

To: All Plan Holders of Record

From: CT Consultants, Inc.  
For the Owner

**Re: Addendum No. 1  
WTP Chlorine Building  
City of Painesville**

Date: November 7, 2024

This Addendum forms a part of the contract documents and modifies the original bidding documents dated October 2024 and all previous addenda, if any. Acknowledge receipt of this addendum in the space provided in the bid forms. Failure to do so may subject the bidder to disqualification.

### **QUESTIONS AND ANSWERS**

Q1. See photo below. Door schedule shows 10 x 10 overhead door and drawings show 10'0" wide x 8'6" high?

*A1. Overhead coiling door is 8'-6" high. See revised elevations.*

Q2. Jamb detail J2 shows a "Z" guide mounted to steel. This is very unusual and will have the guide sticking into opening on both sides. This will result in exposing the guides to being hit and damaging the door. We would recommend an "E" type guide with a ½" set back from the opening on each side. This would make the guide-to-guide dimension 10'1".

*A2. The jamb detail for the overhead coiling door is a typical detail that has been used on numerous projects without issues.*

Q3. This is an interior mounted door, and the specification calls for a Key Switch for exterior mounted doors. What type of control station is required?

*A3. The keyed control station will be mounted on the interior side of the door.*

Q4. It is highly unusual to see a galvanized door specified in a water treatment facility. Typically, aluminum or stainless steel are specified due to the chemical environment in the facility.

*A4. Price out as specified.*

Q5. Even though the door is interior mounted, we would suggest a motor cover to protect the motor from the environment and pedestrians from the motor components that could hang below 8'0".

*A5. Price out as specified.*

Addendum No. 1

Date: November 7, 2024

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## **PLANS**

1. **Replace** Sheet S-01 with Revised Sheet S-01. Revised items are indicated by clouds.
2. **Replace** Sheet S-02 with Revised Sheet S-02. Revised items are indicated by clouds.
3. **Replace** Sheet A-01 with Revised Sheet A-01. Revised items are indicated by clouds.
4. **Replace** Sheet A-02 with Revised Sheet A-02. Revised items are indicated by clouds.
5. **Replace** Sheet A-03 with Revised Sheet A-03. Revised items are indicated by clouds.
6. **Replace** Sheet A-04 with Revised Sheet A-04. Revised items are indicated by clouds.
7. **Replace** Sheet M-01 with Revised Sheet M-01. Revised items are indicated by clouds.
8. **Replace** Sheet SD-02 with Revised Sheet SD-02. Revised items are indicated by clouds.
9. **Replace** Sheet SD-06 with Revised Sheet SD-06. Revised items are indicated by clouds.
10. **Replace** Sheet SD-07 with Revised Sheet SD-07. Revised items are indicated by clouds.

## **SPECIFICATIONS**

**Add:** Specification Section 316615 - Helical Pile Foundations in its entirety.

ADT:mep

Enclosures

H:\2023\232515\SPEC\Phase 1 - Bldg Shell\Addenda\Addendum 01\Addendum 01.Doc

## SECTION 31 6615 HELICAL FOUNDATIONS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Helical anchors used to support tension loads.
- B. Helical piles used to support compression loads.

#### 1.02 RELATED REQUIREMENTS

- A. Section 31 2316 - Excavation.

#### 1.03 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 2200 - Unit Prices, for additional unit price requirements.
- B. Base bids on anchor/pile quantity and lengths as indicated.
- C. If the actual number of installed anchors/piles or the total installed length differs, an adjustment to the Contract Sum will be made .
- D. No additional payment will be made for withdrawn, damaged, rejected, or misplaced piles; for any portion of a pile remaining above the cut-off elevation; for back-driving; for cutting off piles, or for any cut off length of piles.
- E. Quantity and length measurements will be determined by Installation Logs kept and submitted by Architect and verified by Contractor, based on the following:
  - 1. Length: By the linear foot (meter) measured from point to existing site elevation as indicated.
  - 2. Test Anchors/Piles: Assume 5 feet (1.5 m) longer than longest designed length.

#### 1.04 REFERENCE STANDARDS

- A. AISC 360 - Specification for Structural Steel Buildings; 2010.
- B. ASTM A29/A29M - Standard Specification for Steel Bars, Carbon Alloy, Hot-Wrought, General Requirements; 2012.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2013.
- E. ASTM A325 - Standard Specification for Structural Bolts, Heat Treated, 120/105 ksi Maximum Tensile Strength; 2010.
- F. ASTM A490 - Standard Specification for Structural Bolts, Alloy Steel, 150 ksi Maximum Tensile Strength; 2012.
- G. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds; 2013.
- H. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2015.
- I. ASTM D1143/D1143M - Standard Test Method for Deep Foundations Under Static Axial Compression Load; 2007 (Reapproved 2013).
- J. DFI TM-GLOS-1 - Deep Foundation Institute Technical Manual; Glossary of Foundation Terms; 1981.
- K. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2009.
- L. SAE J429 - Mechanical and Material Requirements for Externally Threaded Fasteners; 2011.

## 1.05 DEFINITIONS

- A. Specific terms used in this section are defined below. Terms not defined below are defined in DFI TM-GLOS-1 first and then by common usage.
- B. Extension Section: Helical foundation component installed between lead section and load transfer device.
- C. Effective Torsional Resistance: Average installation torque typically taken over a distance equal to last three diameters of penetration of largest helix plate.
- D. Geotechnical Capacity (or, Ultimate Soil Capacity): Maximum load resisted.
- E. Lead Section: First helical foundation component installed in soil.
- F. Limit State: Condition beyond which a helical foundation component is unfit for service.
  - 1. Serviceability Limit State: Foundation no longer useful for its intended function.
  - 2. Strength Limit State: Foundation is unsafe.
- G. Loads: Forces or other actions that result from weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are those loads in which variations over time are rare or of small magnitude. All other loads are variable loads (see also Nominal Load below).
- H. Load Test: Procedure to test capacity and relation of load to movement.
- I. Mechanical Strength: Maximum tension load resisted by structural elements of helical foundation.
- J. Nominal Load: Magnitude of loads determined by Architect, including dead load, live load and other imposed by building code requirements
- K. Reveal: Distance along longitudinal axis from ground surface to end of last installed extension of a foundation.
- L. Safety Factor: Ratio of ultimate pullout resistance to nominal load.
- M. Ultimate Pullout Resistance: Limit state based on lesser of mechanical strength or geotechnical capacity and defined as point at which helical foundation can resist no additional load.

## 1.06 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation meeting: Conduct a preinstallation meeting one week prior to start of work of this section; require attendance by all affected installers.
- B. Scheduling: Schedule pile driving to occur between hours of 9 AM and 4 PM.

## 1.07 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Designer's Qualification Statement.
- C. Product Data: Product list, with manufacturer's model designations; published capacities for installed assemblies, including load transfer devices.
- D. Design Data: Submit documentation of foundation design, signed and certified by foundation designer; include:
  - 1. Statement that proposed foundations meet specified design criteria.
  - 2. Nominal load on each foundation element.
  - 3. Maximum allowable installation torque of each selected product.
  - 4. Calculated theoretical geotechnical capacity.
  - 5. Minimum effective torsional resistance requirements.
  - 6. Minimum embedment lengths and such other site specific embedment depth requirements.
  - 7. Inclination angle and location tolerance requirements.
  - 8. Pre-tensioning requirements, if any.

- E. Calibration Reports for Testing Equipment: Submit certified copies of calibration of torque measuring equipment and load test measuring equipment to be used on project, performed within one year of starting date of installation.
- F. Installer's Qualification Statement.
- G. Surveyor's Qualification Statement.
- H. Installation Logs:
- I. Field Test Reports.
- J. Project Record Documents: After work is complete, submit certification from surveyor that installed foundation locations are as shown on the drawings.

#### 1.08 QUALITY ASSURANCE

- A. Designer Qualifications: Experienced in design of helical foundations of the type involved on this project, as evidenced by:
- B. Installer Qualifications: Experiences in installation of helical foundations of the type involved on this project, as evidenced by:
- C. Surveyor Qualifications: Engineer or land surveyor licensed in the State in which the Project is located.

### PART 2 PRODUCTS

#### 2.01 HELICAL FOUNDATION DESIGN CRITERIA

- A. It is Contractor's responsibility to design, or obtain qualified design, of the helical foundations as indicated in the contract documents.
  - 1. Information necessary for design that is contained in the contract documents includes:
    - a. Locations of foundation elements.
    - b. Nominal design load for each foundation element, including dead load, live load and other loads required by building codes.
  - 2. Subsurface geotechnical data may be obtained from the soils report as noted in the construction documents.
- B. Helical Foundation Elements: One or more helical deformed plates (helix plates) attached to a central shaft with a load transfer device for attachment to a structure; entire element resisting applied loads by soil pressure.
  - 1. Design foundations to support/resist the nominal design loads shown on the drawings, in accordance with, AISC 360, Allowable Stress Design method.
  - 2. Select foundation elements based on allowable installation torque and calculated minimum embedment length; maximum embedment length, if any; and minimum effective torsional resistance.
  - 3. Corrosion Service Life: 50 years, minimum.
  - 4. Use solid square shaft helical anchors where subject to tension alone.
  - 5. Use hollow, round shaft helical foundations where subject to compression only or to alternating tension and compression.
- C. Helical Piles:
  - 1. Design with pile shaft sections in direct contact with couplings and no coupling bolts or welds in load path.
  - 2. Safety Factor: 2 times ultimate bearing resistance, minimum.
  - 3. Deflection: Axial Deflection at Nominal Axial Load: 3/8 inch
  - 4. Fit Up Tolerance: 1/16 inch (1.5 mm), maximum.

#### 2.02 MATERIALS

- A. All Components: Hot-dipped galvanized in accordance with ASTM A123/A123M.
- B. Helical Piles: Hollow, round shaft of structural steel tube or pipe (welded or seamless) complying with ASTM A500/A500M.
  - 1. Size: 2-7/8 inches (78 mm) O.D. by 0.276 inch (7 mm) wall thickness.

2. Torque Strength: 8,000 foot-pounds (11,000 Nm).
  3. Minimum Yield Strength: 60 kips per square inch (410 MPa).
- C. Helix Plates: Round steel plates formed into helical spiral on matching metal dies to true helical shape and uniform pitch; welded to central shaft with all plates tracking the same path as leading helix.
1. Material: Hot rolled carbon steel sheet, strip, or plate complying with ASTM A36/A36M or ASTM A572/A572M, Grade 50.
  2. Thickness: 3/8 inch (10 mm)
  3. Profile: True helix-shaped plates, normal to shaft, leading and trailing edges within 1/4 inch (6 mm) of parallel.
  4. Pitch: 3 inches (76 mm) plus or minus 1/4 inch (6 mm). All helix plates shall have uniform pitch.
  5. Edge Profile: Circular edge.
  6. Spacing: Between 2.4 and 3.6 times helix diameter.
- D. Bolts: SAE J294, Grade 8, bolts with nut.
- E. Couplings: Integral to shaft.
- F. Anchor Plates: Load-transfer assembly welded from structural steel complying with ASTM A36/A36M.

### PART 3 EXECUTION

#### 3.01 PREPARATION

- A. Protect structures near the work and underground utilities from damage.
- B. Mark underground utilities as required by authority having jurisdiction. Avoid contact with all marked underground facilities.
- C. Locate the starting point of installation in relation to existing site elevation.
- D. Notify Owner at least 24 hours prior starting to installation.

#### 3.02 INSTALLATION

- A. Install helical foundations as shown on drawings and approved design documentation. In event of conflict between drawings and approved anchorage design documentation, do not begin construction on any affected items until such conflict has been resolved.
- B. Comply with manufacturer's written installation requirements and recommendations for specific project site and conditions.
- C. Use installation methods that will not cause damage to existing adjacent or nearby structures.
- D. Keep and submit a log of helical foundation installations, including the following data:
  1. Date and time of installation.
  2. Location of foundation element.
  3. Installed foundation type and configuration.
  4. Foundation reveal.
  5. Total length of installed foundation element.
  6. Installed inclination of foundation element.
  7. Actual effective torsional resistance.
  8. Calculated geotechnical capacity based on actual torsional resistance and soil parameters appropriate for subsurface conditions within three helix diameters above helix depth.
  9. Comments pertaining to interruptions, obstructions, or other relevant information.
- E. If required, position inclined helical anchors perpendicular in order to assist in advancement into soil before establishing required batter angle; after initial penetration, establish required angle of inclination
- F. Engage helical sections into soil and advance in a smooth, continuous manner at a rate of rotation of 5 to 25 RPM.

- G. Apply sufficient down pressure to uniformly advance helical sections a distance per revolution approximately equal to pitch of helix plates.
- H. Adjust rate of rotation and magnitude of down pressure for specific soil conditions and depths.
- I. Provide extension sections as required to achieve required results.
- J. Achieve both minimum embedment length and minimum effective torsional resistance prior to terminating foundation installation.
- K. Location Tolerances:

### 3.03 ACHIEVEMENT OF EFFECTIVE INSTALLATIONS

- A. In the event that the initial installation of a foundation element does not achieve both minimum embedment length and minimum effective torsional resistance, adjust, repair, or replace that foundation element so that it does achieve both requirements.
  - 1. The following procedures are considered acceptable and do not require prior approval unless otherwise indicated.
  - 2. All other proposed remedies must be approved by Owner prior to implementation.
- B. Minimum Embedment Length Achieved Before Achieving Minimum Effective Torsional Resistance: Use one of the following procedures:
  - 1. Continue installation to greater depths until minimum effective torsional resistance is achieved, provided that, if maximum length constraint is applicable, continued installation does not exceed said maximum length.
  - 2. Demonstrate acceptable foundation performance through testing.
  - 3. Replace foundation with one having a different helix configuration, as follows:
    - a. Embed replacement to a length placing last helix at least three times its own diameter beyond position of first helix of replaced foundation.
    - b. Achieve minimum effective torsional resistance.
    - c. Do not exceed any applicable maximum embedment length.
    - d. Test replacement.
- C. Allowable Torque Rating Reached Before Achieving Minimum Embedment Length: Use one of the following procedures:
  - 1. If permitted by Owner, terminate installation at length achieved.
  - 2. Replace foundation with one having either a higher torsional strength rating or a different helix configuration, as follows:
    - a. Achieve minimum embedment length and minimum effective torsional resistance.
    - b. Embed replacement to length that places last helix at least three times helix diameter beyond position of first helix of replaced foundation.
    - c. Do not exceed any applicable maximum embedment length limit.
  - 3. If allowed by location tolerance or approved by Owner, remove foundation section and reinstall as follows:
    - a. Position reinstalled foundation at least three times diameter of largest helix away from initial location.
    - b. Achieve original embedment length and torsional resistance criteria.
    - c. If repositioning requires installation of additional helical foundations, adjust nominal loads for spacing changes.
- D. Maximum Embedment Length Reached Before Achieving Minimum Effective Torsional Resistance: Use one of the following procedures:
  - 1. If allowed by location tolerance or approved by Owner, remove and reinstall foundation as follows:
    - a. Position reinstalled foundation at least three times diameter of largest helix away from initial location.
    - b. Achieve original minimum embedment length and minimum effective torsional resistance.
    - c. If repositioning requires installation of additional helical foundations, adjust nominal loads for spacing changes.

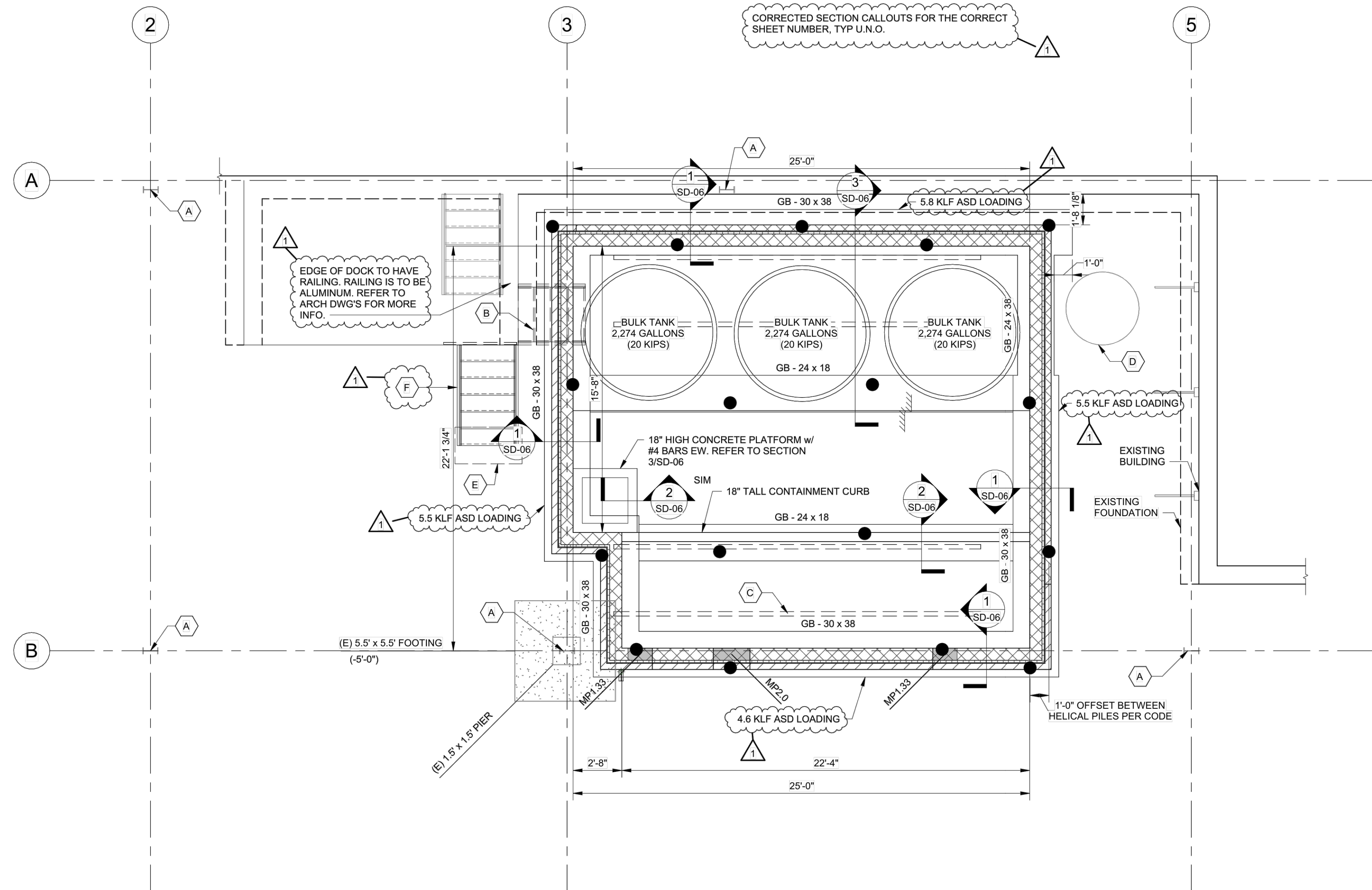
2. Demonstrate acceptable foundation performance through testing.
  3. De-rate load capacity of helical foundation and install additional foundations as necessary; de-rated capacity and additional foundation location shall be subject to approval of Owner.
  4. Replace foundation with one having a different helix configuration; achieve minimum embedment length and minimum effective torsional resistance.
- E. Failure of Field Quality Control Test: Use one of the following procedures:
1. Install foundation to a greater depth and installation torque and re-test provided that, if a maximum embedment length constraint is applicable, continued installation will not exceed said maximum length constraint.
  2. Replace foundation with one having a different helix configuration. Embed last helix at least three times its own diameter beyond position of first helix of replaced foundation without exceeding any applicable maximum embedment length requirements. Re-test replacement.
  3. If approved by Owner, de-rate load capacity of helical foundation and install additional foundations at positions that are at least three times diameter of largest helix away from any other foundation locations; space anchors in cohesive soils not closer than four helix diameters.

