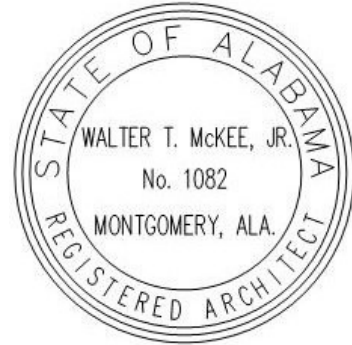


**Addendum No. 1**  
Date: 11.4.24



Project:  
**A New Practice Facility**  
for  
**Troy University**  
**Troy, Alabama**

**MCKEE PROJECT NO. 22-339**  
**ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT NO. 2024-0573**

The following changes and/or substitutions to the plans and specifications are hereby made a part of same and are incorporated in full force as part of the contract.

Bidders shall acknowledge receipt of this Addendum in writing on the Proposal Form.

**A1.1 GENERAL MODIFICATIONS:**

- A. This project must be approved by the Division of Construction Management prior to receipt of bids. As of this date, plans and specifications are not approved. Bid dates will be postponed until the plans and specifications are approved. It is the owner's intent to receive bids as soon as the project is approved. The bid date will be set by addendum for 10 days after approval is received. Thank you for your understanding of this situation.

**A1.2 SPECIFICATION MODIFICATIONS:**

- A. Refer to **Section 13120, Pre-Engineered Metal Building (Metal wall panels - Revised 11.2.24)**, herein.
- B. **DELETE IN ITS ENTIRETY Spec Section 05400 Cold Form Metal Trusses**
- C. Refer to revised **Spec. Section 00031 Table of Contents (dated 11.4.24)**, herein.
- D. Refer to revised **Spec Section 02825 Aluminum Ornamental Fence Systems (dated 11.4.24)**, herein.
- E. See added **Spec Section 09600 High Performance Coatings**, herein.

**A1.3 DRAWING MODIFICATIONS:**

- A. See the attached Revised Drawings as follows:
  - 1. **Sheets S2.2 dated 10.30.24**, herein.
  - 2. **Sheets A4.1, A4.2, A5.1, A6.1 & A6.2 dated 11.2.24**, herein.
  - 3. **Original Troy Practice Field Topo/Survey 7.19.24 by PEC Engineering for reference**, herein.
  - 4. **Sheets S1.1 & S1.3 dated 11.4.24**, herein.

**A1.4 CLARIFICATIONS & RESPONSES:**

- A. See the following responses to RFI questions received from Contractors.

**Question:** PEMB manufacturers are saying some of the hold to 36" rafter and 24" column sizes are not possible and with the note on the drawings to hold these dimensions, it would be a no bid.

**Answer:** See Architectural drawings for maximum Column and rafter sizes.

**Question:** A6.1 and A6.2 show both 2' and 2'-6" max dimensions. Related sections on structural appear to show 2'-8" to 3' dimensions for the same. Advise.

**Answer:** See Architectural drawings for maximum Column and rafter sizes.

**Question:** 1/S2.2 shows a vertical "wind frame." Is this basically a portal brace?

**Answer:** Yes

**Question:** Structural drawing #S2.2 shows roof and tapered column beams, sized W36x232. There are no plan drawings that contain beams of that size. Please advise where this steel beam is installed.

**Answer:** The W36x232 shown at tapered column section and column to splice are W36 x 194 as shown on S1.2 and Revised S2.2

**Question:** Should there be allowances and/or unit prices for unsuitable soils?

**Answer:** all foundations are designed to be supported over aggregate piers. Pier design to be provided by proprietary contractor.

**Question:** For PEMB option what are the deflection limits?

**Answer:**

Deflection limit:

Roof

Dead Load ..... 1/240

Wind Load ..... 1/240

Total ..... 1/180

Columns (Horizontal)

Dead Load ..... 1/240

Wind Load ..... 1/240

Total ..... 1/180

Masonry Support Beam

Dead Load ..... 1/600

B. See the following clarifications as follows:

1. Precast bands, headers & arch headers shall be 16" in height.
2. Sheets A4.1 & A4.2 – remove all notations about Vinyl coated Chain link fence.
3. Remove/omit notes on structural drawings that refer to ridge beam size(s) for PEMB option.
4. Goal posts are by the Turf supplier/ installer – see spec. section 01011 Contingency Allowances.

**END OF ADDENDUM**

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# A New Practice Facility for Troy University Troy, Alabama

**Project No: 22.339**  
**DCM NO. 2024-0573**

### **BIDDING REQUIREMENTS**

- Advertisement For Bids
- Instructions to Bidders (DCM Form C-2 August 2021)
- Request For Information (McKee Form)
- Prior Approval/Substitution Request Form (McKee Form)
- Instructions to Bidders (DCM Form C-2 August 2021)
- Proposal Form (DCM Form C-3 August 2021)
- Form Of Bid Bond (DCM Form C-4, August 2021)
- Special Instructions to Bidders (McKee Form April 2024)

### **CONTRACT FORMS**

- Preparation and Approval of Construction Contracts and Bonds (DCM Form B-7 July 2022)
- Construction Contract (DCM Form C-5, December 2021)
- Performance Bond (DCM Form C-6, July 2022)
- Payment Bond (DCM Form C-7, July 2022)
- General Conditions of the Contract (DCM Form C-8, Revised October 2022)
- Instructions for Contractor's Insurance Company (Article 37 of DCM Form C-8, Revised October 2022)
- Supplement to General Conditions of the Contract (McKee Form April 2024)
- State of Alabama Disclosure Statement Form, Required by Article 3B of Title 41, Code of Alabama 1975(Revised 09/2013) with Information and Instructions regarding Relationships Between Contractor/Grantees and Public Officials/Employees.
- Alabama Department of Revenue – Sales and Use Tax Division – Application for Sales and Use Tax Certificate of Exemption (ST:EX-01 June 2021)
- State of Alabama E-Verify Memorandum of Understanding Instructions (Revised August 2021) *with* ABC Bulletin (May 29, 2012) *and* Revised Alabama Immigration Law Guidance for School Boards (Revised May 2012).
- Alabama Department of Finance, Real Property Management – Division of Construction Management – Permit Fee & Permit Re-Inspection Fee Calculation Worksheet (December 2021)

## **GENERAL CONDITIONS**

- Pre-Construction Conference Checklist (DCM Form B-8 June 2023)
- Detail Of Project Sign (DCM Form C-15, Revised December 2021)
- Application and Certificate for Payment (DCM Form C-10, Revised July 2022)
- Schedule Of Values, (DCM Form C-10SOV, Revised October 2021) Attachment to DCM Form C-10
- Inventory Of Stored Materials, (DCM Form C-10SM, Revised October 2021) Attachment to DCM Form C-10
- Progress Schedule and Report (DCM Form C-11, August 2021)
- Change Order Checklist, (DCM Form B-12, August 2021) For Use with DCM Form C-12
- Contract Change Order (DCM Form C-12 (fully locally funded K-12 Schools), August 2021)
- Change Order Justification (DCM Form B-11, August 2021) Attachment to DCM Form C-12
- General Contractor's Roofing Guarantee (DCM Form C-9, August 2021)
- Certificate of Substantial Completion (DCM Form C-13 & 13A, Revised November 2022)
- Form of Advertisement for Completion (DCM Form C-14, August 2021)
- Certification of Structural Observation (DCM Form B-14 Revised December 2021)
- Final Payment Checklist (DCM Form B-13, Revised October 2022)
- Contractor's Affidavit of Payment of Debts and Claims (DCM Form C-18, August 2021)
- Contractor's Affidavit of Release of Liens (DCM Form C-19, August 2021)
- Consent of Surety to Final Payment (DCM Form C-20, August 2021)
- Form of Advertisement for Completion (DCM Form C-14, August 2021)
- Act 2009-657 Requiring Certification of Fire Alarm Contractors (DCM Memorandum January 19, 2021)
- State Of Alabama Department of Insurance – Application For State Fire Marshal's Certified Fire Alarm Contractor Permit
- Certificate of Asbestos Free Building Materials (McKee Form)

## **TECHNICAL SPECIFICATIONS**

<b>DIVISION 01</b>	<b>GENERAL REQUIREMENTS</b>
01000	Alternates & Contractors Options
01010	Scope of Work
01011	Contingency Allowances
01011A	Items Performed By Turf Contractor
01250	Contract Modification Procedures
01290	Payment Procedures
01320	Construction Progress Documentation
01322	Photographic Documentation
01330	Submittal Requirements



01500 Temporary Facilities and Controls  
01600 Product Requirements  
01700 Execution Requirements  
01770 Closeout Procedures  
01781 Project Record Documents  
01782 Operation and Maintenance Data  
01820 Demonstration and Training

**DIVISION 02 SITE WORK**

02070 Selective Demolition  
02100 Site Preparation  
02200 Earthwork (Geo Report Included)  
02282 Termite Control  
02467 Rammed Aggregate Pier Foundation System  
02514 Portland Cement and Concrete Paving  
02660 Water Distribution System  
02720 Storm Sewers  
02730 Sanitary Sewers  
02810 Sodding and Topsoil  
02825 Aluminum Ornamental Fence Systems and Gates

**DIVISION 03 CONCRETE**

03310 Cast-In-Place Concrete  
03410 Structural Precast Concrete

**DIVISION 04 MASONRY**

04200 Unit Masonry

**DIVISION 05 METAL**

05120 Structural Steel  
~~05400 Cold Formed Metal Trusses~~  
05501 Miscellaneous Steel Fabrications (Handrails)  
05513 Ladders – Alternating Tread Stairs  
05540 Metal Studs

**DIVISION 06 CARPENTRY**

Not Applicable

**DIVISION 07 MOISTURE PROTECTION**

07200 Insulation  
07600 Flashing and Sheet Metal  
07900 Joint Sealers

**DIVISION 08 DOORS, WINDOWS AND GLASS**

08100 Steel Doors and Frames  
08330 Coiling Doors  
08700 Finish Hardware

**DIVISION 09 FINISHES**

09250 Gypsum Drywall  
09291 Glass Fiber Reinforced Architectural Elements (FRP)  
09510 Acoustical Ceilings  
**09600 High Performance Coatings**  
09900 Painting

**DIVISION 10 SPECIALTIES**

10160 Toilet Partitions  
10410 Identifying Devices  
10440 Fire Extinguishers, Cabinets and Accessories  
10742 Cupola (Aluminum Clad Steel Structure)  
10800 Toilet Accessories

**DIVISION 11 EQUIPMENT**

11000 Protective Padding  
11500 Baseball Tension Netting System

**DIVISION 12 FURNISHINGS**

Not Applicable

**DIVISION 13 SPECIAL CONSTRUCTION**

13120 Pre-Engineered Building

**DIVISION 14 CONVEYING SYSTEM**

Not Applicable

<b>DIVISION 15</b>	<b>MECHANICAL</b>
15010	General Mechanical Provisions
15400	Plumbing
15700	Heating, Ventilating and Air Conditioning

<b>DIVISION 16</b>	<b>ELECTRICAL</b>
16100	Electrical
16601	Lighting Protection Systems

**END OF TABLE OF CONTENTS**

## SECTION 02825 - STEEL ORNAMENTAL FENCE SYSTEMS & GATES

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Ornamental Steel Fence System and Gates.

#### 1.2 RELATED WORK

- A. Section 03310, Concrete

#### 1.3 SYSTEM DESCRIPTION

- A. The Contractor shall supply and install a total Industrial Ornamental Steel Fencing System. The system shall include all components (i.e., pickets, posts, rails, gates and hardware) required.

#### 1.4 QUALITY ASSURANCE

- A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials specified.

#### 1.5 REFERENCES

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- C. ASTM D523 - Test Method for Specular Gloss.
- D. ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- E. ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- F. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- G. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- H. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- I. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- J. ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

#### 1.6 SUBMITTAL

- A. The manufacturer's submittal package shall be submitted prior to installation to confirm compliance with all requirements for materials specified in this section.

#### 1.7 PRODUCT HANDLING AND STORAGE

- A. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage and to protect against damage, weather, vandalism and theft.

#### 1.8 PRODUCT WARRANTY

- A. All structural fence components (i.e. rails, pickets, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 10 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.
- B. Reimbursement for labor necessary to restore or replace components that have been found to be

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defective under the terms of manufactures warranty shall be guaranteed for five (5) years from date of original purchase.

## PART 2 - MATERIALS

### 2.1 MANUFACTURER

- A. Ameristar Perimeter Security USA Inc.; 1555 N. Mingo Road, Tulsa, OK 74116; [www.ameristarfence.com](http://www.ameristarfence.com); PH: 888.333.3422
- B. Equal products of other manufacturers may be used in the work provided, such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

### 2.2 MATERIAL

- A. "Aegis II" Industrial Ornamental Steel Fencing and Gates by Ameristar Perimeter Security USA Inc.
  - 1. Style: "Genesis" 3-rail style with Triad Finials and between rail Rings.
- B. Steel material for fence framework (i.e. tubular pickets, rails and posts), shall be galvanized prior to forming in accordance with the requirements of ASTM A653/A653M, with minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft<sup>2</sup> (276 g/m<sup>2</sup>), Coating Designation G-90.
- C. Material for pickets shall be 1" square x 14 Ga. tubing. The cross-sectional shape of the rails shall conform to the manufacturer's ForeRunner™ double wall design with outside cross-section dimensions of 1.75" square and a minimum thickness of 14 Ga. Picket holes in the ForeRunner rail shall be spaced 4.715" o.c., except for Invincible style 6' long, which shall be, spaced 4.98" o.c. Picket retaining rods shall be 0.125" diameter galvanized steel. High quality PVC grommets shall be supplied to seal all picket-to-rail intersections. Fence posts and gateposts shall meet the minimum size requirements of Table 1.

