

Addendum #01

Date: January 27, 2022

Project: Longview School District Heat Pump Replacement and Indoor Air Quality Improvements

The additions, clarifications and corrections herein shall be made to the Project Manual, Drawings and Schedules for the above-referenced project, and shall be included in the scope of work and proposals to be submitted.

NOTE: References made below to the Project Manual and Drawings shall be used as a general guide only. The Bidders themselves shall determine the work affected by the Addendum items.

PROJECT MANUAL ITEMS

Item #01 Section 000110 TABLE OF CONTENTS

Add. #01 **DELETE:** (not included) from Division 00 title.
ADD: Section 092116 – Gypsum Board Assemblies.
ADD: Section 093000 – Tiling.

Item #02 Section 001113 ADVERTISEMENT FOR BIDS

Add. #01 **REVISE:** SUBMITTAL TIME/DATE/LOCATION: to read the following:
Prior to 2:00 P.M., Tuesday, February 7th, 2023.

Item #03 Section 002114 BID PROPOSAL FORM

Add. #01 **REVISE:** Section 002114 in its entirety per attached Section 002114 dated 01/27/2023.

Item #04 Section 092116 GYPSUM BOARD ASSEMBLIES

Add. #01 **ADD:** Section 092116 in its entirety, attached.

Item #05 Section 093000 TILING

Add. #01 **ADD:** Section 093000 in its entirety, attached.

Item #06 099000 – PAINTING AND COATING

Add. #01 **ADD:** 1.1.C.3 to read the following:
3. Section 092116 – Gypsum Board Assemblies: Finishing requirements for paints specified.
ADD: 2.2.F.1 to read the following:
1. Gypsum Wallboard: Typical walls and ceilings in classrooms, offices, etc.
a. One Primer Coat: Top commercial grade zero VOC GWB primer.
1) Sherwin Williams: ProMar 200 Zero VOC Primer B28 Series.

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- 2) PPG Paints: 6-4900XI Speedhide Zero Interior Zero VOC Latex Sealer.
- 3) Benjamin Moore: Ultra Spec 500 Interior Primer N534.
- 4) Rodda: 503601 MP Ultra Low VOC Interior Primer/Sealer.
- 5) Miller Paint: Acrylitex MPI 50 Primer/Sealer.
- b. Two Finish Coats: Top commercial grade zero VOC latex, Eggshell.
 - 1) Sherwin Williams: ProMar 200 Eg-Shel, B20-2600.
 - 2) PPG Paints: 6-4310XI Speedhide Zero Interior Zero VOC Latex Eggshell.
 - 3) Benjamin Moore: Ultra Spec 500 Interior N538, Eggshell.
 - 4) Rodda: 523601 MP Ultra Low Interior Satin Finish.
 - 5) Miller Paint: Performance Plus Eggshell Interior Latex 1303.

ADD 3.3.D to read the following:

1. Gypsum Wallboard: Remove all dust and dirt with a brush; if necessary, clean surfaces using damp rags or sponges. Repair of surface defects is specified in Section 092116.

ADD 3.5.B.2 to read the following:

1. When applying paint to drywall, use a roller nap no greater than 3/8 inch so as to achieve a light stipple finish.

Item # 07 Section 232123 – HYDRONIC PUMPS

Add. #01 **DELETE** paragraph 2.03 “Vertical In-Line Pumps”, replace with the following:

2.03 END SUCTION PUMPS

- A. Type: Centrifugal, single stage, vertical split, end suction base mounted pump. Bell & Gossett Series 1510 (or approved).
- B. Operating Range: Pump shall be rated for continuous operation at a minimum of 175 psi and 250 deg F.
- C. Volute: Cast iron or ductile iron construction (except shall be of bronze construction where pump is noted as “all bronze”), with plugged gauge tappings at inlet and outlet, and an integrally cast support foot centered beneath volute. Shall have flanged suction and discharge connections, pressure class to match piping system connected to.
- D. Impeller: Cast bronze or stainless steel, fully enclosed, keyed to shaft and secured with stainless steel locking cap screw.
- E. Shaft: High strength steel, with bronze or stainless steel replaceable shaft sleeves. Where “all bronze” pump is noted, shaft shall be Type 416 stainless steel. Shaft shall be coupled to motor with a flexible, center drop-out type coupler, with coupling guard. Shaft support bearings shall be re-greasable roller or ball bearings.

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- F. Seal: Internally self-flushing mechanical seal; with EPR or EPDM or Viton elastomer, carbon rotating face, tungsten carbide (or silicon carbide) stationary face, stainless steel spring, and metal parts of stainless steel or brass construction.
- G. Base: Pump and motor shall be mounted on a heavy structural steel baseplate, with welded cross members, fully enclosed sides and ends, and open grouting area.
- H. Service: Entire rotating assembly shall be removable for service (back pull-out arrangement) without disturbing pump piping or motor.

Item # 08 Section 235213 – BOILERS- ELECTRIC
Add. #01 Paragraph 2.01, B., **ADD** Precision Boilers.

DRAWING ITEMS

STRUCTURAL

Item #S01 S2-1 – STRUCTURAL GENERAL NOTES
Add. #01 **REVISE:** SHEET S2-1 TO INCLUDE STRUCTURAL ENGINEERING STAMP PER ATTACHED SHEET S2-1.

Item #S02 S2-2 – STRUCTURAL GENERAL NOTES
Add. #01 **REVISE:** SHEET S2-2 TO INCLUDE STRUCTURAL ENGINEERING STAMP PER ATTACHED SHEET S2-2.

Item #S03 S2-3 – MARK MORRIS – AA BUILDING PLANS AND DETAILS
Add. #01 **REVISE:** SHEET S2-3 TO INCLUDE STRUCTURAL ENGINEERING STAMP PER ATTACHED SHEET S2-3.
REVISE: TEXT CALLOUT ON PLAN VIEW 1/S2-3 FROM “LOCATE POSTS PER BM LOCATIONS ABOVE, SEE ROOF FRAMING PLAN, BM CL = POST CL. SEE PLAN NOTE 2, TYP” TO “LOCATE POSTS PER BM LOCATIONS ABOVE, SEE ROOF FRAMING PLAN, BM CL = POST CL. SEE PLAN NOTE 2, TYP. POSTS SHALL BE LOCATED ALONG CL OF (E) INTERIOR WALLS.”

Item #S04 S2-4 – MARK MORRIS – VOCATIONAL BUILDING PLANS AND DETAILS
Add. #01 **REVISE:** SHEET S2-4 TO INCLUDE STRUCTURAL ENGINEERING STAMP PER ATTACHED SHEET S2-4.
DELETE: TEXT CALLOUT ON PLAN VIEW 2/S2-4 “DUCT OPENINGS. GC COORDINATE LOC w/ MECH, LOC OF (E) RF FRAMING AND DECK SUPPORTS. FRAME OPENINGS WITH L4x4x1/4 w/ END CONN SIM TO 11/S2-4” AND DELETE ASSOCIATED GRAPHICAL ROOF DUCT PENETRATION AND ROOF DUCT PENETRATION FRAMING PER ATTACHED SHEET S2-4.
REVISE: TEXT CALLOUT ON PLAN VIEW 2/S2-4 FROM “(E) MEP RF PENETRATIONS, GC VERIFY LOC AND SIZE” TO “(E) MEP RF PENETRATIONS

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TO BE REUSED, GC VERIFY LOC AND SIZE. PROVIDE INFILL PER DETAIL 12/S2-4 WHERE PORTIONS OF (E) PENETRATIONS ARE NOT REUSED" PER ATTACHED SHEET S2-4.

REVISE: TEXT CALLOUT ON PLAN VIEW 2/S2-4 FROM "(E) MEP RF PENETRATION TO BE ABANDONED. PROVIDE INFILL PER 12/S2-4. EXACT LOC UNKNOWN, GC VERIFY, TYP." TO "(E) MEP RF PENETRATIONS TO BE REUSED, GC VERIFY LOC AND SIZE. PROVIDE INFILL PER DETAIL 12/S2-4 WHERE PORTIONS OF (E) PENETRATIONS ARE NOT REUSED" PER ATTACHED SHEET S2-4.

REVISE: GENERAL LOCATION AND SHAPE OF (E) MEP ROOF PENETRATION ON PLAN VIEW 2/S2-4 PER ATTACHED SHEET S2-4.

Item #S05 S2-5 – DETAILS AND SECTIONS

Add. #01 **REVISE:** SHEET S2-5 TO INCLUDE STRUCTURAL ENGINEERING STAMP PER ATTACHED SHEET S2-5.

MECHANICAL

Item #M01 M0.2 –COLUMBIA VALLEY GARDENS SCHEDULES

Add. #01 **REVISE:** Pump Schedule as follows:
CP-3A – Taco FI Series, Base Mounted Type.
CP-3B – Taco FI Series, Base Mounted Type.

Item #M02 M1.4 – MECHANICAL DEMO PLAN – MARK MORRIS HS AA-BUILDING

Add. #01 **ADD:** General Note 3: "Remove all (E) portable AC unit duct from each classroom. Remove & return portable AC units to owner. Assume 16 AC units for bidding purposes."

Item #M03 M2.3 – COLUMBIA VALLEY GARDENS – ENLARGED MECHANICAL ROOM PLAN

Add. #01 **ADD** note at fluid cooler FC-1 as follows:
"Provide custom duct transition from fluid cooler discharge up through existing roof penetration, terminate minimum 2'-0" above roof with screened opening."

Item #M04 M3.1 – MECHANICAL DETAILS

Add. #01 **DELETE** "Inline Pump Detail".

Item #M05 M3.1 – MECHANICAL DETAILS

Add. #01 **ADD** "Base Mounted Pump Detail" per attached ADM-001.

Item #M06 M3.3 – MECHANICAL DETAILS – MARK MORRIS HS

Add. #01 **ADD** "Rooftop Duct Support Detail" per attached ADM-001.

Contractor Questions:

1. Does the contractor pay for the building permit?
No. Per 005200 8.1.4, this is an Owner cost.

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2. There appear to be hazardous materials in the AA Building. What is the abatement process?
The Owner will coordinate with the Contractor on the extent of materials to be removed, and abated as applicable. The Owner will remove and abate the materials prior to Contractor mobilization.
3. Has the tank in Columbia Valley Gardens been tested for hazardous materials?
The tank will be tested by the Owner. Any required abatement will be completed prior to Contractor mobilization.

Attachments:

Pre-bid Site walk attendance sheet

Project Manual

Section 002114 – Bid Proposal Form

Section 092116 – Gypsum Board Assemblies

Section 093000 - Tiling

Drawings

S2-1

S2-2

S2-3

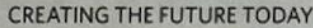
S2-4

S2-5

ADM-001

ADM-002

END OF ADDENDUM #01



**Longview School District
Heat Pump Replacement and Indoor Air Quality Improvements
Mark Morris High School and Columbia Valley Gardens Elementary School**

Bid Proposal FORM

February 7, 2023 at 2:00 p.m.

Project No. 2023-01-Longview Public Schools
for
(Sealed Base Bid and Alternate Bid Due 2:00 P.M. Tuesday February 7, 2023)

To: Longview Public Schools #301
Longview School District MOTF Office
ATTN: Barbara Howe
2080 38th Avenue
Longview, WA 98632

1.02 SUBMITTED BY (BIDDER TO ENTER NAME AND ADDRESS):

- A. BIDDER'S NAME _____
- B. ADDRESS: _____
- C. CITY, STATE, ZIP: _____

1.03 OFFER:

Having carefully examined the Project Manual and the Drawings entitled Heat Pump Replacement and Indoor Air Quality Improvements, as well as the premises and conditions affecting the Work, the undersigned represents that it has the personnel, qualifications, expertise and means to complete the Work in a timely manner and proposes to furnish all labor, equipment, and materials to perform the Base Bid Work required in strict accordance with the proposed Contract Documents for the following amount:

Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in figures shall govern.

2.01 THE BASE BID AMOUNT INCLUDES ALL WORK SHOWN ON THE DRAWINGS AND SPECIFIED IN THE BIDDING AND CONTRACT DOCUMENTS

TOTAL BASE BID:

DOLLARS (\$_____)

2.04 OVERHEAD AND PROFIT:

All of the above bid prices include overhead and profit.

2.05 SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

ALTERNATE BID NO. 1 - Provide exhaust duct from existing range hoods up through roof and terminate each into a roof vent.

DOLLARS (\$_____)

OVERHEAD AND PROFIT:

All of the above bid prices include overhead and profit.

SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

OVERHEAD AND PROFIT:

All of the above bid alternates include overhead and profit.

SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

ALTERNATE BID NO. 2 - Demolish (E) wall louvers, infill openings with brick veneer to match existing. Tooth bricks into (E) brick veneer adjacent to opening.

DOLLARS (\$_____)

OVERHEAD AND PROFIT:

All of the above bid prices include overhead and profit.

SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

OVERHEAD AND PROFIT:

All of the above bid alternates include overhead and profit.

SALES TAX:

01/27/2023

None of the above bid prices include State, County, or City Sales Tax.

ALTERNATE BID NO. 3 - Demo (12) hot water unit heaters, associated valves & controls. Furnish & install (12) hot water unit heaters, associated valves & controls.

DOLLARS (\$ _____)

OVERHEAD AND PROFIT:

All of the above bid prices include overhead and profit.

SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

OVERHEAD AND PROFIT:

All of the above bid alternates include overhead and profit.

SALES TAX:

None of the above bid prices include State, County, or City Sales Tax.

2.05 TRENCH EXCAVATION SAFETY SYSTEM INCLUDED ABOVE:

Included in the above Base Bid is an amount for Trench Excavation Safety for any trenching exceeding a depth of four feet. (In accordance with Chapter 39.04 RCW and WAC 296-155-650, all costs for adequate trench safety systems are required to be identified in this Bid.) The Bidder certifies that the following amount is included in the Base Bid for Trench Excavation Safety Provisions. **If no** amount is entered, the Owner will presume that the Bidder represents that there are no Trench Excavation Safety costs for this Project.

Trench Safety System DOLLARS(\$ _____)

3.01 SUBCONTRACTOR LISTING:

THE BIDDER SHALL LIST SUBCONTRACTORS ON THE ALTERNATE BID PROPOSAL FORM (PART 2). IF SUBCONTRACTORS VARY WITH BID ALTERNATES, THE BIDDER MUST SO INDICATE ON THE ALTERNATE BID PROPOSAL FORM.

4.01 CONTRACT, BOND, INSURANCE CERTIFICATES:

If the undersigned is notified of the acceptance of this Bid within forty-five (45) calendar days after the time set for opening of bids (the "Bid Date"), or such longer period identified in the Bidding Documents, it agrees to execute and deliver to the Owner the Agreement Between Owner and Contractor in the form provided by the Owner for a compensation computed from the above sum and any Alternates selected by the Owner and to furnish the bond, insurance certificates and other documents as required by the Contract Documents within ten (10) days after issuance of the Letter of Intent to Award a Contract.

4.02 TIME OF COMPLETION:

The undersigned agrees, if awarded the Contract, to achieve Substantial Completion of the Work as described in the Standard Form of Agreement Between the Owner and Contractor, AIA Document A104-2017.

4.03 LIQUIDATED DAMAGES:

The Bidder, by submitting its Bid, represents that the liquidated damages specified in the Contract Documents are a reasonable estimate of the costs and damages to the Owner that would be incurred if the Contractor fails to achieve Substantial Completion within the Contract Time.

4.04 BID SECURITY:

5% of the Base Bid

The undersigned further agrees that the Bid security accompanying this Bid shall be left in escrow with the Owner. The Bid security constitutes a pledge that the Bidder will, if issued a Letter of Intent to Award, enter into the Contract with the Owner on the form provided and on the terms stated in its Bid and will furnish the payment and performance bonds, certificates of insurance, and all other documents required in the Contract Documents. Should the Bidder fail or refuse to enter into the Contract or fail or refuse to furnish such documents, the amount of the Bid security shall be forfeited to the Owner as liquidated damages, and not as a penalty.

5.01. APPRENTICES

The undersigned understands that, pursuant to RCW 39.04.320, the Contractor will be required to achieve apprentice participation of at least fifteen percent (15%) of the total construction labor hours and that further information on this requirement is contained in the statute and the Contract Documents.

6.01. ADDENDA:

Receipt of the following addenda is hereby acknowledged and all costs of the Work therefore have been included in the proposal.

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

6.02 AS A CONDITION OF SUBMITTAL OF THIS BID, THE CONTRACTOR CERTIFIES THAT:

- A. It will comply with the current Cowlitz County prevailing wages pursuant to RCW 39.12. See Washington State Prevailing Wage Rates and Benefit Code Key.
- B. It is a registered contractor with RCW 18.27.
- C. It will comply with RCW 70.92, Aged and Physically Handicapped.
- D. It will comply with RCW 26A.400.330, Crimes Against Children.
- E. It has a current state unified business identifier number.
- F. It has industrial insurance coverage for the its employees working in Washington as required in Title 51 RCW
- G. It has an employment security department number as required in Title 50 RCW.
- H. It has a state excise tax registration number as required in Title 82 RCW
- I. It is not disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations).
- J. Within the three-year period immediately preceding the Bid Date, the Bidder has not been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provisions of chapter 49.46, 49.48 or 49.52 RCW.