#### 3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Owner will employ independent testing agency to field test helical foundations.
- C. Contractor shall cooperate with testing agency and provide full access to installed foundations.
- D. Failure of Tests: Replace or re-drive, and re-test, helical foundations that any fail test and cannot be remedied using any of the procedures described above in "ACHIEVEMENT OF EFFECTIVE INSTALLATIONS" article.

END OF SECTION





**FOUNDATION PLAN**

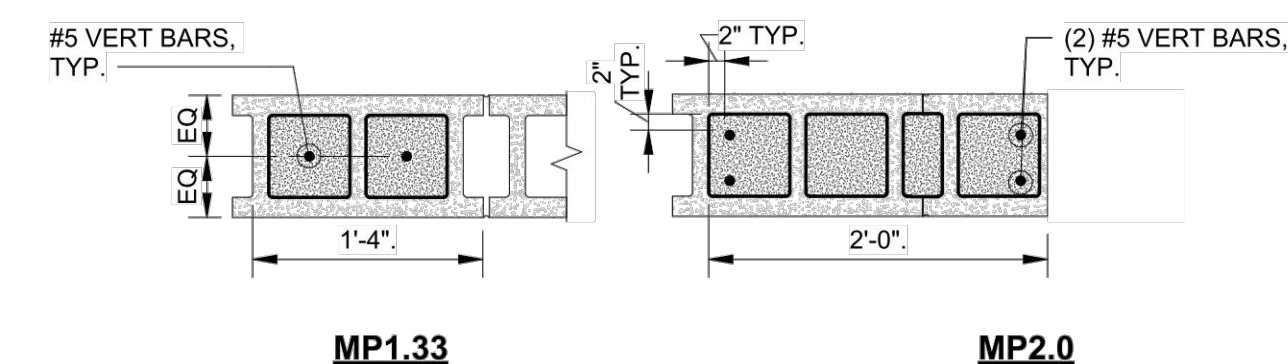
1/4" = 1'-0"

CORRECTED SECTION CALLOUTS FOR THE CORRECT SHEET NUMBER, TYP. U.N.O.

EDGE OF DOCK TO HAVE RAILING. RAILING IS TO BE ALUMINUM. REFER TO ARCH DWG'S FOR MORE INFO.

- DEEP FOUNDATION PLAN NOTES:**
- SEE SHEETS SD-01, SD-02, AND SD-03 FOR GENERAL STRUCTURAL NOTES.
  - SEE SHEET SD-04 FOR TYPICAL FOUNDATION DETAILS.
  - FLOOR CONSTRUCTION - 10" STRUCTURAL CONCRETE SLAB REINFORCED WITH #6 BARS @ 9" OC, EACH WAY, TOP AND BOTTOM, ON 6" THICK GRANULAR DRAINAGE BASE WITH A 10 MIL VAPOR RETARDER.
  - TOP OF SLAB-ON-GRADE ELEVATION = 100'-0" = PROJECT DATUM, TYP. UNO. ALL ELEVATIONS TO BE REFERENCES FROM THE PROJECT DATUM OF 0'-0".
  - GB-X x X @ (-X'-X") DENOTES GRADE BEAM TYPE (WIDTH AND THICKNESS @ (DEPTH)), DEPTH IS TO THE TOP OF THE GRADE BEAM REFERENCED FROM THE PROJECT DATUM, UNO. SEE THIS SHEET FOR THE GRADE BEAM SCHEDULE. SEE SHEET SD-04 FOR TYPICAL DETAILS.
  - TOP OF GRADE BEAM ELEVATION SHALL BE AT ELEVATION -1'-0", TYP., UNO.
  - XXXXX) DENOTES FINISHED GRADE AROUND PERIMETER OF BUILDING. COORDINATE FINAL FINISH GRADE ELEVATIONS WITH CIVIL DWG'S.
  - MPX X DENOTES MASONRY PIERS. SEE THIS SHEET FOR MASONRY PIER DETAILS. SEE SHEET SD-05 FOR TYPICAL MASONRY DETAILS. CONCRETE MASONRY WALLS SHALL BE CENTERED ON FOOTING, UNO.
  - SEE ARCHITECTURAL DRAWINGS FOR ALL MEASUREMENTS NOT SHOWN. ALL DIMENSIONS SHALL CONFORM TO THE ARCHITECTURAL DRAWINGS.
  - COORDINATE LOCATION AND SIZE OF PENETRATIONS AND OPENINGS WITH MECHANICAL AND SITE DRAWINGS.
  - SEE ROOF PLAN NOTES FOR MASONRY WALL SIZE AND REINFORCING. SEE SHEET SD-05 FOR TYPICAL MASONRY CONTROL / EXPANSION JOINT. COORDINATE LOCATION WITH ARCH DRAWINGS.
  - CONTRACTOR SHALL COORDINATE SLAB FINISHES WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS.
  - X X KLF DENOTES LOADING TO BE USED BY HELICAL PILE DESIGNER IN HELICAL PILE DESIGN.
- FOUNDATION PLAN LEGEND:**
- INDICATES HELICAL PILE. REFER TO GENERAL NOTES FOR MORE INFORMATION.
  - /// INDICATES STEP IN SLAB.
- FOUNDATION PLAN CODED NOTES:**
- EXISTING STEEL COLUMN TO REMAIN. TYP. UNLESS NOTED OTHERWISE.
  - EXISTING STAIRS TO BE REMOVED. SEE ARCH DWG'S FOR MORE INFORMATION.
  - EXISTING 3" RAILS EMBEDDED INTO THE ASPHALT TO BE REMOVED. TYP. UNLESS NOTED OTHERWISE.
  - EXISTING SLUDGE MANHOLE TO REMAIN. TYP. UNLESS NOTED OTHERWISE.
  - THICKENED SLAB BENEATH STAIR. SEE SECTION 5/SD-06 FOR MORE INFORMATION.
  - STEEL STAIRS, COLUMNS, AND CONNECTIONS BY THE STAIR DESIGNER/MFG. SUBMIT SHOP DWG'S STAMPED AND SIGNED CALCULATIONS BY A REGISTERED ENGINEER IN THE STATE OF THE PROJECT TO THE EOR FOR REVIEW.

GRADE BEAM SCHEDULE				
MARK	SIZE (WIDTH X DEPTH)	MAIN REINF. (TOP & BOT.)	SIDE BARS	STIRRUPS
GB - 24 X 18	24" X 18"	(4) #5	(1) #5	#3 @ 9" O.C.
GB - 24 X 38	24" X 38"	(6) #5	(2) #5	#3 @ 18" O.C.
GB - 30 X 38	30" X 38"	(6) #5	(2) #5	#3 @ 18" O.C.



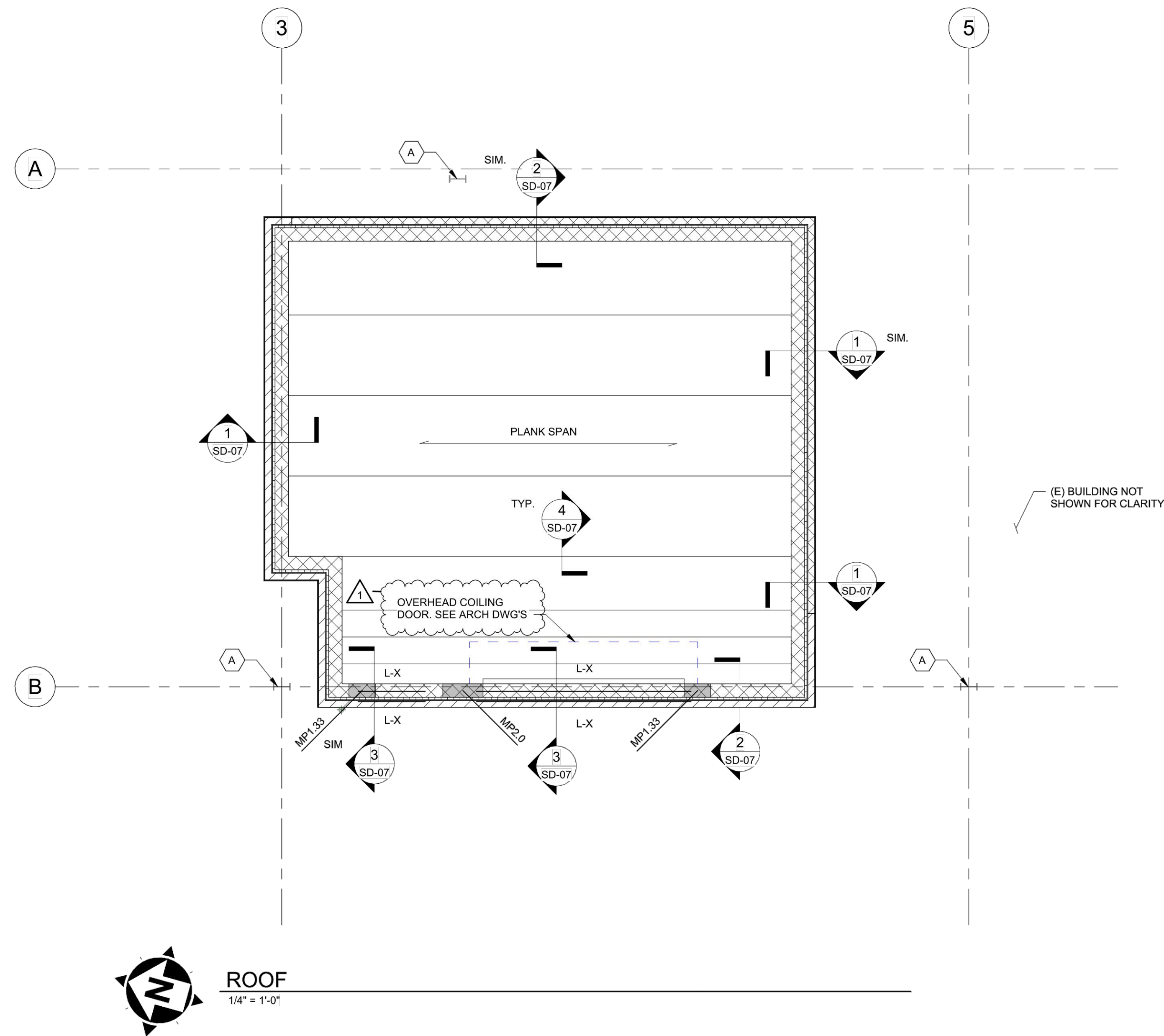
**MASONRY PIER DETAILS**  
1/2" = 1'-0"



NO.	AS SHOWN	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
1	ADDENDUM NO. 1	11/7/2024	BF	BW	BF

THE CITY OF PAINESVILLE  
WATER TREATMENT PLANT  
CHLORINE BUILDING  
MENTOR, OHIO  
LAKE COUNTY  
CHLORINE FEED BUILDING  
FOUNDATION PLAN

PROJECT NO:	232515
DRAWING NAME	S-01
SHEET	4
OF	17



**PRECAST ROOF PLAN NOTES:**

- SEE SHEETS SD-01, SD-02, AND SD-03 FOR GENERAL STRUCTURAL NOTES.
- ROOF CONSTRUCTION - 8" HOLLOW CORE PLANK. SEE HOLLOW CORE PLANK SCHEDULE ON THIS SHEET FOR LIVE AND DEAD LOADS.
- COORDINATE LOCATION AND SIZE OF ALL ROOF PENETRATIONS AND OPENINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
- L-X INDICATES MISC. ANGLE LINTEL, SEE GENERAL NOTES FOR SIZES BASED ON OPENING SIZE.
- MPX.X INDICATES MASONRY PIER, SEE DETAILS ON S-01.
- SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ROOF TOP EQUIPMENT WEIGHTS AND LOCATIONS NOT INDICATED.
- SEE ARCHITECTURAL DRAWINGS FOR ALL MEASUREMENTS NOT SHOWN. ALL DIMENSIONS SHALL CONFORM TO THE ARCHITECTURAL DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE EXISTING CONDITIONS AND FOR THE PROPER FIT AND CLEARANCE IN THE FIELD OF ANY MATERIAL THAT IS FABRICATED FROM THESE DRAWINGS. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT AS REPRESENTED ON THESE DRAWINGS, THE EOR SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE STRUCTURAL SIGNIFICANCE OF THE DEVIATION.
- CONCRETE MASONRY WALLS SHALL BE 8" WIDE AND REINFORCED VERTICALLY WITH (1) #5 BAR AT 32" ON CENTER. SEE GENERAL NOTES FOR MORE INFORMATION. CONCRETE MASONRY WALLS SHALL BE CENTERED ON FOOTING UNLESS NOTED OTHERWISE.

**ROOF FRAMING PLAN CODED NOTES:**

- EXISTING STEEL COLUMN TO REMAIN.

PRECAST PLANK LOADS				
PLANK	DEAD LD	2" TOPPING	TOT D. LD	LIVE LD
8" PLANK	56 PSF	N.A.	56 PSF	SEE DESIGN LOADS IN GENERAL NOTES