### 2.3 FABRICATION

- A. Pickets, rails and posts shall be precut to specified lengths. ForeRunner rails shall be prepunched to accept pickets. Pickets shall be predrilled to accept retaining rods.
- B. Grommets shall be inserted into the prepunched holes in the rails and pickets shall be inserted through the grommets so that predrilled picket holes align with the internal upper raceway of the ForeRunner rails (Note: This can best be accomplished by making an alignment jig). Retaining rods shall be inserted into each ForeRunner rail so that they pass through the predrilled holes in each picket.
- C. The manufactured galvanized framework shall be subjected to the PermaCoat® thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be (specify Black, Bronze, White, or Desert Sand). The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2.
- D. Completed sections (i.e., panels) shall be capable of supporting a 600 lb. load applied at midspan without permanent deformation. Panels shall be biasable to a 25% change in grade.
- E. Swing gates shall be fabricated using 1.75" x 14ga Forerunner double channel rail, 2" sq. x 12ga. gate ends, and 1" sq. x 14ga. pickets. Gates that exceed 6' in width will have a 1.75" sq. x 14ga. intermediate upright. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding. Gusset plates will be welded at each upright to rail intersection. Cable kits will be provided for additional trussing for all gates leaves over 6'.

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- F. Pedestrian swing gates shall be self-closing, having a gate leaf no larger than 48" width. Integrated hinge-closer set (2 qty) shall be ADA compliant that shall include a variable speed and final snap adjustment with compact design (no greater than 5" x 6" footprint). Hinge-closer set (2 qty) shall be tested to a minimum of 500,000 cycles and capable of self-closing gates up to a maximum gate weight of 260 lbs. and maximum weight load capacity of 1,500 lbs. Hinge-closer device shall be externally mounted with tamper-resistant security fasteners, with full range of adjustability, horizontal (.5" - 1.375") and vertical (0 - .5"). Maintenance free hinge-closer set shall be tested to operate in temperatures of negative 20 F to 200 F degrees, and swings to negative 2 degrees to ensure reliable final lock engagement.

**PART 3 - EXECUTION**

**3.1 PREPARATION**

- A. All new installation shall be laid out by the contractor in accordance with the construction plans.

**3.2 FENCE INSTALLATION**

- A. Fence post shall be spaced according to Table 3, plus or minus 1/2". For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 36" (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

**3.3 FENCE INSTALLATION MAINTENANCE**

- A. When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces:
  1. Remove all metal shavings from cut area.
  2. Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry.
  3. Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

**3.4 GATE INSTALLATION**

- A. Gate posts shall be spaced according to the manufacturers' gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturers' gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer's recommendations.

**3.5 CLEANING**

- A. The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

**3.6 TABLES**

<b>Table 1 – Minimum Sizes for Aegis II Posts</b>	
<u>Fence Posts</u>	<u>Panel Height</u>
2-1/2" x 12 Ga.	Up to & Including 6' Height

3" x 12 Ga.	Over 6' Up to & Including 10' Height			
4" x 11 Ga.	Over 10' Height			
	<u>Gate Height</u>			
<u>Gate Leaf</u>	<u>Up to &amp; Including 6'</u>	<u>Over 6' Up to &amp; Including 8'</u>	<u>Over 8' Up to &amp; Including 10'</u>	<u>Over 12'</u>
Up to 4'	3" x 12Ga.	3" x 12 Ga.	4" x 11 Ga.	4" x 11 Ga.
4'1" to 6'	3" x 12Ga.	3" x 12 Ga.	4" x 11 Ga.	4" x 11 Ga.
6'1" to 8'	4" x 11 Ga.	6" x 3/16"	6" x 3/16"	6" x 3/16"
8'1" to 10'	4" x 11 Ga.	6" x 3/16"	6" x 3/16"	6" x 3/16"
10'1" to 12'	6" x 3/16"	6" x 3/16"	6" x 3/16"	8" x 1/4"
12'1" to 16'	6" x 3/16"	6" x 3/16"	8" x 1/4"	8" x 1/4"

<b>Table 2 – Coating Performance Requirements</b>		
<u>Quality Characteristics</u>	<u>ASTM Test Method</u>	<u>Performance Requirements</u>
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

<b>Table 3 – Aegis II – Post Spacing By Bracket Type</b>		
Span	For INVINCIBLE® 8' Nominal (91.25" Rail)	For CLASSIC, GENESIS, & MAJESTIC 8' Nominal (92.625" Rail)



Post Size	2-1/2"	3"	2-1/2"	3"	2-1/2"	3"	2-1/2"	3"
Bracket Type	Industrial Flat Mount (BB301)		Industrial Universal (BB302)	Industrial Universal (BB303)	Industrial Flat Mount (BB301)		Industrial Swivel (BB304)*	
Post Settings ± 1/2" O.C.	94-1/2"	95"	96"	96.5"	96"	96-1/2"	*97-1/2"	*98"
Span	For INVINCIBLE® 6' Nominal (67.75" Rail)		For CLASSIC, GENESIS, & MAJESTIC 6' Nominal (71.375" Rail)					
Post Size	2-1/2"	3"	2-1/2"	3"	2-1/2"	3"	2-1/2"	3"
Bracket Type	Industrial Flat Mount (BB301)		Industrial Universal (BB302)	Industrial Universal (BB303)	Industrial Flat Mount (BB301)		Industrial Swivel (BB304)*	
Post Settings ± 1/2" O.C.	75"	75.5"	71.5"	72"	71.5"	72"	*73"	*73.5"
*Note: When using BB304 swivel brackets on either or both ends of a panel installation, care must be taken to ensure the spacing between post and adjoining pickets meets applicable codes. This will require trimming one or both ends of the panel.								

**END OF SECTION**

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## SECTION 09600

### High Performance Coatings

#### PARTS-GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

Section includes surface preparation and application of high-performance coating systems on the following substrates:

- 1. Exterior Substrates:
  - a. Steel
- B. Related Requirements:
  - 1. Section 05120 "Structural Steel" for shop priming of metal substrates with primers specified in this section.
  - 2. Section 13120 "Pre-Engineered Metal Buildings" for shop priming of metal substrates with primers specified in this section.

#### DEFINITIONS

- 1.3
  - A. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
  - B. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.
  - C. Steel Structures Painting Council (SSPC):
    - 1. Steel Structures Painting Council Surface Preparation Specifications (SSPC-SP)
    - 2. Steel Structures Painting Council Paint Applications (SSPC-SP)
  - D. American Society for Testing and Materials (ASTM):
    - 1. ASTM B 117 Standard Test Method for Corrosion Resistance.
    - 2. ASTM D 2240 Standard Test Method for Measuring Shore Hardness.
    - 3. ASTM D 2794 Standard Test Method for Measuring Direct Impact.
    - 4. ASTM D 3359 Standard Test Methods for Measuring Adhesion by Tape Test.
    - 5. ASTM D 3363 Standard Test Method for Film Hardness by Pencil Test.
    - 6. ASTM D 4060 Standard Test Method for Abrasion Resistance.

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7. ASTM D 4213 Standard Test Method for Measuring Scrub-ability of Coatings

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include preparation requirements and application instructions.

#### **1.5 DAILY LOG AND TESTING EQUIPMENT**

- A. The Contractor shall keep a daily log in which he shall record the following information:
  1. Air Temperature: Air temperature readings shall be taken at intervals throughout the days work. Readings shall be taken at the start of the mornings work, mid day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coatings manufacturer.
  2. Surface Temperature: Surface temperatures shall be taken in areas where work is being performed. Surface temperature shall be that as specified by the coatings manufacturer.
  3. Material Temperature: Material temperature reading shall be taken prior to the application of the paint.
  4. Relative Humidity: Relative humidity readings shall be taken at intervals throughout the days work. Readings shall be taken at the start of the morning work, mid day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coatings manufacturer.
  5. Dew Point: Dew point readings shall be taken at intervals throughout the days work. Readings shall be taken at the start of the mornings work, mid day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coatings manufacturer.
  6. Blast Profile: Following blasting operations, the Contractor shall take and record the depth of the blast profile. Blast profile measurements shall be taken using Tested X Course Replica Tape. Replica Tape shall be included in the daily log.
  7. Detail or Work Performed During the Day: Area where work was performed and the extent of the work performed shall be included in the daily log.

#### **B. Testing Equipment:**

In addition to the equipment required to take measurements which will be included in the daily log, The Contractor shall have on the project site the following testing equipment. Equipment shall be in calibration and proper working order.

1. Dry Film Thickness Measurements Gauge: Dry film thickness reading shall be taken with a properly calibrated (per the manufacturer's instructions) Type I (magnetic) or Type 2 (electromagnetic) instrument. Dry film thickness reading will be taken and recorded in the in a frequency and manner as dictated by the Engineer.

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2. Sling Psychrometer: The Contractor shall have a sling psychrometer along with the polymeric table to calculate relative humidity and dew point.

## **1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
  1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

## **1.6 FIELD CONDITIONS**

- A. Apply coatings only when the temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F unless otherwise allowed by the coating system manufacturer.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Tnemec Company, Inc,
  2. Or approved equal

### **2.2 HIGH-PERFORMANCE COATINGS, GENERAL**

- A. Performance Standards: Provide products that comply with the generic type and performance standards listed herein-
- B. Materiel Compatibility:
  1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

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2. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.
  3. Provide products of same manufacturer for each coat in a coating system.
- C. VOC Content: Products shall comply with VOC *limits of authorities having jurisdiction*.
- D. Colors: As selected by Architect from manufacturers full range.

### **2.3 METAL PRIMERS**

- A. Primer, Organic Zinc Rich Aromatic Urethane:
1. Series 90-97 Tneme-Zinc; Tnemec Company, Inc.
    - a. 2.5 – 3.5 Mils Dry Film Thickness
  2. "Or Equal"

### **2.4 EPOXY COATINGS**

- A. Epoxy, High-Build, Polyamide, Low Gloss:
1. Series 66 Epoxoline; Tnemec Company, Inc.
    8. 4.0 – 6.0 Mils Dry Film Thickness
  2. "Or Equal"

### **2.5 FLUOROPOLYMER URETHANE**

- A. Thermoset Solution Fluoropolymer Urethane; High Gloss, Semi-Gloss or Eggshell Finish:
1. Series 1070 Fluoronar (Gloss); Tnemec Company, Inc.  
Series 1071 Fluoronar (Serni-Gloss); Tnemec Company, Inc. Series 1072 Fluoronar (Eggshell);  
Tnemec Company, Inc.
    - a. 2.0 – 3.0 Mils Dry Film Thickness

### **SOURCE QUALITY CONTROL**

- 2.6** A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to the Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  2. Testing agency will perform tests for compliance with product requirements.

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3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### **3.2 PREPARATION**

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting.
  1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could **impair** bond of **coatings, including** dust, dirt, oil, grease, and **incompatible** paints and encapsulants.
  1. Remove incompatible primers and reprime substrate with specified primer.
- D. Steel Substrates: Remove rust, mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
  1. SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint in accordance with SSPC-SP 6 Commercial Blast Cleaning or SSPC-SP 11 Power Tool Cleaning to Bare Metal. Surface profile shall be a minimum of 1.5 mils. Prime exposed areas with the same material as used for shop priming to comply with SSPG-PA 1 for touching up shop-primed surfaces.

### **3.3 APPLICATION**

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations. Intermediate and finish coat materials shall be capable of application by brush and/or roller should job site limitations restrict the use of spray application.

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1. Use applicators and techniques suited for coating and substrate indicated.
  2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat
  3. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance
- D. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

#### 3.4 CLEARING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by site washing, scoping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in aft undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

### **PART 4-PRODUCT PERFORMANCE CRITERIA**

- A. Provide the following product information and manufacturers published performance data should coatings or coating **system** be submitted in lieu of the standard of quality established in the project documents. Should the data not be available in a published format, or if the duration of the test does not meet the specified requirement, please respond in the appropriate space **Qian** (Not Tested).

1. Organic Aromatic Zinc Rich Urethane
  1. Generic Type: Aromatic Urethane
  2. Solids By Volume: 63%
  3. Zinc Content: 83% in red film
  4. Test Criteria:

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Test Criteria	Test Duration	Proposed Product Test Results
ASTM B 117 Salt Spray (Fog)	50,000 hours (Scribed Panel)	Ru8t @ Scribe: Plane Rust: Blisters:
ASTM G 85 Prohesion	15,000 hours	Rust @ Scribe: Plane Rust Blisters:
ASTM D 4585 Humidity	4,000 hours	Rusting: Blistering:
ASTM 4541 Adhesion	Average of Three Tests	Report PSI Adhesion
ASTM Ci8 Cathodic Disbondment	30 Days Exposure	
Immersion Service (Potable Water)	7 years – No Failure	

2. Epoxy Intermediate Coat

1. Generic Type: Polyamide Epoxy
2. Solids By Volume: 56%.
3. Test Criteria:

Test Criteria	Teat Duration	Proposed Product Test Results
ASTM B 117 Salt Spray (Fog)	10,900 hours (Scribed Panel)	Rust Q Scribe: Plane Rust: Blisters:
ASTM G 85 Prohesion	15,000 Hours	Rust @ Scribe: Plane Rust: Blisters:
ASTM D 4585	4,000hours	Rusting:

Humidity		Blistering:
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss/ Average of three tests
ASTM 4541 Adhesion	Average of Three Tests	Report PSI
ASTM G8 Cathodic Disbondment	30 Days Exposure	
immersion Service (Potable Water)	7 years — No Failure	

1. Exterior Finish Coat

1. Generic Type: Fluoropolymer Polyurethane
2. Solids By Volume: 60%.
3. Teat Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
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ASTM B 117 Salt Spray (Fog)	10,000 hours (Scribed Panel)	Rust @ Scribe: Plane Rust: Blisters:
ASTM D 4585 Humidity	3,000 hours	Rusting: Blistering:
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss / Average of three tests
ASTM 4541 Adhesion	Average of Three Tests	Report PSI
ASTM D4587 QUV Exposure Cycle 4: 8 hours UV – 4 hours condensation	16,000 hours	Gloss Retention:
ASTM D4587 QUV Exposure Cycle 4: 8 hours UV – 4 hours condensation	25,000 hours	Gloss Retention: Color Change: DED FMCII
ASTMD4141 (EMMAQUA) Exterior Exposure	1,260MJ/m2 Expo- sure	Gloss Retention: Color Change:
ASTM D 4141 (EMMAQUA) Exterior Exposure	3,500MJfm2 Expo- sure	Gloss Retention: Color Change:
ASTM D 522 Flexibility	Method A Conical Mandrel	Cracking: % Elongation:
ASTM 2794 Impact	Average of Three Trials	Direct Impact:
ASTM D 503'1 Weatherometer	5,500 hours	% Gloss Retention: Color Change: DED
AAMA 2604-98	5 Years Exposure	Report: Color Retention: Gloss Retention: Chalking: Erosion:

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## SECTION 13120 - PRE-ENGINEERED BUILDING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1 Specifications sections apply to work specified in this Section.