The undersigned certifies under penalty of perjury under the laws of the State of Washington that the foregoing representations are true and correct.

7.01 BID FORM SIGNATURES:

**THE UNDERSIGNED CERTIFIES THAT THEY ARE AUTHORIZED TO BIND THE LEGAL ENTITY
MAKING THIS PROPOSAL.**

Date: _____

Name of Firm: _____

Bidder's Signature: _____

Bidder's Printed Name: _____

Title: _____

Street Address: _____

City: _____

State: _____ Zip Code: _____

Telephone Number: _____

STATE OF WASHINGTON CONTRACTOR'S NO: _____

FEDERAL ID NO: _____

DEPARTMENT OF LABOR & INDUSTRY REG. NO: _____

WASHINGTON STATE DEPARTMENT OF REVENUE NO: _____

**7.02 NOTE: IF A BIDDER IS A CORPORATION, WRITE STATE OF INCORPORATION; AND IF
A PARTNERSHIP, PROVIDE FULL NAMES AND ADDRESSES OF ALL PARTNERS
BELOW.**

A. (If Corporation) – State of Incorporation: _____

B. (If Partnership) – List all Partners:

1. Name: _____

a. Address: _____

2. Name: _____

a. Address: _____

3. Name: _____

a. Address: _____

8.01 SUBCONTRACTOR LIST:

01/27/2023

THE BIDDER SHALL NOT LIST MORE THAN ONE SUBCONTRACTOR FOR EACH CATEGORY OF WORK IDENTIFIED BELOW. (IF SUBCONTRACTORS VARY WITH BID ALTERNATES, THE BIDDER MUST SO INDICATE IN 11.02 BELOW.)

- A. If awarded the Contract for the Work, the undersigned Bidder will subcontract directly with the Subcontractors listed below for performance of the categories of the Work designated.
- B. The Bidder must list itself if it intends to perform a category of the Work itself.

FAILURE OF THE BIDDER TO SUBMIT THE NAMES OF THE FOLLOWING SUBCONTRACTORS OR TO NAME ITSELF TO PERFORM SUCH WORK WITHIN ONE HOUR OF THE PUBLISHED BID OPENING TIME SHALL RENDER THE BIDDER'S BID NONRESPONSIVE AND, THEREFORE VOID.

Category of Work	Subcontractor/Self
Heating, ventilation, and air conditioning	
Plumbing as described in RCW 18.106	
Electrical work as described in RCW 19.28	

FAILURE OF THE BIDDER TO SUBMIT THE NAMES OF THE FOLLOWING SUBCONTRACTORS OR TO NAME ITSELF TO PERFORM SUCH WORK WITHIN FORTY-EIGHT HOURS OF THE PUBLISHED BID OPENING TIME SHALL RENDER THE BIDDER'S BID NONRESPONSIVE AND, THEREFORE VOID.

Category of Work	Subcontractor/Self
Structural Steel Installer	
Rebar Installer	

- C. ALTERNATE SUBCONTRACTORS: Should the bid for an Alternate require a different Subcontractor, the Subcontractor must be identified in 11.02 below.

8.02 ALTERNATE SUBCONTRACTOR LIST:

SHOULD THE BID FOR AN ALTERNATE REQUIRE A SUBCONTRACTOR DIFFERENT FROM THE SUBCONTRACTOR LISTED IN 11.01 ABOVE, THE SUBCONTRACTOR MUST BE IDENTIFIED BELOW ALONG WITH THE AFFECTED CATEGORY OF THE WORK AND ALTERNATE NUMBER(S).

Name of Different Subcontractor for Alternate(s)	Category of Work	Alternate Number(s)

**LONGVIEW SCHOOL DISTRICT
HEAT PUMP REPLACEMENT AND INDOOR AIR QUALITY
IMPROVEMENTS**

END OF BID PROPOSAL FORM

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Tile backing panels.
3. Drywall trim and finishing (joint tape and compound).
4. Finishing Accessories.

B. Related Sections:

1. Section 061000 - Rough Carpentry: For wood framing and furring for gypsum board support.
2. Section 093000 - Tiling: Coordination of tile backing panels with tiling installation.
3. Section 099000 - Painting and Coating: For finish paints and primers applied to gypsum board assemblies.

1.2 REFERENCES

A. ASTM International:

1. ASTM C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
2. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
3. 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. to 0.112 in in Thickness.
4. ASTM C1002 - Standard Specification for Steel Self Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
5. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
6. ASTM C1396 - Standard Specification for Gypsum Board.
7. ASTM C1629 - Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber Reinforced Cement Panels.

8. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
9. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- B. Gypsum Association:
 1. GA-214 - Recommended Levels of Gypsum Board Finish.
 2. GA-216 - Specifications for the Application and Finishing of Gypsum Panel Products.
- C. Underwriters Laboratories, Inc.:
 1. Fire Resistance Directory.

1.3 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data for each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards. Provide all components of each wall assembly from a single manufacturer.
- B. Assembly Instructions: Keep at the site and make available to installers a copy of installation requirements for each fire rated assembly.
- C. Qualifications:
 1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
 2. Installer: Company specializing in performing Work of this section with minimum five years documented experience.

1.5 PROJECT CONDITIONS

- A. Environmental Conditions: Comply with ASTM C840 requirements for gypsum board application or written recommendations of gypsum board manufacturer, whichever is more stringent, for environmental conditions before, during and after application of gypsum board.
- B. Cold Weather Protection: When ambient outdoor temperatures are below 55 degrees F. maintain continuous, uniform, comfortable building working temperatures of not less than 55 degrees F. for a minimum period of 48 hours prior to, during and following application of gypsum board and joint treatment materials. Do not install interior products until installation areas are enclosed and conditioned.

- C. Ventilation: Provide controlled ventilation during joint finishing operations to eliminate excessive moisture. Avoid drafts during hot, dry weather to prevent excessively fast drying of joint compound.
- D. Dehumidification: Refer to NWCB Technical Document Gypsum Wallboard 300-103 for required drying.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. General: Perform work in accordance with Gypsum Association publications:
 - 1. GA-214 - Recommended Levels of Gypsum Board Finish.
 - 2. GA-216 - Specifications for the Application and Finishing of Gypsum Panel Products.

2.2 DESIGN REQUIREMENTS

- A. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated according to ASCE 7 and applicable codes for Seismic Design Category indicated on Structural Drawings.

2.3 GYPSUM BOARD

- A. Acceptable Manufacturers
 - 1. USG, Chicago, IL, 312.436.4000. (<http://www.usg.com>).
 - 2. Georgia-Pacific, (<http://www.gp.com>)
 - 3. Certainteed, (<http://www.certainteed.com>)
 - 4. Substitutions: Under provisions of Section 012500.
- B. Gypsum Wallboard (GWB):
 - 1. USG Sheetrock Brand Firecode; Georgia-Pacific ToughRock Fireguard X; Certainteed Gypsum Board or approved equal.
 - 2. ASTM C1396, Type "X", tapered edged, 5/8 inch thick;
 - 3. Furnish boards in maximum lengths available to minimize end-to-end joints; 48-inches wide.
 - 4. Greenguard Gold Certified.
- C. Tile Backer Gypsum Wallboard (GWB-TB):
 - 1. USG Fiberock Tile Backerboard, Georgia Pacific DensShield Tile Backer, Certainteed GlasRoc Tile Backer or approved equal.

2. ASTM C1178 or C1278, Type X, square edged, 5/8 inch thick (unless otherwise indicated);
3. Furnish boards in maximum lengths available to minimize end to end joints; 48 inches wide.

2.4 GYPSUM BOARD TRIM ACCESSORIES

- A. Standard Metal Trim: Unless otherwise noted, Beadex Manufacturing Co., Inc. trim is specified. Substitution of trim members by other manufacturers is acceptable conforming to ASTM C1047 and Section 012500 - Substitution Procedures. Provide galvanized steel laminated with paper trim designed for concealed metal and for application without mechanical fastening, unless otherwise specified; sizes compatible with thickness of drywall.
 1. Outside Corners: Right angle trim with paper surface to receive cement; Beadex "No. B1."
 2. Exposed Edges: "L" shaped trim with paper surface to receive cement; size to suit wallboard thickness. Beadex "No. B4."
 3. Edges Abutting Dissimilar Materials: "L" shaped trim with paper surface to receive cement and factory applied masking; size to suit wallboard thickness. Beadex "Premask L."
 4. Control Joints: Roll-formed zinc trim with tape-protected 1/4-inch opening, 7/16 inch deep. US Gypsum "No. 093", or approved substitution.

2.5 GYPSUM BOARD JOINT TREATMENT MATERIALS

- A. General: Provide materials as hereinafter specified, complying with ASTM C475; use only compatible compounds from one manufacturer.
 1. Joint Tape for Drywall: USG "Sheetrock Brand," or approved high-strength fiber paper tape with feather (sanded) edges.
 2. Joint Treatment for Standard Gypsum Wallboard Panels: Joint compound for embedding paper tape and for first fill coat over metal trim and fasteners except as otherwise indicated. Comply with ASTM C475 and manufacturer's recommendations.
 - a. Beadex "Pre-Mixed Taping Compound"
 - b. USG "Ready-Mixed Taping Joint Compound, All Purpose"
 - c. Substitutions: As specified in Section 012500 - Substitution Procedures.
 3. Joint compound for second and third coats, except for Tile Backer Board:
 - a. Beadex "Pre-Mixed Finishing Compound"

- b. USG "Ready-Mixed, Topping Joint Compound, All Purpose"
- c. Substitutions: As specified in Section 012500 - Substitution Procedures.
- 4. Joint Treatment for Tile Backer Board: Use exterior rated tape and setting-type taping compound and setting-type, sandable topping compound as recommended by the board manufacturer.

2.6 GYPSUM BOARD MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board.
- B. Fasteners:
 - 1. Steel Drill Screws: ASTM C1002 and ASTM C1513, for fastening gypsum board to steel members, unless otherwise indicated.
 - a. Comply with ASTM C954, screws for fastening to 10 gauge or heavier steel studs.
 - b. For fastening tile backer board, use screws of type and size recommended by panel manufacturer.
- C. Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate. Comply with project's VOC content limits.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with installer present, and including welded hollow metal frames and framing, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture, mold or otherwise damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing substrate and site conditions.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. General: Comply with applicable requirements of ASTM C840 and GA 216, fire rated assembly requirements and as specified herein, unless otherwise required by local building authorities.

3.3 FINISHING

- A. Installation: Tape and finish drywall in accordance with GA-214/ASTM C840, for Level of finish indicated below, unless detailed otherwise.
- B. Finishing Schedule:
 - 1. Level 2: Gypsum board above finished ceilings.
 - 2. Level 3: Gypsum board in utilitarian rooms as mechanical/electrical room, storerooms, custodial closets, except behind ceramic tile, blade second coat smooth.
 - 3. Level 4: Gypsum board in exposed to view (public) areas, and behind items that are mechanically attached including whiteboards, tackboards, casework , panel systems, etc., unless skim coat is required to create a smooth surface at abuse resistant and impact resistant panels.

3.4 GYPSUM BOARD INSTALLATION

- A. Install gypsum board units in accordance with ASTM C840 and manufacturer's instructions.
- B. Erect single layer standard gypsum board in most economical direction, with ends and edges occurring over firm bearing. Stagger joints on opposite sides of partitions.
- C. When gypsum board is to be applied to both ceilings and walls, apply the gypsum board to the ceiling first and then to the walls, unless detailed otherwise.
- D. Use screws when fastening gypsum board to metal furring or framing.
- E. Multiple Layer Applications: Use gypsum backing board for first layer, placed over framing or furring members. Use fire rated gypsum backing board for fire rated partitions. Secure subsequent layers to substrate in manner required by code for indicated fire rating. Apply adhesive in accordance with manufacturer's instructions.
- F. Treat cut edges and holes in tile backer board with sealant.
- G. Place control joints consistent with lines of building spaces as indicated or directed.
- H. Place corner beads at all external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials and at exposed edges.

3.5 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.
- C. Apply in accordance with manufacturer's instructions.

3.6 TOLERANCES

- . Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

3.7 CLEANING AND PROTECTION

- A. Promptly remove any residual joint compound from adjacent surfaces.
- B. Provide final protection and maintain conditions, in manner suitable to Installer, to ensure gypsum board assemblies are without damage or deterioration at time of Substantial Completion.

END OF SECTION 092116

GENERAL

1.1 SUMMARY

A. Section Includes:

1. Floor and Wall Tile to match existing.
2. Waterproofing and Crack Isolation Membranes.
3. Grout.
4. Setting Bed Materials and Grout.

B. Related Sections:

1. Section 092116 - Gypsum Board Assemblies: tile backer board substrate.

1.2 REFERENCES

A. American National Standards Institute:

1. ANSI A118.4 - Standard Specifications for Modified Dry-Set Cement Mortar.
2. ANSI A118.6 - Standard Specifications for Standard Cement Grouts for Tile Installation.
3. ANSI A137.1 - Standard Specifications for Ceramic Tile.

B. American Society for Testing and Materials:

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures.

B. Product Data: Submit instructions for using grouts and adhesives. Submit data on specified products, describing physical and performance characteristics; sizes, patterns, colors available and method of installation. Show compliance with requirements, including independent laboratory test reports and Manufacturer's instructions and recommendations for installation and maintenance.

C. Samples: Submit mounted tile and grout on two rigid panels, 12 x 12 inch in size illustrating pattern, color variations and grout joint size variations.

D. Section 017700 - Closeout Procedures.

E. Materials and Finishes Manual: Submit instructions for routine care, stain removal methods and grout care.

1.4 QUALITY ASSURANCE

A. Manufacturer/Installer Qualifications:

1. Tile: Minimum 5 years experience in manufacture of tile products.
2. Setting materials: Minimum 5 years experience in manufacture of setting and grout materials specified.
3. Installer Qualifications: Specializing in tile work having minimum of 5 years successful documented experience with work comparable to that required for this Project.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Protect adhesives and grouts from freezing or overheating.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Section 016000 - Product Requirements.
- B. Do not install adhesives and grouts in unventilated environment.
- C. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

1.7 EXTRA MATERIALS

- A. Section 017700 - Closeout Procedures: Spare parts and maintenance products.
- B. Supply 5% of each size, color (mix/blend) and surface finish of tile specified.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: To match existing.
- B. Substitutions: As specified in Section 012500 - Substitution Procedures.

2.2 WALL TILE

- A. Wall Tile: ANSI A137.1
 1. Tile Size and color: To match existing.
 2. Joint Width: To match existing.
 3. Thickness: To match existing.
 4. Special Shapes:

- a. Provide special shapes required by conditions of installation in each case.
- b. Provide bullnose tile, cove base, inside and outside corners, etc., to complete installation and to achieve required sanitary and code-compliant conditions.

2.3 FLOOR TILE

A. Floor Tiles: ANSI A137.1

1. Tile Size and color: To match existing.
2. Thickness: To match existing.
3. Joint Width: To match existing.
4. Mohs Hardness: >7.
5. Bond Strength: >200 psi.
6. Modulus of Rupture: >6000 psi.
7. Wall Base: To match floor tile.
 - a. Base Size: To match existing..
 - b. Profile:
 - 1) Cove Base.
8. Special Shapes:
 - a. Provide special shapes required by conditions of installation in each case.
 - b. Provide bullnose tile, cove base, inside and outside corners, etc., to complete installation and to achieve required sanitary and code-compliant conditions.

2.4 WATERPROOFING/CRACK ISOLATION MEMBRANE

- A. Bostik "Hydroment Ultra-Set Advanced," single component, trowelable, elastomeric, moisture curing urethane; does not require the use of fabric; complying with ANSI A118.10, ASTM C627 and ASTM C836.
- B. Laticrete "Hydro Ban™," single component self-curing, liquid rubber polymer; does not require the use of fabric; anti-fracture protection of up to ½ inch over shrinkage and non-structural cracks; and exceeding ANSI 118.10 and ANSI 118.12.
- C. Custom Building Products "RedGard® Waterproofing and Crack Prevention Membrane," elastomeric, spray or trowel applied; does not require the use of fabric; meeting ANSI A118.10 and ANSI A118.12.

- D. Ardex “S1K,” one component waterproofing and crack isolation compound meeting ANSI A118.10 and ASNI A118.12.

- E. Substitutions: Under provisions of Section 012500.

2.5 WATERPROOFING MEMBRANE

- A. Acceptable Manufacturers:

1. Ardex Americas, “Ardex, S1K.”
2. Custom Building Products “Custom 9240.”
3. Laticrete “9235 Waterproofing Membrane.”
4. Mapei “Mapelastic AquaDefense.”
5. Substitutions under provisions of Section 012500.

- B. Self-curing, liquid polymer and reinforcing fabric, rated for load bearing horizontal and vertical applications, able to bridge up to 1/8 inch shrinkage cracks and other non-structural joints, and meeting ANSI A118.10.

1. Reinforcing Fabric: Manufacturer’s standard, synthetic weave, in rolls 38 inch and 6 inch wide.

2.6 CEMENTITIOUS BOND COAT MATERIALS (F125 LOCATIONS)

- A. Thin set Dryset and Polymer Additive: Two component system; factory prepared, high bond strength dryset mortar and liquid polymer additive; ANSI A118.4.

