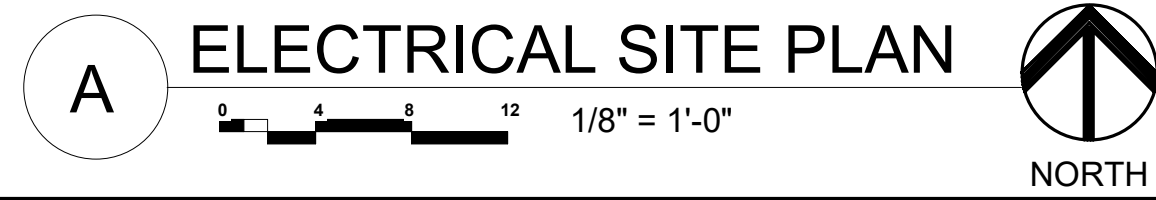
REFER TO RELATED ARCHITECTURAL DRAWINGS FOR RELATED INFORMATION

REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.

WALL MOUNTING HEIGHTS TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED.

A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL POWER, RECEPTACLE, AND LIGHTING CIRCUITS. GROUND CONDUCTORS ARE NOT SHOWN ON DRAWINGS.

1. EC SHALL INSTALL LIGHT FIXTURES TO BE 10' AWAY FROM EXTERIOR MONUMENT SIGN. EC SHALL ANGLE BEAMS OF LIGHT TO BE 90 DEGREES TO THE HORIZONTAL ILLUMINATE ENTIRE SIGN. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN.
2. EC SHALL PROVIDE AND INSTALL (2) 2" EMPTY CONDUIT WITH 14 AWG WIRE TO NURSE STORAGE #12 FOR FUTURE TELEPHONE AND DATA. CONTRACTOR SHALL COORDINATE EXACT PATH AND ROUTING OF CONDUIT WITH TELECOM UTILITIES.
3. UNDERGROUND SERVICE FEEDERS FROM POLE MOUNTED UTILITY TRANSFORMER INTO THE BUILDING SHALL BE 1" CONDUIT.
4. CONTRACTOR SHALL INSTALL (2) 1" C. FOR GENERATOR START SIGNAL WIRING TO ATS. COORDINATE EXAVT REQUIREMENTS WITH GENERATOR MANUFACTURER PRIOR TO ROUGH-IN.
5. PROVIDE A 208V, 40A SINGLE PHASE CIRCUIT TO THE GENERATOR AUXILIARY LOADS. COORDINATE EXACT REQUIREMENTS WITH GENERATOR MANUFACTURER PRIOR TO ROUGH-IN.
6. EC SHALL PROVIDE AND INSTALL LIGHT FIXTURES IN GRADE WITH IN-GROUND STAKES FOR MOUNTING OF LIGHT FIXTURES. EC SHALL INSTALL LIGHT FIXTURES BE 10' FROM FUTURE MONUMENT SIGN. COORDINATE ANGLE AND LOCATION OF LIGHT FIXTURE WITH ARCHITECT PRIOR TO ROUGH-IN. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. E



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OKLAHOMA REGISTRATION NUMBER: 5682  
**Integrated Consulting  
Engineers, Inc.**  
349 South Hydraulic • Wichita, KS 67211  
316.264.3588 • 316.264.3948 • [www.iconengineers.net](http://www.iconengineers.net)



**CORBIN MERZ HANEY**  
ARCHITECTURE INTERIOR DESIGN

302 NORTH INDEPENDENCE ENID, OK 73701 [WWW.CORBINMERZHANEY.COM](http://WWW.CORBINMERZHANEY.COM) PH: (580) 233-2362

EXPIRES: 12-31-2024

date issued: 03-03-2023					

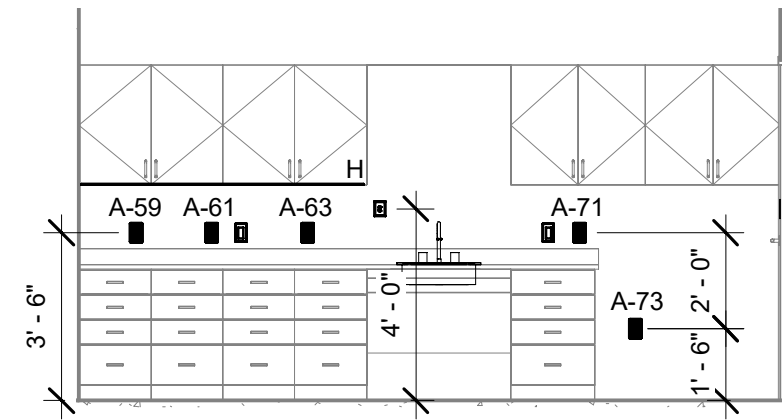


GENERAL NOTES:

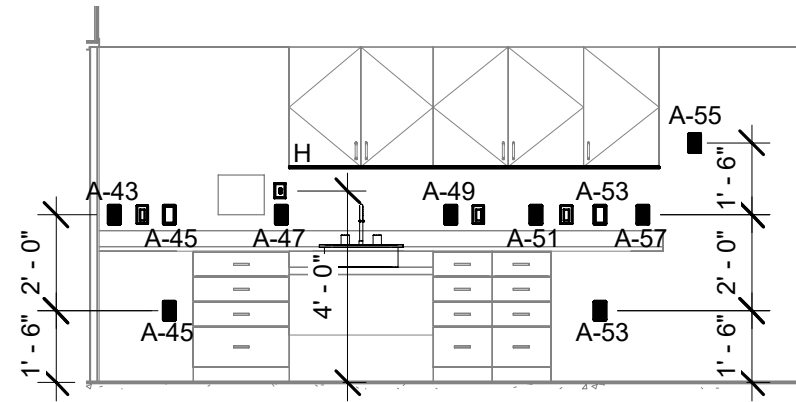
- ALL CIRCUITS INDICATED ON DRAWINGS SHALL BE 20A, 120V CIRCUITS WITH (2)-#12'S AND (1)-#12 G. IN 0.5" CONDUIT U.O.N.
- LABEL ALL SNAP SWITCH COVERPLATES WITH THE PANEL AND CIRCUIT NUMBER.
- REFER TO RELATED ARCHITECTURAL DRAWINGS FOR RELATED INFORMATION.
- REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
- WALL MOUNTING HEIGHTS TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED.
- A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL POWER, RECEPTACLE, AND LIGHTING CIRCUITS. GROUND CONDUCTORS ARE NOT SHOWN ON DRAWINGS.