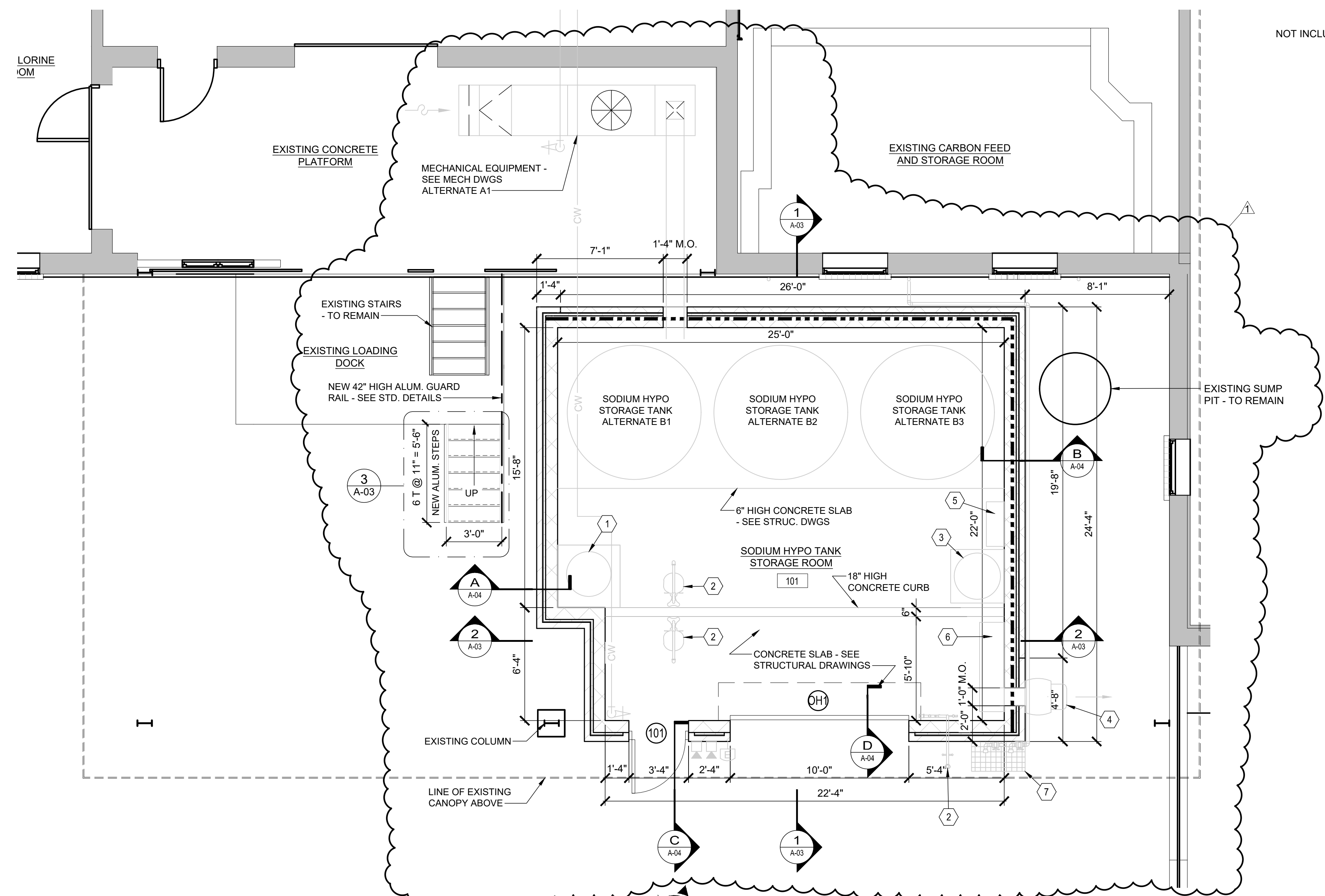
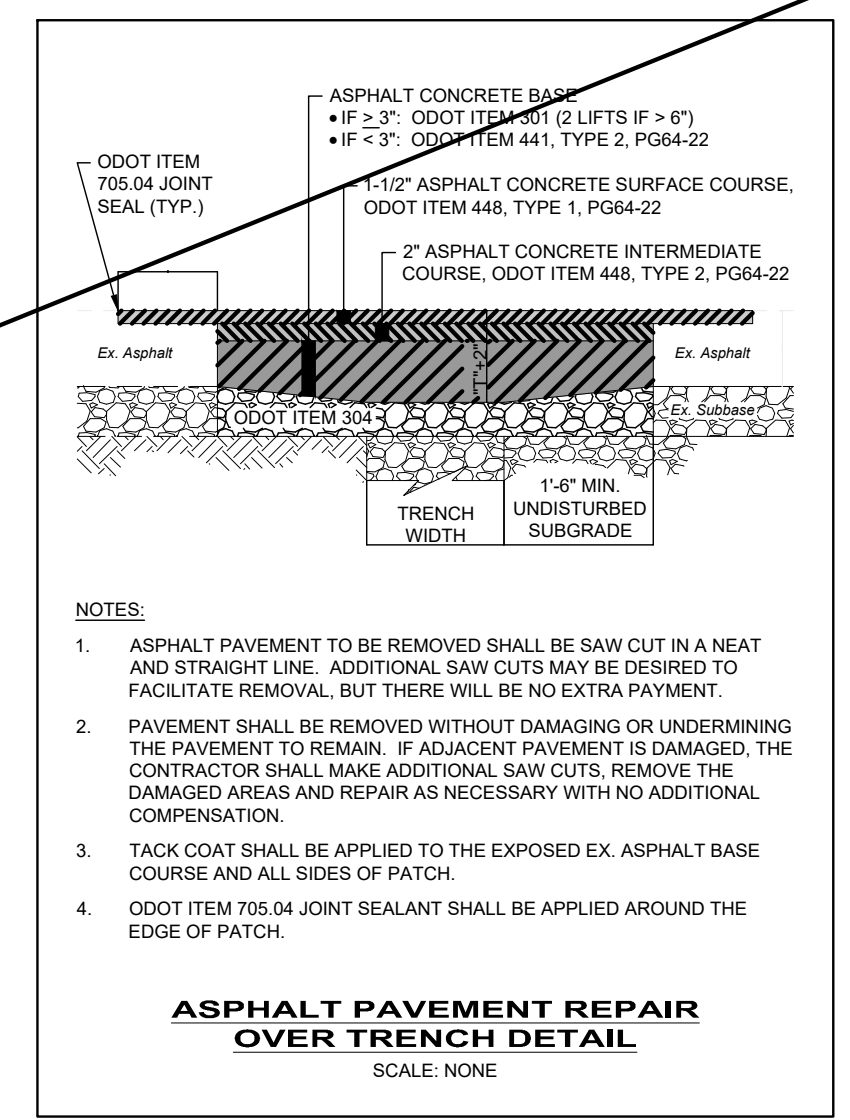
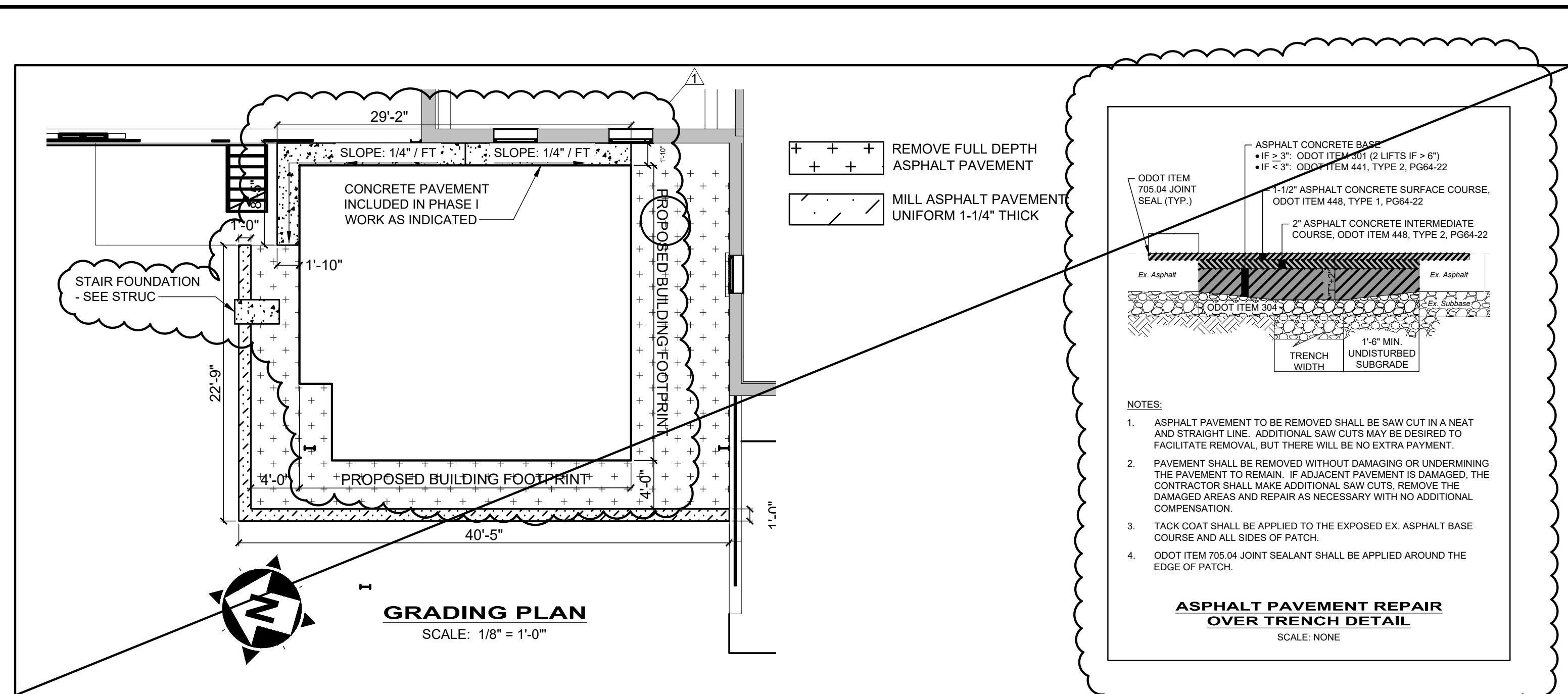
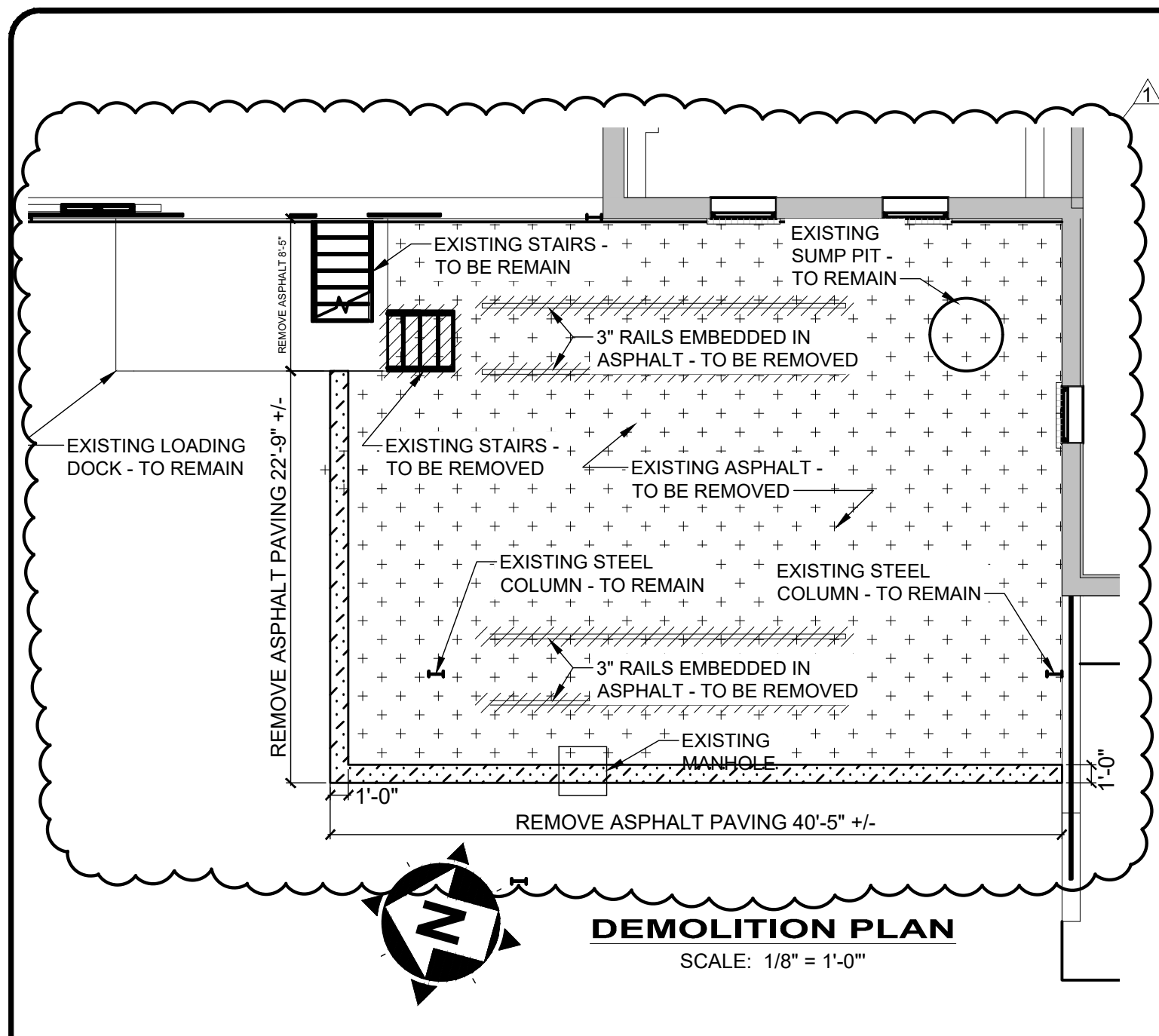
NO.	REVISION	DATE
1	ADDENDUM NO. 1	11/7/2024

SCALE:	AS SHOWN	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		10/30/2024	BF	BW	BF

THE CITY OF PAINESVILLE  
 WATER TREATMENT PLANT  
 CHLORINE BUILDING  
 MENTOR, OHIO  
 LAKE COUNTY  
 CHLORINE FEED BUILDING  
 ROOF PLAN

PROJECT NO:	232515
DRAWING NAME	S-02
SHEET	5
OF	17



**CHLORINE FEED BUILDING**

**CODE DATA:**  
**GOVERNING CODES:**  
 2024 OHIO BUILDING CODE (2021 IBC W/ STATE AMENDMENTS)  
 2024 OHIO PLUMBING CODE (2021 IPC W/ STATE AMENDMENTS)  
 2024 OHIO MECHANICAL CODE (2021 IMC W/ STATE AMENDMENTS)  
 2017 OHIO FIRE CODE (2015 IFC W/ STATE AMENDMENTS)  
 2017 OHIO ENERGY CODE (2012 IECC W/ STATE AMENDMENTS)

**PROJECT DATA:**  
 OCCUPANCY GROUP: H-3  
 CONSTRUCTION TYPE: IIB, UNPROTECTED, SPRINKLED  
 ALLOWABLE HEIGHT: 55'-0"  
 ACTUAL HEIGHT: 13'-6"  
 ALLOWABLE NUMBER OF STORIES: 2  
 ACTUAL NUMBER OF STORIES: 1  
 ALLOWABLE AREA: 15,500 S.F.  
 ACTUAL AREA: 649 S.F.  
 3 HOUR FIRE BARRIER  
 BRICK: MIN 5.5" (TABLE 721.1(2))  
 CMU: MIN 5.3" (TABLE 721.1(2))

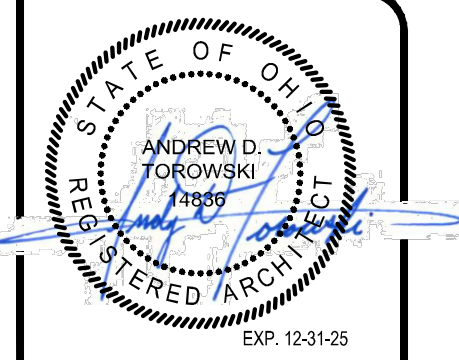
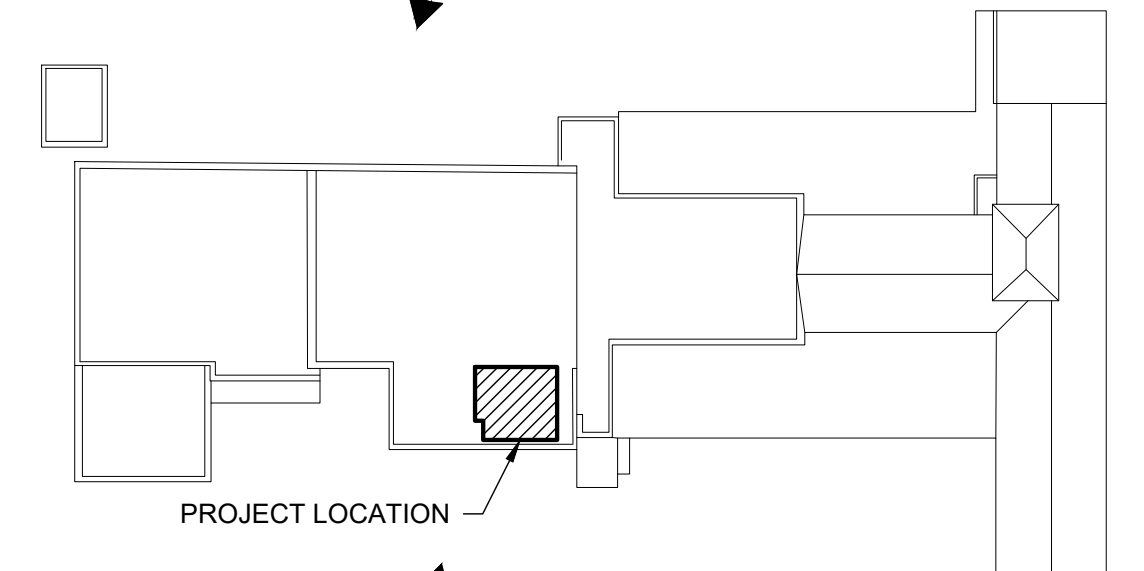
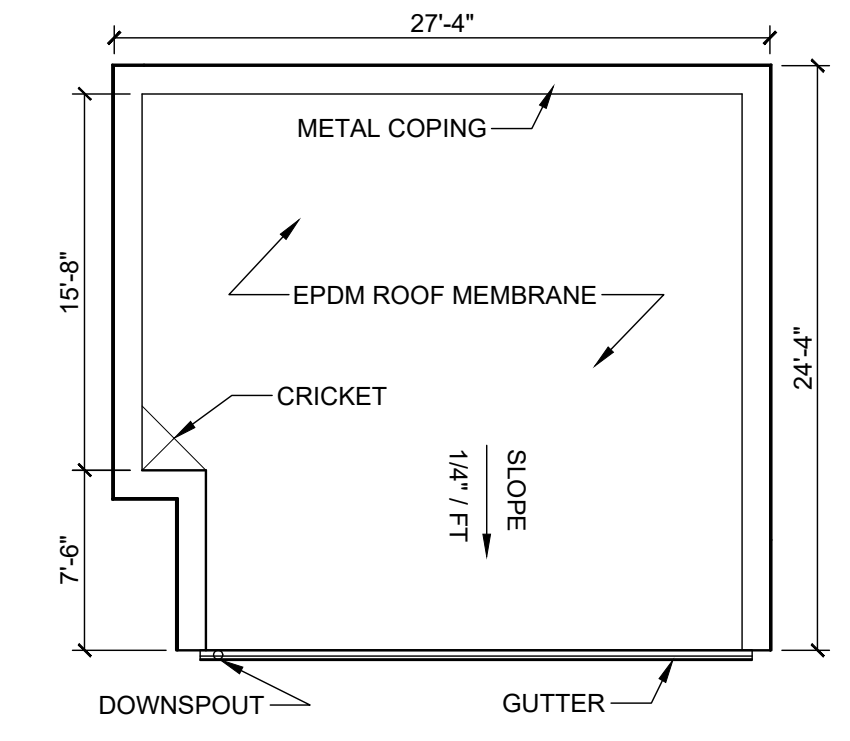
THIS BUILDING IS NOT REGULARLY OCCUPIED. SYSTEMS ARE PROVIDED FOR REMOTE MONITORING. ANY TEMPORARY OCCUPANCY WILL BE LIMITED TO MAINTENANCE OF EQUIPMENT AND PERIODIC TESTING ONLY.

**DEMOLITION NOTES:**

1. REMOVE EXISTING ASPHALT AS SHOWN ON PLAN
2. EXISTING LOADING DOCK STAIRS TO BE REMOVED
3. EXISTING 3" EMBEDDED RAIL SYSTEM TO BE REMOVED
4. EXISTING RACK STORAGE TO BE REMOVED
5. EXISTING MANHOLES TO REMAIN
6. EXISTING STEEL COLUMNS TO REMAIN

**CODED NOTES:**

- 1 WATER HEATER TANK - NOT INCLUDED IN CONTRACT
- 2 EMERGENCY EYE WASH STATION - NOT INCLUDED IN CONTRACT
- 3 DAY TANK WITH SCALE - NOT INCLUDED IN CONTRACT
- 4 EXHAUST FAN - FUTURE PHASE
- 5 TRANSFER PUMPS - NOT INCLUDED IN CONTRACT
- 6 DUPLEX PERISTALTIC PUMP SKID - NOT INCLUDED IN CONTRACT
- 7 CHEMICAL CONTAINMENT PALLET - NOT INCLUDED IN CONTRACT



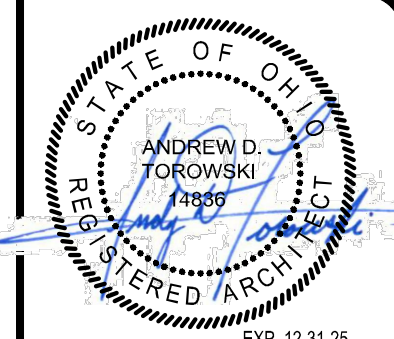
NO	REVISION	DATE
1	ADDENDUM NO. 1	11/17/2024

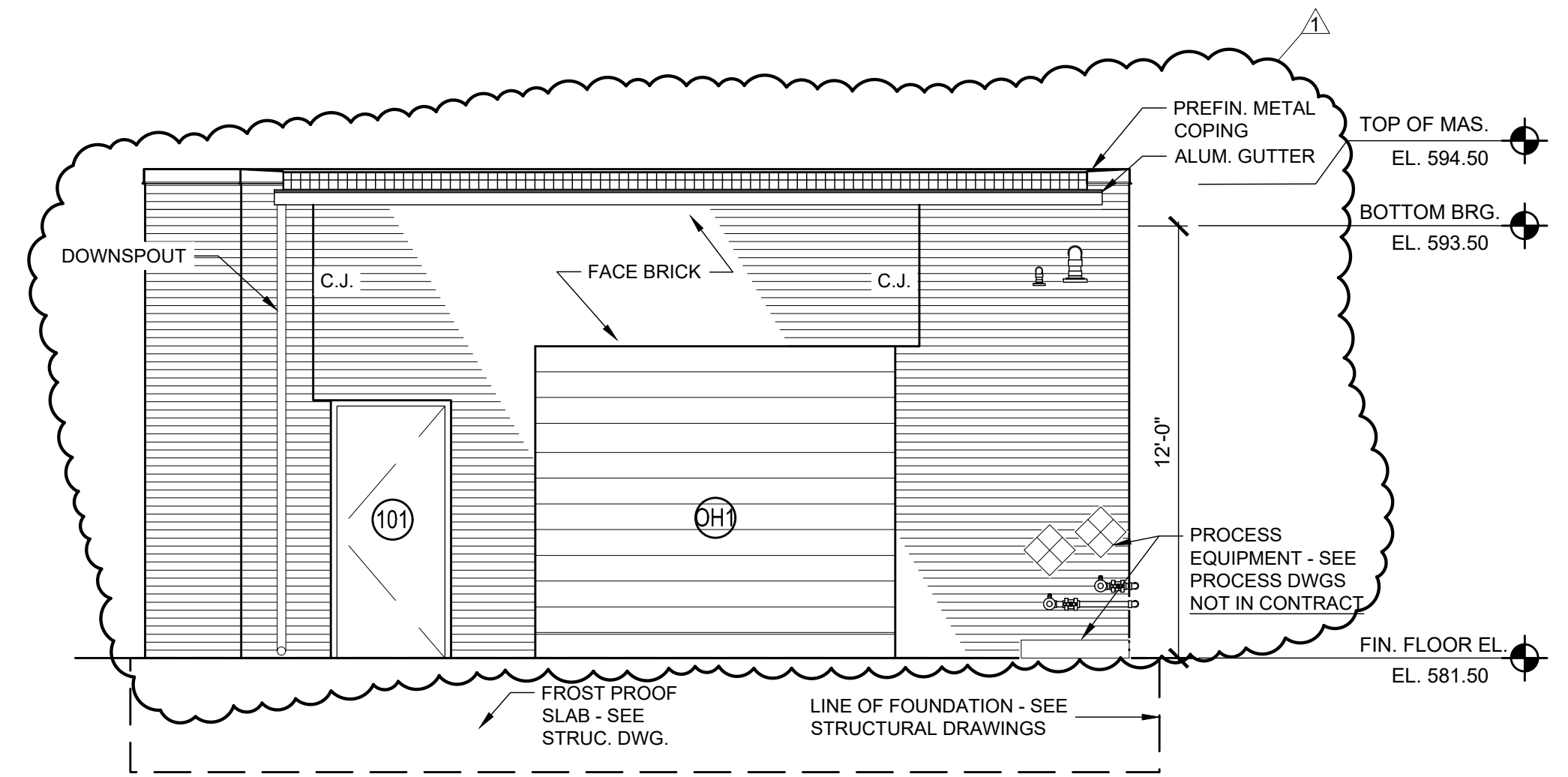
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		10/30/2024						

THE CITY OF PAINESVILLE  
 WATER TREATMENT PLANT  
 CHLORINE BUILDING  
 LAKE COUNTY  
 MENTOR, OHIO  
**CHLORINE FEED BUILDING**  
**FLOOR PLAN**