1. Bostik; “Hydroment Tile Mate and Flex-A-Lastic 447 Flexible Mortar Admixture.”
2. Custom Building Products; “Porcelain Tile Fortified Thin-Set Mortar.”
3. Laticrete International; “Laticrete 4237 Mortar Admix with Laticrete 211 Crete Filler.”
4. Mapei Corporation; “Ultraflex 2.”
5. Ardex, Ardex X 4.
6. Substitutions: Under provisions of Section 012500 - Substitution Procedures.

2.7 GROUTS

- A. Latex-Modified Grout for Wall Tile:

1. Description: Latex-modified, factory blended, mildew resistant, sanded grout consisting of Portland cement and additives; comply with ANSI A118.6 or better.

2. Latex Additive: Type as recommended by latex mortar manufacturer.
3. Color: As specified in Room Finish Schedule.
4. Joint Thickness: Approximately 1/8 inch.
5. Acceptable Products: Type as recommended by membrane and setting bed materials manufacturer.

B. Sanded Epoxy Grout for Floor Tile:

1. Description: Modified epoxy emulsion grout.
2. Color: As specified on Color and Finish Schedule.
3. Joint Thickness: Approximately 1/8 inch.
4. Acceptable Products: Type as recommended by membrane and setting bed materials manufacturer.

2.8 ACCESSORIES

- A. Joint Sealants: Provide in accordance with Section 079200; color to match grout.
- B. Reinforcing Mesh (For F111 Installations): 6 oz. woven and treated glass fiber mesh
- C. Tile Trim:
 1. Top tile trim: L shaped profile with 1/8 inch wide visible surface integrated trapezoid perforated anchoring leg, and integrated grout joint spacer, aluminum.
 - a. Basis of Design: Schluter, Schiene, or approved equivalent.
 2. Outside Tile Corners: Trapezoid-perforated anchoring leg with rounded outer corner with 1/4 inch radius along surface edge, aluminum.
 - a. Basis of Design - Schluter, RONDEC or approved equivalent.
 3. Inside Tile Corners: Cove shaped profile, 23/32 inch wide radius, stainless steel.
 - a. Basis of Design - Schluter, Dilex-EHK or approved equivalent. Aluminum.
- D. Penetrating sealer/grout release: Recommended by installation product manufacturer.
- E. Primer: For use at gypsum based underlayment or patches and recommended by installation product manufacturer.

PART 3 EXECUTION

3.1 TILE INSTALLATION, GENERAL

- A. General: Install tile materials in accordance with ANSI A137.1, other referenced ANSI and TCNA specifications, and TCNA "Handbook for Ceramic Tile Installation," except for more stringent requirements of manufacturer or these Specifications.
- B. Floor Tile Installation Method: TCNA System F125 - Full.
 - 1. Description: Ceramic tile, over bonded crack isolation membrane, (full coverage) including wall base.
 - 2. Bond Coat Mortars: Thin set Bed Dryset and polymer additive to set tile.
 - 3. Grout: Sanded, epoxy.
 - 4. Control Joints: 1/4" thick with backer rod and sealant. Location not exceeding 24 - feet in each direction for interior floor joints.
- C. Wall Tile Installation Method: TCNA System W245
 - 1. Description: Ceramic tile, over waterproofing membrane, over tile backer unit.
 - 2. Mortar: Thin set Bed Dryset and polymer additive to set tile. Use mortar specifically formulated or recommended for glass tile at glass tiles.
 - 3. Grout: Sanded, Latex-modified. Comply with glass tile manufacturer's recommendations at glass tile.
 - 4. Control Joints: 1/4" thick with backer rod and sealant. Location not exceeding 24 - feet in each direction for interior wall joints.
- D. Tile Base:
 - 1. Cove Base: Install all cove base "flush" per current TCNA.
 - 2. Non-Cove Base: Install all non-cove base "square" per current TCNA.
 - 3. Before grouting, for each type of grout used, test patch to determine if grout will contaminate surface of tile. If test patch shows a tendency for staining or difficulty of removal, apply penetrating sealer/grout release prior to grouting process.

3.2 CLEANING

- A. Section 017700 - Closeout Procedures: Final cleaning.
- B. Clean tile and grout surfaces.

3.3 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 017000 - Execution: Protecting installed construction.
- B. Do not permit traffic over finished floor surface for 4 days after installation.

- C. Cover all tile flooring after installation is complete with ¼ inch plywood or hardboard sheets on undyed and untreated Kraft paper. Protection to remain in place until Substantial Completion.

END OF SECTION 093000

GENERAL STRUCTURAL NOTES

These notes shall govern unless otherwise noted in the drawings. Refer to written specifications for further requirements and amplification of these notes.

Codes

International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction.
Project Jurisdiction: City of Longview, State of Washington.

Design Loads

Reference code: ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures.

Dead Loads	
Roof	
Roof - A4 Building	15 psf (superimposed)
Roof - Vocational, Original	28 psf (superimposed)
Roof - Vocational, 1977 addition	14 psf (superimposed)

Mechanical Equipment

- Actual operating weight is by manufacturer.
- Weight indicated on drawings is the maximum design load.
- Notify Architect/Engineer if the manufacturer's operating weight of the equipment provided exceeds the maximum design load, prior to installation of the equipment.

Live Loads	
(live load reduction is applied as allowed by the reference code)	
Roof	
Typical Roof	20 psf

Handrails/Guardrails	
Assembly	200 lbs at any point, in any direction or 50 lbs/ft along top rail in any direction

Snow	
Ground snow load	Pg = 20 psf
Calculated flat roof snow load	PF = 22 psf
Minimum flat roof snow load	PI = 25 psf
Importance factor (snow)	Is = 1.1
Snow exposure factor	Ce = 1.0
Thermal factor	Ct = 1.0
Other Surcharges	per reference code
Unbalanced loads	per reference code

Wind	
Basic wind speed (3 second gust)	V = 85 mph
Exposure Category	B
Importance factor (wind)	Iw = 1.15
Topographical Factor	Kzt = 1.0
Directional Coefficient	Kd = 0.85
Gust Effect Factor	G = 0.85
Internal pressure coefficient	Gcp = 0.18
Minimum Net Uplift	16 psf

Earth	
Reference IBC Table 1806.2 - Presumptive Load-Bearing Values	
Allowable Bearing Pressure	1,500 psf (Class 5)
Passive resistance	100 pcf

Refer to drawings for additional loads

- CONSTRUCTION LOADS**
- Reference code: ASCE/SEI 37-14, Design Loads on Structures During Construction
 - The structure represented in these drawings has been designed to resist vertical and lateral loads prescribed by the reference code in its final constructed condition. The sequence of construction is the responsibility of the general contractor. All loads experienced by the structure due to the incomplete nature of the structure are the sole responsibility of the general contractor. The general contractor must design and provide temporary shoring and bracing until the final built condition, as shown in these drawings, is achieved.
 - The structure represented in these drawings has not been designed to resist vertical and lateral loads imparted by construction equipment. All loads experienced by the structure while supporting construction equipment are the sole responsibility of the general contractor. The general contractor must design and provide temporary shoring and bracing where required to support construction equipment.
 - Where temporary shoring or bracing is required, retain the services of a structural engineer registered in the project jurisdiction to design and detail the bracing of that equipment for the gravity and lateral forces prescribed by the reference code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.

FOUNDATION	
Reference Codes	
• International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 18	

Strength	
Reference IBC Table 1806.2 - Presumptive Load-Bearing Values	
Allowable soil bearing pressure	1,500 psf (Class 5)
Passive equivalent fluid pressure	100 pcf

- Coordination**
- Coordinate grading and excavating requirements with civil/landscape drawings. Foundations are designed to bear on undisturbed native soils or compacted structural fill, as described in the Geotechnical Report, over undisturbed native soils.

- Execution**
- Footing excavations should be cleaned of all loose soil, leveled, and protected from water and construction traffic.
 - Refer to geotechnical report and follow recommendations specific to wet weather earthwork.
 - Refer to geotechnical report and follow recommendations specific to temporary cut slopes.

- Submittals**
- Submittal of soils for bearing is as described in the geotechnical report. Soil bearing surfaces must be observed and approved by the geotechnical engineer of record prior to pouring foundation concrete. Submit the written field report by the geotechnical engineer of record to the Architect/Engineer for approval.

GENERAL CONDITIONS

- TYPICAL CONDITIONS**
- Typical details are not referenced at all locations for which they apply and may not be referenced at all. Details located on typical detail sheets represent the method of construction to be used at all locations, unless otherwise indicated in the drawings.

- EXISTING CONDITIONS**
- Diagrams and dimensions of the existing conditions are provided for reference only. The general contractor must verify all dimensions and existing conditions prior to commencing work in the area of that existing condition. Notify the Architect/Engineer of any discrepancy prior to fabrication and execution of the work in the area of the discrepancy.
 - Fully coordinate with demolition plans and architect to identify location and extent of structural and non-structural elements to be removed. Where there is a discrepancy between the demolition plans and the structural drawings describing the final built condition, contact the Engineer prior to fabrication and execution of the work in the area of the discrepancy.
 - Coordinate with the owner's representative to minimize disruption to the owner's operation and to provide building user and worker safety.
 - Coordinate with the owner's representative on approval for excessive noise and vibration during hours of building operation.
 - For all existing building materials and equipment to remain, provide protection from damage due to construction operations performed under this contract.
 - Any walls, floors, ceilings and/or equipment damaged as a result of construction operations, shall be repaired or replaced to match existing finish and condition.
 - Where walls, floors, or ceilings are removed only for the purpose of accessing an area of work in this contract, replace the walls, floors, and ceilings to match the original condition. Material and finishes for new walls, floors, and ceilings shall match surrounding surfaces unless noted otherwise. Maintain rating or replace with construction of the same rating at all existing fire and smoke rated construction.
 - Verify and maintain the location of existing plumbing, power, communications and data cables so as to not interrupt the continuity of their services, unless noted otherwise.
 - Leave all areas of work broom and dust clean at hard surfaces and vacuum clean at carpeted surfaces.

- DEMOLITION**
- Refer to demolition drawings for the extent and requirements of demolition work. Coordinate location and extent of demolition work with the structural drawings to achieve the final built condition described therein. Notify Architect/Engineer of any discrepancies between the structural, architectural and demolition drawings prior to commencing demolition.
 - The general contractor shall be responsible for the sequences of demolition, for providing all temporary shoring and bracing as needed to safely resist all loads which the existing structure may experience during demolition.
 - Where temporary shoring or bracing is required, retain the services of a structural engineer registered in the project jurisdiction to design and detail the bracing of that equipment for the gravity and lateral forces prescribed by the reference code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
 - Repair or replace any structural elements damaged during demolition to match the strength, quality, and appearance of the existing condition. Retain the services of a structural engineer registered in the project jurisdiction to design the repair or replacement of a damaged element wherever the strength and quality of the existing element is not evident. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
 - Sawcut existing concrete and masonry walls at least 1" deep on both faces of wall, all around new openings, prior to removal of material. Do not overcut at corners.
 - Remove all demolition materials from the site unless otherwise noted and dispose of it in a legal manner.

- COORDINATION**
- The written specifications and the drawings of the architectural, mechanical, electrical and civil/landscape disciplines are to be used in conjunction with the structural drawings for bidding and construction.
 - Dimensions for some secondary elements such as windows, doors, walls and floor edges are located only in the architectural drawings. Shop drawing production for structural elements will require dimensional information contained in both the architectural and structural drawings. All requests for dimensions in shop drawing submittals will be referred to the general contractor.
 - The contractor shall coordinate dimensions and conditions between the drawings (including the architectural, mechanical, electrical and civil/landscape disciplines), the specifications, and the site conditions prior to fabrication and construction. Notify Architect/Engineer in writing of any discrepancies in dimensions or conditions found prior to fabricating and executing work in the area of the discrepancy. Architect/Engineer will respond in writing according to the provisions of the general conditions found in the specifications. Any related work performed by the contractor between the discovery of the discrepancy and receipt of the Architect's/Engineer's written response will be done at the contractor's risk.
 - Where the bracing of mechanical, plumbing, fire-suppression and/or electrical equipment is not specifically detailed in the mechanical, plumbing, fire-protection and/or electrical drawings or specifications, retain the services of a structural engineer registered in the jurisdiction of this project to design and detail the bracing of that equipment for the gravity and lateral forces prescribed by the governing building code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
 - Where the bracing of ceilings and other architectural elements is not specifically detailed in the architectural drawings or specifications, retain the services of a structural engineer registered in the jurisdiction of this project to design and detail the bracing of those elements for the gravity and lateral forces prescribed by the governing building code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
 - Provide coordination drawings showing all anticipated penetrations through the structural elements shown in these drawings. No penetrations through structural elements shall be allowed unless already indicated in the structural drawings or approved in writing by the structural engineer.

- SUBMITTALS**
- Construction utilizing any given material shall not occur until the approved submittals for that material are received from the Architect/Engineer.

REINFORCING

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction
 - ACI 318-14, Building Code Requirements for Structural Concrete
 - ACI 301-10, Specification for Structural Concrete
 - TMS 402/602-16, Building Code Requirements and Specification for Masonry Structure
 - AWS D1.4/D1.4M-18, Structural Welding Code - Steel Reinforcing Bars

Strength			
Deformed Bars (new billet stock)	ASTM A615	Fy = 60 ksi	
Weldable Deformed Bars	ASTM A706	Fy = 60 ksi	
Epoxy Coated Deformed Bars	ASTM A775	Fy = 60 ksi	
Plain Welded Wire Fabric (electrically welded)	ASTM A165	Fy = 60 ksi	

Fiber reinforced concrete shall conform to ACI Report 544.1R. Follow manufacturer's recommended mix quantity, but use no less than 1.58/cu yd.

CONCRETE

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 19
 - ACI 301-10, Specification for Structural Concrete
 - ACI SP66 (04), ACI Detailing Manual
 - ACI 318-14, Building Code Requirements for Structural Concrete

Strength

Provide concrete mix design in accordance with ACI 301, and meeting the requirements of the CONCRETE MIX DESIGN TABLE.

- Coordination**
- Conduits embedded within slabs, walls or beams shall be placed between rebar mats where double mats occur. The outside diameter of the conduit shall be smaller than 1/4 x the member thickness and shall be spaced greater than 4 x the conduit outside diameter.
 - Coordinate reinforcing steel placement details with structural embeds and embeds specified in other disciplines. Utilize templates for placing steel in congested areas.
 - No concrete work shall be penetrated for piping or ducts, unless shown in the drawings or approved by the Engineer in writing.

- Execution**
- Provide bar supports as required in the contract documents. Concrete dobies shall be minimum 4000 psi with cast-in double annealed 16 ga iron wires for tying. Wire chairs shall have Class 1 plastic tips.
 - Provide cover as shown in drawings, with a minimum cover as required by the CONCRETE REINFORCING COVER TABLE.
 - Provide rebar splice lengths as shown in the drawings, with a minimum splice as required by the CONCRETE REINFORCING SPLICE TABLE.
 - Camber concrete forms as shown plus deflection due to the weight of wet concrete.
 - One-way slabs shall be cambered 1/1000 of the span, unless noted otherwise on the drawings. Cambers of less than 1/8" may be neglected.
 - Air Content and Slump shall be measured at the truck discharge or at the end of the pump, wherever concrete is pumped. Slump shall be within +/-1/2" of slump specified in the approved mix design submittal.
 - The reinforcement into the correct positions using double annealed 16 ga iron wire. Use wire chairs at maximum 36 inch spacing in formed construction and concrete dobies at maximum 24 inch spacing at concrete cast against grade or rigid insulation to elevate the rebar into the designated positions and to maintain the required concrete cover.
 - Cold Bend bars as noted in drawings to radius specified in ACI 315. Bend bars one time only.
 - Trim bars may be omitted when the opening dimensions are less than the rebar spacing, for opening less than 12"x12". Relocate all interrupted rebar along one side of the opening and place an identical bar on the opposite side of the opening. Alternatively, where the interrupted bar is within 3" of opening edge, rebar may be sprung around the opening with no additional rebar required on the opposite side of the opening.
 - Provide 3/4" chamfer at all exposed concrete edges, unless noted otherwise.

- Submittals**
- Mix Designs meeting or exceeding the requirements of the CONCRETE MIX DESIGN TABLE must be submitted to and approved by the Engineer prior to use. Provide mix designs which correspond to anticipated placement requirements and finish conditions. Deviation from the specified mix design must be demonstrated to be in accordance with ACI 318, Chapter 26 and must be submitted a minimum of two weeks prior to use for approval by the Engineer, with a written explanation of the reason for deviating from the specified mix design. Approval of deviation from the specified mix design is at the discretion of the Engineer.
 - Provide coordinated shop drawings with 1/4" scale elevations of all walls with all reinforcing, openings, structural embeds, and embedded items from other disciplines, all shown in conjunction and dimensioned relative to a common datum. Before submitting shop drawings for structural review, Mechanical and Electrical contractors must mark size and locations of all required penetrations and embeds on wall elevations.
 - Provide certification to show that all rebar welders hold a current WABO certification and are pre-qualified according to AWS D1.4 for all weld sizes and positions required.
 - Slab-on-Grade control joints shown in plan are schematic. Contractor shall provide control joint layout submittal to Engineer for approval showing all control joints that will be provided, conforming to the maximum joint spacing allowed.