# E2.1 PLAN NOTES

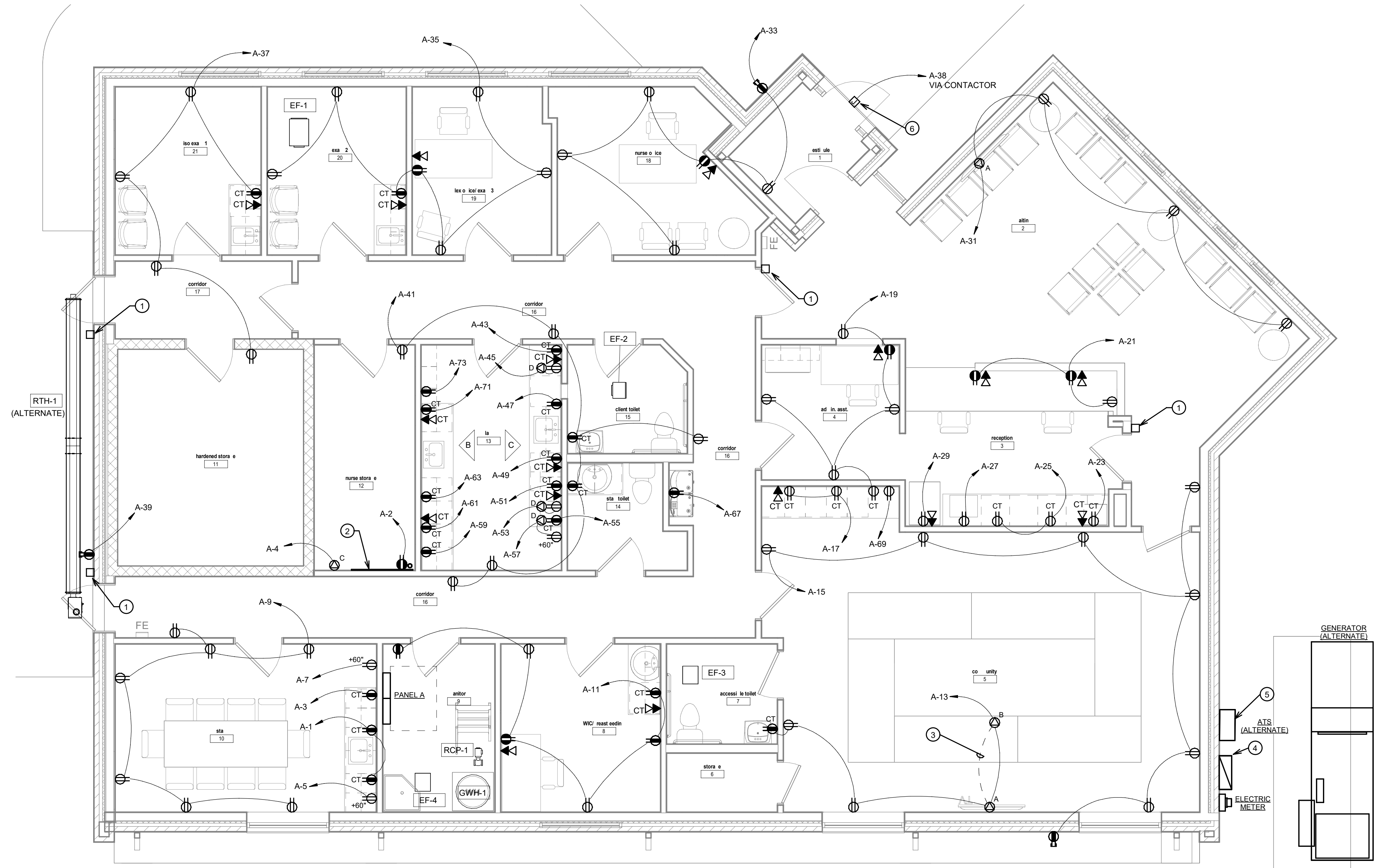
- PROVIDE A WALL MOUNTED J-BOX AND A 1" CONDUIT STUBBED TO ACCESSIBLE LOCATION FOR CONNECTION TO CARD READER. COORDINATE ALL REQUIREMENTS WITH DOOR HARDWARE PROVIDER AND THE OWNER PRIOR TO ROUGH-IN.
- PROVIDE A PLYWOOD BACKING FOR OWNER PROVIDED TELEPHONE AND DATA INFRASTRUCTURE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- EC SHALL PROVIDE AND INSTALL (1) EMPTY 1" UNDERGROUND CONDUIT WITH PULL WIRE FROM THE FLOOR BOX TO THE WALL MOUNTED TV.
- APPROXIMATE LOCATION OF THE NEW 400A NEMA 3R DISCONNECT, FUSED AT 400A. REFER TO THE RISER DIAGRAM FOR ADDITIONAL INFORMATION.
- APPROXIMATE LOCATION OF THE NEW AUTOMATIC TRANSFER SWITCH (ATS). REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION.
- PROVIDE A JUNCTION BOX FOR 120V POWER CONNECTION TO EXTERIOR BUILDING SIGNAGE. COORDINATE ALL REQUIREMENTS WITH SIGN MANUFACTURE PRIOR TO ROUGH-IN.



B WEST LAB ELEVATION  
0 2 4 6 1/4" = 1'-0"



C EAST LAB ELEVATION  
0 2 4 6 1/4" = 1'-0"



A ELECTRICAL POWER PLAN  
0 2 4 6 1/4" = 1'-0"