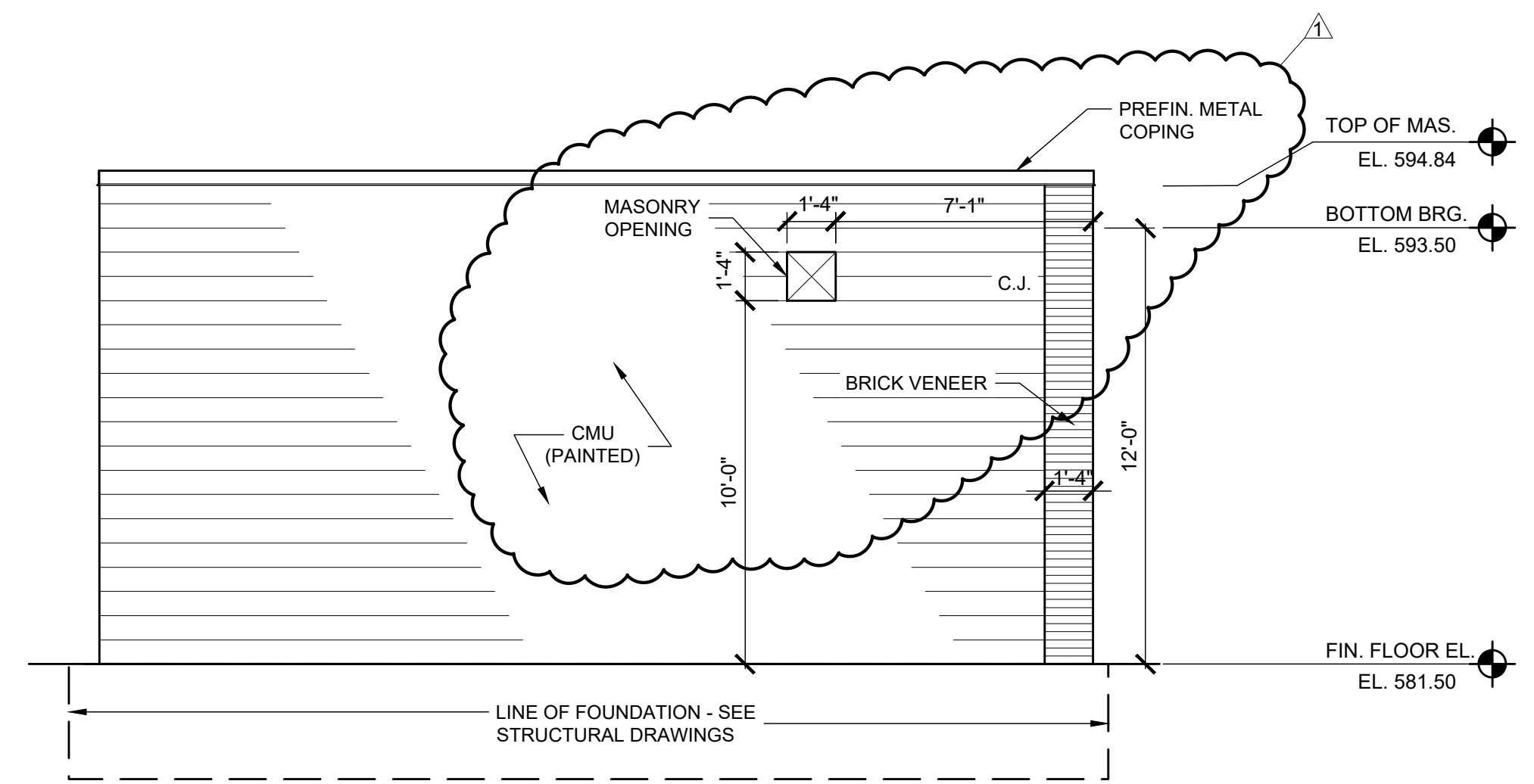
PROJECT NO:	232515
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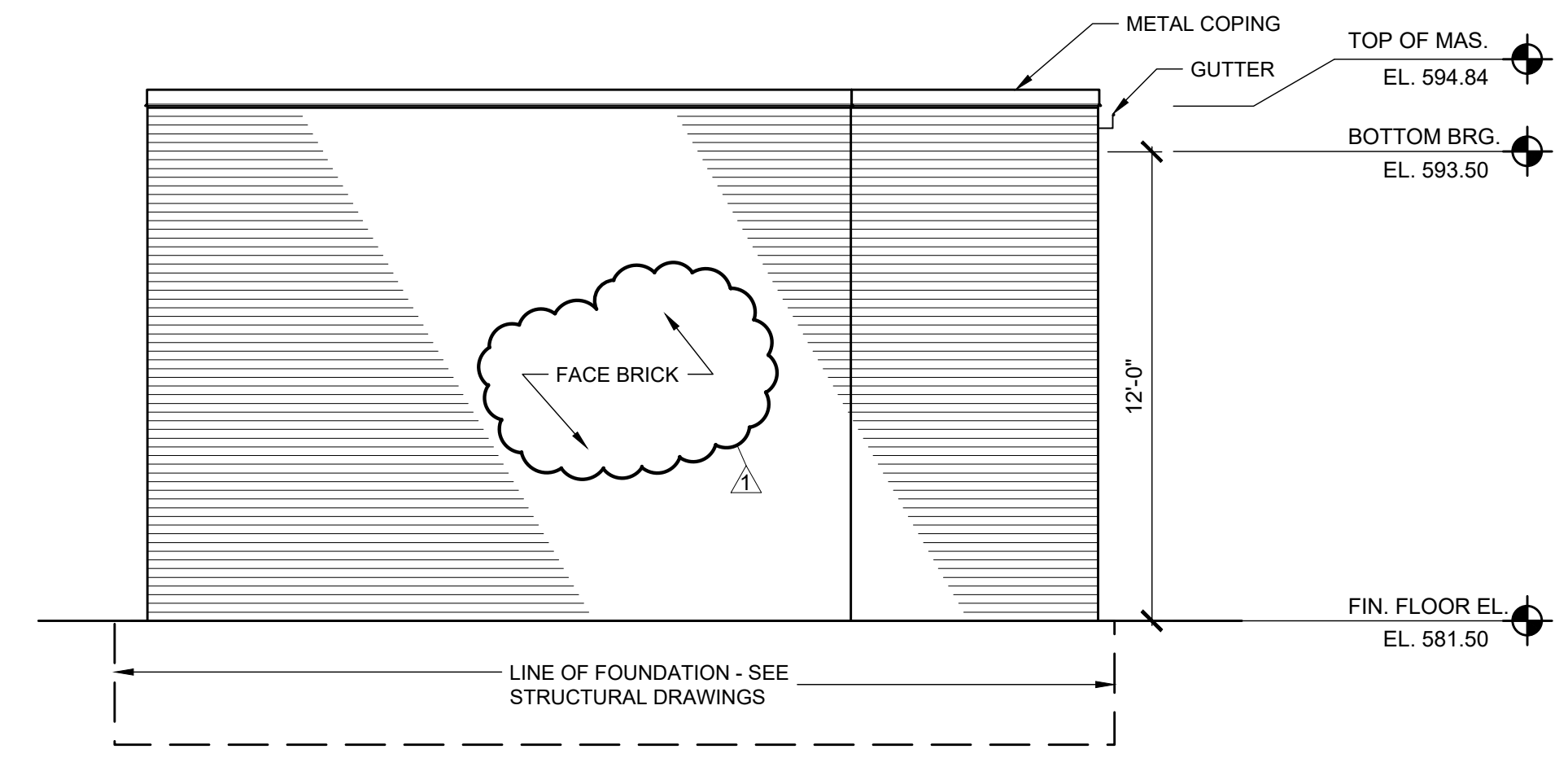
**T consultants**  
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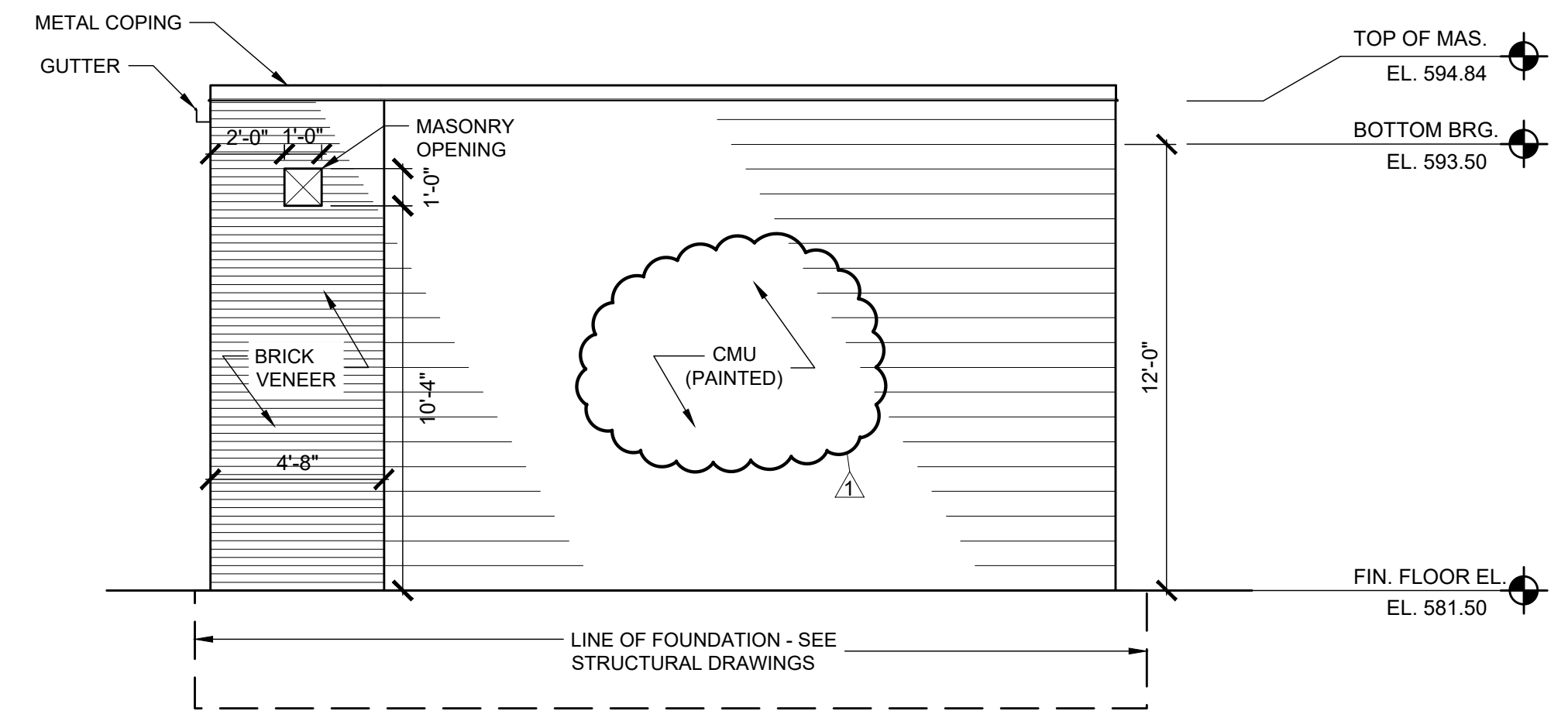
**WEST ELEVATION**  
 SCALE: 1/4" = 1'-0"



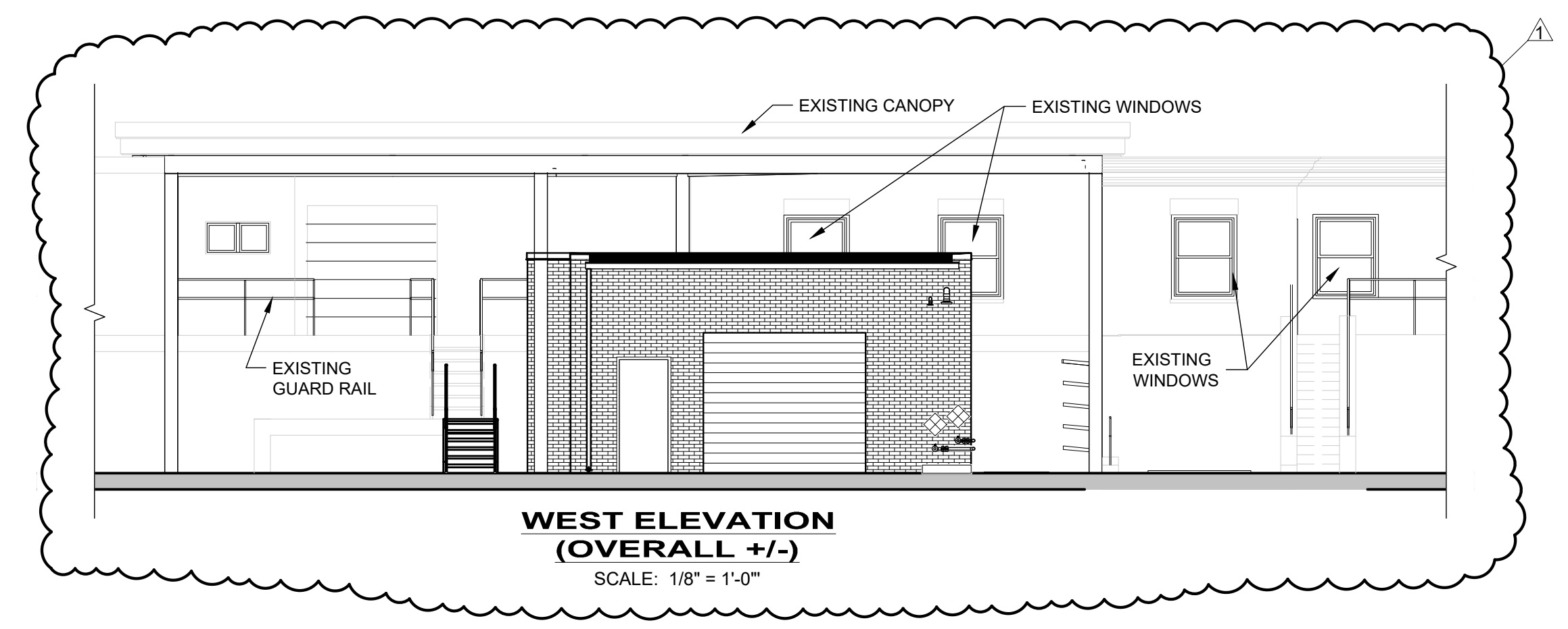
**EAST ELEVATION**  
 SCALE: 1/4" = 1'-0"



**NORTH ELEVATION**  
 SCALE: 1/4" = 1'-0"



**SOUTH ELEVATION**  
 SCALE: 1/4" = 1'-0"



**WEST ELEVATION (OVERALL +/-)**  
 SCALE: 1/8" = 1'-0"

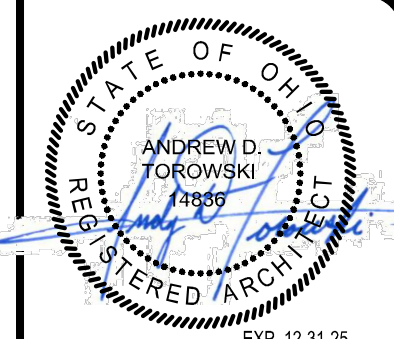
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1	ADDENDUM NO. 1	11/7/2024

SCALE:	AS SHOWN	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
	AS SHOWN	10/30/2024	ADT	VMP	ADT

THE CITY OF PAINESVILLE  
 WATER TREATMENT PLANT  
 CHLORINE BUILDING  
 MENTOR, OHIO  
 LAKE COUNTY  
 CHLORINE FEED BUILDING  
 ELEVATIONS

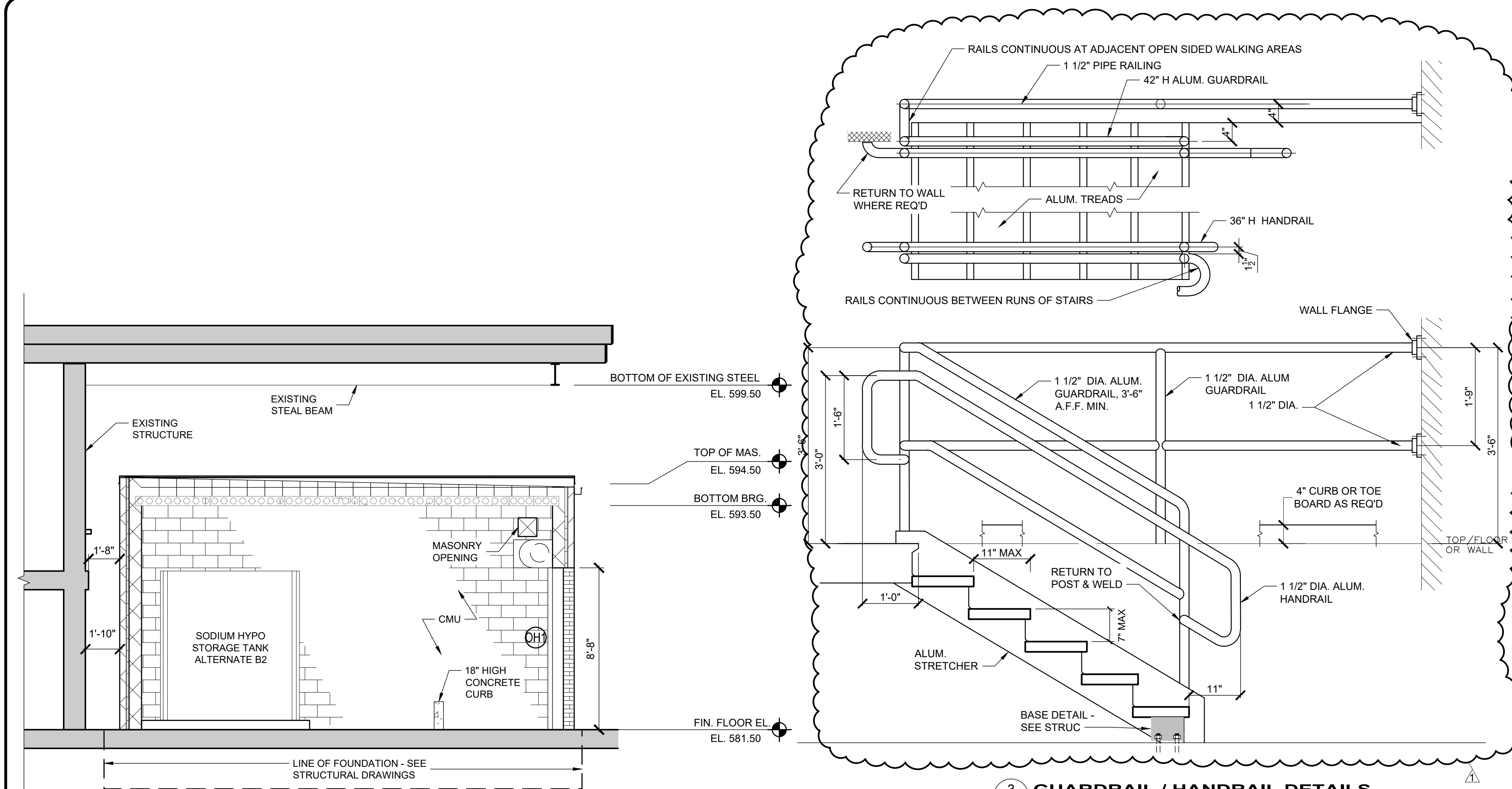
PROJECT NO:	232515
DRAWING NAME	A-02
SHEET	7
OF	17



NO.	REVISION	DATE
1		11/17/2024
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ROOM FINISH SCHEDULE										
NUMBER	ROOM NAME	FLOOR	BASE	FINISHES				CEILING	REMARKS	
				NORTH	EAST	SOUTH	WEST			
CHLORINE FEED BUILDING										
101	SODIUM HYPO TANK STORAGE ROOM	F1	-	W1	W1	W1	W1	C1	*	VARIES - SEE WALL SECTIONS
FLOOR	F1 - SEALED CONCRETE			WALLS W1 - CMU (PAINT)				CEILING	C1 - EXPOSED STRUCTURE (PAINT)	