CONCRETE REINFORCING COVER TABLE					
Location	Size	Cover			
Cast against and permanently exposed to earth	All	3"			
Exposed to earth or weather	#5 or smaller	1 1/2"			
Interior Wall Faces	#6 or larger	2"			
	#11 or smaller	3/4"			
Slab-on-Grade cast against vapor barrier	#14 and #18	1 1/2"			
	#11 or smaller	1" (see note 1)			
Elevated Slabs	#14 and #18	1 1/2"			
	#11 or smaller	1" (see note 1)			
Interior Frames - Beams and Columns (to Ties, Spirals, or stirrups)	#14 and #18	1 1/2"			
	All	1 1/2"			
Exterior Frames - Beams and Columns (to Ties, Spirals, or stirrups)	All	2" (see note 2)			

- Notes:**
- Can be 3/4 for 1-hour fire - refer to code plan.
 - Can be 1 1/2 for less than 4-hour fire rating, unless exposed to earth or weather - refer to code plan.

WOOD

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 23
 - West Coast Lumber Inspection Bureau Standard Grading Rules for West Coast Lumber No. 16, latest edition
 - ANSIAWC NDS-2018, National Design Specification (NDS) for Wood Construction, with 2018 Supplement
 - ANSIAWC SDPWS-2015, Special Design Provisions for Wind and Seismic

Strength			
2x Joists and Built-Up Members	Douglas Fir-Larch No. 2		
2x & 4x Beams and Posts	Douglas Fir-Larch No. 2		
2x Wall Studs	Douglas Fir-Larch No. 2		
4x Studs and Plates	Douglas Fir-Larch No. 2		
Misc. Light Framing	Douglas Fir-Larch No. 2		
T&G Decking	Douglas Fir Commercial Grade		

Design

- Where required by the drawings, design premanufactured wood joist, trusses and connections to resist construction and building loads described in these documents.

- Coordination**
- Structural walls are those shown in the structural drawings. Refer to architectural drawings for non-structural walls, partitions and soffits.

- Execution**
- Provide ASTM A307 bolts, unless noted otherwise.
 - Provide standard washers at all bolt heads and nuts.
 - All exterior bolts, nuts and washers shall be galvanized.
 - Provide nails conforming to "Common" specification ASTM F1667.
 - Timber connectors called out by letters and numbers shall be by Simpson Strong Tie Company, Inc. Provide fasteners of the size required by the manufacturer, in each hole.
 - All wood plates, ledgers, and blocking in direct contact with concrete or masonry shall be pressure treated with an American Wood Preservers Association (AWPA) approved preservative. Alternatively per IBC section 2304.11, for some exceptions, impervious moisture barriers may be provided between untreated members and concrete or masonry.
 - All metal fasteners in contact with treated wood shall be G-90 galvanized or stainless steel. When using galvanized fasteners, the contractor shall coordinate the galvanization process with the chemical composition of the wood treatment.
 - At all joints: provide cross-bridging at 8'-0" on center maximum. Provide solid blocking or continuous rim at all bearing points. Provide solid blocking over all bearing walls above.
 - Provide double joint under all parallel partitions that extend over more than half the joist length. Provide double joints each side of all openings in floors and roofs unless detailed otherwise. Coordinate size and location of all openings with architectural and Mechanical drawings.
 - Provide two 2x10 headers over and double studs each side of all openings in stud bearing walls unless noted otherwise.
 - Provide solid blocking at floors for wood columns and multiple stud posts to pass through.
 - Provide continuous solid blocking at mid-height of all stud walls over 10'-0" in height.
 - All stud walls unless noted otherwise shall be 2x4 at 16 inches on center at interior walls and 2x6 at 16inches on center at exterior walls.
 - Use full-length studs (balloon frame) on exterior walls at stairways and at vaulted ceilings.
 - All wood stud walls shall have lower wood plates attached to wood framing below with 16d nails at 6 inches on center, staggered or bolted to concrete with 5/8 inch diameter anchor bolts at 4'-0" on center unless noted otherwise on the plans. All anchor bolts shall have 3 x3 x 0.225 inch plate, washers and minimum embedment of 7 inches in concrete.
 - Plywood wall sheathing shall have solid blocking at all edges. Provide the following minimum nailing unless noted otherwise on plans:
 - 10d at 16 inches on center at sheath edge.
 - 10d at 12 inches on center at intermediate bearing points.
 - Where fasteners sizes and/or patterns are not noted, reference IBC Table 2304.10.1 for additional information.

- Submittals**
- All designs required to be provided by the manufacturer shall include drawings and calculation, stamped and signed by an engineer registered to work in the jurisdiction of this project.

WOOD STRUCTURAL PANELS

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 23

Strength

Plywood sheathing shall be grade Structural I.
Exterior glue up shall be in conformance with the building code, United States Voluntary Product Standards PS-1 or PS-2.

- Execution**
- Stagger panel end joints.
 - Provide approved edge clips at 24 inches on center at unblocked roof and floor sheathing edges.
 - Provide 1/8 inches gap between all abutting panel edges.
 - Provide the following minimum nailing unless noted otherwise on plans:
 - 10d at 6 inches on center at all supported panel edges.
 - 10d at 12 inches on center field nailing.
 - Where replacing damaged existing roof decking and/or sheathing, provide sheathing to match thickness of existing deck/sheathing build-up.

GLUED-LAMINATED TIMBER (GLULAM)

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 23
 - ANSI/APA A190.1-2017, Standard for Wood Products - Structural Glued Laminated Timber
 - ASTM D3737
 - ANSIAWC NDS-2018, National Design Specification (NDS) for Wood Construction, with 2018 Supplement

Strength (unless noted otherwise in drawings)	
Glulams	Douglas Fir Combination 24F-V8

- Coordination**
- All Glulams are architectural grade where exposed to view, unless noted otherwise.
 - Locate AITC identification mark where it will not be exposed to view in the finished building.

- Execution**
- Camber all glulams to a 2,000 foot radius unless noted otherwise. Install glulams with positive camber up. No camber on cantilever glulams or glulams that are continuous over supports.
 - Provide fasteners and connections according to "WOOD" section of these notes.

- Submittals**
- Provide shop drawings, detailing all framing members and connections.
 - Keep AITC certificate of conformance on file for all glulam members.

MASONRY VENEER

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 21
 - TMS 402/602-16, Building Code Requirements and Specification for Masonry Structures

- Execution**
- Provide wire type seismic veneer ties, spaced at 16" on center horizontal and 16" on center vertical per typical detail and specifications
 - Where veneer is not laid in running bond joint reinforcement is required. See Masonry Veneer specification
 - Provide galvanized steel angles over all openings in masonry veneer per typical detail

FASTENERS

- Execution**
- At repetitive fasteners, place end fasteners no more than 6" from the end of the member
 - For PDF's penetrating a steel substance, use 0.1570 PDF with length fully penetrating the base material thickness, unless the base material thickness is greater than 3/4". For base material thickness 3/4" and thicker, the PDF shall have 3/4" embedment
 - Locate fasteners according to the drawings and with the following minimum edge distance and spacing, unless noted otherwise:

Fastener	Typical size, UNO	Substrate	Min Edge Dist.	Min Spacing
Powder Driven	0.1570 x 1 long	Concrete	3"	4"oc
Powder Driven	0.1570 x Note 2	Steel	1 1/2"	1 1/2"oc
Self-Tapping Screw	1/40 x 1 3/4 long	Concrete	2 1/2"	3"oc
Self-Tapping Screw	1/40 x 1 3/4 long	Steel	1 1/2"	1 1/2"oc

BOLTS/RODS

- Reference Codes**
- AISC, Specification for Structural Joints Using ASTM A325 or A490 Bolts.

Strength	
Erection Bolts in Steel	ASTM A307, Snug Tight
All other Bolts in Steel	ASTM F1852, Twist-off Tension Control Bolts
All Bolts in Wood	ASTM A307
Anchor Rods	ASTM F1554, Grade 55
Threaded Rods	ASTM A36
Hardener Steel Washers	ASTM F436
Nuts	ASTM A563, Heavy Hex Nuts

- Execution**
- Place hardened steel washers between nuts and slotted or oversized holes.
 - All high-strength bolts shall be installed, tightened, and inspected in accordance with the AISC Specification for Structural Joints using ASTM A325 Bolts. The criteria for slip critical connections shall apply to all connections, unless noted as snug tight.
 - Use galvanized bolts, rods and washers wherever used in exterior applications and wherever connecting galvanized steel elements.

- Submittals**
- Include anchor rod setting templates with all base plate shop drawings.

STRUCTURAL STEEL

- Reference Codes**
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 22
 - AISC 360-16, Specifications for Structural Steel Buildings
 - AISC 341-16, Seismic Provisions for Structural Steel Buildings.

Strength			
W Shapes, WT Shapes	ASTM A992 or A913, Gr 50	Fy = 50 ksi	
Angles, Channels	ASTM A36	Fy = 36 ksi	
HSS Square Structural Tube	ASTM A500, Gr C	Fy = 50 ksi	
HSS Rectangular Structural Tube	ASTM A500, Gr C	Fy = 50 ksi	
HSS Round Structural Tube	ASTM A500, Gr C	Fy = 46 ksi	
Steel Pipe	ASTM A53, Gr B	Fy = 35 ksi	
All other Steel Shapes	ASTM A572 or A588	Fy = 50 ksi	
All Steel Plate, UNO	ASTM A572 or A588	Fy = 50 ksi	
Steel Plate Designated as 36 ksi	ASTM A36	Fy = 36 ksi	

- Plates 2" thick and thicker, that are part of the Lateral Force Resisting System, shall have a minimum Charpy V-notch toughness of 20 ft-lb at 70 degrees F, measured at any location permitted by ASTM A673.
- Hot rolled shapes that are part of the Lateral Force Resisting System shall have a minimum Charpy V-notch toughness of 20 ft-lb at 70 degrees F, tested in the alternate core location as described in ASTM A6.

- Coordination**
- Refer to architectural drawings for dimensions required for the location of steel elements including, but not limited to, framing around window and door openings, top of parapet and bottom of soffit elevations, wall locations, and edge of deck dimensions.

- Execution**
- The corners of continuity plates and stiffeners placed in the webs of rolled shapes that are part of the Lateral Force Resisting System shall be drilled according to AISC 341 Commentary F3.5b.4 and AWS D1.8 Commentary Section 4.
 - Weld access holes shall comply with the requirements of AISC 360, Section J1.6.
 - Provide N-Bearing 3/4" diameter bolts through horizontal short slotted holes at beam shear connections, unless noted otherwise.
 - Where connection is not accessible to Twist-off Bolt Guns, provide A325 Bolts with load indicator washers.
 - All exterior exposed structural steel shall be galvanized, unless noted otherwise.
 - Unless otherwise noted, beams are equally spaced between dimension points.
 - The Contractor shall be responsible for all erection aids and joint preparations.
 - The Contractor shall be responsible for compliance with all current OSHA requirements.
 - Modification to the structural steel, including holes and copes, shall not be made in the field without prior approval of the Engineer.

- Submittals**
- Shop drawings shall include the following information relative to the Lateral Force Resisting System:
 - Designate all members and connections that are part of the Lateral Force Resisting System.
 - Designate all shop welds that are Demand Critical.
 - Designate and dimension all protected zones.
 - Include welding requirements as specified in AWS D1.8.

WELDS

- Reference Codes**
- AWS D1.1/D1.1M-15, Structural Welding Code - Steel
 - AWS D1.3-08, Structural Welding Code - Sheet Steel
 - AWS D1.4/D1.4M-18, Structural Welding Code - Steel Reinforcing Bars
 - AWS D1.6-01/8M-16, Structural Welding Code - Seismic Supplement
 - AISC 341-16, Seismic Provisions for Structural Steel Buildings

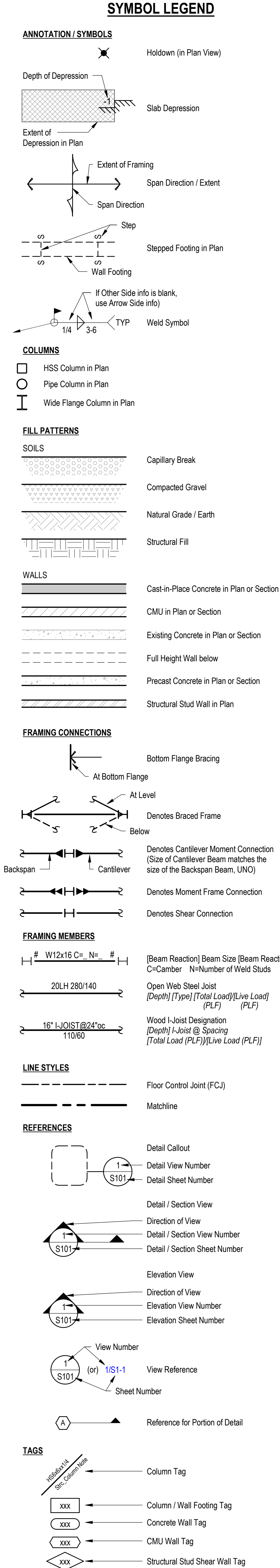
- Strength**
- Electrodes: Minimum yield strength = 70 ksi for all weld processes
- Where welds are designated as demand critical, they shall be made with a filler metal capable of providing a minimum Charpy V-notch toughness of 20 ft-lb at 70 degrees F as determined by the appropriate AWS classification test method or manufacturer certification, and a minimum Charpy V-notch toughness of 40 ft-lb at 70 degrees F per AWS D1.8.
 - All other weld used in members and connections in the Lateral Force Resisting System shall be made with a filler metal that can produce welds that have a minimum Charpy V-notch toughness of 20 ft-lb at 0 degrees F, as determined by the appropriate AWS AS classification test method or manufacturer certification.

- Execution**
- Welding shall be performed in accordance with a welding procedure specification (WPS) as required in AWS D1.1. The WPS variables shall be within the parameters established by the filler metal manufacturer.
 - Field welding symbols have not necessarily been indicated on the drawings. Where no field welding symbols are shown, it is the Contractor's responsibility to coordinate the use of shop and field welds.
- Submittals**
- All welders shall be AWS or WABO certified. Provide certification that each welder is qualified per AWS D1.1 for each position and weld type that the welder will perform.
 - Provide written Welding Procedure Specifications adhering to AWS D1.1 as well as the following:
 - Type of power source (constant current or constant voltage)
 - Manufacturer and trade name of electrodes used in Demand Critical welds
 - Manufacturer's certification of notch toughness requirements for electrodes used in Demand Critical welds.