#### 1.2 SUMMARY

- A. Extent of pre-engineered buildings work is shown on drawings.
- B. Building Type: The pre-engineered building system shown is a single story, rigid frame type metal building of the nominal length, width, eave height and roof pitch indicated.
  - 1. Manufacturer's standard components may be used, providing components, accessories, and complete structure conform to architectural design appearance shown and to specified requirements.
  - 2. Concrete floor and foundations and installation of anchor bolts are specified in a Division 3 section. Provide anchor bolts (including sizes and lengths) and anchor bolt plan to Contractor for work by others.
  - 3. Sealants and caulking are specified in Division 7 section.
  - 4. Blanket Insulation under roof and inside walls as indicated on drawings and specified in this section.
  - 5. Prefinished Metal Roof Panels as indicated on drawings and specified in this section.
  - 6. Interior and Exterior Wall Panels as indicated on drawings and specified in this section.
  - 7. Provide prefinished fascia, vented/non-vented soffit systems, flashing, drip edge, trim, gutters and downspouts as indicated on drawings and specified in Section 07600, Flashing and Sheet Metal.

#### 1.3 DESCRIPTION

- A. Provide all materials, labor, equipment and services, and perform all operations in connection with the furnishing and installing of pre-engineered building, in accordance with the drawings and specifications, including, but not limited to, the following:
  - 1. Primary Framing
  - 2. Secondary Framing
  - 3. Preformed Metal Roofing
  - 4. Exterior/Interior Metal Wall Panels
  - 5. Ceiling Liner Aluminum Soffit Panels
  - 6. Fascia, Soffit, Flashing, Drip Edges, Gutters and Downspouts
  - 7. Workmanship
  - 8. Inspection of Surfaces
  - 9. Protection
  - 10. Delivery, Samples and Shop Drawings
  - 11. Guarantee and Warranty

#### 1.4 SUBMITTALS

- A. **Any deviation (deletions, additions or revisions thereof) from the requirements of the Contract Documents contained in a Submittal shall be clearly identified as a "Deviation**

from Contract Requirements” (or by similar language) within the Submittal in ‘RED’ and, in a letter transmitting the Submittal to the Architect, the Supplier and Contractor shall direct the Architect’s attention to, and request specific approval of, the **specific** deviations. Otherwise, the Architect’s approval of a Submittal does not constitute approval of any deviation from the requirements of the Contract Documents contained in the Submittal. Should any deviation be found at a later date, the Supplier and Contractor shall bear the responsibility and cost of all corrections required.

- B. Product Data: Submit manufacturer's product information, specifications and installation instructions for building components and accessories. Submit sample warranty.
- C. Shop Drawings: Submit complete erection drawings showing anchor bolts settings, sidewall, endwall, and roof framing, transverse cross sections, covering and trim details, and accessory installation details to clearly indicate proper assembly of building components.
  - 1. The shop drawings **MUST** be submitted as an “overlay” drawing to the Architectural drawings.
  - 2. The Contractor/supplier **MUST** provide the “overlay” drawings **including** the Architectural drawings in the complete submittal.
  - 3. The “overlay” drawings must be submitted in ‘RED’ with the Architectural drawings in ‘BLACK’.
- D. Samples: The contractor shall submit samples for review as required thru-out this specification section. Samples will be used to evaluate the quality of the finished product/system.
- E. Certification: Submit written Certification and all structural calculations prepared and signed by a Professional Engineer, registered to practice in the State where building is to be erected, verifying that building design meets indicated loading requirements and codes of authorities having jurisdiction. Calculations shall clearly show all loads used for the design of each member. All column reactions at the foundation shall be provided for verification of the foundation design.

## 1.5 QUALITY ASSURANCE

- A. Design Criteria:
  - 1. All items below shall be designed within the architectural design furring spaces. Refer to submittal requirements above for deviations made from the requirements of the Contract Documents.
  - 2. Structural Framing: Design primary and secondary structural members and exterior covering materials for applicable loads and combinations of loads in accordance with the Metal Building Manufacturers Association's (MBMA) "Design Practices Manual".
  - 3. Structural Steel: For design of structural steel members, comply with requirements of the American Institute of Steel Construction's (AISC) "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" for design requirements and allowable stresses.
  - 4. Light Gage Steel: For design of light gage steel members, comply with requirements of the American Iron and Steel Institute's (AISI) "Specification for the Design of Cold Formed Steel Structural Members" and "Design of Light Gage Steel Diaphragms" for design requirements and allowable stresses.
  - 5. Welded Connections: Comply with requirements of the American Welding Society's (AWS) "Standard Code for Arc and Gas Welding in Building Construction" for welding procedures.
  - 6. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the “Resistance to Foot Traffic Test “ FM 4470.
- B. Design Loads: Building shall meet all applicable Codes.

1. Basic design loads include live load, wind load and up-lift, in addition to the dead load. Minimum acceptable design loads and deflection criteria are shown on the drawings.
  2. Design each member to withstand stresses resulting from combinations of loads that produce the maximum allowable stresses in that member as prescribed in MBMA's "Design Practices Manual".
- C. Manufacturer's Qualifications: Provide pre-engineered metal buildings as produced by a manufacturer with not less than 5 years successful experience in the fabrication of pre-engineered metal buildings of the type and quality required. Manufacturer will be a member of the MBMA.
- D. Erector's Qualifications: Pre-engineered building shall be erected by a firm that has not less than 5 years successful experience in the erection of pre-engineered buildings similar to those required for this project, and that has been licensed by the manufacturer of the building system.
- 1.6 DELIVERY, STORAGE AND HANDLING**
- A. Deliver and store prefabricated components, sheets, panels and other manufactured items so they will not be damaged or deformed.
  - B. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal sheets or panels so that water accumulations will drain freely. Do not store sheets or panels in contact with other materials which might cause staining.
- 1.7 WARRANTIES**
- A. The Contractor Must provide ALL Warranties as indicated thru-out this specification section.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURER**

- A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:
  1. ACI Building Systems
  2. American Buildings Company
  3. Bigbee Steel Buildings, Inc.
  4. Butler Buildings Company
  5. Ceco Building Systems
  6. Nucor Building Systems
  7. Varco-Pruden Building System

### **2.2 MATERIALS**

- A. Hot-Rolled Structural Shapes: Comply with requirements of ASTM A36 or A529.
- B. Tubing or Pipe: Comply with requirements of ASTM A500, Grade B, ASTM A501, or A53.
- C. Members Fabricated from Plate or Bar Stock: Provide 42,000 psi minimum yield strength. Comply with requirements of ASTM A529, A570 or A572.
- D. Members Fabricated by Cold Forming: Comply with requirements of ASTM A607, Grade 50.
- E. Bolts for Structural Framing: Comply with requirements of ASTM A307 or A325 as necessary for design loads and connection details.

### **2.3 PRIMARY FRAMING**

- A. Rigid Frames shall be fabricated from hot-rolled structural steel. Provide built-up "I-beam" shape rigid frames consisting of either tapered or parallel flange beams and straight columns. Provide

frames factory welded and shop painted. Furnish frames complete with attachment plates, bearing plates and splice members. Factory drill frames for bolted field assembly.

1. Provide length of span and spacing of frames indicated. Slight variations in length of span and frame spacing may be acceptable if necessary to meet manufacturer's standard, and if approved by the Architect.
2. Provide rigid frames at endwalls where indicated.

B. End Wall Columns: Provide factory welded, shop painted endwall columns built-up "I" shape welded plate.

C. Wind Bracing: Provide horizontal and adjustable wind bracing at roof only using diagonal cables or threaded steel rods; comply with requirements of ASTM A36 or A572, Grade D.

## **2.4 SECONDARY FRAMING**

A. The spacing of all purlins as shown on the drawings is diagrammatic, therefore, the Registered Professional Engineer for the Pre-Engineered Building shall be responsible for the design of the roof structure to support the framing to meet all state, federal and local code restrictions and structural requirements set forth by the structural engineer. It shall be the responsibility of the Pre-Engineered Building manufacture to coordinate with the Bidding Contractor the amount of erection required for the roof framing before bidding.

B. Provide not less than 16-ga. shop painted rolled formed sections for the following secondary framing members unless shown otherwise on structural contract drawings.

1. Purlins.
2. Eave struts.
3. Endwall rafters.
4. Flange bracing.
5. Sag bracing.

C. Provide not less than 14-ga. cold-formed galvanized steel sections for the following secondary framing members:

1. Base channels.
2. Sill angles.
3. Endwall structural members (except columns and beams).
4. Purlin spacers.

D. Bolts: Provide ASTM A307 bolts, at secondary structural connections. Provide zinc-plated or cadmium-plated bolts when structural framing components are in direct contact with roofing and siding panels. Primary structural connections to be made with ASTM A325 bolts.

E. Shop Painting: Clean surfaces to be primed of loose mill scale, rust, dirt, oil, grease, and other matter precluding paint bond. Follow procedures of SSPC-SP3 for power tool cleaning, SSPC-SP7 for brush-off blast cleaning, and SSPC-SPI for solvent cleaning.

1. Prime structural steel primary and secondary framing members. See Structural Steel 05500 page 3 - Structural Steel Prime Paint and page 5 - Shop Painting.
2. Prime galvanized members, after phosphoric acid pretreatment with manufacturer's standard zinc dust-zinc oxide primer.

## **2.5 PREFORMED METAL ROOFING**

A. Description of Work

1. The work under this section consists of all preformed metal roofing, underlayment, ridge vent system, sheet metal, roof drainage accessories and all related items necessary to complete

the roofing system work indicated on the drawings and herein specified including but not limited to the following:

- a. Formed Roof Panels for Standing Seam Installation
- b. Workmanship
- c. Inspection of Surfaces
- d. Protection
- e. Delivery, Samples and Shop Drawings

B. Quality Assurance

1. The Contractor shall engage the services of a Professional Roof Consultant. The Consultant must hold a minimum title of Registered Roof Observer (RRO) through the International Institute of Building Enclosure Consultants (IIBEC) and provide evidence of adequate insurance as required below. The Consultant should perform three (3) inspections during the installation of each new roof system type (1 – Start up inspection; 2 – Interim inspection; 3 – Final inspection). The Consultant must document all site visits with photographs and written reports. All reports shall be forwarded to the Architect with documentation of the roofing progress and any deficiencies noted during the inspections. Upon completion of all punch list items, the Consultant should provide a letter of roof completion advising the new roof systems meet and/or exceed the project requirements. ***(Note: Although the contractor will be paying the roof consultant from their proceeds, the roof consultant will be considered an agent of the owner and architect throughout the project and will perform the required inspections on behalf of the owner and architect. The above specification shall be applied to individual facilities when multiple site locations are included in the project.)***
  - a. Roof Consultant Insurance Requirements:
    - i. Gen. Liability - \$1,000,000 each occurrence - \$2,000,000 General Aggregate / Auto. Liability - \$1,000,000 / Umbrella Liability. - \$1,000,000 / Workers Compensation - \$1,000,000 per statute / Professional Liability - \$1,000,000
  - b. Approved Roof Consulting Firm:
    - i. Roof Asset Management, Inc. | David Lee, RRO, CIT, FAA-107 | 4950 Woodfield Drive, Millbrook, Alabama 36054 | (334) 590-7999.
    - ii. Substitutions: Roof consulting firms must be pre-approved by the Architect. Requests for a substituting firm must be submitted "In writing" 10 (Ten) days prior to the bid opening.
2. Performance Test Standards: Provide preformed panel systems which have been pretested and certified by manufacturer to provide specified resistance to air and water infiltration and structural deflection and failure when installed as indicated and when tested in accordance with AAMA 501, "Methods of Test for Metal Curtain Walls".
3. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.
4. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the "Resistance to Foot Traffic Test" FM 4470.
5. Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

C. Submittals



1. Product Data: Submit manufacturer's product specifications, standard details, certified product test results, installation instructions and general recommendations, as applicable to materials and finishes for each component and for total system of preformed panels.
  2. Samples: Submit 2 samples 12" square, of each exposed finish material.
  3. Shop Drawings: Submit small-scale layouts of panels on roofs, and large-scale details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory and field assembly work.
- D. Roofer's Qualifications
1. Installation of the metal roofing and roof related accessories shall be performed by **Certified / Preferred Roofers** authorized by the manufacturer as trained and qualified to erect the manufacturer's product.
  2. The Contractor shall submit a letter from the manufacturer of the metal roofing system, certifying the date of certification from the Manufacturer and the dates and year the Roofing Contractor attended school, prior to full certification that this Roofing Contractor is a certified roofer.
- E. Roofing Warranties and Guarantee
1. Weather Tightness Warranty
    - a. The entire installation (sub-framing, clips, panels, fasteners, rakes, eave, ridge, valley flashing conditions, roof to wall conditions as-well-as all materials specified as supplied by the manufacturer) shall be guaranteed weather tight for a minimum of **Twenty (20) years (NO Dollar Limit NDL)**. Provide written warranty, signed by metal roofing manufacturer and his authorized installer, agreeing to replace/repair defective materials and workmanship during the warranty period, certified by the third-party inspection firm as stated under QUALITY ASSURANCE. This warranty shall be identified as neither Non-Depreciating, Non-Pro-Rated, nor have exclusions that identify, valleys, curbs, and flashings. The warranty shall be signed by the Manufacture of the roofing materials and the authorized installer.
  2. Manufacturer's Warranty
    - a. **Manufacturer's roofing warranties which contain language regarding the governing of the warranty by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such warranties.**
    - b. Roof Panels: Durability of the metallic coated and unpainted roof panels due to rupture, structural failure or perforation shall be warranted for a period of **Twenty (20) years** by the manufacturer.
    - c. Color Finish:
      - i. The exterior color finish for painted panels shall be warranted by the Manufacturer for **Twenty-five (25) years** against blistering, peeling, cracking, flaking, chalking and shipping.
      - ii. Excessive color change and chalking shall be warranted for **Twenty-five (25) years**.
        - 1) Color change shall not exceed 5 NBS units per ASTM D2244.68T, chalking shall not be less than a rating of 6 (white) or 8 (other colors) per ASTM D-659.
    - d. The roofing manufacture shall be required to provide documentation certifying that the roof design provided complies with the performance requirements as set forth in IBC Chapter 15, Section 1504. The documentation shall be attached to the roof warranty at the close out of the project.