DOOR SCHEDULE											
NUMBER	MATERIAL	TYPE	WIDTH	HEIGHT	THICKNESS	FRAME			HARDWARE SET	REMARKS	
						MATERIAL	TYPE	DETAIL			
CHLORINE BUILDING											
101	HM	D1	3'-0"	7'-0"	1 3/4"	HM	D1	H1	J1	L-1	1
OH1	STL	D2	10'-0"	8'-8"	-	STL	D2	H1	J2	*	* SEE SPECS *

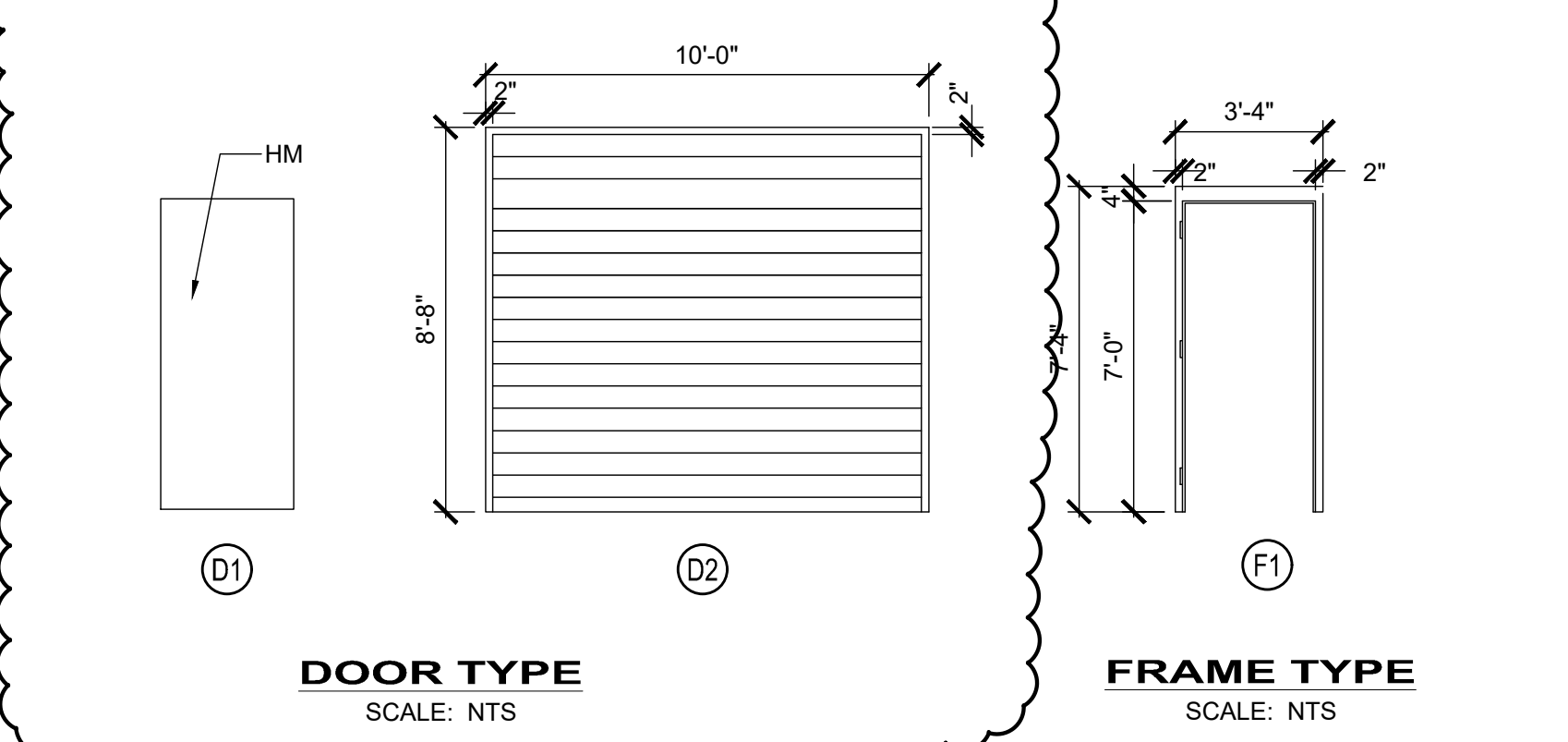


**1 SECTION**  
A-01 SCALE: 1/4" = 1'-0"

**3 GUARDRAIL / HANDRAIL DETAILS**  
SCALE: N.T.S.

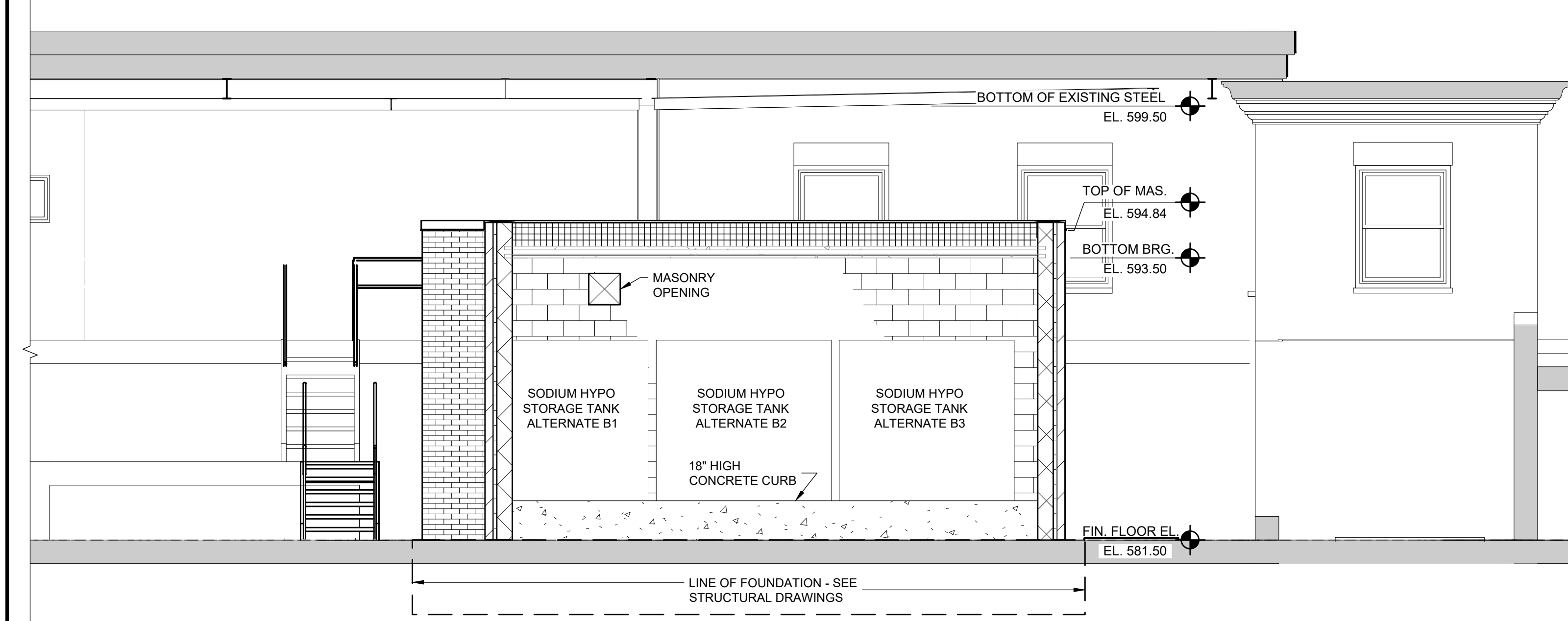
THE RAILS SHALL BE CONTINUOUS BETWEEN RUNS OF STAIRS AND THE STAIRS ADJACENT TO THE OPEN SIDED WALKING AREA, EXTEND WALL MOUNTED HANDRAILS IN CONFORMANCE WITH 2024 OHIO BUILDING CODE, AS REVISED.