SHEET LIST

STRUCTURAL	
S2-1	STRUCTURAL GENERAL NOTES
S2-2	STRUCTURAL GENERAL NOTES
S2-3	MARK MORRIS - A4-BUILDING

ABBREVIATIONS		ABBREVIATIONS	
<i>*Code References</i>		<i>I</i>	
ACI	AMERICAN CONCRETE INSTITUTE	IN	INCH, INCHES
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	INCL	INCLUDED, INCLUDING
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	INSUL	INSULATION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	INT	INTERIOR
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	IP	INTERLOCKING PUNCH
AWS	AMERICAN WELDING INSTITUTE	J	
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	JST	JOIST
IBC	INTERNATIONAL BUILDING CODE	JT, JTS	JOINT, JOINTS
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	K	
ICC-ES	ICC EVALUATION SERVICE	k, KIP	KILOPOUND
UBC	UNIFORM BUILDING CODE	ksi	KIPS PER SQUARE INCH
WABO	WASHINGTON ASSOCIATION OF BUILDING OFFICIALS	L	
WPS	WELDING PROCEDURES SPECIFICATIONS	L	ANGLE or LENGTH
<i>*MISC</i>		LAT	LATERAL
-	DEGREE	LF	LINEAR FOOT
±	PLUS OR MINUS	LFRS	LATERAL FORCE RESISTING SYSTEM
Ø	DIAMETER	LGT, LONG	LONGITUDINAL
A		LIN	LINEAR
AB	ANCHOR BOLT	LL	LIVE LOAD
ADD	ADDENDUM	LLH	LONG LEG HORIZONTAL
ADL	ADDITIONAL	LLV	LONG LEG VERTICAL
ADH	ADHESIVE	LOC	LOCATION
ADJ	ADJACENT	LSH	LONG SLOTTED HOLE
AES	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	LSL	LAMINATED STRAND LUMBER
AFF	ABOVE FINISH FLOOR	LVL	LAMINATED VENEER LUMBER
AHU	AIR HANDLING UNIT	M	
ALT	ALTERNATE	MAX	MAXIMUM
ANCH	ANCHOR, ANCHORAGE	MC	MISCELLANEOUS CHANNEL
APPROX	APPROXIMATE	MECH	MECHANICAL
AR	ANCHOR ROD	MEP	MECHANICAL, ELECTRICAL, PLUMBING
ARCH	ARCHITECT, ARCHITECTURAL	MEZZ	MEZZANINE
B		MF	MOMENT FRAME
BAL	BALANCE	MFR	MANUFACTURER
BF	BRACED FRAME	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BLKG	BLOCKING	MTL	METAL
BM	BEAM	N	
BOD	BOTTOM OF DECK	N-GROUT	NON-SHRINK GROUT
BOF	BOTTOM OF FOOTING, FOUNDATION	NLB	NON-LOAD BEARING
BOS	BOTTOM OF STEEL	NS	NEAR SIDE
BOT	BOTTOM	NTS	NOT TO SCALE
BP	BASE PLATE	O	
BRB	BUCKLING RESTRAINED BRACE	OC	ON CENTER
BRG	BEARING	OD	OUTSIDE DIAMETER
BTWN	BETWEEN	OPNG	OPENING
C		OPP	OPPOSITE
(c)	COLLECTOR	OSB	ORIENTED STRAND BOARD
C	CAMBER or CHANNEL	OWJ	OPEN WEB JOIST
CANT	CANTILEVER	P	
CIP	CAST-IN-PLACE	PAF	POWDER ACTUATED FASTENERS
CJ	CONTROL JOINT	PERIM	PERIMETER
CJP	COMPLETE JOINT PENETRATION	PERP	PERPENDICULAR
CL	CENTERLINE	PJP	PARTIAL JOINT PENETRATION
CLR	CLEAR, CLEARANCE	PL	PLATE
CMU	CONCRETE MASONRY UNIT	PLF	POUNDS PER LINEAL FOOT
COL	COLUMN	PLYWD	PREFABRICATED
COMP	COMPOSITE or COMPRESSION	PREFAB	PREFABRICATED
CONC	CONCRETE	PRELIM	PRELIMINARY
CONN	CONNECTION	PSF	POUNDS PER SQUARE FOOT
CONT	CONTINUOUS	PSI	POUNDS PER SQUARE INCH
CONTR	CONTRACTOR	PSL	PARALLEL, STRAND LUMBER
COORD	COORDINATE	PT	POINT, POST TENSION
CTR	CENTER, CENTERED	Q	
Q		QTY	QUANTITY
d	PENNY (NAIL)	R	
D&E	DRILL AND EPOXY	REF	REFERENCE
DBA	DEFORMED BAR ANCHOR	REINF	REINFORCE(D), (ING), (MENT)
DBL	DOUBLE	REQD	REQUIRED
DC	DEMAND CRITICAL	REV	REVISION, REVISED
DEMO	DEMOLISH, DEMOLITION	S	
DIA	DIAMETER	SCHED	SCHEDULE
DIAG	DIAGONAL	SECT	SECTION
DIAPH	DIAPHRAGM	SF	SQUARE FOOT
DIM	DIMENSION	SHGT	SHEATHING
DL	DEAD LOAD	DOWN	DOWN
DN	DOWN	SIM	SIMILAR
DTL	DETAIL	SOG	SLAB ON GRADE
DWG, DWGS	DRAWING, DRAWINGS	SPA	SPACING
DWL, DWLS	DOWEL, BOWELS	SPEC	SPECIFICATION
E		SQ	SQUARE
EA	EACH	SS	STAINLESS STEEL
EF	EACH FACE	SSH	SHORT SLOTTED HOLE
EL, ELEV	ELEVATION	STD	STANDARD
ELECT	ELECTRICAL	STD	STAGGERED
EMBED	EMBEDMENT	STIFF	STIFFENER
ENGR	ENGINEER	STR	STEEL
EOD	EDGE OF DECK	STRUCT	STRUCTURAL
EOS	EDGE OF SLAB	SYM	SYMMETRICAL
EQ	EQUAL	T	
EQUIP	EQUIPMENT	T&B	TOP AND BOTTOM
ES	EACH SIDE	T&G	TONGUE AND GROOVE
EW	EACH WAY	TEMP	TEMPERATURE, TEMPORARY
EXIST, (E)	EXISTING	THRD	THREAD, THREADED
EXP	EXPANSION	TO	TOP OF
EXT	EXTERIOR	TOB	TOP OF BEAM
F		TOC	TOP OF CONCRETE
FCJ	FLOOR CONTROL JOINT	TOF	TOP OF FOOTING
FDN	FOUNDATION	TOP	TOP OF PARAPET
FFE	FINISH FLOOR ELEVATION	TOS	TOP OF STEEL
FIN	FINISH	TOW	TOP OF WALL
FLR	FLOOR	TRA	THREADED ROD IN ADHESIVE ANCHOR
FO	FACE OF	TRANS	TRANSVERSE
FRMG	FRAMING	TYP	TYPICAL
FS	FAR SIDE	U	
FT	FOOT, FEET	UNO	UNLESS NOTED OTHERWISE
FTG	FOOTING	UT	ULTRASONIC TEST
G		V	
GA	GALUGE, GAGE	VERT, V	VERTICAL
GALV	GALVANIZED	VIF	VERIFY IN FIELD
GC	GENERAL CONTRACTOR	W	
GLB	GLUE LAMINATED BEAM	W, WF	WIDE FLANGE
GR	GRADE, GRADING	W	WITH
GWB	GYPSUM WALL BOARD	W/O	WITHOUT
H		WCJ	WALL CONTROL JOINT
HAS	HEADED ANCHOR STUD	WO	WOOD
HCP	HOLLOW CORE PLANK	WF	WIDE FLANGE
HDR	HEADER	WP, WPT	WORKING POINT
HORIZ, H	HORIZONTAL	WS	WELD STUD
HSS	HOLLOW STRUCTURAL SECTION	WT	WEIGHT or STRUCTURAL TEE CUT FROM WY SECTION
HT	HEIGHT	WWF	WELDED WIRE FABRIC
X		X	
XS	EXTRA STRONG	X	
XXS	DOUBLE EXTRA STRONG	XXS	



CONSTRUCTION ADMIN

Deferred Submittals

- Concrete Mix
- Metal Stud Systems
- Temporary Shoring/Bracing of Existing Structure

1. Deferred Submittal components are intended to be vendor designed and have not been designed by the Architect/Engineer. Refer to the drawings, the specifications, and the material sections of these general notes for design and submittal requirements.

2. Deferred Submittal components have not been permitted under the base building application. The contractor shall submit the approved submittals for the Deferred Submittal components to the building official. Deferred Submittal components shall not be installed until the building official has permitted the Deferred Submittal.

3. When the manufacturer is registered and approved to perform work without special inspection, the Contractor is to submit to the Building Official certificates of compliance from the manufacturers at the completion of manufacture stating that the work was performed in accordance with the approved construction documents.

Structural Observations

1. Structural Observation by the Structural Engineer is for the purpose of confirming general conformance of the construction with the design intent of the structure.

2. Structural observations will occur as required to confirm general conformance of the construction with the design intent of the structure.

3. Structural Observation is not intended to review the Contractor's construction procedures or the Contractor's conformance with the contract.

4. Structural Observation is not intended to replace the required Special Inspection program.

Special Inspection

Special inspections shall be performed by an agency which:

1. Is employed by the owner;
2. Is qualified to perform special inspection activities in accordance with IBC Section 1704.2;
3. Has been approved by the building official to perform special inspections.

The special inspector shall provide written documentation of qualifications per IBC section 1704.2.1.

The special inspector shall furnish inspection reports and a final report in accordance with IBC Section 1704.2.4.

The construction or work for which special inspection is required shall remain accessible and exposed of special inspection purposes until completion of the required special inspections.

Each contractor responsible for the construction of a main wind- or seismic force-resisting system, designated seismic system or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the owner prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the statement of special inspection.

Fabricators

The special inspector shall verify fabrication and implementation procedures of the following items per IBC Section 1704.2.5 unless the fabricator is registered and approved by the building official to perform such work without special inspection. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

1. Structural Steel- to include the requirements of AISC 360 Chapter N.
2. Ready Mix Concrete
3. Light-gage Steel Studs
4. Light-gage Metal Deck