3. Contractor's Roofing Guarantee
  - a. Contractor shall furnish Contractors 5 Year Alabama Division of Construction Management Roofing Guarantee. This roofing guarantee is included in the front end documentation of this project manual.
4. All roof warranties/guarantees shall be provided to the Owner, by the Contractor at the Final Inspection to obtain the Substantial Completion.

F. Materials

1. All materials shall be from a single source.
2. **Standing Seam II** with Kynar 500 Finish by American Buildings Company/A Nucor Company.
  - a. Standing seam roof panel shall have a configuration consisting of 2 inch high vertical rib spaced on 16 inch centers. The panel shall have flush horizontal and vertical surfaces to facilitate sealing at terminations. Panel configurations which create voids requiring supple metal closure devices shall not be considered acceptable. Panels shall be joined at the sidelap with an interlocking seam mechanically locked by a seaming machine after installation. The female panel seam shall have a factory applied sealant, in compliance with UL90.
  - b. The panel shall be **24 gauge (minimum)** commercially pure aluminum coated steel meeting military specification MIL-C-4174A Type II, Galvalume or G90 galvanized. Minimum yield strength shall be 80,000 PSI.
  - c. Deviations in appearance from the quality standard manufacturer's panel must be approved by the owner before acceptance.
  - d. Changes in framing or variations in loading to the existing structure caused by alternate roof systems shall be subject to review and all costs for any modifications shall be the responsibility of the General Contractor.
  - e. System Description: The roof system is a concealed fastener interlocking standing seam system. ***Panel must not be roll formed on site, nor use a portable roll former whereby the contractor manufactures the panel versus a single sourced manufacturer providing the finished materials with a single sourced warranty.***
  - f. Roof panels shall be standing seam interlocking design and secured to the supports with a concealed structural fastening system. UL certification must appear on the panel if so requested.
  - g. The concealed attachment system shall eliminate all through penetration of the exposed roofing surface into structural supports and allow the roof covering to move independently of any differential thermal movement by the framing system.
  - h. The panel to structural clip shall be designed to provide +/- one inch of thermal movement. It shall incorporate a self centered feature to assure one inch of movement in both directions.
  - i. The standing seam shall have integral male and female interlocking ribs with a factory applied, non-hardening sealant, and the seams shall be continuously locked or crimped together by mechanical means during installation.
  - j. Roof panels shall be fastened to the support framing members with a concealed clip or backing device of steel having a protective metallic coating. Through penetration of the roofing surface by exposed fasteners shall occur only for non-structural connection at panel termination and roof perimeter flashing location.
  - k. Panel termination and perimeter flashing (attached to roof panels) shall be sealed with sealants recommended by the manufacturer.

- I. Required closures shall be metal. Non-metal closures shall not be acceptable.
  - m. Provide thermal blocks at all roof to purlin connection points/deck supports.
- G. Metal Finishes
- 1. General: Apply coating either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Protect coating promptly after application and cure, by application of strippable film or removable adhesive cover and retain until installation has been completed.
  - 2. Color Finish on Roof Panels and Trim: (*Applies to Metal Wall Panels, Flashings, Facia, Metal Building Accessories, Gutters and Downspouts*)
    - a. Panels shall have a factory color finish on the exposed side. The exposed finish shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning.
    - b. Color of the exterior roof panels and trim shall be selected from manufactures standard color pallet After Bid Date.
    - c. The exterior color finish shall meet or exceed the performance requirements specified below.
      - i. Paint Color Test:
        - 1) Test: Film Thickness; Test Method: ASTM D-1005; Performance: 0.2 mil primer 0.8-0.9 mil topcoat
        - 2) Test: 60° @ under 10 low gloss; Test Method: ASTM D-523; Performance: 25-35
        - 3) Test: IR Reflectivity; Test Method: ASTM D-4803-97; Performance: Must meet 25% Minimum (exceeds)
        - 4) Test: Pencil Hardness; Test Method: ASTM D-3363; Performance: HB-H
        - 5) Test: Flexibility, T-Bend; Test Method: ASTM D-4145; Performance: 2-T Galvalume Steel
        - 6) Test: Adhesion; Test Method: ASTM D-3359; Performance: No adhesion Loss
        - 7) Test: Reverse Impact; Test Method: ASTM D-2794; Performance: No cracking or loss of adhesion
        - 8) Test: Abrasion, Falling Sand; Test Method: ASTM D-968; Performance: 65-85 1/mil
        - 9) Test: Mortar Resistance; Test Method: ASTM C-267; Performance: No effect
        - 10) Test: Detergent Resistance; Test Method: ASTM D-2248 3% 72 hrs. @ 100°F; Performance: No effect
        - 11) Test: Acid Pollutants; Test Method: ASTM D-1308 10% Muriatic Acid (15 min) 20% Muriatic Acid (15 min); Performance: No effect, AAMA 605.2 <5units color change
        - 12) Test: Acid Rain Test; Test Method: Kesternich; Performance: 15 cycles minimum, no objectionable color change
        - 13) Test: Alkali Resistance; Test Method: 20% Sodium Hydroxide (1hr); Performance: No effect

- 14) Test: Salt Spray Resistance 5% @ 95° F; Test Method: ASTM B-117; Performance: 1000 hrs Galvalume steel
- 15) Test: Humidity Resistance 100% @ 100° F; Test Method: ASTM D-2247; Performance: Passes 1000 hrs Galvalume Steel
- 16) Test: South Florida exposure; Test Method: ASTM D-2244; Performance: <5 units color change
- 17) Test: UVB (313 bulbs); Test Method: ASTM G-53; Performance: Passes 3000 hrs
- 18) Test: Chalk Resistance; Test Method: ASTM D-4214; Performance: Rating of 8 min

- 1. Colors must meet the following: The solar reflectance for a steep-sloped roof must be a minimum of 25%, dropping no less than to 15% after three years. Low sloped roofs (below 2:12) must be a minimum of 65% dropping to no less than 50% after three years.

#### H. Roof Panels

- 1. General: Provide roofing sheets formed to the general profile or configuration indicated. All roof panels shall be full length, no end laps allowed.
- 2. Zinc-Coated Steel Sheets: Provide structural quality hot-dip galvanized steel sheets, complying with requirements of ASTM A446, Grade C, with G90 coating complying with ASTM A525.
- 3. Aluminum Coated Steel Sheets: Provide drawing quality aluminum coated steel sheets, complying with requirements of ASTM A463, with T1-40 coating.
  - a. Metal thickness not less than 24 ga. (0.0179").
- 4. Accessories: Provide the following sheet metal accessories factory formed of the same material and finish as the roofing and siding.
  - a. Flashings.
  - b. Fillers.
  - c. Metal expansion joints.
  - d. Facias
  - e. Ridge covers.
  - f. Cover exposed structural and secondary members at exterior.
- 5. Fasteners:
  - a. Provide self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end welded studs, and other suitable fasteners as standard with the manufacturer designed to withstand design loads.
  - b. Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.
  - c. Use stainless steel fasteners for exterior application and galvanized or cadmium plated fasteners for interior applications.
  - d. Locate and space fastenings in true vertical and horizontal alignment. Use proper type fastening tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
  - e. Provide fasteners with heads matching color of roofing sheets by means of plastic caps or factory-applied coating.

6. Flexible Closure Strips: Provide closed-cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or premold closure strips to match corrugation configuration of roofing and siding sheets. Provide closure strips where indicated or necessary to ensure weathertight construction.
  7. Sealing Tape: Provide pressure sensitive 100 percent solids isobutylene tripolymer compound sealing tape with release paper backing. Provide permanently elastic, non-sag, non-toxic, non-staining tape not less than 1/2" wide and 1/8" thick.
  8. Joint Sealants: Provide one-part elastomeric polyurethane polysulfide or silicone rubber sealant as recommended by the building manufacturer.
- I. Miscellaneous Materials
1. Internal Panel Framing: Manufacturer's standard.
  2. Fasteners: Manufacturer's standard noncorrosive types, with exterior heads gasketed.
  3. Accessories: Except as indicated as work of another specification section, provide components required for a complete roofing/siding system, including:
    - a. Trim, Copings, Fascias, Gravel stops, Mullions, Sills, Corner Units, Ridge Closures, Clips, Seam Covers, Battens, Flashings, Gutters, Downspouts, Louvers, Sealants, Gaskets, Fillers, Closure Strips, All similar items.
      - i. Match materials/finishes of preformed panels.
  4. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.
- J. PRE-ROOFING CONFERENCE
1. A pre-roofing conference is required before any roofing materials are installed. This conference shall be conducted by a representative of the Architect and attended by representatives of the Owner, Division of Construction Management Inspector, General Contractor, Roofing Contractor, Sheet Metal Contractor, Roof Deck Manufacturer (if applicable), and the Roofing Materials Manufacturer (if warranty is required of this manufacturer). If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting. Provide at least 72 hours advance notice to participants prior to convening pre-roofing conference.
  2. The pre-roofing conference is intended to clarify demolition and application requirements for work to be completed before roofing operations can begin. This would include a detailed review of the specifications, roof plans, roof deck information, flashing details, and approved shop drawings, submittal data, and samples. If conflict exists between the specifications and the Manufacturer's requirements, this shall be resolved. If this pre-roofing conference cannot be satisfactorily concluded without further inspection and investigation by any of the parties present, it shall be reconvened at the earliest possible time to avoid delay of the work. In no case should the work proceed without inspection of all roof deck areas and substantial agreement on all points.
  3. The following are to be accomplished during the conference:
    - a. To review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
    - b. To establish trade-related job schedules, including the installation of roof-mounted mechanical equipment.
    - c. To establish roofing schedule and work methods that will prevent roof damage.
    - d. Require that all roof penetrations and walls be in place prior to installing the roof.
    - e. To establish those areas on the job site that will be designated as work and storage areas for roofing operations.

- f. To establish weather and working temperature conditions to which all parties must agree.
  - g. To establish acceptable methods of protecting the finished roof if any trades must travel across or work on or above any areas of the finished roof.
4. The Architect shall prepare a written report indicating actions taken and decisions made at this pre-roofing conference. This report shall be made a part of the project record and copies furnished the General Contractor, the Owner, the Division of Construction Management, and the Division of Construction Management Inspector.

K. Installation

- 1. General: Comply with panel fabricator's and material manufacturer's instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.
  - a. Install panels with concealed fasteners.
- 2. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4" in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8" offset of adjoining faces and of alignment of matching profiles.
- 3. Joint Sealers: Install gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel systems. Provide types of gaskets and sealants/fillers indicated or, if not otherwise indicated, types recommended by panel manufacturer.
- 4. Refer to other sections of these specifications for product and installation requirements applicable to indicated joint sealers.
- 5. Water shall be prevented from entering the building during the work. This shall involve keeping penetrations sealed, planning the work to reroof sections and sealing new to old or other precautionary and effective safeguards.

**2.6 METAL WALL PANELS**

A. Description of Work

- 1. Extent of each type of preformed wall panels/siding is indicated on the drawings and by provisions of this section. Preformed wall panels/siding is hereby defined to include panels which are structurally capable of spanning between supports spaced as indicated.
- 2. Types of materials required include the following:
  - a. Exterior Wall Panel
  - b. Workmanship
  - c. Inspection of Surfaces
  - d. Protection
  - e. Delivery, Samples and Shop Drawings

B. Quality Assurance

- 1. Performance Test Standards: Provide preformed panel systems which have been pretested and certified by manufacturer to provide specified resistance to air and water infiltration and structural deflection and failure when installed as indicated and when tested in accordance with AAMA 501, "Methods of Test for Metal Curtain Walls".
- 2. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum of five years of experience in manufacture of similar products in successful use in similar applications.

3. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.
- C. Submittals
1. Product Data: Submit manufacturer's product specifications, standard details, certified product test results, installation instructions and general recommendations, as applicable to materials and finishes for each component and for total system of preformed panels.
  2. Samples: Submit 2 samples 12" square, of each exposed finish material.
  3. Shop Drawings: Submit small-scale layouts of panels, and large-scale details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory and field assembly work.
- D. Materials - **EXTERIOR PANELS / INTERIOR PANELS**

## 1.1 MANUFACTURER

Basis of Design Manufacturer: **MBCI Metal Roof and Wall Systems, Division of NCI Group, Inc.**;  
Houston TX. Tel: (877)713-6224; Email: [info@mbci.com](mailto:info@mbci.com); Web: [www.mbci.com](http://www.mbci.com).

Morin / A Kingspan Group Company; [www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems](http://www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems); 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501

- A. PAC-CLAD; [www.pac-clad.com](http://www.pac-clad.com): 1005 Tonne Road, Elk Grove Village, IL 60007; Ph: 800-PAC-CLAD

Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

### PERFORMANCE REQUIREMENTS

General: Provide metal panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated, as determined by ASTM E1592:

Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.

Wind Negative Pressure: Certify capacity of metal panels by actual testing of proposed assembly.

Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of 1/120 of the span with no evidence of failure.

Seismic Performance: Comply with ASCE 7 Sections 9, "Earthquake Loads."

Wall Panel Air Infiltration, ASTM E283:

1. No air infiltration at static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).

Wall Panel Water Penetration Static Pressure, ASTM E331: No uncontrolled water penetration at a static pressure of 6.24 lbf/sq. ft. (300 Pa).

Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.



## **FORMED METAL WALL PANELS – see Drawings for locations**

Flush-Profile, Concealed Fastener Metal Wall Panels: Structural metal panels consisting of formed metal sheet with vertical panel edges and flat pan with flush joints between panels, field assembled with nested interlocking edges, and attached to supports using concealed fasteners.