- RAIL-RAILING SYSTEM**
- POST SPACING SHALL NOT EXCEED 4'-4" OC

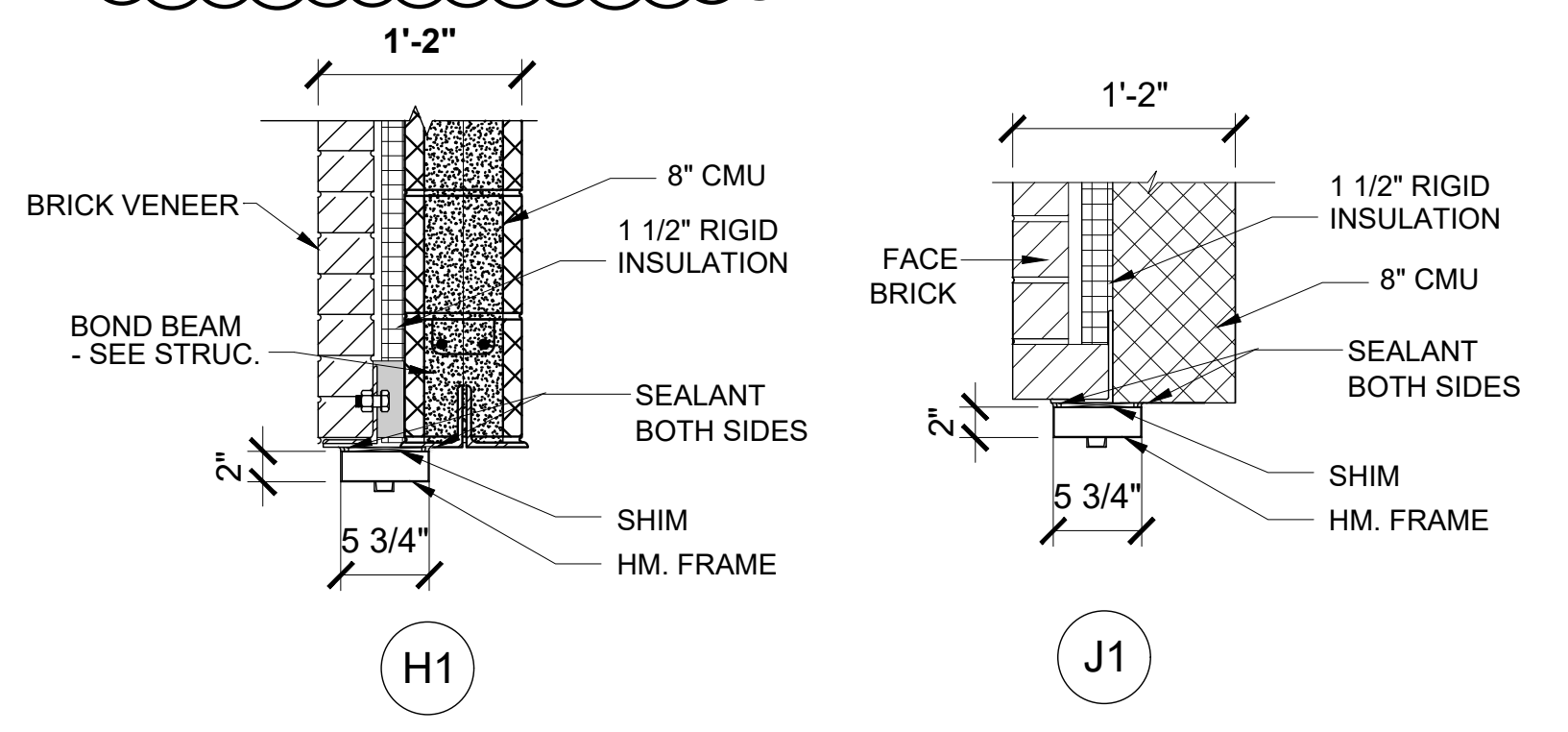


**DOOR TYPE**  
SCALE: NTS

**FRAME TYPE**  
SCALE: NTS

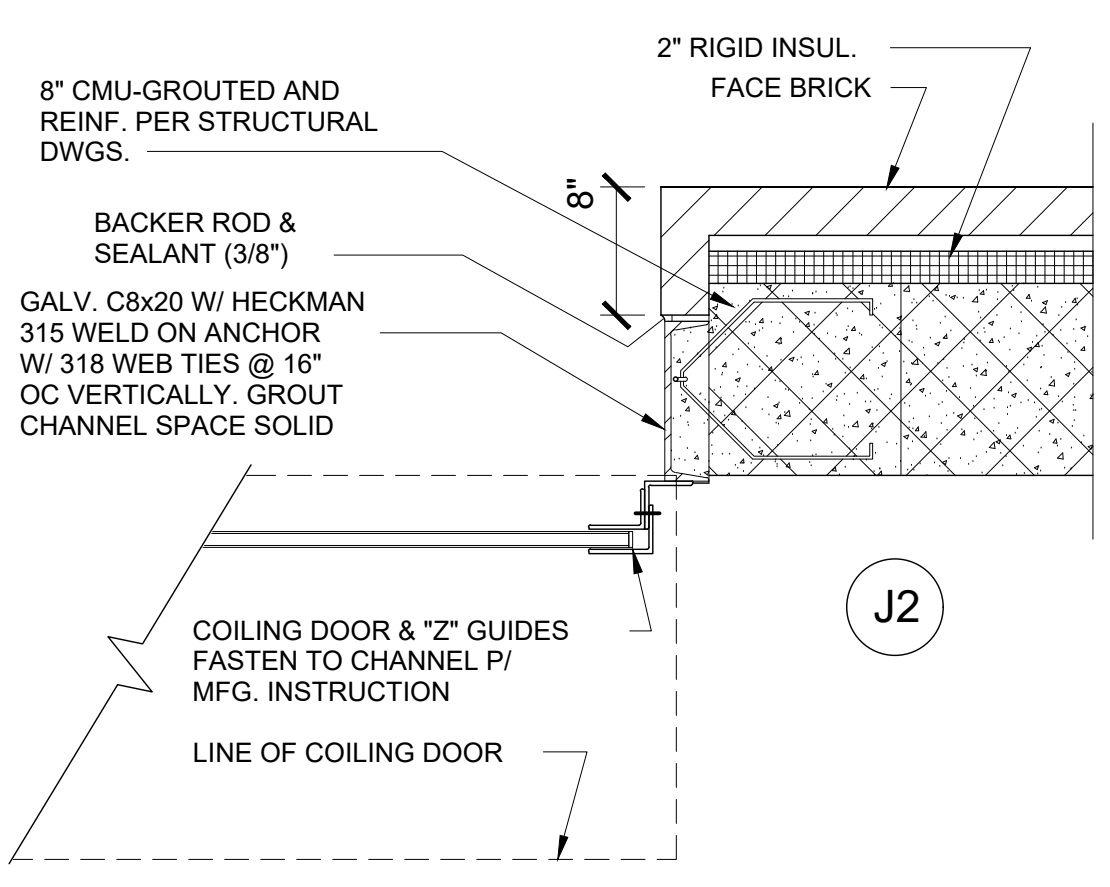


**2 SECTION**  
A-01 SCALE: 1/4" = 1'-0"



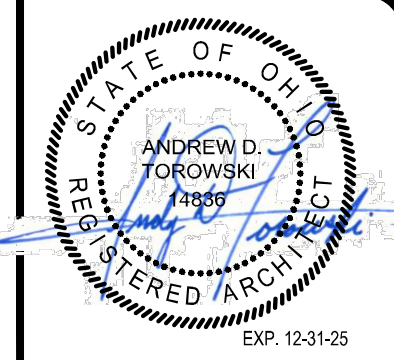
**H1**

**J1**



**J2**

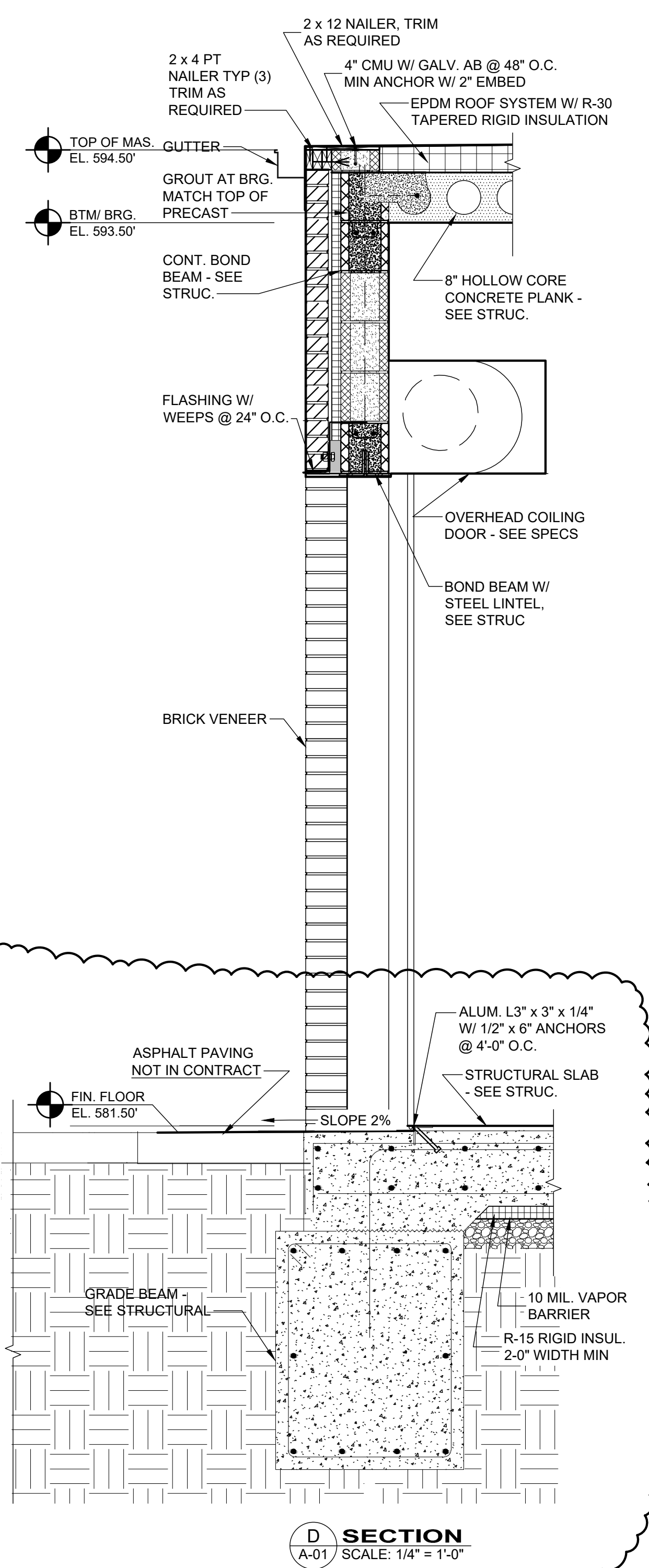
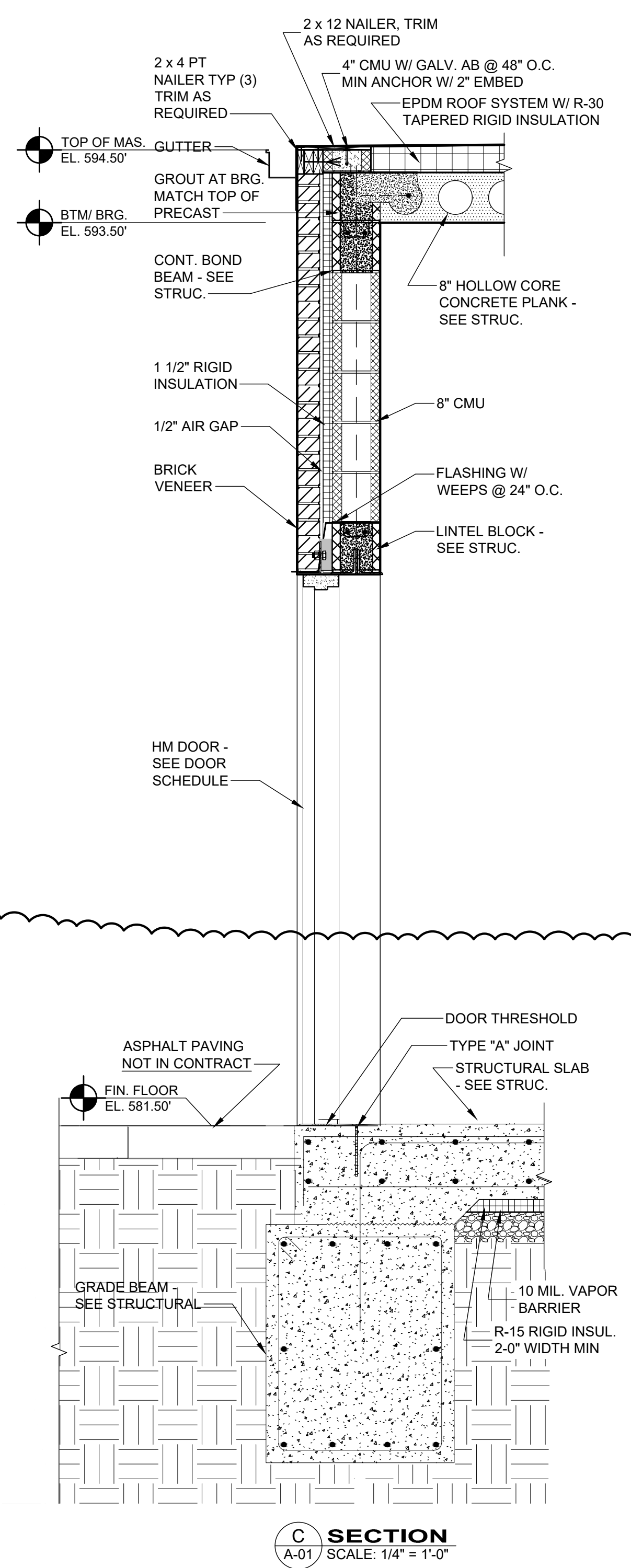
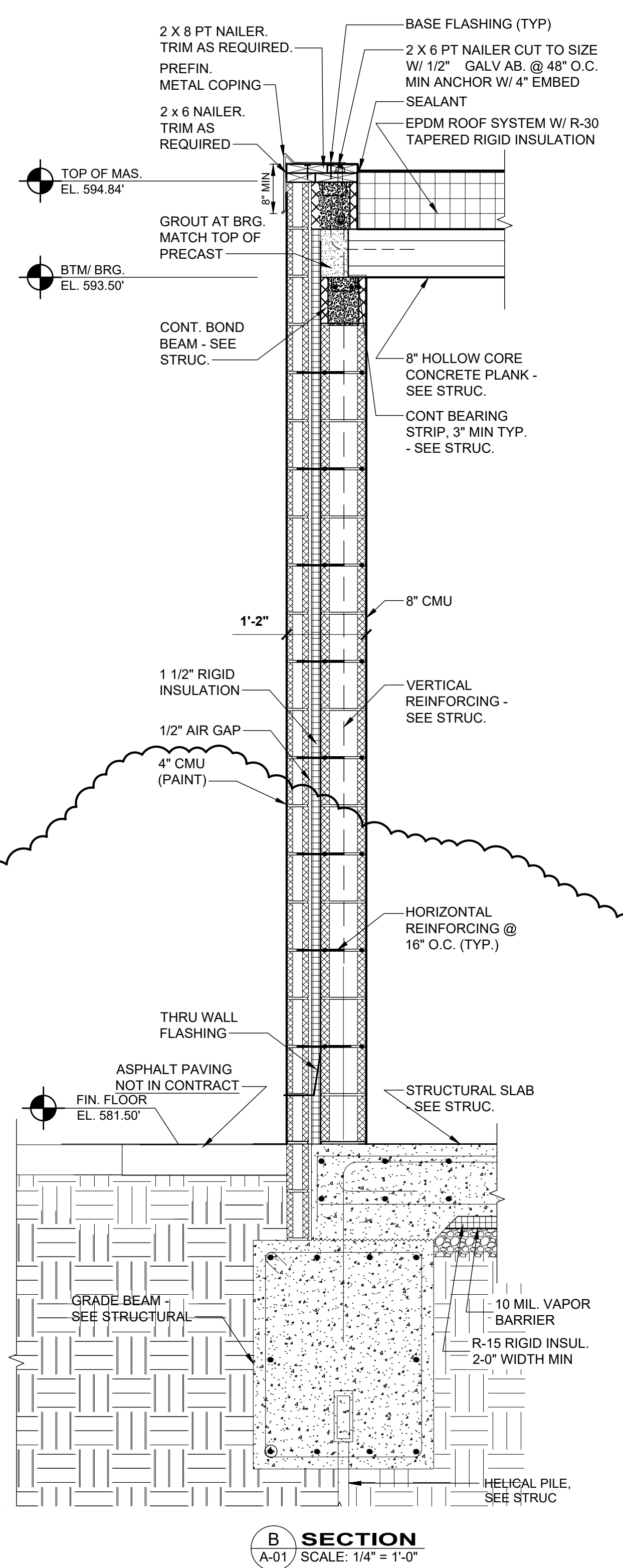
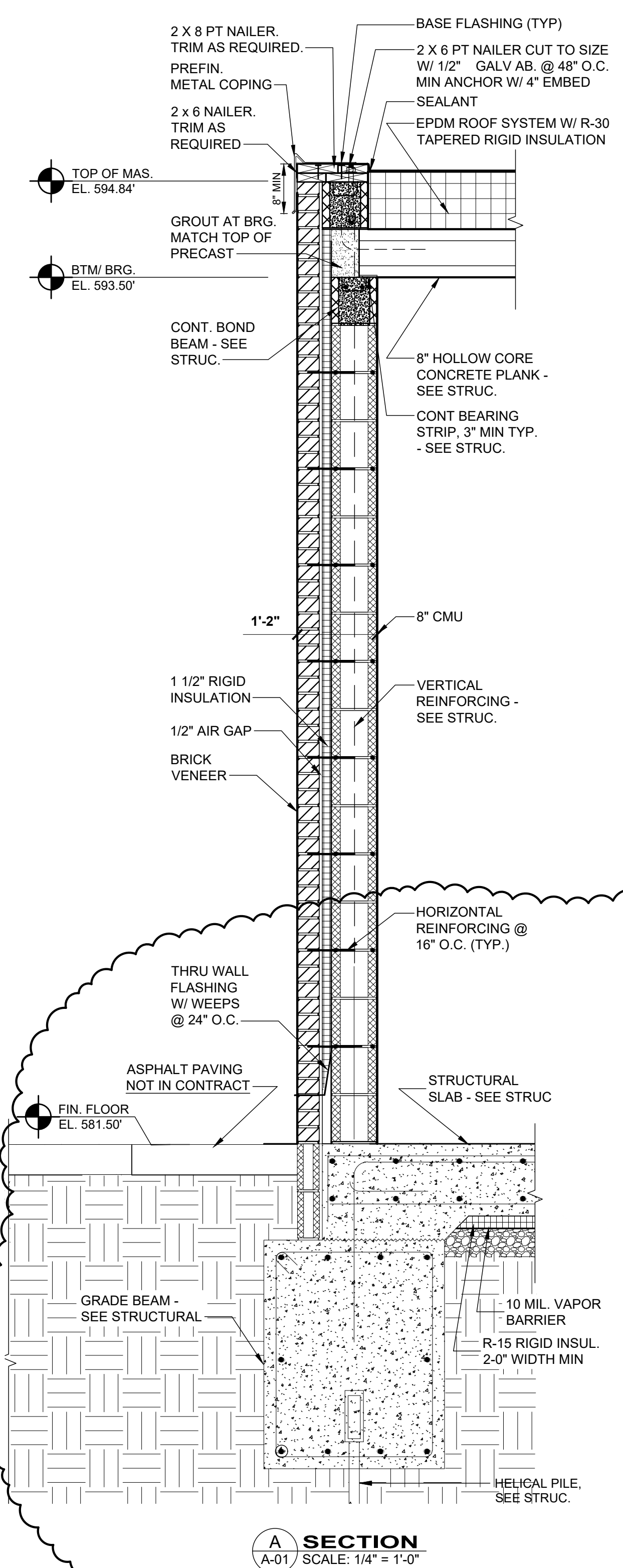
PROJECT NO.	232515
DRAWING NAME	A-03
SHEET	8
OF	17



DATE	11/17/2024
REVISION	
NO.	ADDENDUM NO. 1
SCALE	AS SHOWN
DATE	10/30/2024
DESIGNED BY	ADT
DRAWN BY	VMP
CHECKED BY	ADT

THE CITY OF PAINESVILLE  
WATER TREATMENT PLANT  
CHLORINE BUILDING  
LAKE COUNTY  
MENTOR, OHIO  
**CHLORINE FEED BUILDING**  
WALL SECTIONS

PROJECT NO.	232515
DRAWING NAME	A-04
SHEET	9
OF	17



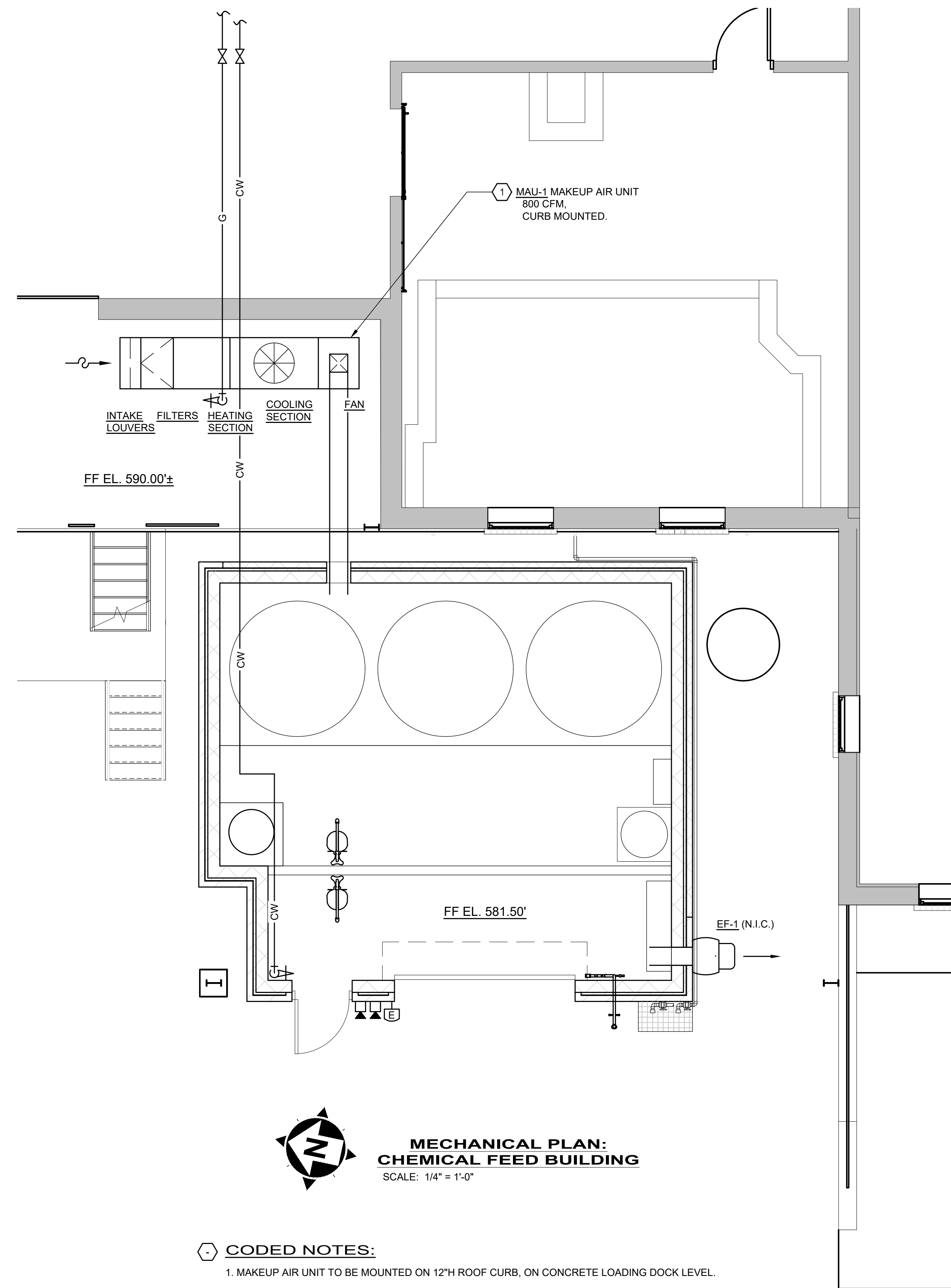
HVAC EQUIPMENT SCHEDULE					
SYMBOL	QUANT.	AREA SERVED	DESCRIPTION	ACCESSORIES	ELECTRICAL REQUIREMENTS
MAU-1	1	CHEMICAL FEED BUILDING	GREENHECK #DGX-P116-H12-D1-3 MAKEUP AIR UNIT OUTDOOR, HORIZONTAL CONFIG., DIRECT-FIRED HEAT, NATURAL GAS, PACKAGED DX INTEGRAL COOLING, R-454B REFRIGERANT, RIGHT HAND ACCESS AND CONNECTIONS, TOP DISCHARGE, DIRECT-DRIVE, B.C. PLENUM FAN WITH VARIABLE FREQUENCY DRIVE(VFD), SECTIONS: INTAKE LOUVERS, FILTERS, GAS BURNER, DX COOLING, FAN. APPROX. DIMENSIONS: 159"L x 33"W x 39"H, APPROX. WEIGHT: 1,500#±.  800 CFM @ 0.50" E.S.P., 1.18" TOTAL S.P., 1,140 RPM, 0.28 BHP, 1/2 HP MOTOR, HEAT: 90 MBH INPUT, 83 MBH OUTPUT, 95°F ΔT AT 92% EFF., 7" BURNER OPERATING PRESSURE, 30:1 TURNDOWN RATIO. COOLING: 41 MBH TC, 22 MBH SC, 89.4/76.3 EAT, 61.9/61.8 LAT, 15.5 EER. FAN: 57 Lwa, 46 dBA, 3.5 SONES.	SEE SPEC. #237423 FOR ADDITIONAL INFO. DOUBLE WALL CONSTRUCTION (1" INSULATION) FAN AND HEAT SECTIONS HINGED ACCESS DOORS MOTORIZED OUTLET DAMPER, WITH END SWITCH HI-PRO POLYESTER COATING. ENTIRE UNIT AND ALL ACCESSORIES LOUVERED INLET HOOD WITH ALUMINUM MESH V-BANK FILTER SECTION WITH: 2" THICK, PLEATED, MERV-13 DISP. FILTERS MICROPROCESSOR UNIT CONTROLS, WITH REMOTE TOUCHSCREEN PANEL DISCHARGE AIR TEMPERATURE CONTROLS, WITH ROOM OVERRIDE THERMOSTAT FREEZE PROTECTION HEATING INLET AIR SENSOR COOLING INLET AIR SENSOR DIRTY FILTER SENSOR/SWITCH AUXILIARY CONTACTS: SUPPLY FAN STATUS, EXHAUST FAN INTERLOCK, EMERGENCY STOP. FM COMPLIANT GAS TRAIN, WITH HIGH/LOW GAS PRESSURE SWITCHES FLAME FAILURE ALARM LIGHT TEFC MOTOR, PREMIUM EFFICIENCY 12" ROOF CURB EMERGENCY STOP - SEE NOTE 2.	208/3/60 21.4 MCA 30A MOCB
EF-1 (N.I.C.)					

**NOTES:**

- CHARACTERISTICS (RPM, HP, IMPELLERØ, PRESSURE DROP) SHALL NOT VARY BY MORE THAN 10% OF SPEC'D UNITS. SOUND VALUES SHALL NOT EXCEED THE VALUES INDICATED.
- CONTRACTOR TO PROVIDE A MANUAL EMERGENCY SHUTOFF TO DE-ENERGIZE MAU-1 AND EF-1 EXHAUST FAN. EMERGENCY SHUTOFF TO BE MODEL #HVAC-120 AS MANUFACTURED BY PILLA ELECTRICAL PRODUCTS, INC., OR EQUAL. SHUTOFF TO BE 120-VOLT, RED PUSH BUTTON TYPE, PULL RESET, METALLIC NEMA 4, 4X, 12 ENCLOSURE, WITH LABEL TO READ: "VENTILATION SYSTEM EMERGENCY SHUTOFF". PROVIDE WITH #PILCLHCOV1 CLEAR HINGED COVER.

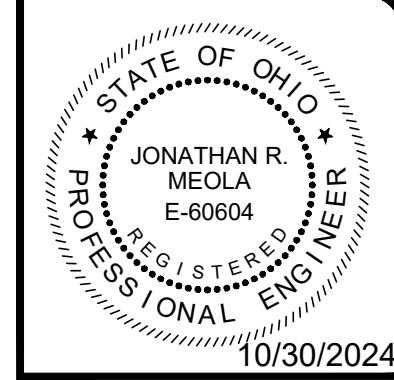
**SEQUENCE OF OPERATION**

- MAU-1 MAKEUP AIR UNIT:**  
VENTILATION SHALL BE CONTINUOUS, 24 HOURS/DAY, 365 DAYS/YEAR.  
MAU-1 SHALL BE A HEATING AND COOLING UNIT.  
MAU-1 SHALL BE INTERLOCKED, CONTINGENT UPON THE OPERATION OF EF-1 EXHAUST FAN. VENTILATION SYSTEM PROVIDES ~ 7.3 AIR CHANGES PER HOUR, AND 1.4 CFM/SF (MINIMUM OF 1.0 CFM/SF REQUIRED BY THE OHIO MECHANICAL CODE).  
MAU-1 SHALL BE PROVIDED WITH AN INTEGRAL UNIT MOUNTED MICROPROCESSOR, WITH REMOTE TOUCHSCREEN PANEL.  
FAN SHALL BE SET TO RUN CONTINUOUSLY.  
CONTROL MODES SHALL INCLUDE A HEAT-COOL-AUTO. TEMPERATURE CONTROL SHALL BE DISCHARGE AIR WITH A ROOM OVERRIDE THERMOSTAT. IN THE HEAT POSITION, THE UNIT SHALL BE HEATING ONLY. IN THE COOL POSITION, THE UNIT SHALL BE COOLING ONLY. IN THE AUTO POSITION, THE UNIT CAN FUNCTION IN HEATING OR COOLING MODES.  
SPACE TEMPERATURE SETTINGS TO BE ~65°F HEATING AND ~75°F COOLING, BOTH ADJUSTABLE.  
SYSTEM SHALL INCLUDE AN EMERGENCY STOP BUTTON (SEE PLANS FOR LOCATION) TO SHUT DOWN MAU-1 AND EF-1, PER THE OHIO MECHANICAL CODE FOR HAZARDOUS MATERIAL STORAGE.  
SEE ELECTRICAL DRAWINGS FOR INTERLOCK WIRING, MONITORING, AND ALARM PROVISIONS. AN ALARM SIGNAL SHALL BE INITIATED SHOULD MAU-1 OR EF-1 NOT BE OPERATING (CURRENT SENSING RELAY, ETC).
- EF-1 EXHAUST FAN:**  
VENTILATION SHALL BE CONTINUOUS, 24 HOURS/DAY, 365 DAYS/YEAR.  
MAU-1 MAKEUP AIR UNIT SHALL BE INTERLOCKED WITH EF-1, AS DESCRIBED ABOVE.