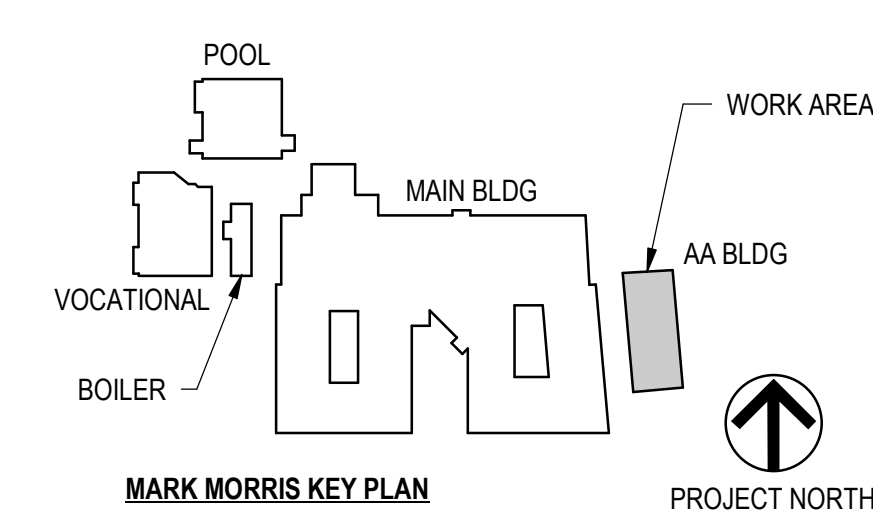
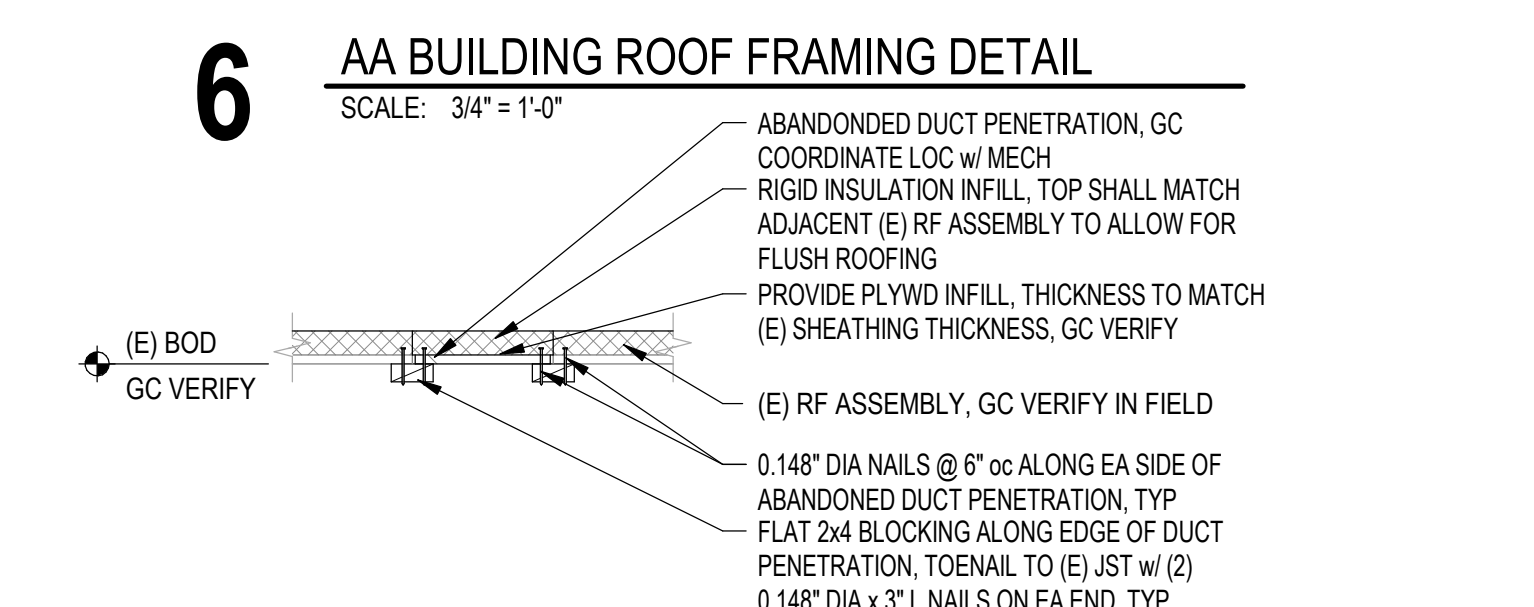
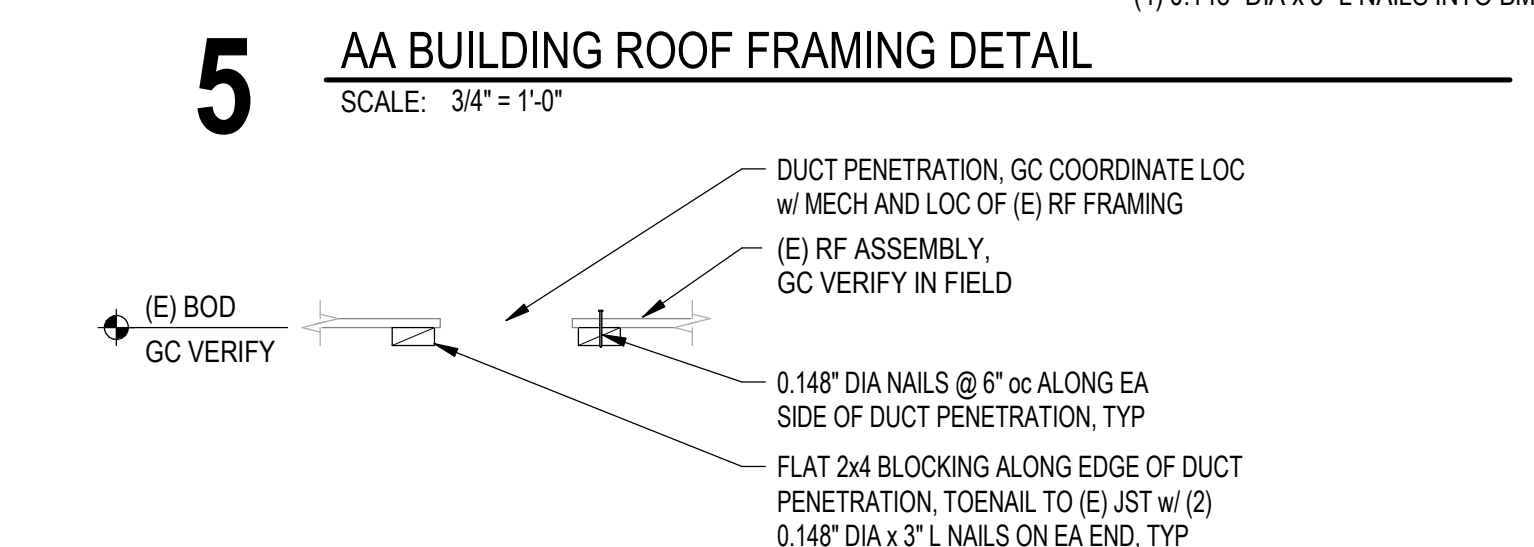
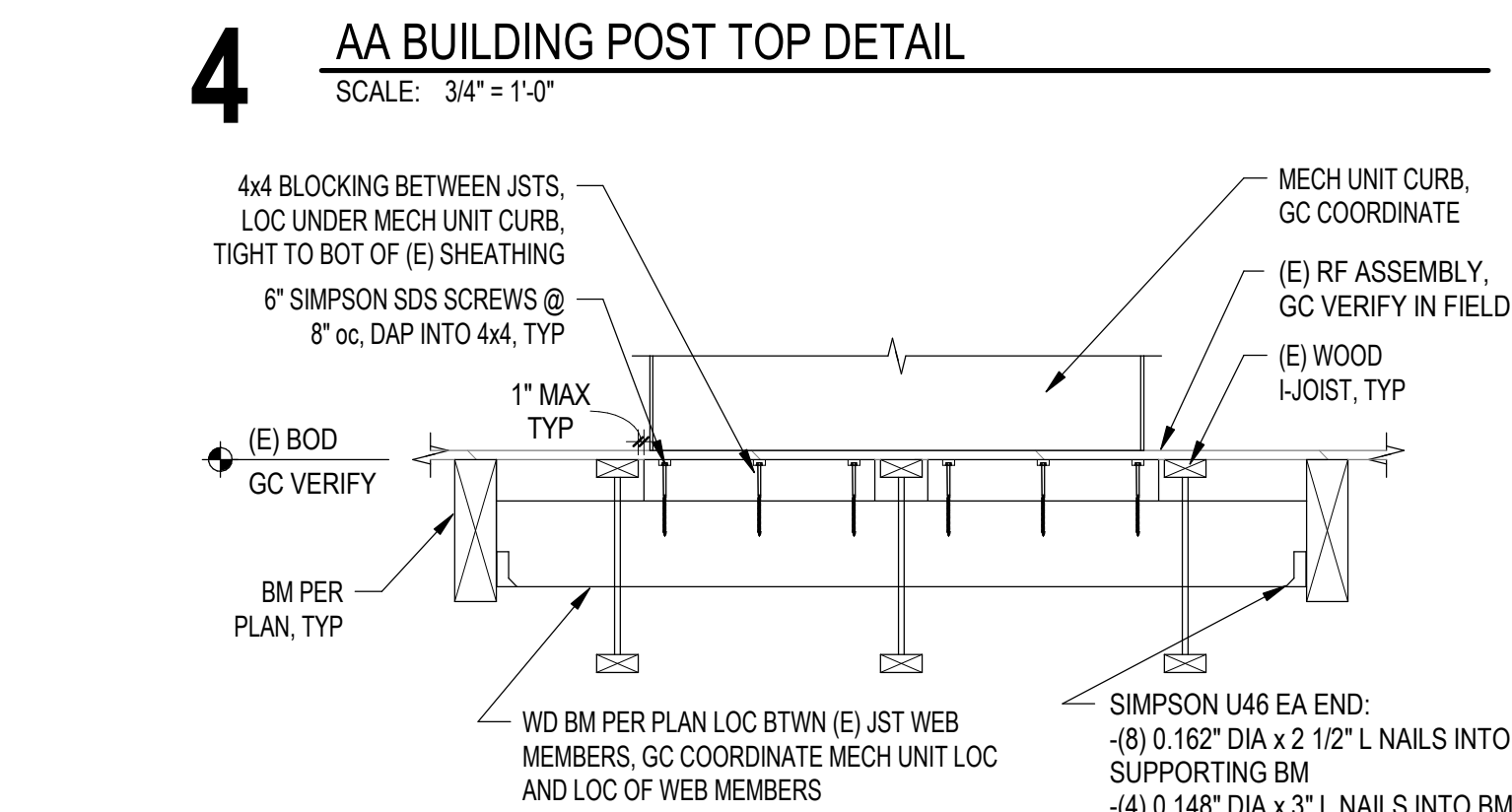
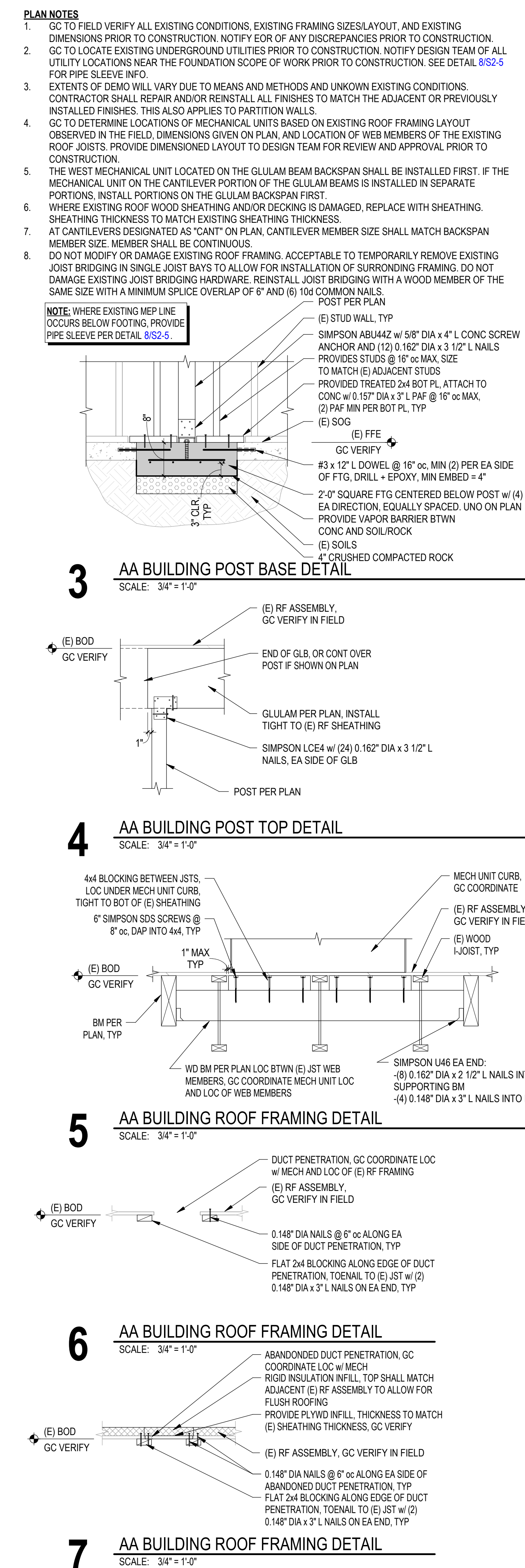
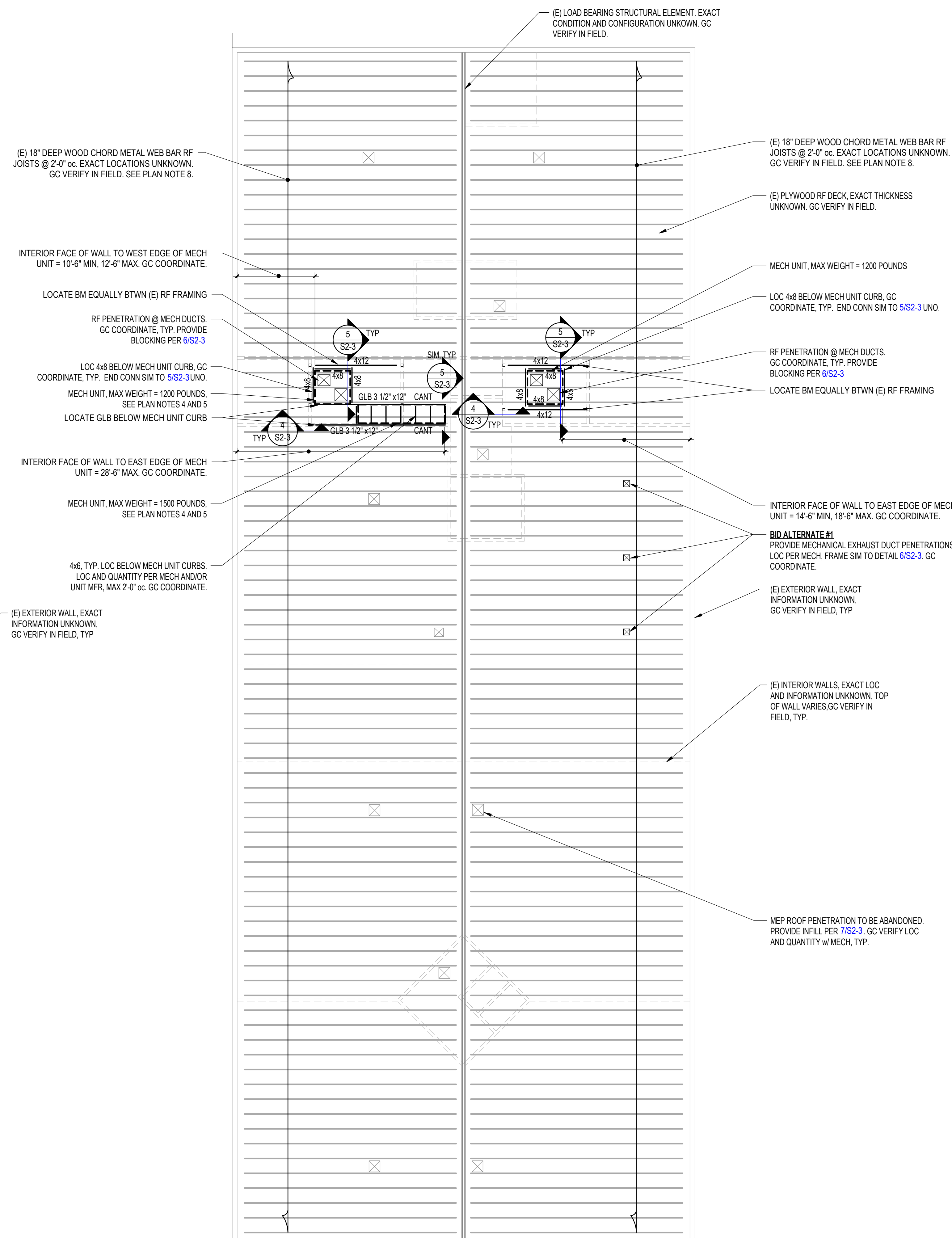
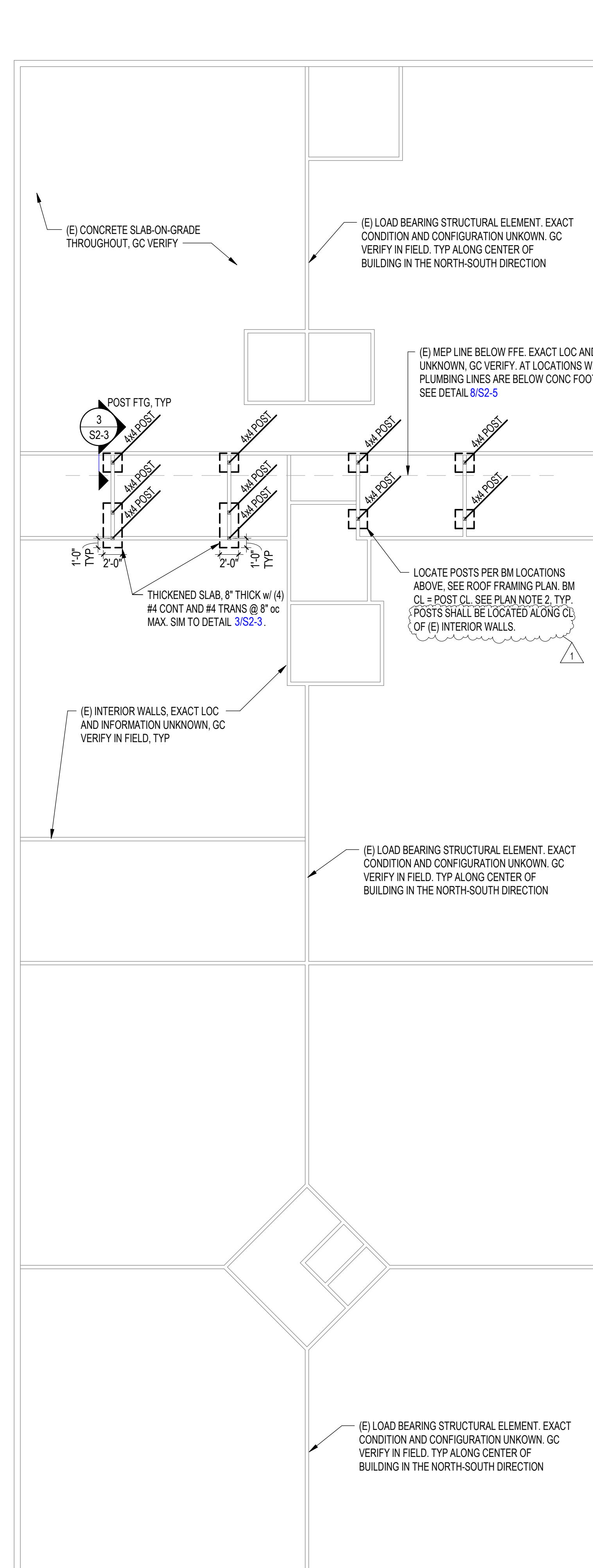
SUBMITTALS TO SPECIAL INSPECTOR

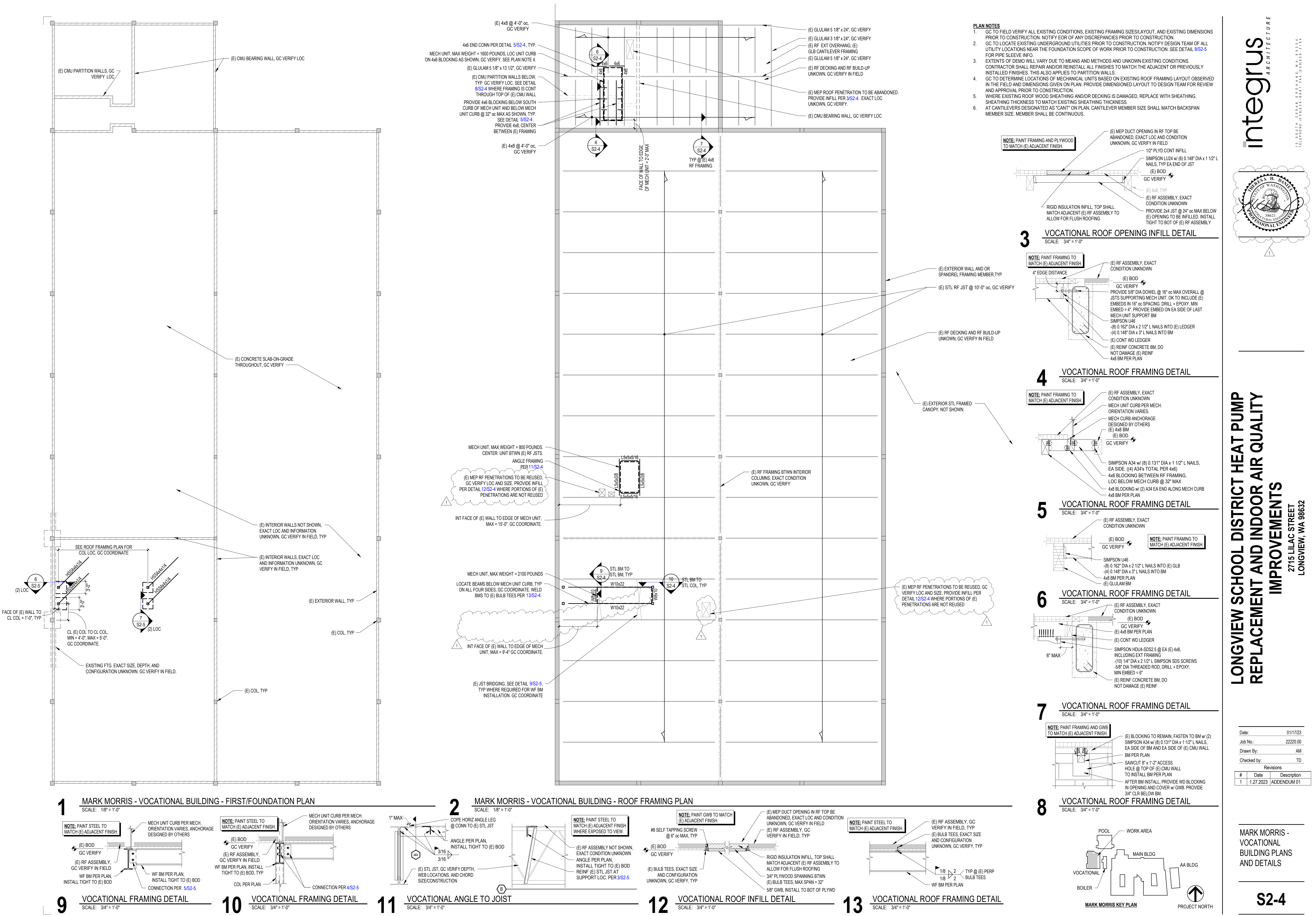
		CERTIFICATE
Welding	Structural Steel	AWS D1.1 Prequalification
	Light Gage Steel	AWS D1.3 Prequalification
	Reinforcing	AWS D1.4 Prequalification
	Welding	WABO or AWS Certified
Bolting	High Strength Bolts	Manufacturer's Letter of Certification
CMU Walls	Block Units	Manufacturer's Letter of Certification
	Grout	Manufacturer's Letter of Certification
	Mortar	Manufacturer's Letter of Certification
Adhesive Anchor	Epoxy Adhesive	Manufacturer's Letter of Certification
Concrete	All Concrete Material	All trip tickets, including water/cement ratio in truck
Slab-on-Grade	Concrete	In place water/cement ratio test results
Metal Deck Topping	Concrete	In place water/cement ratio test results

Inspector to review submittals before installation begins. Inspector must inspect job from approved & stamped design & shop drawings, including all clarifications, both written & in drawing form.