**TYPE 1 METAL WALL PANELS:** Basis of Design: **MBCI, FW-120-1 Panel. (Single Bead at 6” spacing).**

Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M, structural quality, Grade 50, Coating Class AZ50 (Grade 340, Coating Class AZM150), prepainted by the coil-coating process per ASTM A755/A755M.

Nominal Thickness: 24 gauge (Standard) coated thickness, with smooth surface.

- i. Exterior Finish: Fluoropolymer two-coat system.
- ii. Color: As selected by Architect from manufacturer's standard colors after Bid Date.  
Panel Width: 12 inches (305 mm).  
Panel Thickness: 1-1/2 inch (38 mm).

**TYPE 2 METAL WALL PANELS:** Basis of Design: **MBCI, PBC Panel. (Ribs at 2.67” spacing).**

Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M, structural quality, Grade 50, Coating Class AZ50 (Grade 340, Coating Class AZM150), prepainted by the coil-coating process per ASTM A755/A755M.

Nominal Thickness: 24 gauge (Standard) coated thickness, with smooth surface.

- iii. Exterior Finish: Fluoropolymer two-coat system.
- iv. Color: As selected by Architect from manufacturer's standard colors after Bid Date.  
Panel Width: 32 inches (812.8 mm).  
Panel Thickness: 7/8 inch (22.23 mm).

## **MISCELLANEOUS MATERIALS**

General: Provide complete metal panel assemblies incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

Flashing and Trim: Match material, thickness, and finish of metal panels.

Panel Fasteners: Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by means of factory-applied coating, with weathertight resilient washers.

Panel Sealants:

Factory-Applied Seam Sealant: Manufacturer's standard hot-melt type.

Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

Elastomeric Joint Sealant: Urethane sealant, single-component, ASTM C920 Type S, Grade NS, Class 25, Use NT, A, M, G, O.

Foam Tape: Manufacturer's standard self-adhering type.

## FABRICATION

General: Provide factory fabricated and finished metal panels, trim, and accessories meeting performance requirements, indicated profiles, and structural requirements.

Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings.

## FINISHES

Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621, meeting solar reflectance index requirements.

Basis of Design: **MBCI, Signature 300.**

## EXECUTION

### EXAMINATION

Examine metal panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.

Inspect framing that will support insulated metal panels to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to metal panel manufacturer and installer. Confirm presence of acceptable framing members at recommended spacing to match installation requirements of metal panels.

Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal panel installation.

### 1.1 METAL PANEL INSTALLATION

Concealed-Fastener Formed Metal Panels: Install metal panel system in accordance with manufacturer's written instructions, approved shop drawings, project drawings, and referenced publications. Install metal panels in orientation, sizes, and locations indicated. Anchor panels and other components securely in place. Provide for thermal and structural movement.

Fasten metal panels to supports with fasteners at each location indicated on approved shop drawings, at spacing and with fasteners recommended by manufacturer. Fasten panel to support structure through leading flange. Snap-fit back flange of subsequent panel into secured flange of previous panel. Where indicated, fasten panels together through flush-fitted panel sides.

Cut panels in field where required using manufacturer's recommended methods.

Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by metal panel manufacturer.

Attach panel flashing trim pieces to supports using recommended fasteners and joint sealers.

Joint Sealers: Install liquid sealants where indicated and where required for weatherproof performance of metal panel assemblies.

Seal panel base assembly, openings, panel head joints, and perimeter joints using joint sealers indicated in manufacturer's instructions.

Seal perimeter joints between window and door openings and adjacent panels using elastomeric joint sealer.

Prepare joints and apply sealants per requirements of Division 07 Section "[Joint Sealants.](#)"

## **ACCESSORY INSTALLATION**

General: Install metal panel accessories with positive anchorage to building and weather tight mounting; provide for thermal expansion. Coordinate installation with flashings and other components.

Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.

Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.

Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

## **CLEANING AND PROTECTION**

Clean finished surfaces as recommended by metal panel manufacturer.

Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

1.

### **2.8 CEILING LINER ALUMINUM SOFFIT PANELS DESCRIPTION OF WORK**

A. This section covers the pre-finished, pre-fabricated Factory Manufactured Aluminum Soffit System. All metal trim, accessories, and fasteners are part of this section

B. Related Work Specified Elsewhere

1. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

#### **QUALITY ASSURANCE**

A. Petersen Aluminum Corp, Acworth, GA, 800-272-4482 products establish a minimum of quality required.

B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.

#### **SUBSTITUTIONS**

A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

#### **SYSTEM DESCRIPTION**

A. Material to comply with:

1. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

#### **SOFFIT SYSTEM PERFORMANCE TESTING**

A. Soffit System shall be designed to meet Standard Building Code wind load requirements.

B. Soffit System shall be designed to meet applicable Local Building Code and the Soffit System shall have been tested by the Manufacturer per ASTM E-330 and have the applicable Load Tables published from this Air Bag testing for negative loads.

#### **WARRANTIES**

A. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.

1. Exposed Panels Finish - deterioration includes the following:

- a. Color fading more than 5 hunter units when tested according to ASTM D 2244
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
  - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
2. Warranty Period: 20 Years from the date of substantial completion

#### **SUBMITTALS**

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.

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

- A. Deliver components, sheets, metal soffit panels and other manufactured items so as not to be damaged or deformed. Package metal soffit panels for protection during transportation and handling.
- B. Unload, store and erect metal soffit panels in a manner to prevent bending, warping, twisting and surface damage.
- C. Stack metal soffit panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal soffit panels to ensure dryness. Do not store metal soffit panels in contact with other materials that might cause staining, denting or other surface damage.
- D. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

#### **PROJECT CONDITIONS**

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

### **PART 2 - PRODUCTS**

#### **ACCEPTABLE MANUFACTURERS**

- A. Manufacturer: The following manufacturers' products have been used to establish minimum standard for materials, workmanship and function:
  1. PAC-CLAD (Basis of Design); [www.pac-clad.com](http://www.pac-clad.com); 1005 Tonne Road, Elk Grove Village, IL 60007; Ph: 800-PAC-CLAD
  2. MBCI Manufacturing; [www.mbc.com](http://www.mbc.com); 2280 Monier Avenue, Lithia Springs, Georgia, 30122; Phone: 844.2506 or 770.729.4772.
  3. Morin / A Kingspan Group Company; [www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems](http://www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems); 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501
- B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

#### **PANEL DESIGN**

- A. PAC-850 Soffit Panels.
- B. Soffit panels shall be 12" wide by 3/8" deep with "vee" groove every 6" center-to-center in continuous lengths up to 25 feet. Panels utilize innovative hook-and-grab interlock.

- C. Manufacturer shall be able to provide all three options of panel surface: Full Vent, Half Vent or Solid Soffit in the specified color(s).

### **MATERIALS AND FINISHES**

- A. Materials: ASTM B-209 quality aluminum, 3105-H14 Alloy and Temper material. Aluminum shall be tension leveled (temper passed and stretcher leveled) with camber of a maximum of 1/4" in 20 feet, manufactured in the USA, and shall be .032" thick aluminum, US standard grade.
  - 1. Color shall be PAC-CLAD Kynar 500 Standard Pac-Clad Finish Color selections.
  - 2. Panel Surface shall be: Half Vent as Indicated on Drawings.
- B. Finishes: Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over 0.25 to 0.31 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil. Finish shall conform to tests for adhesion, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
- C. Field protection must be provided by the Contractor at the job site so material is not exposed to weather and moisture.
- D. If any strippable film coating is applied to any pre-finished panels or materials for protection during shipping, strippable film shall be removed prior to installation.
- E. Forming: use continuous and rolling method. No end laps on panels. No "portable rollforming" machines will be permitted on this project; no installer-owned or installer-rented machines shall be permitted. It is the intent of the Architect to provide Factory-Manufactured soffit systems only for this project.
- F. Trim: Trim shall be fabricated of the same material and finish to match the profiled sheeting and press broken in lengths of 10 - 12 feet. Trim shall be formed only by the manufacturer or their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- G. Fasteners: Fasteners shall be 400 series stainless steel, dished washers stainless steel with bonded neoprene.
- H. Zees: Where required by design of primary structural framing system, zeos shall be used to span between beams and/or other joists. Thermally responsive base and top clips shall be fastened to the zeos on 12" centers.
- I. Insulation: See Section 07200: Building Insulation.

### **SEALANTS**

- A. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
- B. One part polysulfide not containing pitch or phenolic extenders or
- C. Exterior grade silicone sealant recommended by roofing manufacturer or
- D. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

### **FABRICATION**

- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
- B. Fabricate components of the system in factory, ready for field assembly.
- C. Fabricate components and assemble units to comply with fire performance requirements specified.
- D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

### **INSPECTION**

- A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **FASTENERS**

- A. Secure units to supports
- B. Place fasteners as indicated in manufacturer's standards.

#### **INSTALLATION**

- A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- B. Install soffit panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight , complete and architecturally pleasing installation.
- C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.
- D. Panels attached to any TREATED LUMBER MUST HAVE AN APPROPRIATE VAPOR BARRIER INSTALLED OVER THE TREATED LUMBER PRIOR TO INSTALLING ANY SOFIT PANELS OR RELATED FLASHINGS. DO NOT ALLOW ANY METAL PRODUCTS TO COME INTO DIRECT CONTACT WITH TREATED LUMBER.

#### **DAMAGED MATERIAL**

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

### **2.7 FASCIA, SOFFIT, FLASHING, DRIP EDGE, TRIM, GUTTERS AND DOWNSPOUTS**

- A. Facia, Soffit, Flashings, Drip Edge and Trims
  - 1. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.
  - 2. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning,
    - a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.
- B. Gutters
  - 1. Gutters: Provide flat shapes, no rolled formed stiffeners or ribbed allowed. Form gutters in "continuous" sections not less than 8 feet in length, complete with end pieces, outlet tubes and other special pieces as may be required. Join sections with riveted and soldered or sealed joints. Provide expansion-type slip joint at center of runs.
    - a. Furnish gutter supports spaced at 36" on center constructed of same metal as gutters.
  - 2. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.
  - 3. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The

dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning,

- a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.

#### C. Downspouts

1. Downspouts: Form downspouts in sections approximately 10 feet long (**no corrugated sections**), complete with elbows and offsets. Join sections with not less than 1-1/2" telescoping joints. Provide fasteners, designed to securely hold downspouts not less than 1" away from walls; locate fasteners at top and bottom and equally spaced at approximately 5 feet on center in between.
2. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.
3. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning,
  - a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.

### 2.8 FABRICATION

- A. General: Design prefabricated components and necessary field connections required for erection to permit easy assembly and disassembly. Fabricate components in such a manner that once assembled, they may be disassembled, repackaged and reassembled with a minimum amount of labor.
  1. Clearly and legibly mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams and instruction manuals.
- B. Structural Framing: Shop fabricate structural framing components to the indicated size and section complete with base plates, bearing plates and other plates required for erection, welded in place. Provide required holes for anchoring or connections either shop drilled or punched to template dimensions.
  1. Shop Connections: Provide power riveted, bolted or welded shop connections.
  2. Field Connections: Provide bolted field connections.

## PART 3 - EXECUTION

### 3.1 ERECTION

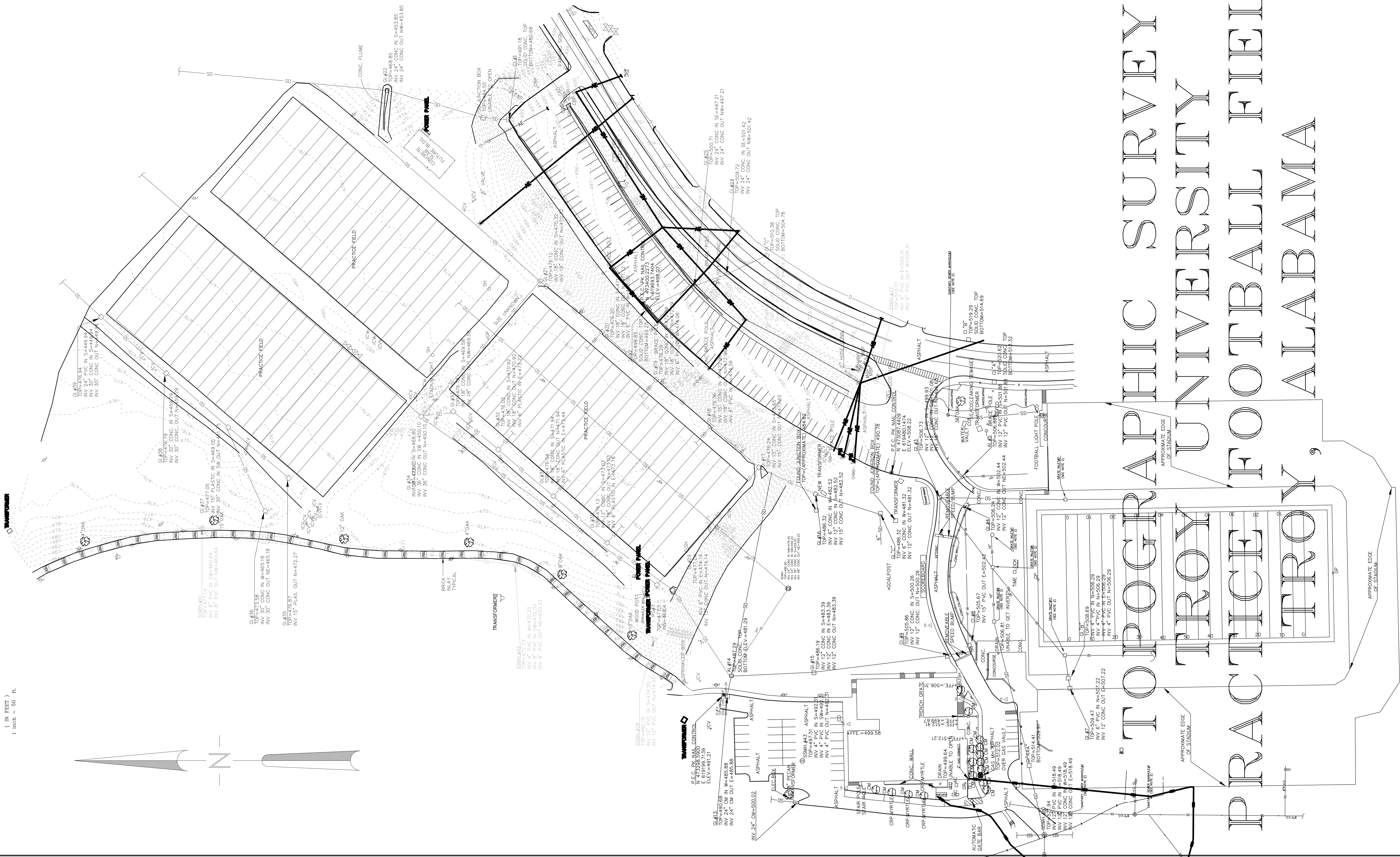
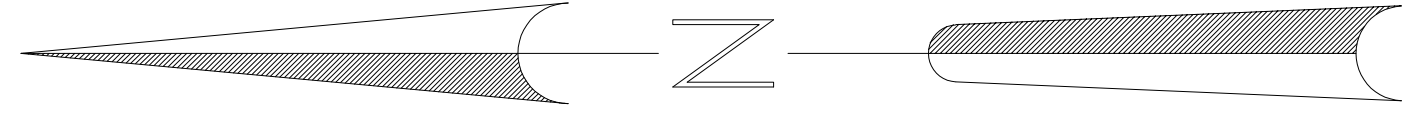
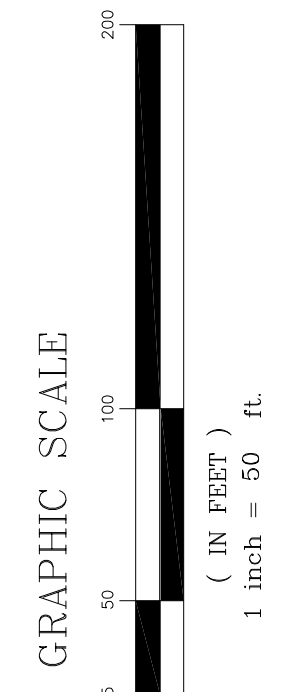
- A. Framing: Erect structural framing true to line, level and plumb, rigid and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a non-shrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than 7 days after placement.
- B. Purlins and Girts: Provide rake or gable purlins with tight fitting closure channels and fascias. Locate and space wall girts to suit door and window arrangements and heights. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.
- C. Bracing: Provide Temporary Cross Bracing as required for full height of bays. Temporary cross bracing shall be removed upon completion of final cross bracing.
- D. Final Cross Bracing shall be as shown and described on the Structural Drawings. The Contractor shall furnish and install cross bracing as directed by the Structural Engineer – no exceptions. Portal frames are not permitted.