date issued:	03-03-2023

Grant County Health Department  
Lots 1-5, Block 20, Medford, OK



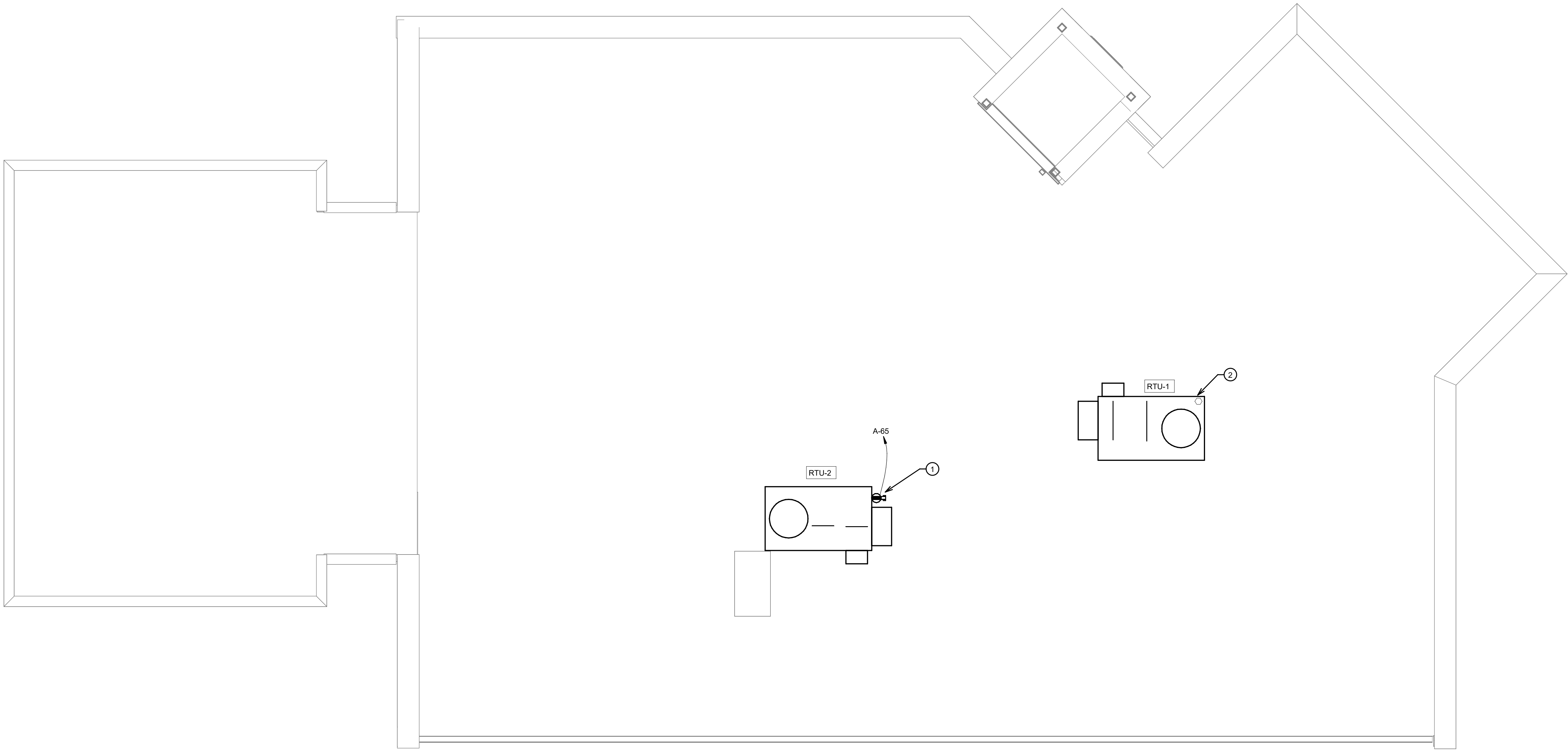


GENERAL NOTES:

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- 2. LABEL ALL SNAP SWITCH COVERPLATES WITH THE PANEL AND CIRCUIT NUMBER.
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- 4. REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
- 5. WALL MOUNTING HEIGHTS TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED.
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# E2.2 PLAN NOTES

- 1. MOUNT ON UNIT.
- 2. PROVIDE A DUCT MOUNTED SMOKE DETECTOR IN THE RETURN AIR DUCT OF THE RTU. COORDINATE LOCATION AND REQUIREMENTS WITH EQUIPMENT MANUFACTURE AND MECHANICAL CONTRACTOR. THE DUCT DETECTOR SHALL SHUT DOWN THE UNIT. CONTRACTOR SHALL ALSO PROVIDE A REMOTE ALARM INDICATOR IN THE CEILING UNDERNEATH THE UNIT. PROVIDE 120V CONTROL POWER AS REQUIRED.



A ELECTRICAL POWER PLAN - ROOF

0 2 4 6 1/4" = 1'-0"

NORTH

date issued: 03-03-2023					

Grant County Health Department  
Lots 1-5, Block 20, Medford, OK

CORBIN  
ARCHITECTURE

MERZ  
INTERIOR DESIGN

HANEY

302 NORTH INDEPENDENCE ENID, OK 73701

WWW.CORBINMERZHANEY.COM

PH: (580) 233-2362

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OKLAHOMA REGISTRATION NUMBER: 5682  
Integrated Consulting  
Engineers, Inc.  
349 South Hydraulic • Wichita, KS 67211  
316.264.3588 • 316.264.3948 • www.icengrsgisocem.net