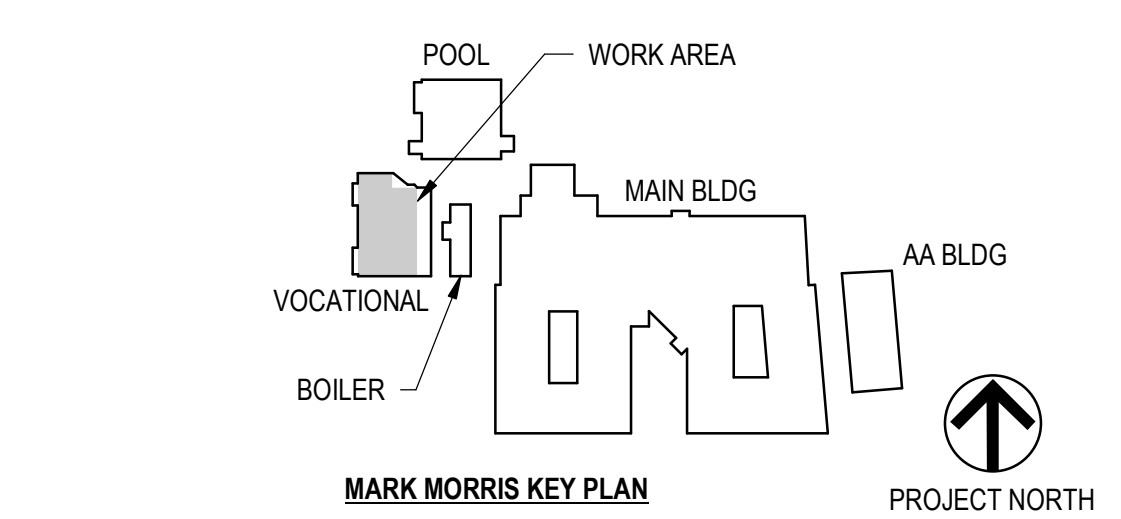
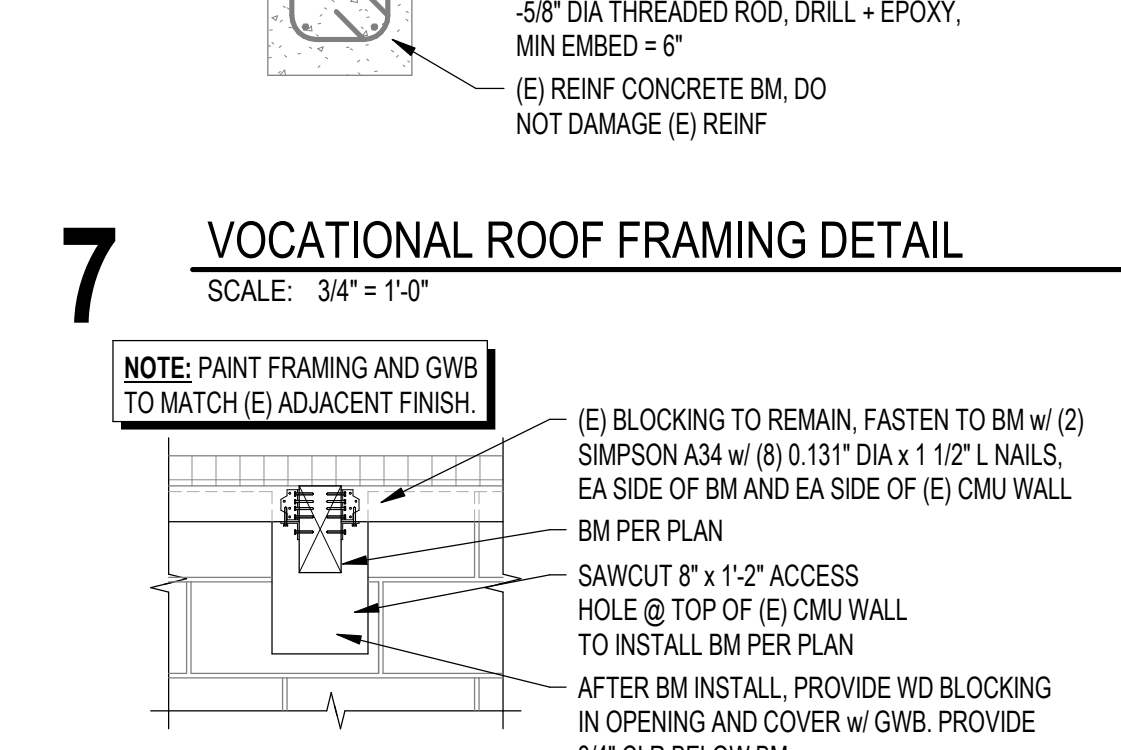
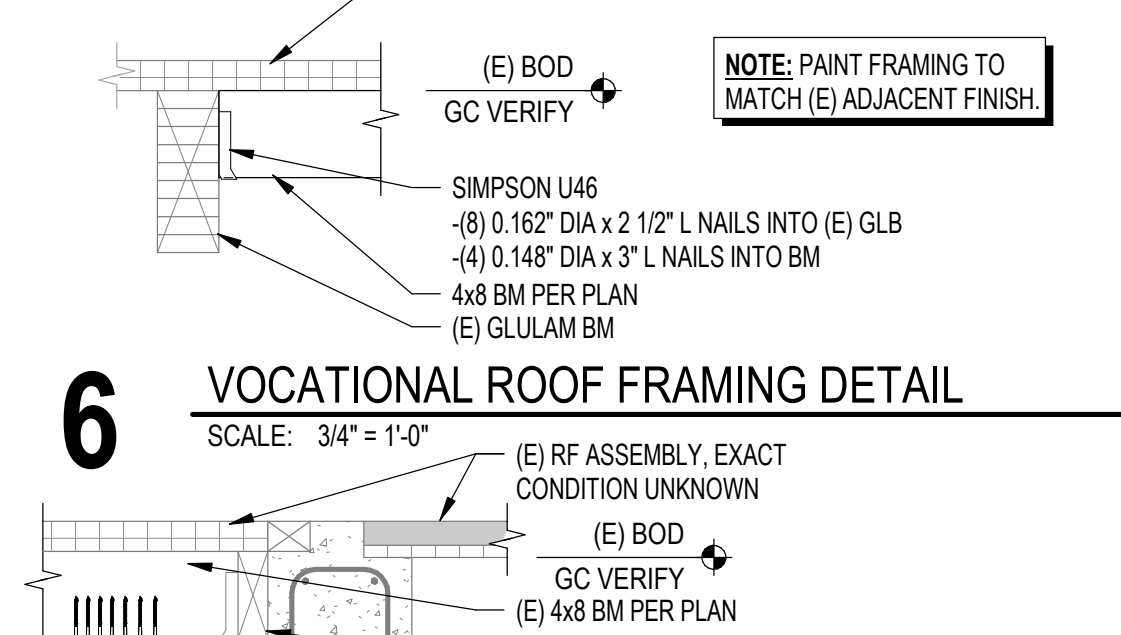
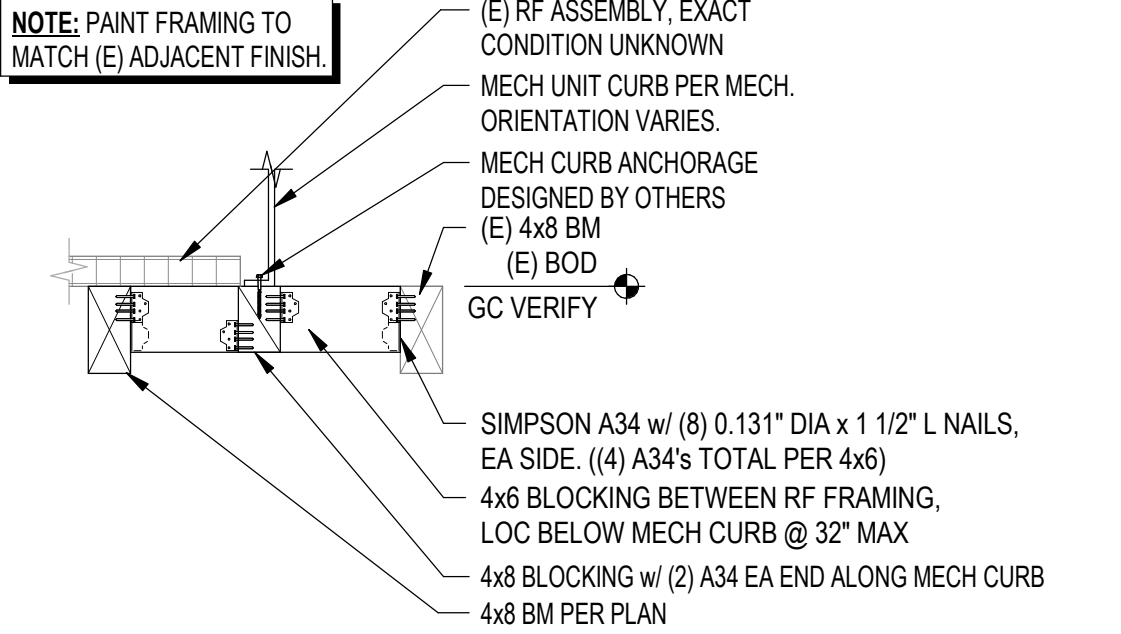
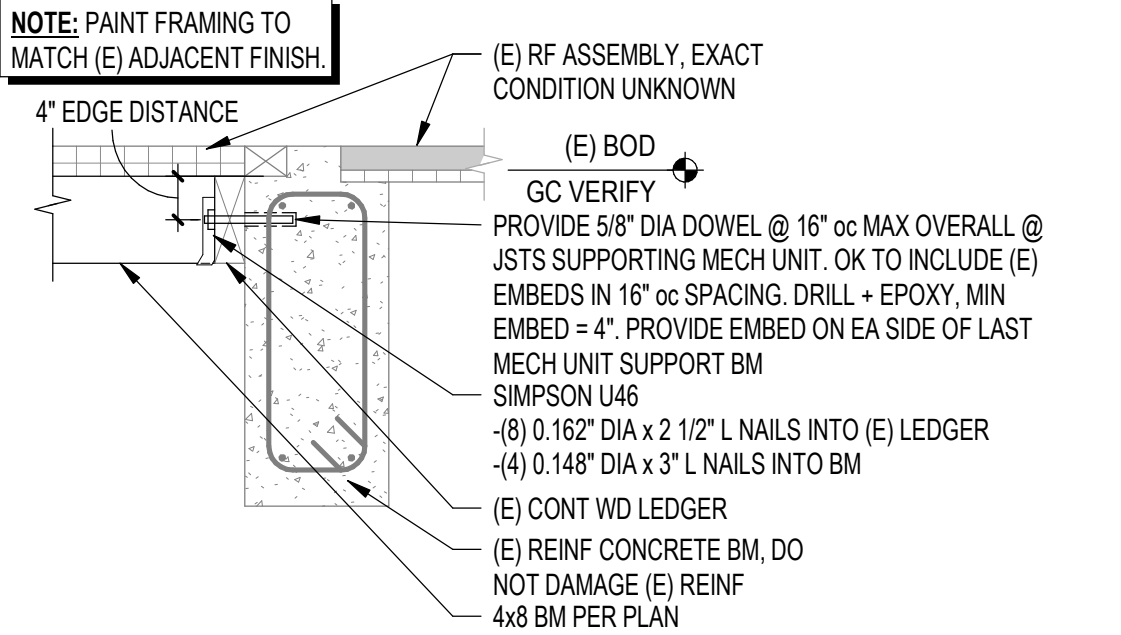
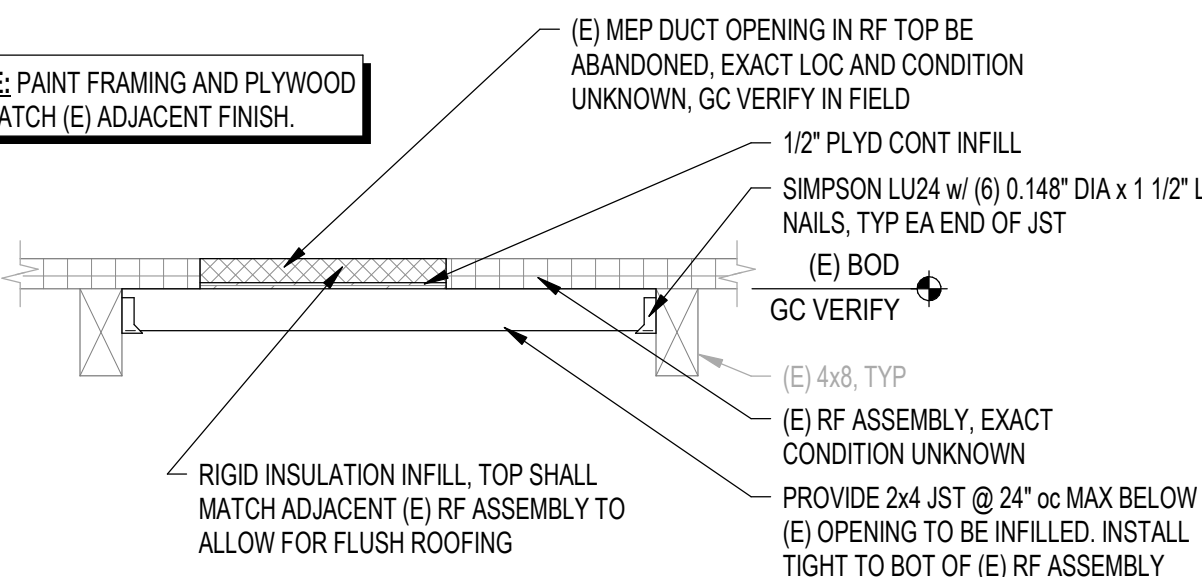
STATEMENT OF SPECIAL INSPECTIONS	
Seismic Requirements (IBC 1704.3.2)	
Special Inspections for Seismic Resistance (IBC 1705.12)	
Seismic Structural Steel and Steel Elements (IBC 1705.12.1, 1705.12.2 and AISC 341 Chapter J):	
Special inspection for structural steel seismic force-resisting systems (moment frames, braced frames, steel plate shear walls, etc) and structural steel elements (studs, collectors, chords, foundation elements, etc) shall be in accordance with the quality assurance (QA) requirements of AISC 341 and as noted below;	
1. The special inspector shall provide written documentation of practices and personnel as required by AISC 341 sections J3 and J4.	
2. Inspection of welding shall be in accordance with AISC 341 Section J6 and Tables J6-1, J6-2, and J6-3, inspection tasks prior, during, and after welding.	
3. Inspection of high-strength bolting shall be in accordance with AISC 341 Section J7 and Tables J7-1, J7-2, and J7-3, inspection tasks prior, during, and after bolting.	
4. Inspection of protected zones and reduced beam section moment frames shall be in accordance with AISC 341 section J8 and table J8-1	
5. Inspection of composite structures shall be in accordance with AISC 341 section J9 and table J9-1, J9-2, and J9-3, inspection tasks prior, during and after concrete placement.	
Structural Wood Construction (IBC 1705.12.2):	
Structural Wood seismic force-resisting systems (shear walls, diaphragms, collectors, drag struts, hold downs, etc) shall be inspected in accordance with IBC Section 1705.12.2.	
Structural Cold-Formed Steel Light Frame Construction (IBC 1705.12.3):	
Cold-formed steel light frame seismic force-resisting systems (shear walls, braces, diaphragms, collectors, drag struts, hold downs, etc) shall be inspected in accordance with IBC Section 1705.12.3.	
Designated Seismic Systems (IBC 1705.12.4):	
The special inspector shall examine architectural, mechanical, and electrical components, supports, and attachments indicated in Table 13.2-1 of ASCE 7 and verify that the label, anchorage or mounting conforms to the certificate of compliance required by Sections 13.2.1 and 13.2.2 of ASCE 7.	
Architectural Components (IBC 1705.12.5):	
Periodic special inspection is required during erection and fastening of exterior cladding, interior and exterior veneer, and interior and exterior non-bearing walls over 30 feet in height above grade or walking surface, and for anchorage of access floors. Inspection and limitations to be per IBC Section 1705.12.5.	
Mechanical, Electrical and Plumbing Components (IBC 1705.12.6):	
Periodic special inspection is required during the installation and anchorage of the following items:	
1. Electrical equipment for emergency or standby power systems.	
2. Piping systems designed to carry hazardous materials and their associated mechanical units.	
3. Ductwork designed to carry hazardous materials.	
4. Vibration isolation systems where a nominal clearance of 1/4 inch (6.4 mm) or less is required between the equipment support frame and restraint.	
5. Minimum clearances of Mechanical and electrical equipment, including duct work, piping systems and their structural supports per IBC section 1705.12.6.6 and ASCE 7 Section 13.2.3.	
Storage Racks (1705.12.7):	
Periodic special inspection is required during the anchorage of storage racks 8 feet (2438 mm) or greater in height per IBC Section 1705.12.7.	
Seismic Isolation Systems (IBC 1705.12.8)	
Periodic special inspection is required during the fabrication and installation of seismic isolation systems in accordance with IBC Section 1705.12.8.	
Cold-Formed Steel Special Bolted Moment Frames (IBC 1705.12.9)	
Periodic special inspection is required during the installation of cold-formed special bolted moment frames in accordance with IBC Section 1705.12.9.	
Testing and Qualification for Seismic Resistance (IBC 1705.13)	
Seismic Structural Steel and Steel Elements (IBC 1705.13.1 and AISC 341):	
Nondestructive testing for welded joints within the structural steel seismic force-resisting system shall be in accordance with section J6.2 of AISC 341. This includes testing of k-area welds, CJP Groove welds, where base material is greater than 1.5" thick, welded splices, thermally cut surfaces or beam copes and access holes, reduced beam section repairs, and weld tab removals.	
Concrete Reinforcement (IBC 1705.12 Item 1 and 1705.12.1):	
Certified mill test reports indicating compliance with Section 20.2.2 of ACI 308 shall be provided for each shipment of reinforcement used in those elements designated in the drawings as shear walls, moment frames, and coupling beams.	
Seismic Certification of Designated Seismic Systems (IBC 1705.13.3)	
Manufacturer's certification of seismic qualification in accordance with Section 13.2.2 of ASCE 7 shall be provided for active mechanical and electrical equipment that must remain operable following the design earthquake ground motion and for components with hazardous substances.	
Seismic Certification of Architectural, Mechanical and Electrical Components (IBC 1705.13.2):	
Manufacturer's certification of seismic qualification by analysis, testing or experience data in accordance with ASCE 7 Section 13.2 as well as the applicable sections indicated in ASCE 7 Table 13.2-1 shall be provided for architectural, mechanical and electrical components, supports and attachments per IBC Section 1705.13.2.	
Wind Requirements (IBC 1705.11)	
Special inspections for wind resistance are not required.	