- E. Framed Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical or electrical work. Securely attach to building structural frame.

**END OF SECTION**



NOTE: HORIZONTAL AND VERTICAL CONTROL BASED ON ALDOT. CORRS. STATION.(EAST ZONE)

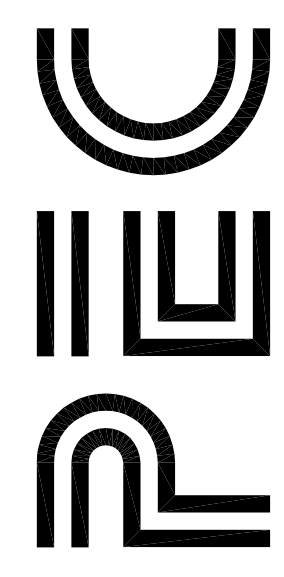


LEGEND

DESCRIPTION	SYMBOL
BUILDING	[Symbol]
CURB	[Symbol]
CURB & GUTTER	[Symbol]
CONCRETE PAVEMENT	[Symbol]
ASPHALT PAVEMENT	[Symbol]
SANITARY SEWER MANHOLE	[Symbol]
SANITARY SEWER LINE	[Symbol]
GAS METER	[Symbol]
GAS LINE	[Symbol]
STORM MANHOLE	[Symbol]
GRATE INLET	[Symbol]
AREA INLET	[Symbol]
STORM DRAIN LINE	[Symbol]
FRENCH DRAIN LINE	[Symbol]
CLEAN-OUT	[Symbol]
WATER LINE	[Symbol]
ELECTRIC (AERIAL)	[Symbol]
ELECTRIC (UNDERGROUND)	[Symbol]
WATER METER	[Symbol]
FIRE HYDRANT	[Symbol]
POWER POLE	[Symbol]
LIGHT POLE	[Symbol]
TELEPHONE POLE	[Symbol]
GUY WIRE	[Symbol]
TRAFFIC SIGN	[Symbol]
BUMPER POST	[Symbol]
METAL COLUMN	[Symbol]
FLOOD LIGHT	[Symbol]
BUSH	[Symbol]
HEDGE ROW	[Symbol]
GUY WIRE	[Symbol]
TREE	[Symbol]
IRON PIN FOUND	[Symbol]
FENCE	[Symbol]

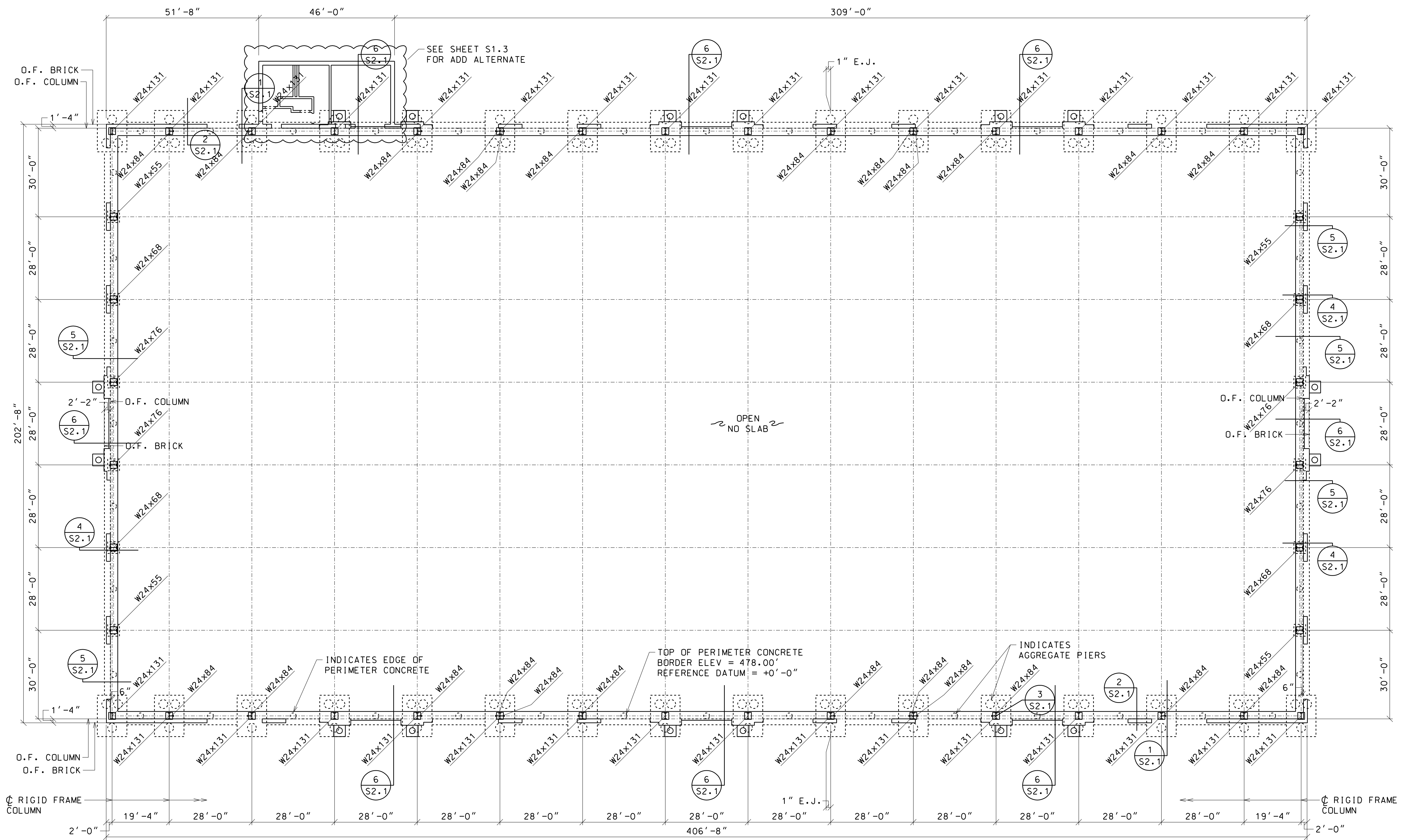
NOTES:  
 BUSH THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED BY FIELD SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. TREE EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DESIGNS AND PLANS THE UNDERGROUND UTILITIES DOWN FENCE ARE IN THE LOCATION SHOWN. THE SURVEYOR HAS NOT CONFIRMED THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ALL OF THE UNDERGROUND UTILITIES.

# TOPOGRAPHIC SURVEY TROY UNIVERSITY FOOTBALL FIELDS TROY, ALABAMA



PROFESSIONAL ENGINEERING CONSULTANTS, LLC  
 822 South McDonough Street  
 Montgomery, Alabama 36104  
 Phone: (334) 262-7307  
 Fax: (334) 262-7309

P:\Projects\2023\23117\23117\_Plans.dgn  
 Model View - S1.1-FOUNDATION  
 11/4/2024 12:06:04 PM  
 30x42 Sheet

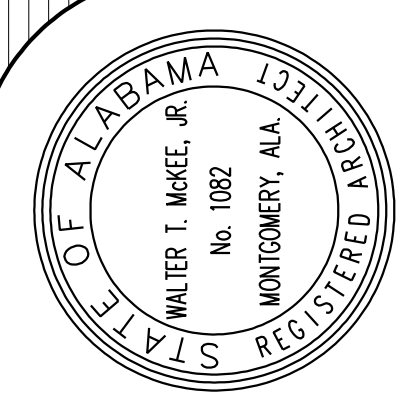


FOUNDATION PLAN — SCALE: 1/8" = 1'-0"

NOTE: ALL STRUCTURAL PLANS AND DETAILS REFLECT FABRICATED STRUCTURAL STEEL COMPONENTS. AN EQUIVALENT PREENGINEERED METAL BUILDING DESIGN CAN BE USED AS A CONTRACTORS OPTION. SEE ARCH FOR MAXIMUM RAFTER AND COLUMN DEPTHS.

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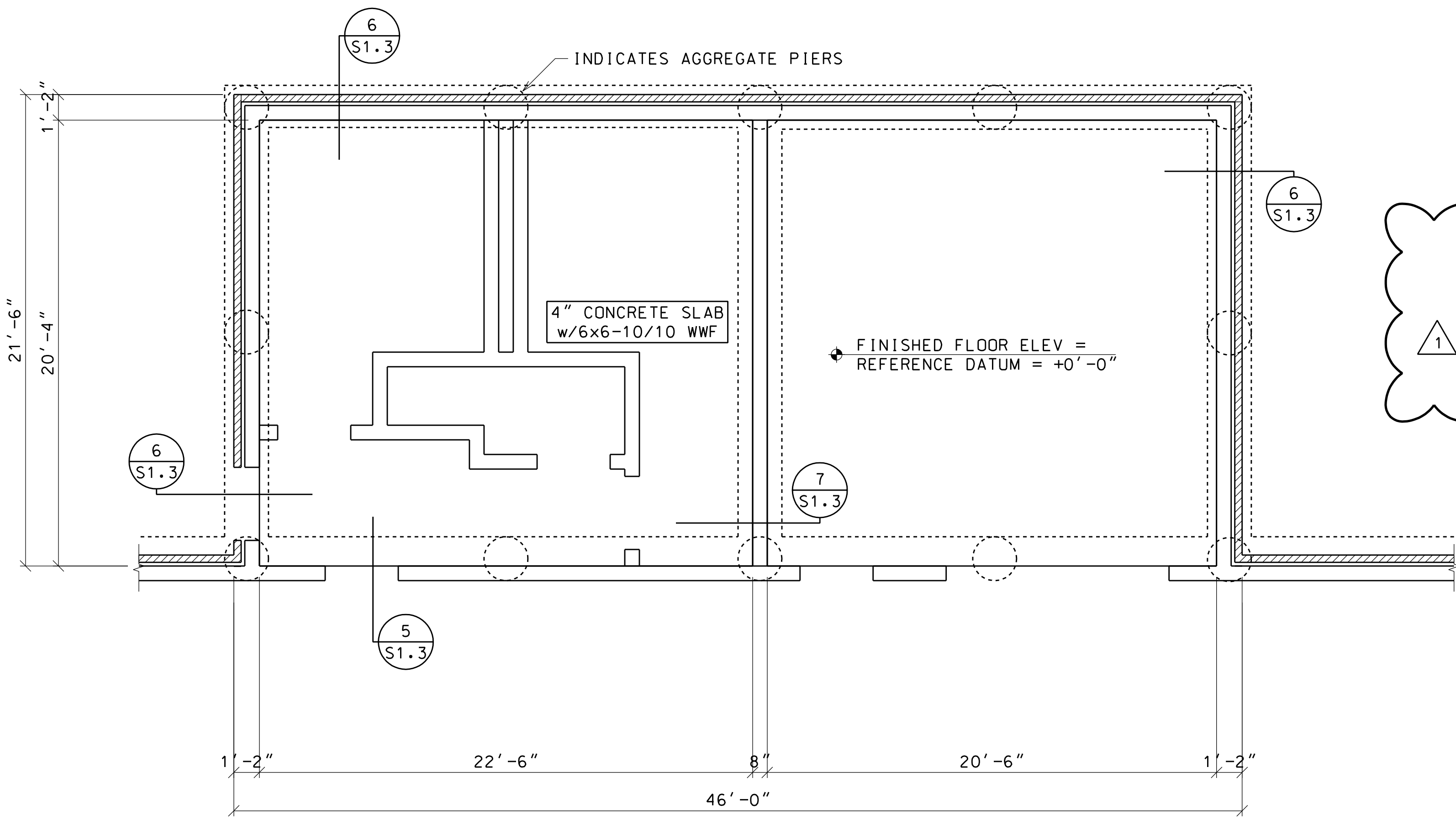
MCKEE and ASSOCIATES  
 ARCHITECTURE and INTERIOR DESIGN  
 631 SOUTH HULL STREET MONTGOMERY, ALABAMA 36104 (334) 834-9933