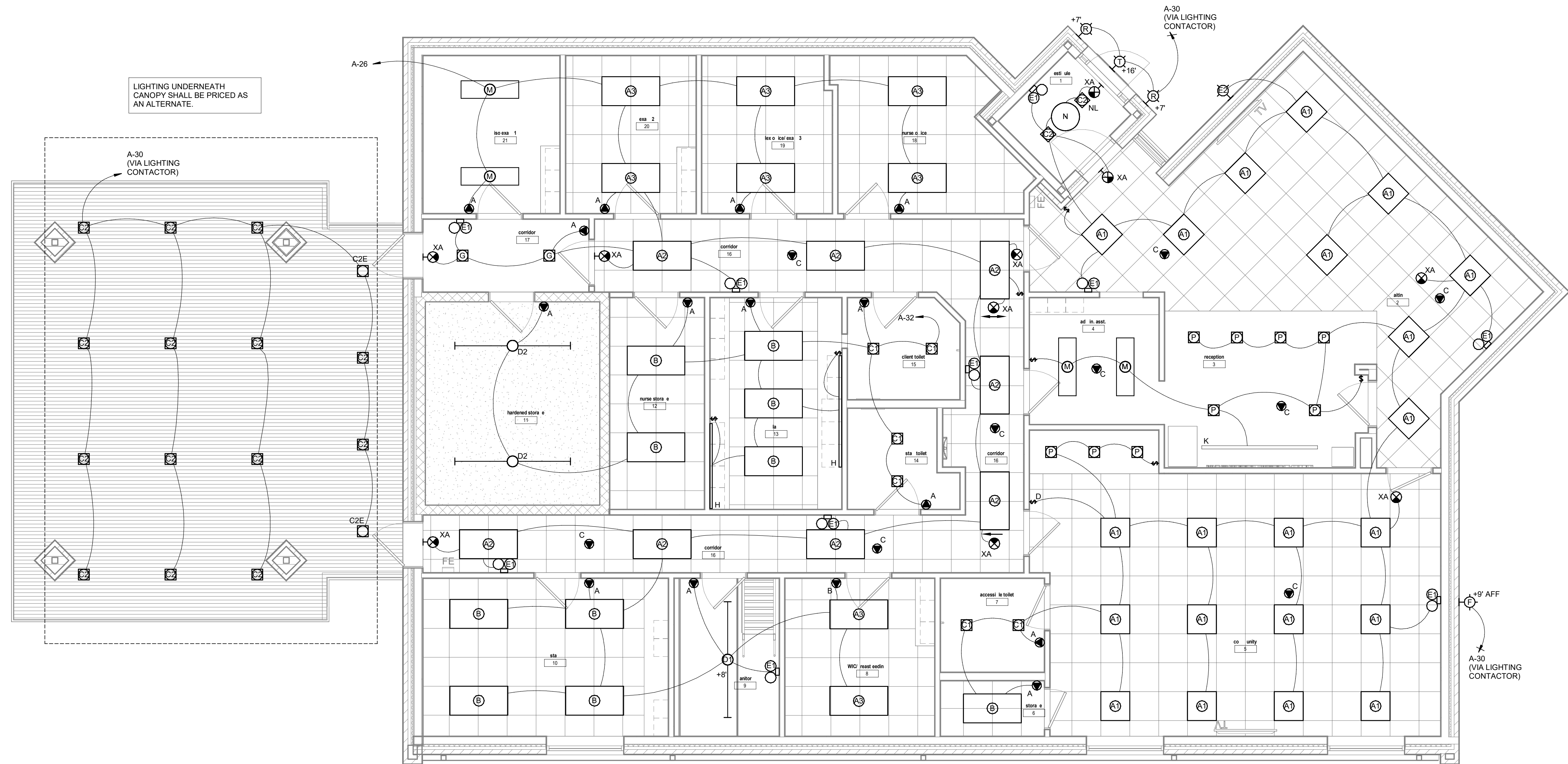
E2.2

EXPIRES: 12-31-2024



GENERAL NOTES:

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- LOWER CASE LETTERS NEXT TO LIGHT FIXTURES INDICATE WHICH SWITCH THEY ARE CONTROLLED BY.



A ELECTRICAL LIGHTING PLAN  
1/4" = 1'-0"  
NORTH

date issued:	03-03-2023

Grant County Health Department  
Lots 1-5, Block 20, Medford, OK

CORBIN MERZ HANEY  
ARCHITECTURE INTERIOR DESIGN  
302 NORTH INDEPENDENCE ENID, OK 73701  
WWW.CORBINMERZHANEY.COM  
PH: (580) 233-2362

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Integrated Consulting  
Engineers, Inc.  
349 South Hydraulic • Wichita, KS 67211  
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E3.1

EXPIRES: 12-31-2024