**CODED NOTES:**

- MAKEUP AIR UNIT TO BE MOUNTED ON 12"H ROOF CURB, ON CONCRETE LOADING DOCK LEVEL.



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NO.	REVISION	DATE
1	ADDENDUM #1 - ENTIRE SHEET REISSUED	11/06/2024

SCALE:	AS SHOWN	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
	10/30/2024	JRM	JRM	JRM	JRM

THE CITY OF PAINESVILLE  
WATER TREATMENT PLANT  
CHLORINE BUILDING  
LAKE COUNTY  
MENTOR, OHIO

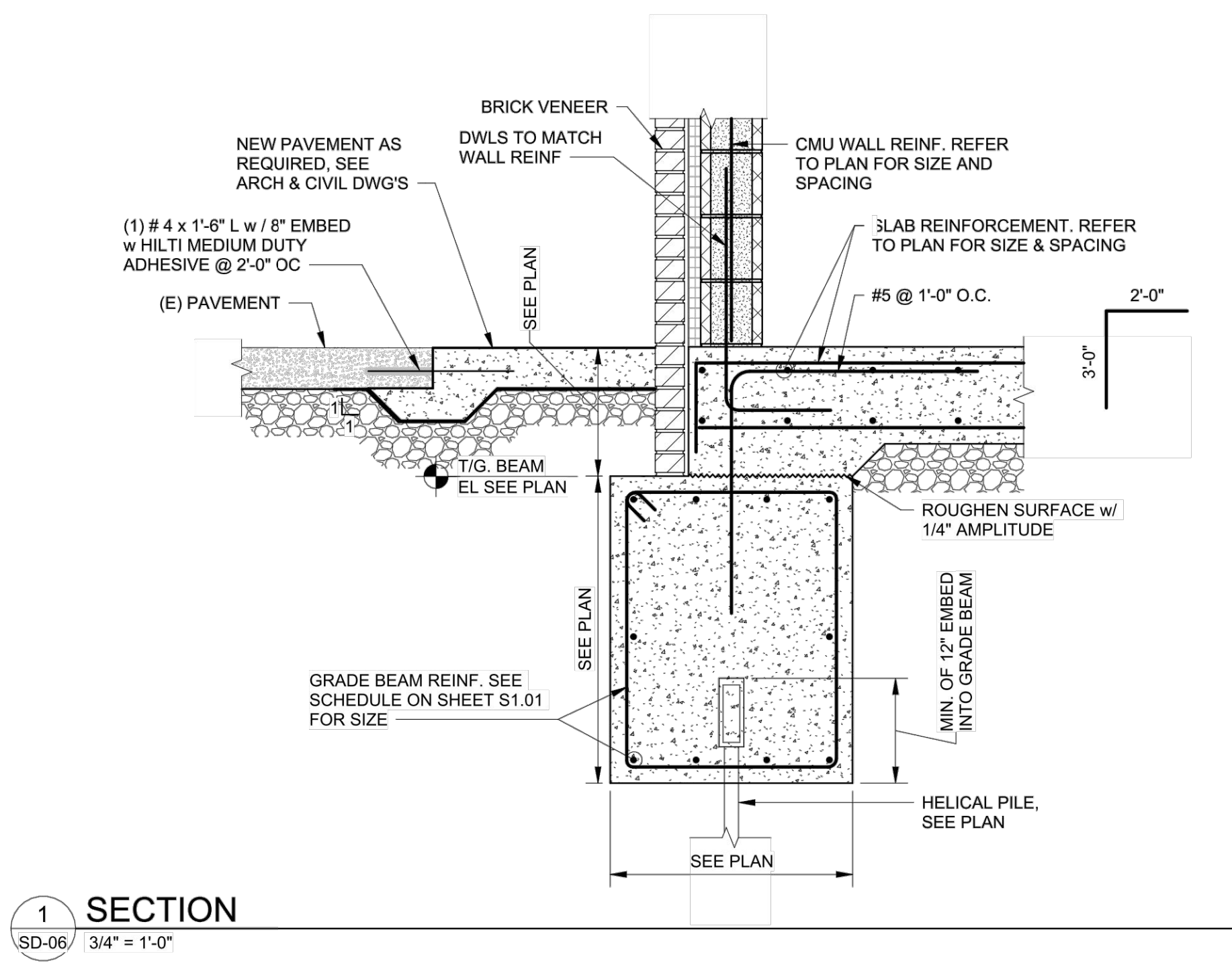
**MECHANICAL**

**MECHANICAL PLANS AND SCHEDULES**

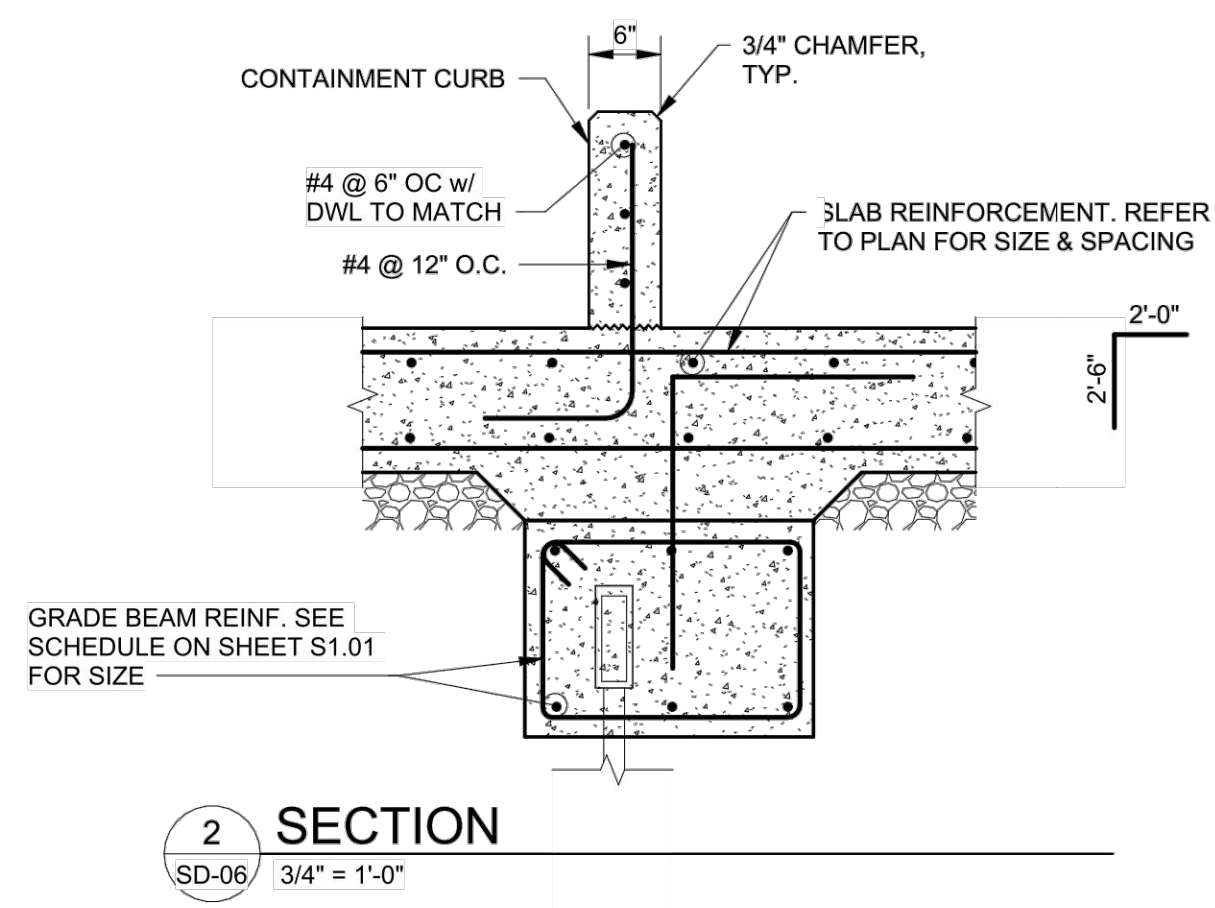
PROJECT NO.	232515
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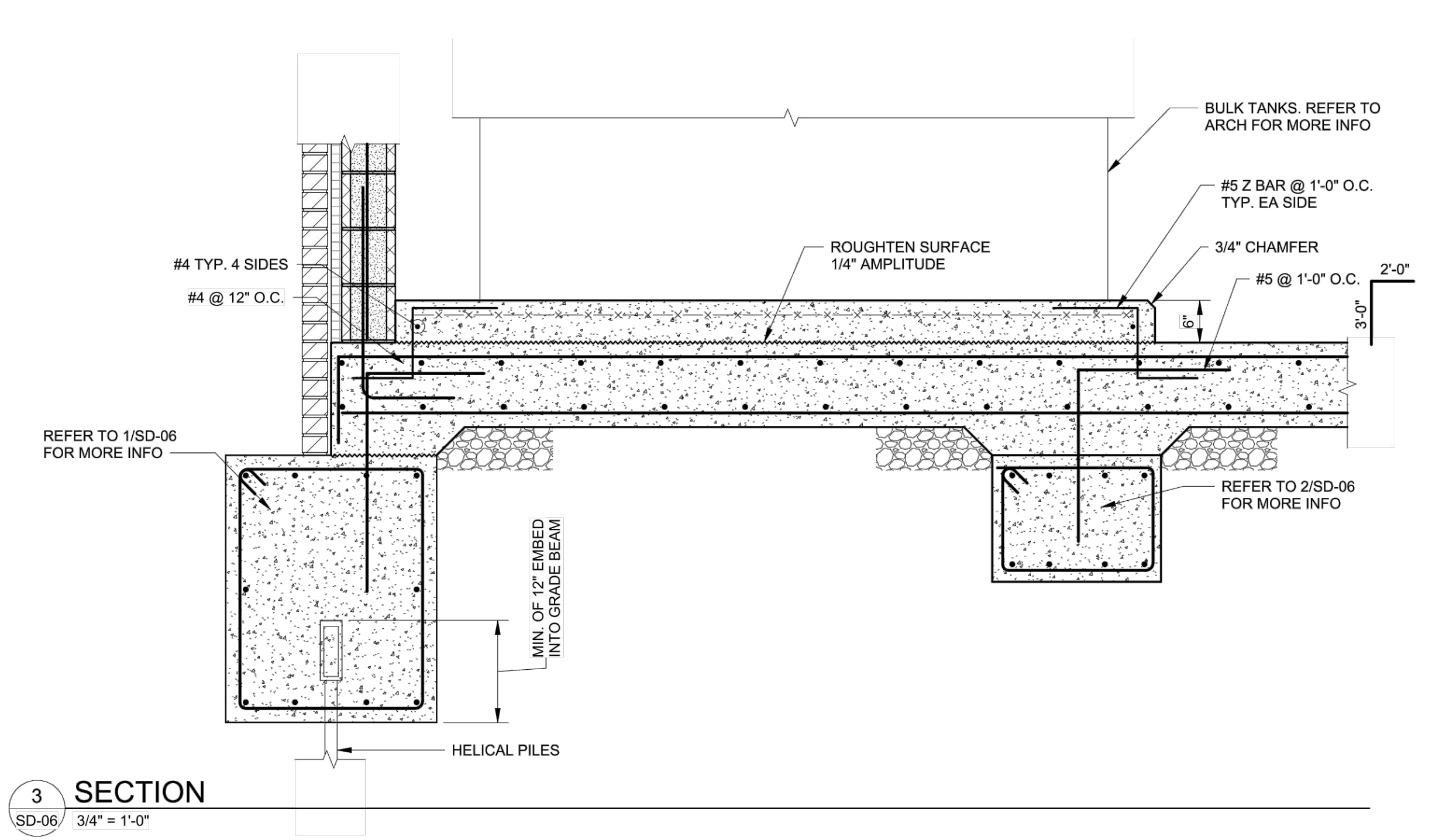




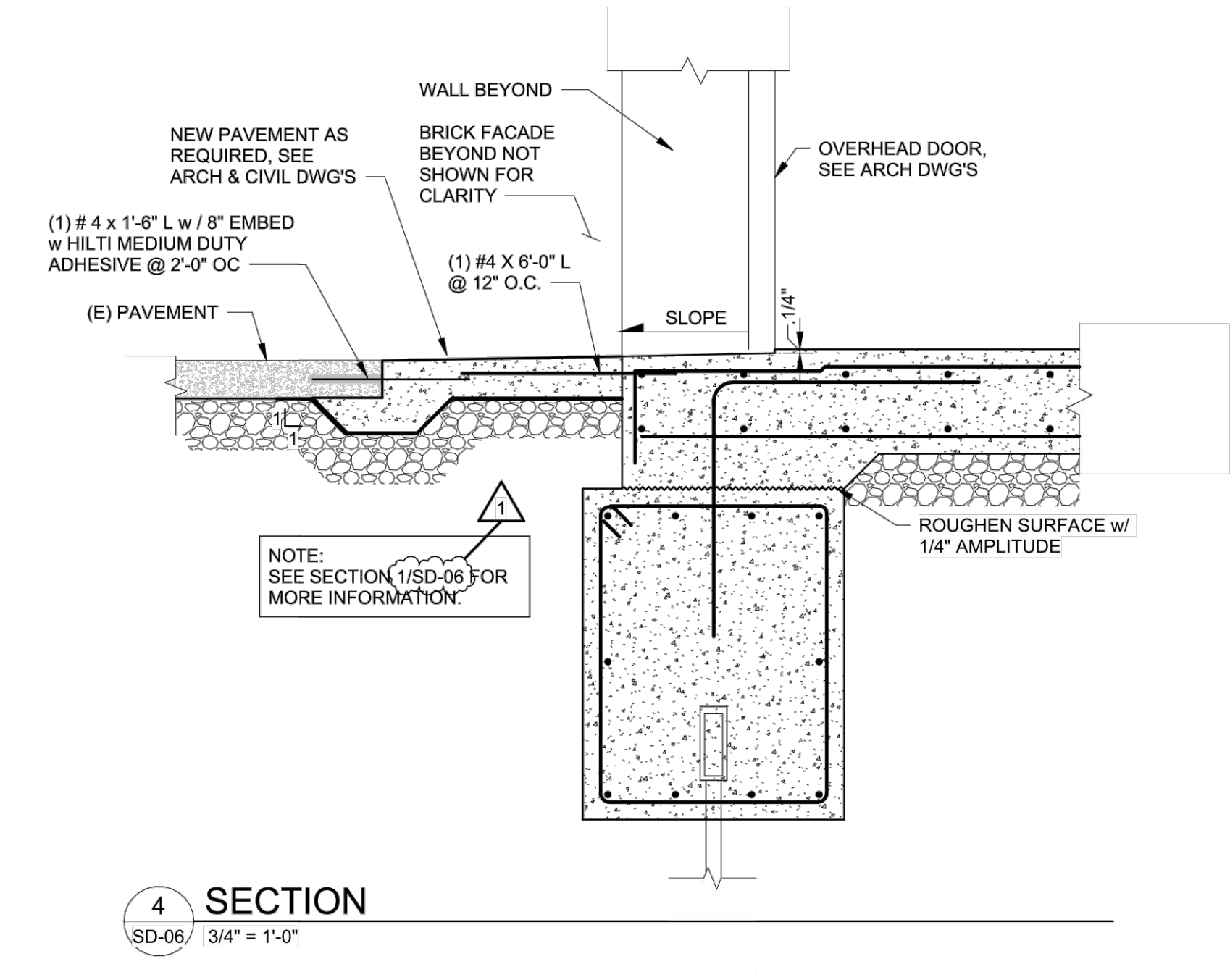
1 SECTION  
SD-06 3/4" = 1'-0"



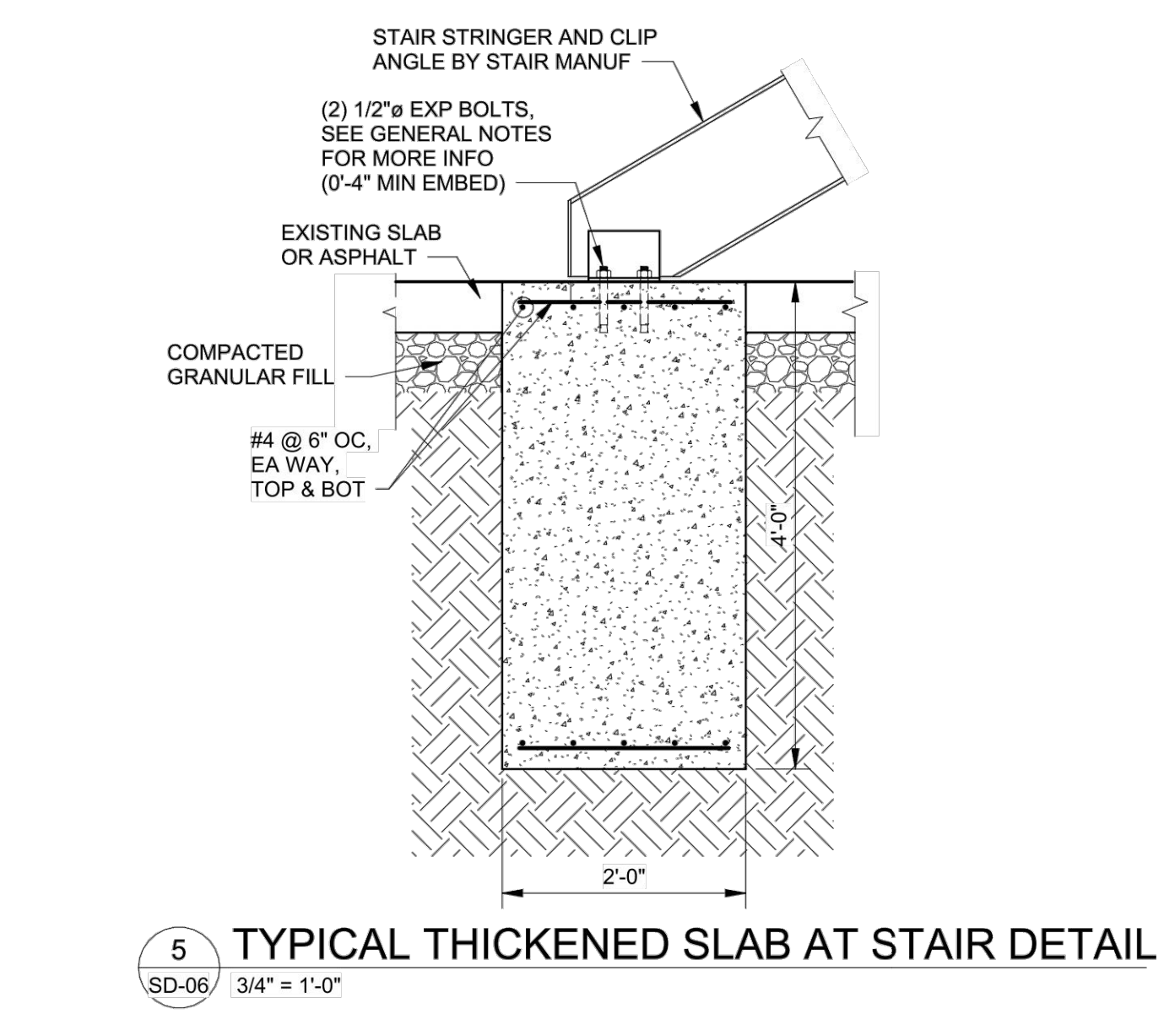
2 SECTION  
SD-06 3/4" = 1'-0"