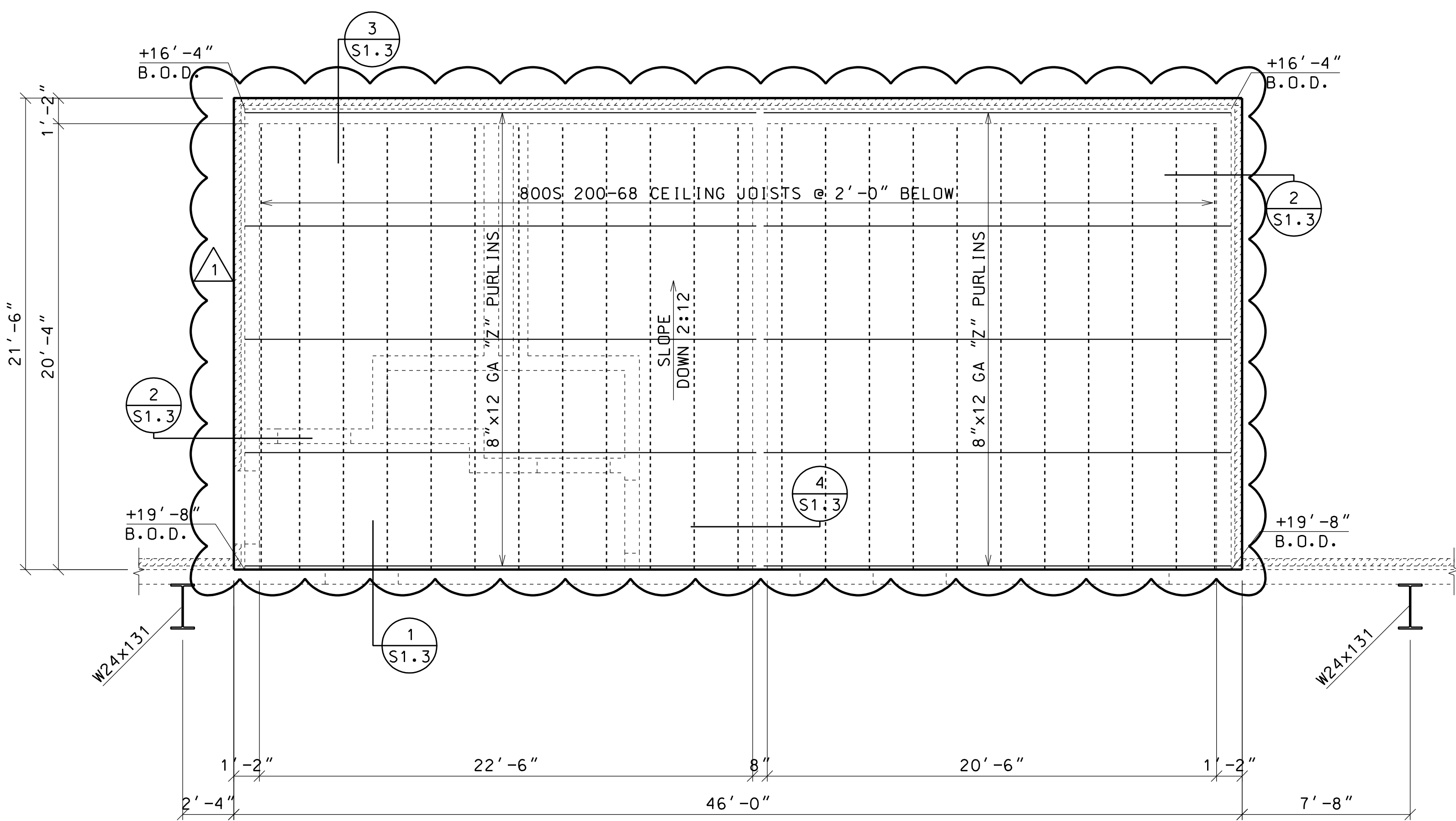
GORDON L. DAVIS  
 STRUCTURAL ENGINEERING CONSULTANT  
 P.O. BOX 241371  
 MONTGOMERY, ALABAMA 36124-1371  
 (334) 213-3070 FAX (334) 213-4020

SHEET TITLE : FOUNDATION PLAN  
 JOB NO. : 22359  
 DRAWN BY : RLD  
 DATE : 10.16.24  
 REVISED DATE : 11.4.24  
 REVISED DATE :  
 REVISED DATE :  
 SHEET NO. : S1.1





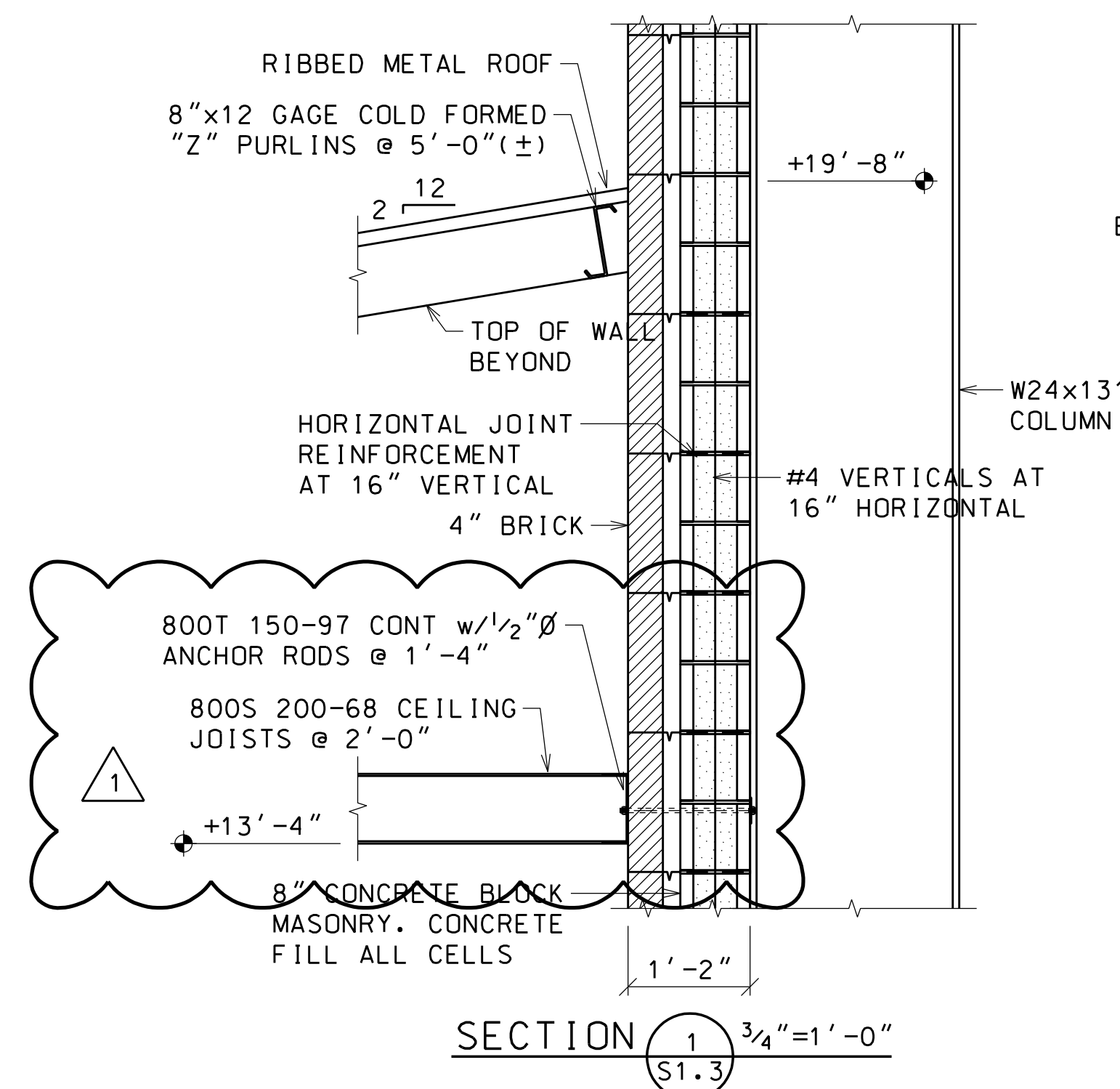
FOUNDATION PLAN — SCALE: 1/4"=1'-0"



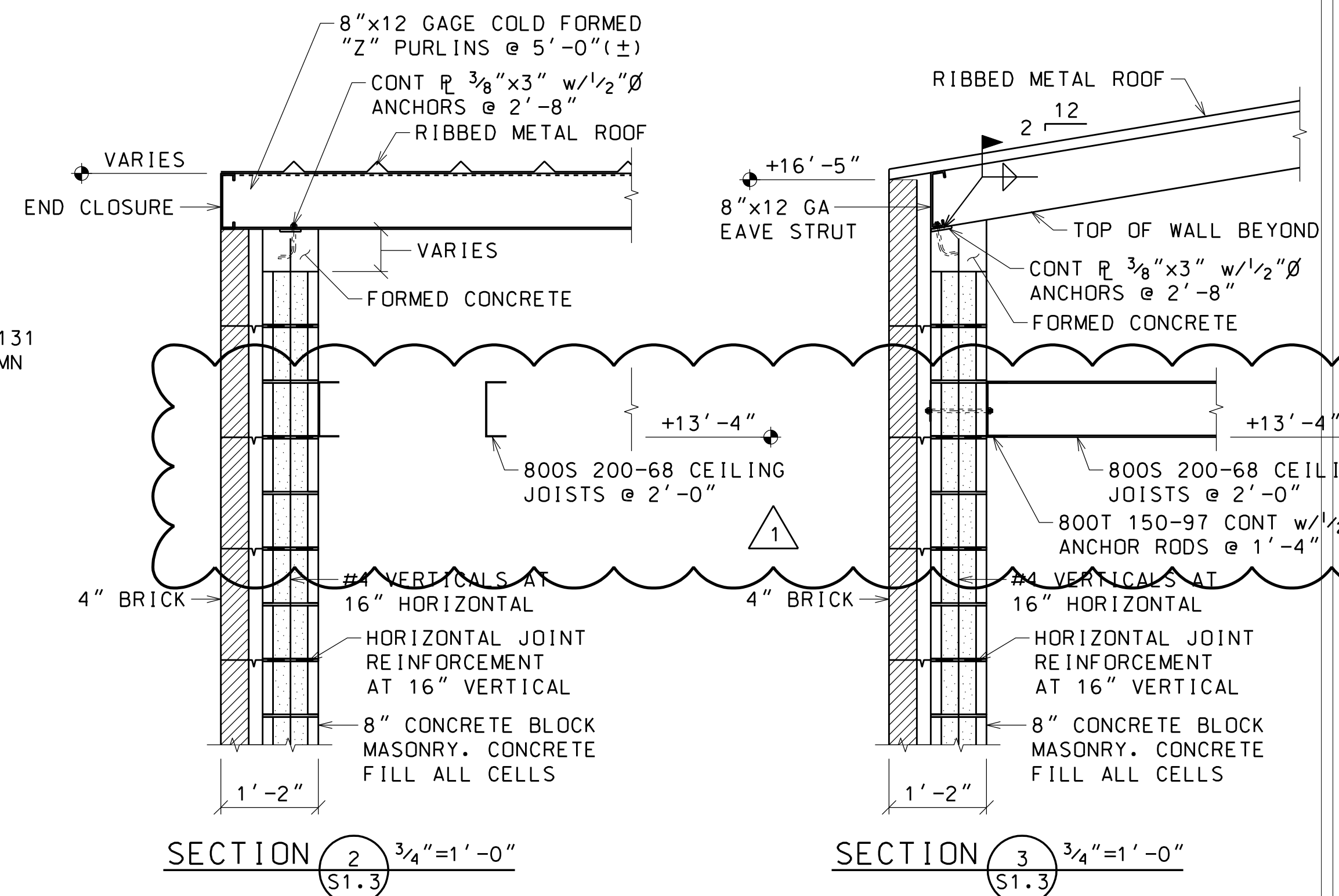
ROOF FRAMING PLAN — SCALE: 1/4"=1'-0"

ROOF CONSTRUCTION	
STANDING SEAM METAL ROOF OVER 8"x14" GAGE COLD FORMED "2" PURLINS SPACED AT 5'-0" MAXIMUM	

ROOF PURLIN PROPERTIES			
DESIGNATION	Ix	Sx	Ma
08Z099	13.606 IN <sup>4</sup>	3.402 IN <sup>3</sup>	112.03 IN-K