STATEMENT OF SPECIAL INSPECTIONS (cont.)	
Steel Construction (IBC 1705.2 and AISC 360 Chapter N)	
Special inspection for structural steel shall be in accordance with the quality assurance (QA) requirements of AISC 360.	
Inspection of welding shall be in accordance with;	
1. AISC 360 sections N4.2 and N5.4	
2. AISC 360 Table N5.4-1 - Inspection Tasks Prior to Welding	
3. AISC 360 Table N5.4-2 - Inspection Tasks During Welding	
4. AISC 360 Table N5.4-3 - Inspection Tasks After Welding	
5. Nondestructive testing of welded joints shall be in accordance with AISC 360 sections N4.3 and N5.5	
Inspection of high-strength bolting shall be in accordance with;	
1. AISC 360 sections N5.6	
2. AISC 360 Table N5.6-1 - Inspection Tasks Prior to Bolting	
3. AISC 360 Table N5.6-2 - Inspection Tasks During Bolting	
4. AISC 360 Table N5.6-3 - Inspection Tasks After Bolting	
Other inspection tasks, including inspection of anchor rods and embedments supporting structural steel shall be in accordance with AISC 360 N5.8.	
Inspection of composite construction, including steel deck, headed stud anchors shall be in accordance with;	
1. AISC 341 Section J9	
2. AISC 341 Tables J9.1 - J9.3 - Inspection of Steel Elements of Composite Construction Prior to Concrete Placement	
Quality assurance inspections, testing and report submittal shall be in accordance with AISC 360 sections N5.2 and N7.	
Cold-Formed Steel Deck (IBC 1705.2.2)	
Special inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC and in accordance with IBC Section 1705.2.2.	
Open-Web Steel Joists and Joist Girders (IBC 1705.2.3)	
Special inspections for open-web steel joists and joist girders shall be in accordance with;	
1. IBC Section 1705.2.3	
2. IBC Table 1705.2.3 - Required Special Inspection of Open-Web Steel Joists and Joist Girders	
Cold-Formed Steel Trusses Spanning 60 feet or Greater (IBC 1705.2.4)	
Special inspections for cold-formed steel trusses with a span greater than 60 feet shall be in accordance with IBC Section 1705.2.4.	
Concrete Construction (IBC 1705.3)	
Special inspection for concrete construction shall be in accordance with IBC Table 1705.3 - Required Verification and Inspection of Concrete Construction.	
Masonry Construction (IBC 1705.4)	
Special inspections and tests for masonry construction shall be in accordance with the quality assurance requirements of TMS 402-16 section 1.3 and TMS 602-16 section 1.6.	
(see for risk category I, or II)	
1. Inspection and testing of CMU shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 2 Quality Assurance)	
2. Inspection of Masonry Veneer shall verify compliance with the approved submittals. (Level 1 Quality Assurance)	
(see for risk category IV)	
1. Inspection and testing of CMU shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 3 Quality Assurance)	
2. Inspection and testing of Masonry Veneer shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 2 Quality Assurance)	
Wood Construction (IBC 1705.5)	
Special inspections for wood construction shall be in accordance with IBC 1705.5	
Per IBC Section 1705.5.1, diaphragm special inspection shall include inspection of;	
1. Wood structural panel sheathing grade and thickness	
2. Nominal size of framing members at adjoining structural panel sheathing	
3. Fastener (nail or staple) diameter and length, the number of fastener lines, and the spacing between fasteners in each line and at edge margins	
Metal-plate-connected wood trusses;	
Special inspections of wood trusses with overall heights of 60 inches (1524 mm) or greater shall be performed to verify that the installation of the permanent individual truss member restraint/bracing has been installed in accordance with the approved truss submittal package per IBC Section 1705.5.2. For wood trusses with a clear span of 60 feet (18 288 mm) or greater, the special inspector shall verify during construction that the temporary installation restraint/bracing is installed in accordance with the approved truss submittal package per IBC Section 1705.5.2.	
Soils (IBC 1705.6)	
Special inspection for existing site soil conditions, fill placement and load-bearing requirements shall be in accordance with;	
1. IBC 1705.6	
2. IBC Table 1705.6 - Required verification and Inspection of Soils	
Driven Deep Foundations (IBC 1705.7)	
Special inspections and tests during installation of driven deep foundation elements shall be in accordance with IBC Section 1705.7.	
Cast-in-Place Deep Foundations (IBC 1705.8)	
Special inspections and tests during installation of cast-in-place deep foundation elements shall be in accordance with IBC Section 1705.8.	
Helical pile Foundations (IBC 1705.9)	
Continuous special inspections during installation of helical pile foundation elements shall be in accordance with IBC Section 1705.9.	
Fabricated Items (IBC 1705.10)	
Special inspections of fabricated items shall be in accordance with IBC Section 1705.10.	
Sprayed Fire-Resistant Materials (IBC 1705.14)	
Special inspection for sprayed fire-resistant materials shall be in accordance with IBC Sections 1705.14.1 through 1705.14.6	
Mastic and Intumescent Fire-Resisting Coatings (IBC 1705.15)	
Special inspection for mastic and intumescent fire-resistant materials shall be in accordance with IBC Sections 1705.15 and AWCI 12-B	
Exterior Insulation and Finish Systems (IBC 1705.16)	
Special inspection for exterior insulation and finish systems shall be in accordance with IBC Sections 1705.16	
Fire-Resistant Penetrations and Joints (IBC 1705.17)	
Special inspection for fire-resistant penetrations and joints shall be in accordance with IBC Sections 1705.17, 1705.17.1, and 1705.17.2	
Smoke Control (IBC 1705.18)	
Special inspection for smoke control systems shall be in accordance with IBC Sections 1705.18	





- PLAN NOTES**
- GC TO FIELD VERIFY ALL EXISTING CONDITIONS, EXISTING FRAMING SIZES/LAYOUT, AND EXISTING DIMENSIONS PRIOR TO CONSTRUCTION. NOTIFY EOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
 - GC TO LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY DESIGN TEAM OF ALL UTILITY LOCATIONS NEAR THE FOUNDATION SCOPE OF WORK PRIOR TO CONSTRUCTION. SEE DETAIL 9S2-5 FOR PIPE SLEEVE INFO.
 - EXTENTS OF DEMO WILL VARY DUE TO MEANS AND METHODS AND UNKNOWN EXISTING CONDITIONS. CONTRACTOR SHALL REPAIR AND/OR REINSTALL ALL FINISHES TO MATCH THE ADJACENT OR PREVIOUSLY INSTALLED FINISHES. THIS ALSO APPLIES TO PARTITION WALLS.
 - GC TO DETERMINE LOCATIONS OF MECHANICAL UNITS BASED ON EXISTING ROOF FRAMING LAYOUT OBSERVED IN THE FIELD AND DIMENSIONS GIVEN ON PLAN. PROVIDE DIMENSIONED LAYOUT TO DESIGN TEAM FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
 - WHERE EXISTING ROOF WOOD SHEATHING AND/OR DECKING IS DAMAGED, REPLACE WITH SHEATHING. SHEATHING THICKNESS TO MATCH EXISTING SHEATHING THICKNESS.
 - AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE. MEMBER SHALL BE CONTINUOUS.



LONGVIEW SCHOOL DISTRICT HEAT PUMP REPLACEMENT AND INDOOR AIR QUALITY IMPROVEMENTS

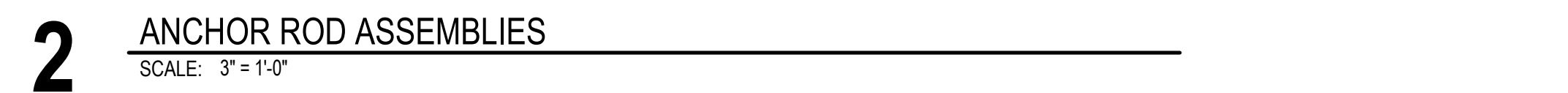
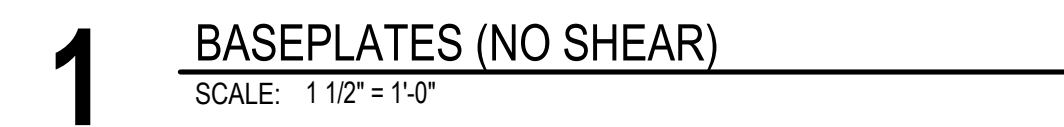
2715 LILAC STREET
LONGVIEW, WA 98632

Date: 01/17/23
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Checked by: TD

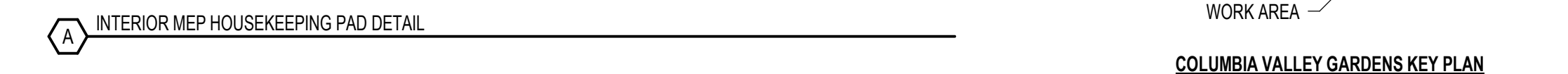
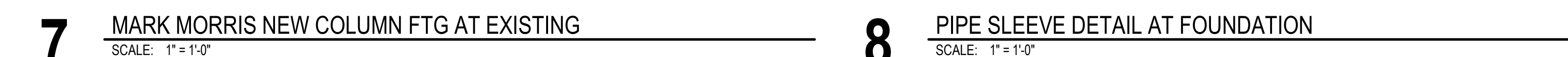
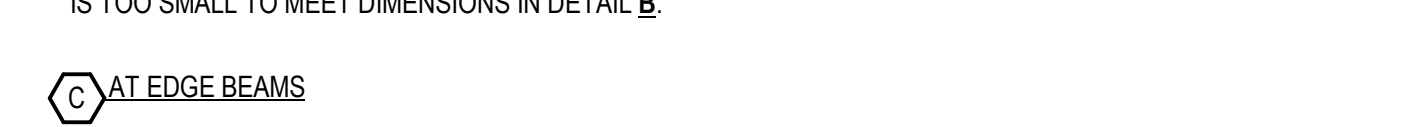
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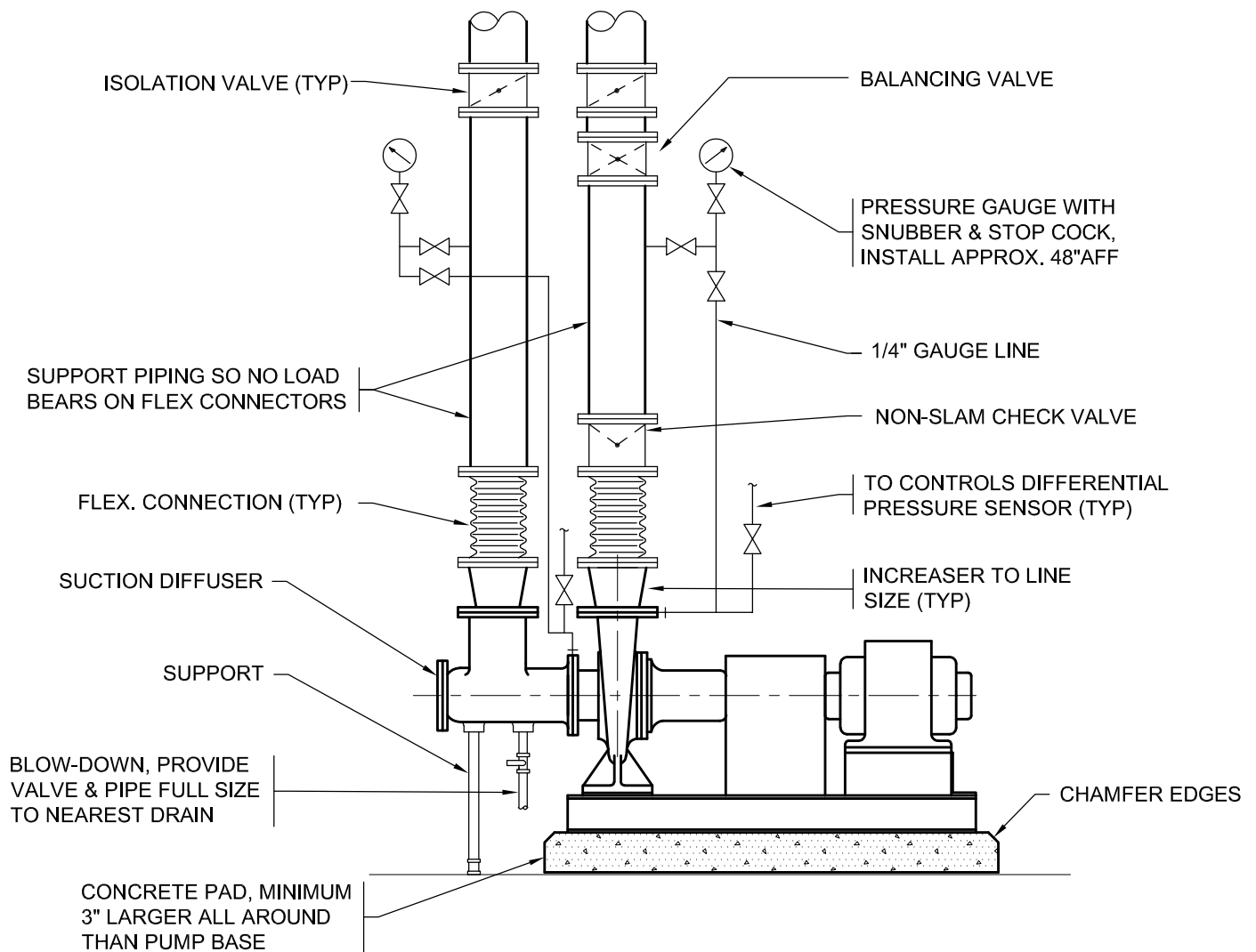
MARK MORRIS - VOCATIONAL BUILDING PLANS AND DETAILS

S2-4



5 STEEL BEAM CONNECTION (SHEAR TAB)





BASE MOUNTED PUMP DETAIL

NTS

4

M3.1

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ARCHITECTURE

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LONGVIEW SCHOOL DISTRICT
HEAT PUMP REPLACEMENT & AIR
QUALITY IMPROVEMENTS
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Addendum Drawing

REF. SHEET

M3.1

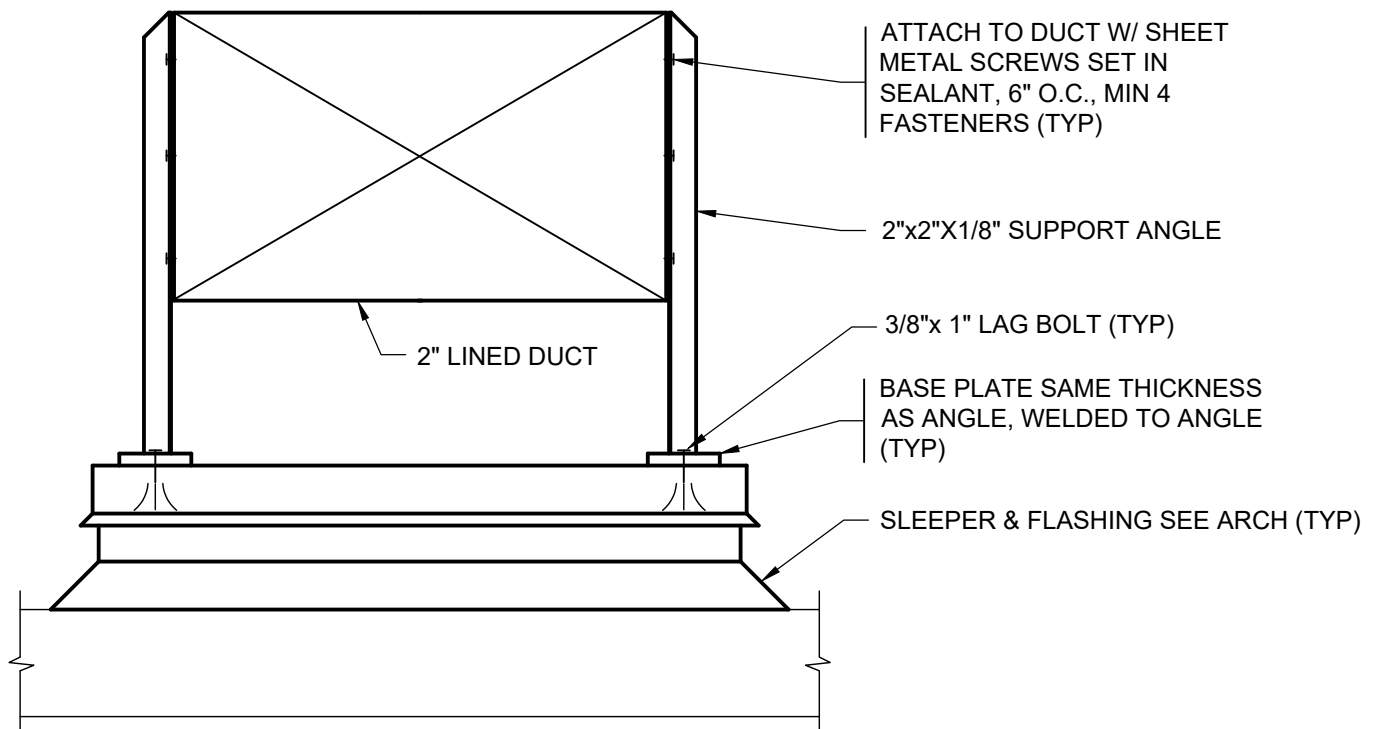
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JOB #:

DRAWN BY: NRH

DATE: 01/26/23

REF. DOC.: ADDENDUM 01



ROOFTOP DUCT SUPPORT DETAIL

NTS

9

M3.3

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Addendum Drawing

REF. SHEET

M3.3

DWG. #: **ADM-002**
JOB #:
DRAWN BY: JJM
DATE: 01/26/23
REF. DOC.: ADDENDUM 01