3 SECTION  
SD-06 3/4" = 1'-0"



4 SECTION  
SD-06 3/4" = 1'-0"



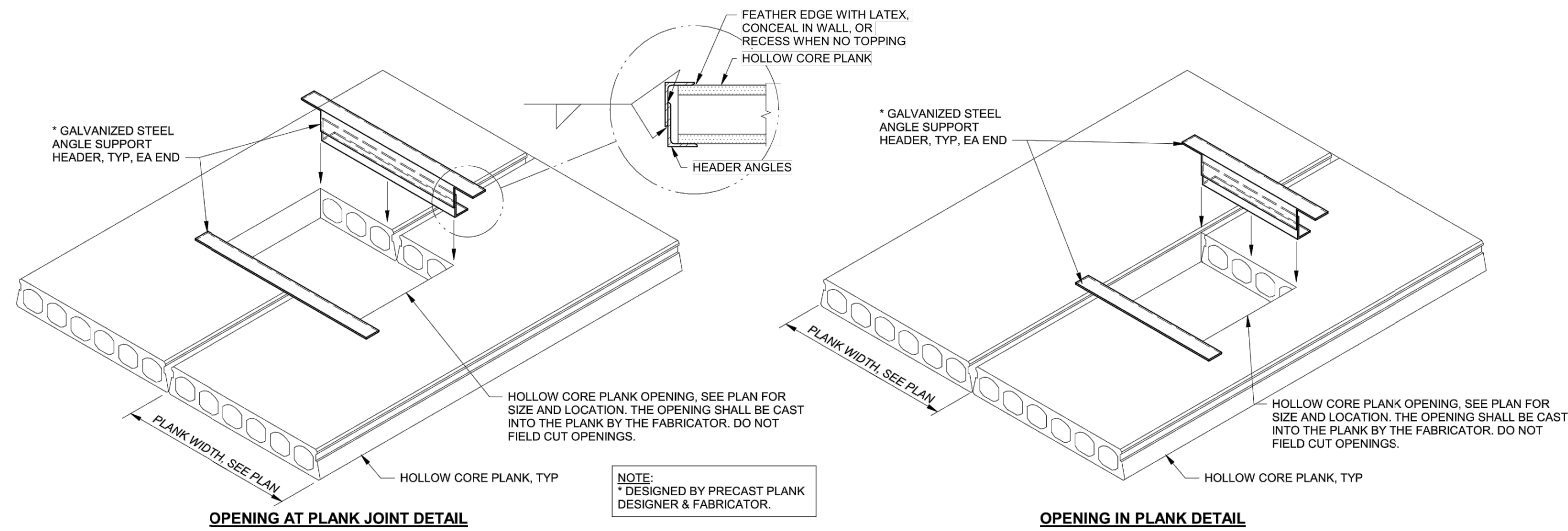
5 TYPICAL THICKENED SLAB AT STAIR DETAIL  
SD-06 3/4" = 1'-0"

DATE	11/7/2024
REVISION	
NO.	ADDENDUM NO. 1
SCALE:	AS SHOWN
DATE:	10/30/2024
DESIGNED BY:	BF
DRAWN BY:	BW
CHECKED BY:	BF

THE CITY OF PAINESVILLE  
WATER TREATMENT PLANT  
CHLORINE BUILDING  
LAKE COUNTY MENTOR, OHIO

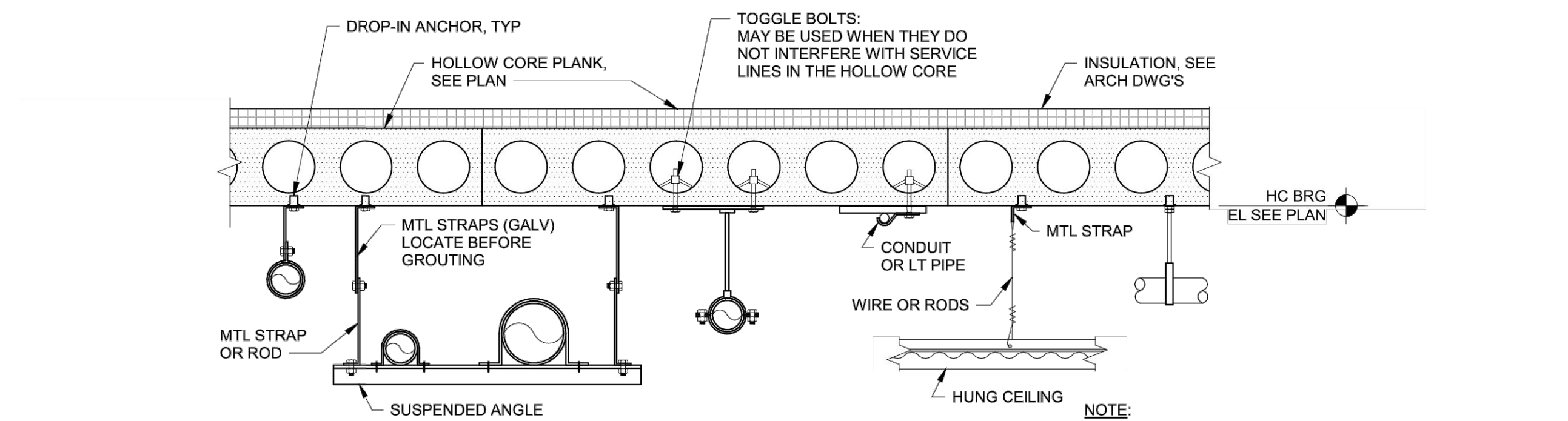
**STANDARD DETAILS**  
**SECTIONS AND TYPICAL DETAILS**

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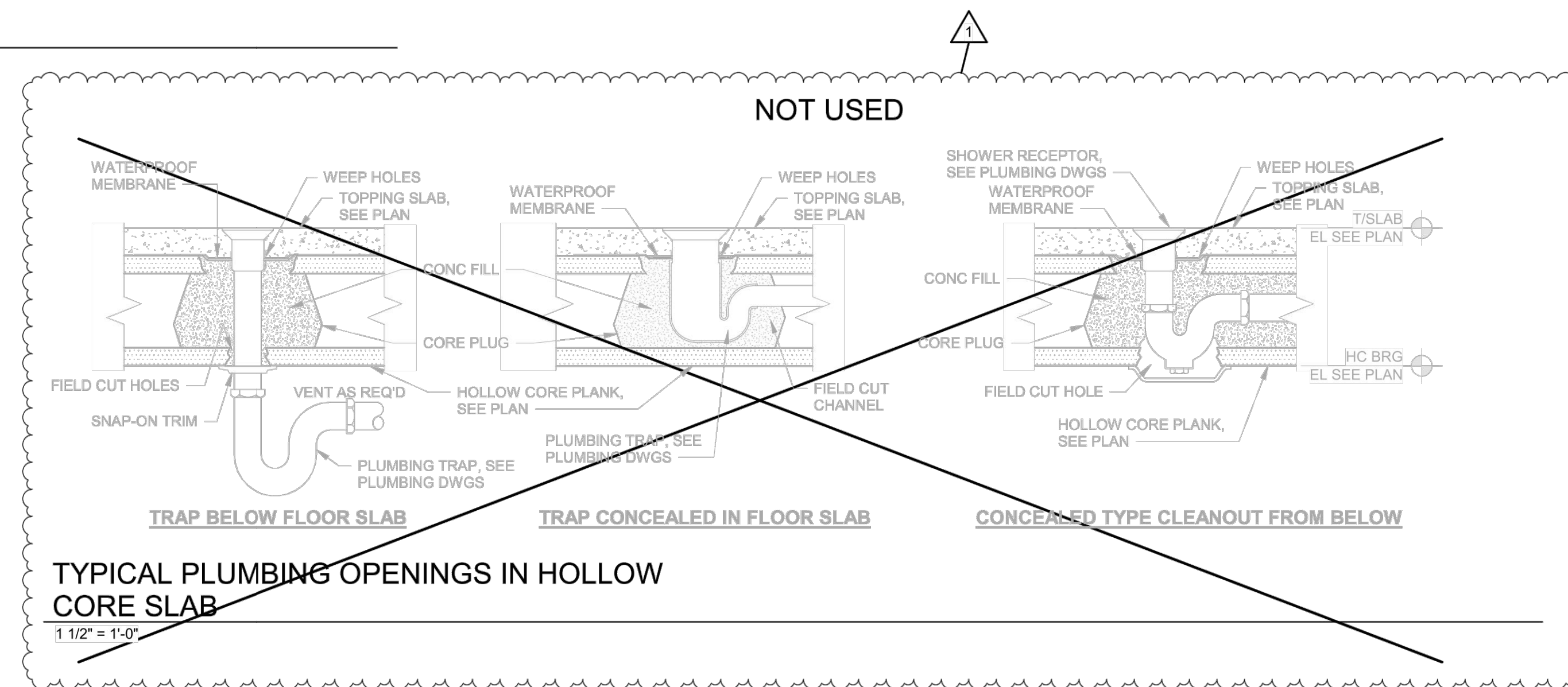
TYPICAL HEADER SUPPORT DETAIL FOR HOLLOW CORE PLANK DETAIL

1/2" = 1'-0"



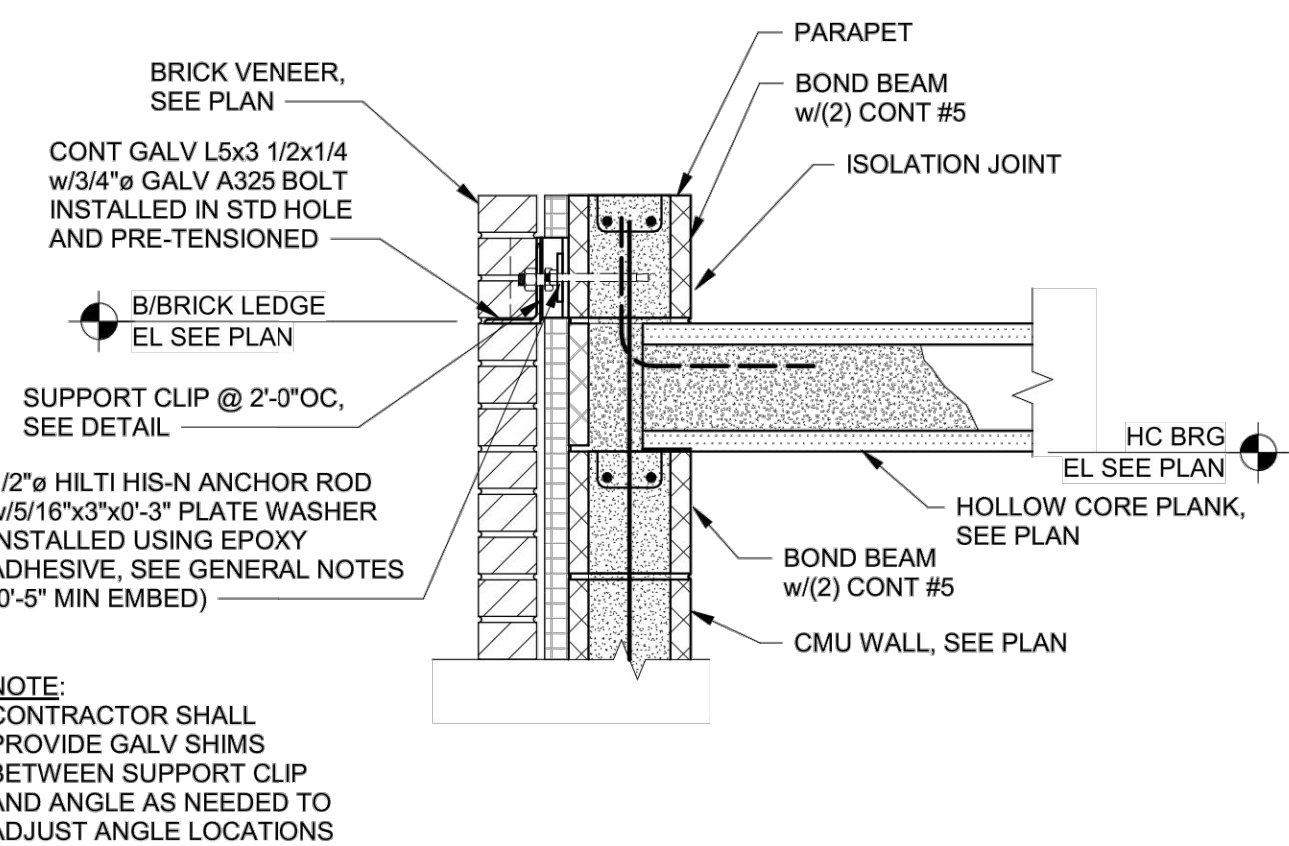
TYPICAL HUNG CONNECTIONS AT HOLLOW CORE SLAB

1" = 1'-0"



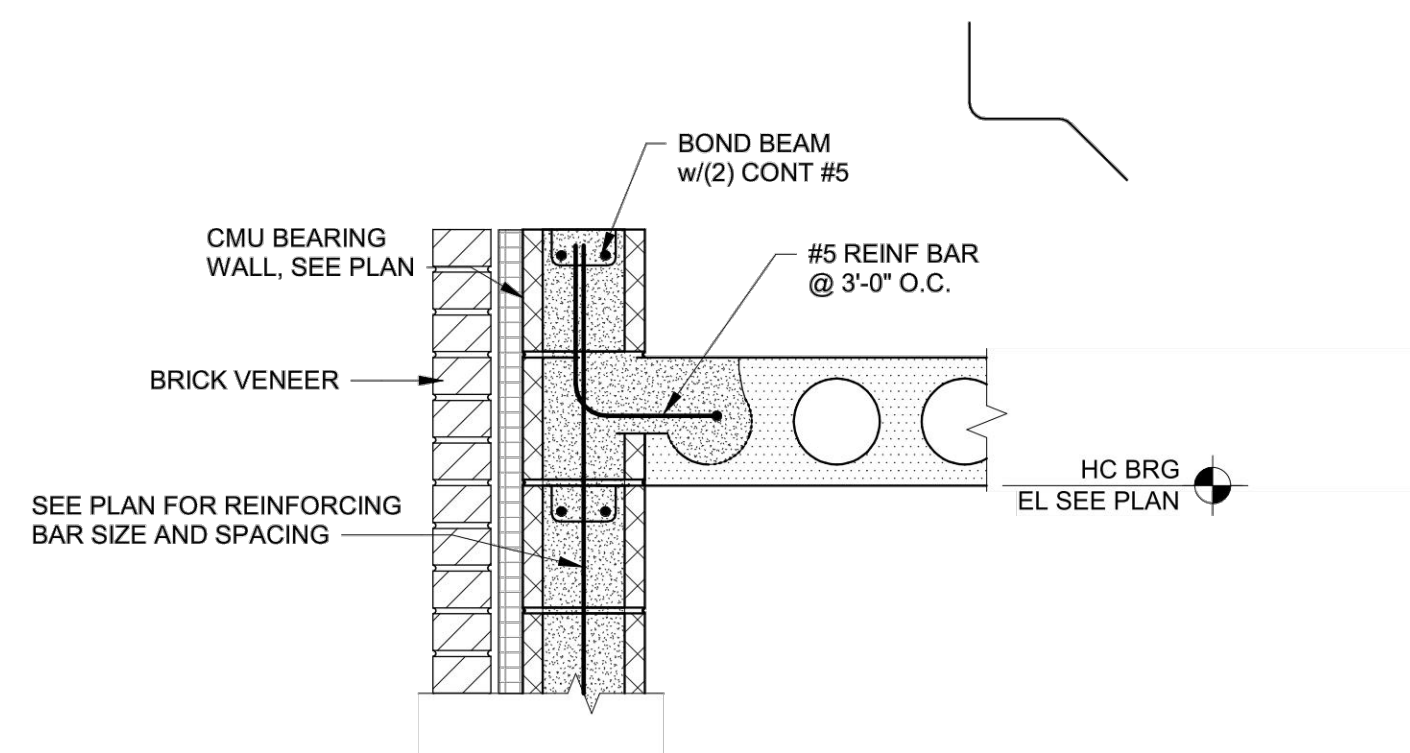
TYPICAL PLUMBING OPENINGS IN HOLLOW CORE SLAB

1 1/2" = 1'-0"



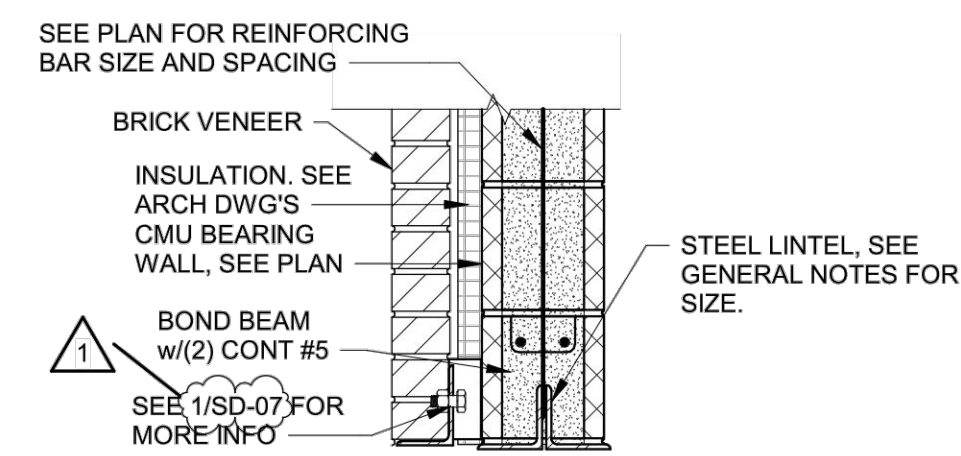
1 SECTION

SD-07 1" = 1'-0"



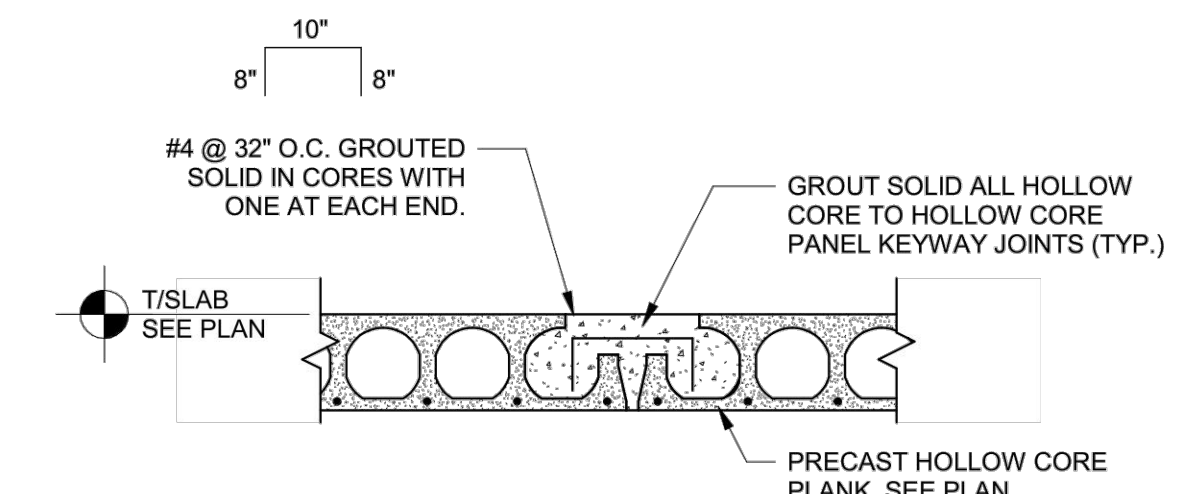
2 SECTION

SD-07 1" = 1'-0"



3 SECTION

SD-07 1" = 1'-0"



4 SECTION DETAIL

SD-07 3/4" = 1'-0"

DATE	11/7/2024
REVISION	
NO	APPENDUM NO. 1
SCALE	AS SHOWN
DATE	10/30/2024
DESIGNED BY:	BF
DRAWN BY:	BW
CHECKED BY:	BF

THE CITY OF PAINESVILLE  
WATER TREATMENT PLANT  
CHLORINE BUILDING  
MENTOR, OHIO  
LAKE COUNTY  
STANDARD DETAILS  
SECTIONS AND TYPICAL DETAILS

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