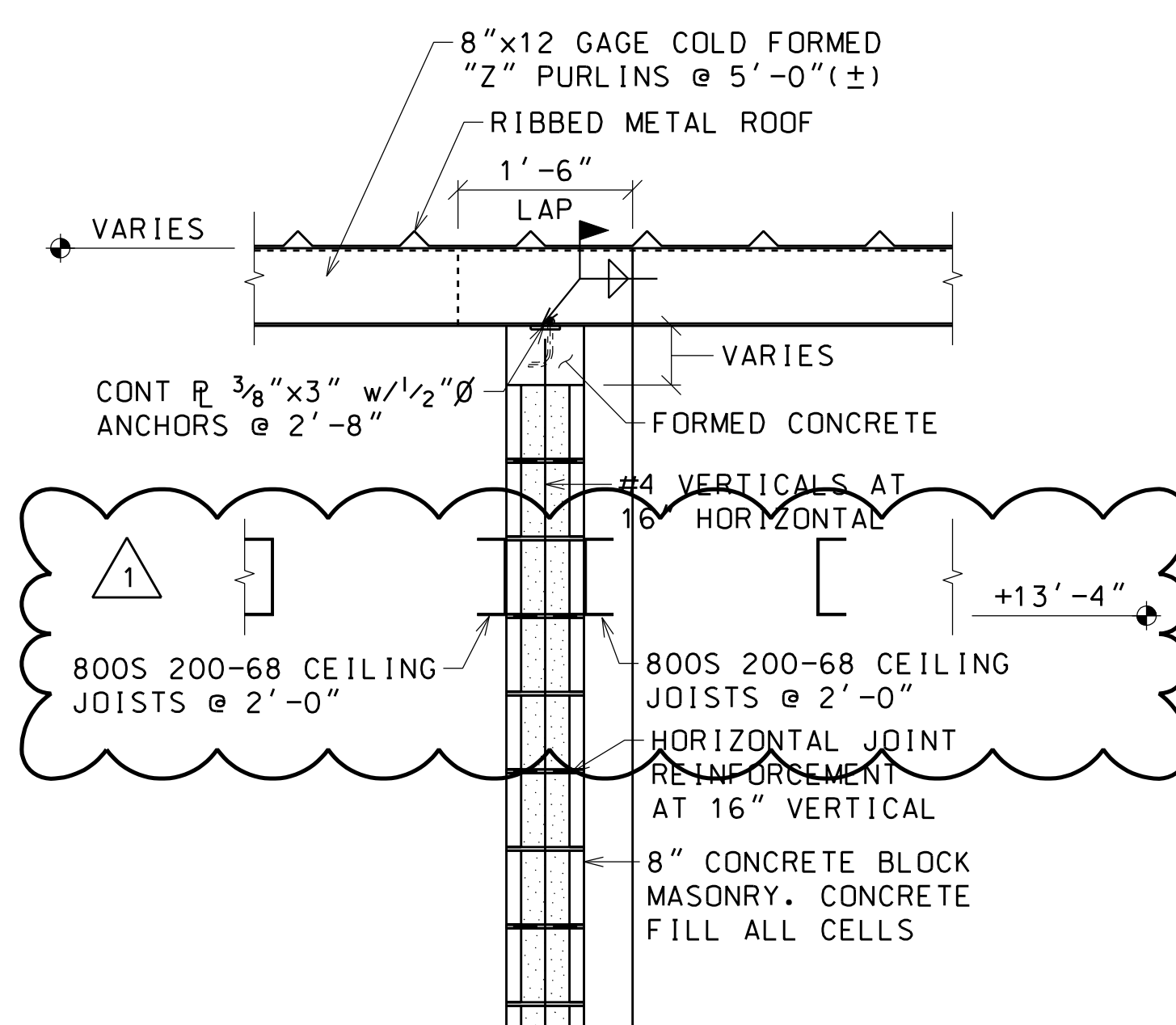


SECTION 1 3/4"=1'-0"

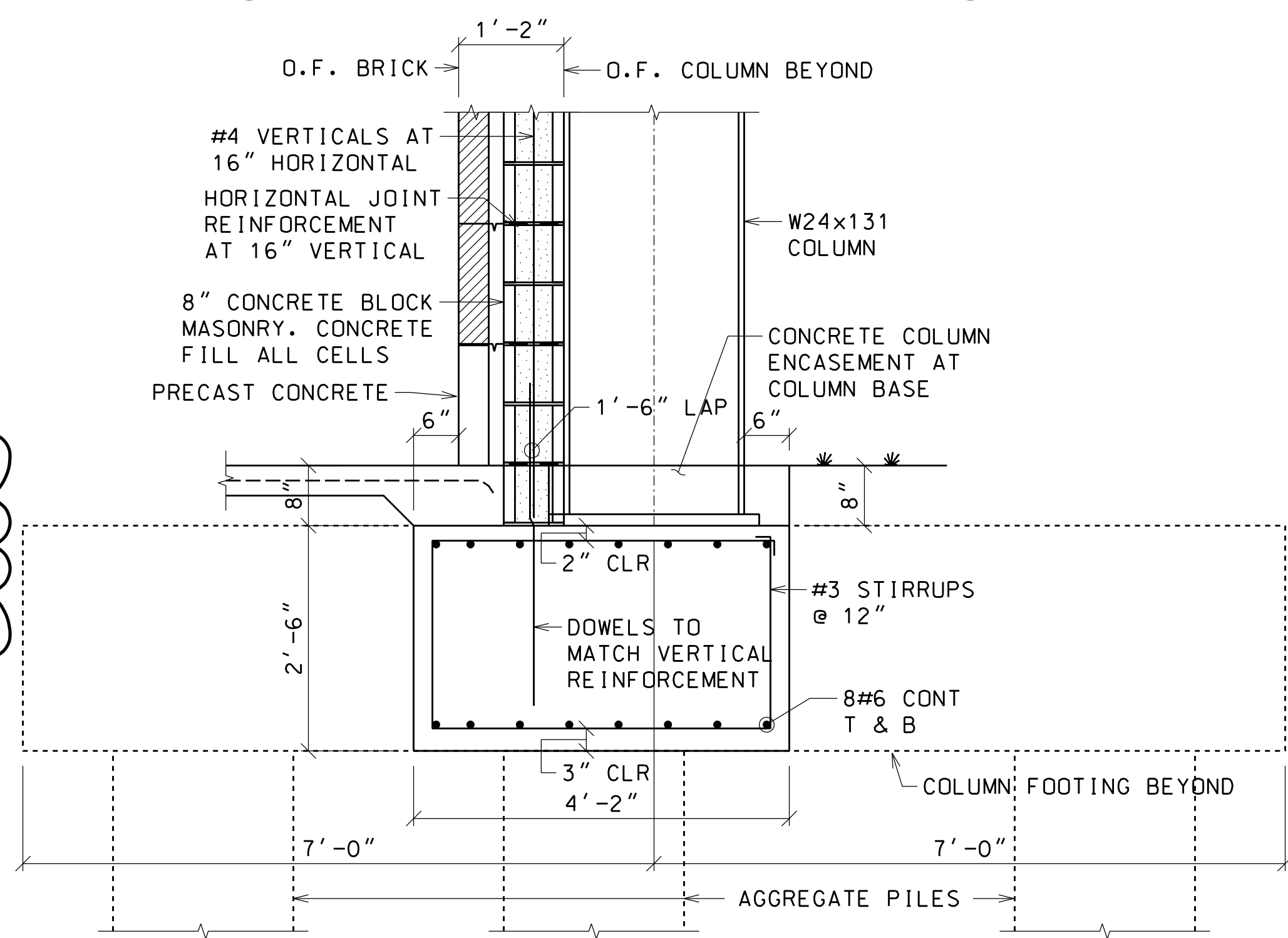


SECTION 2 3/4"=1'-0"

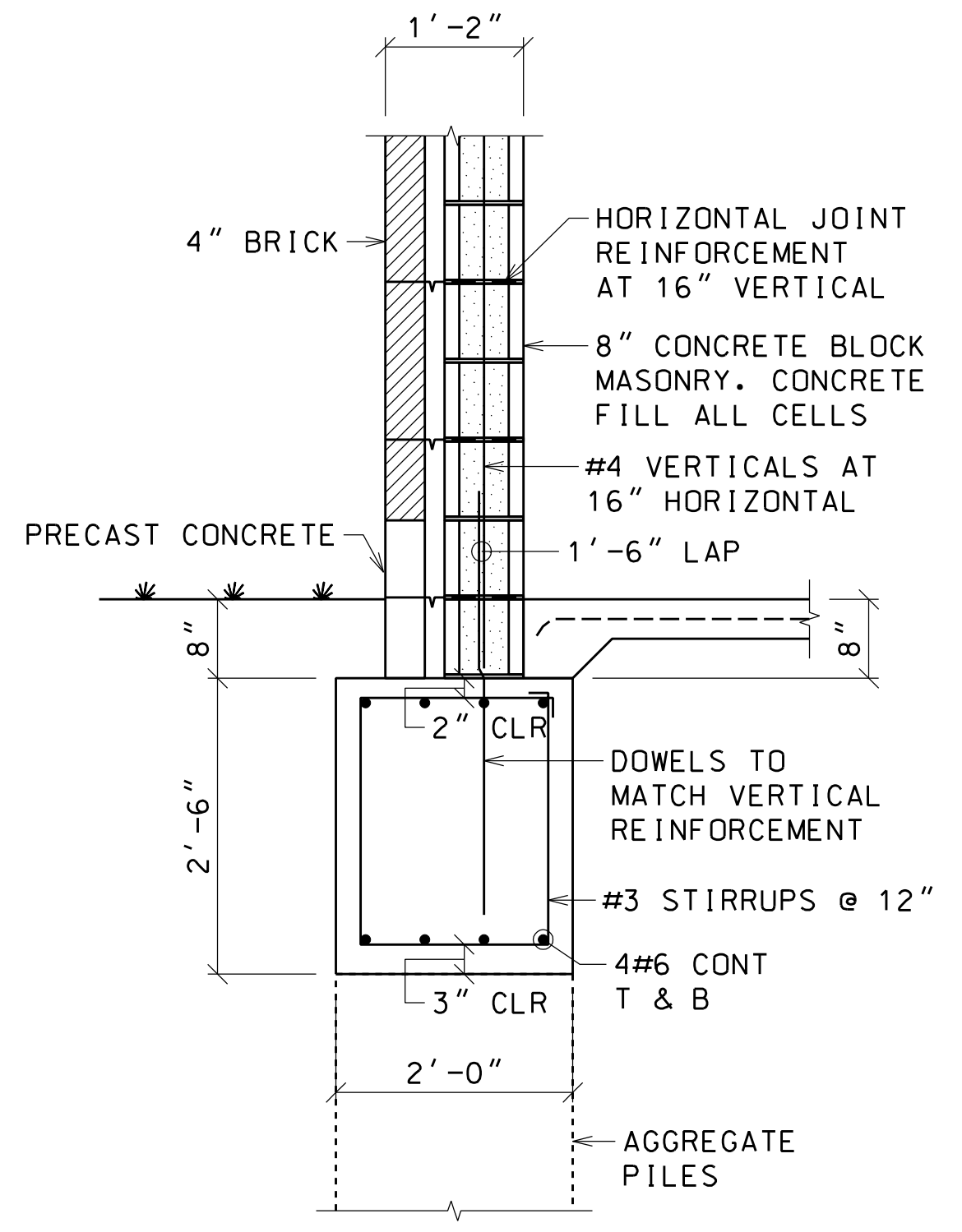
SECTION 3 3/4"=1'-0"



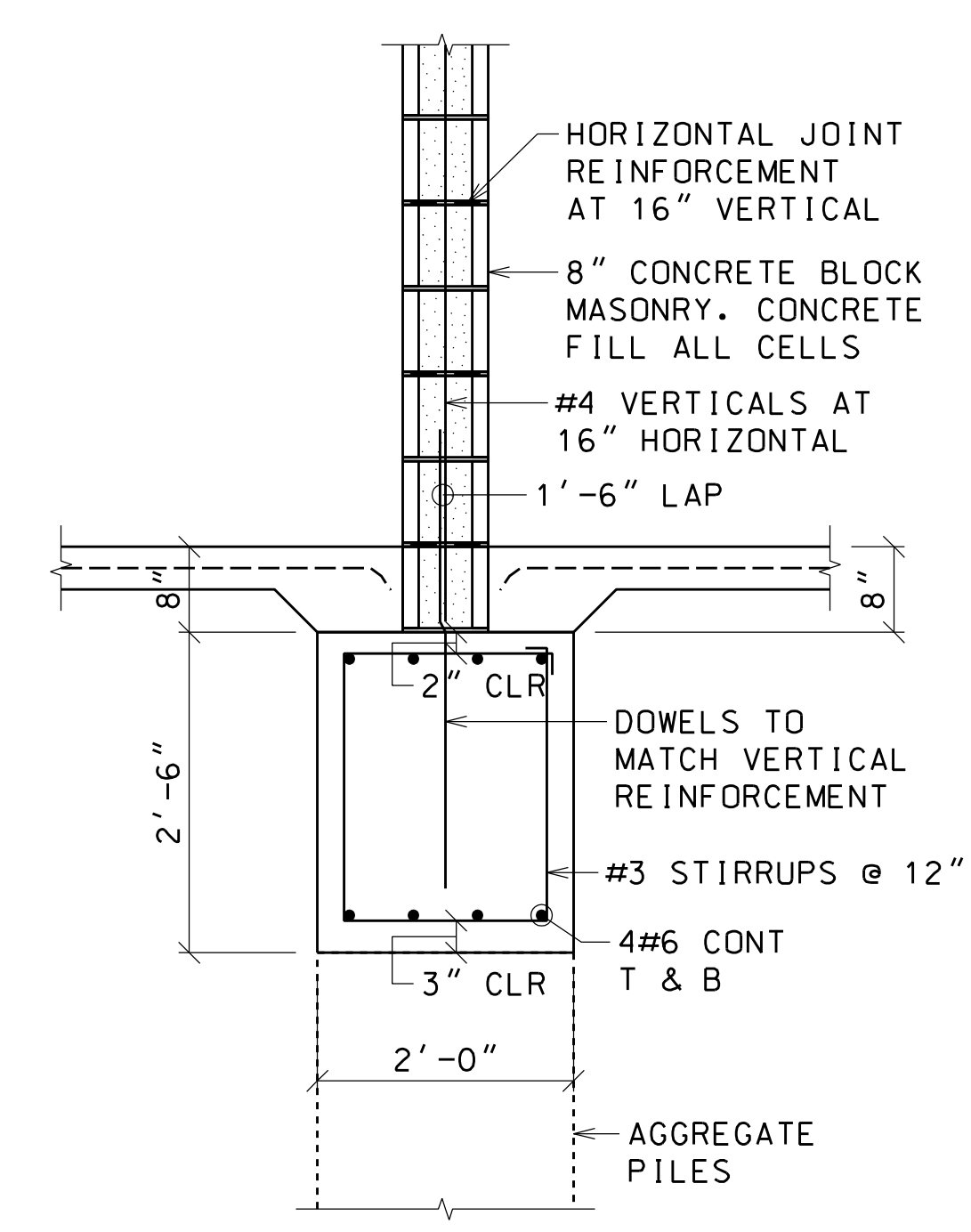
SECTION 4 3/4"=1'-0"



SECTION 5 3/4"=1'-0"



SECTION 6 3/4"=1'-0"



SECTION 7 3/4"=1'-0"

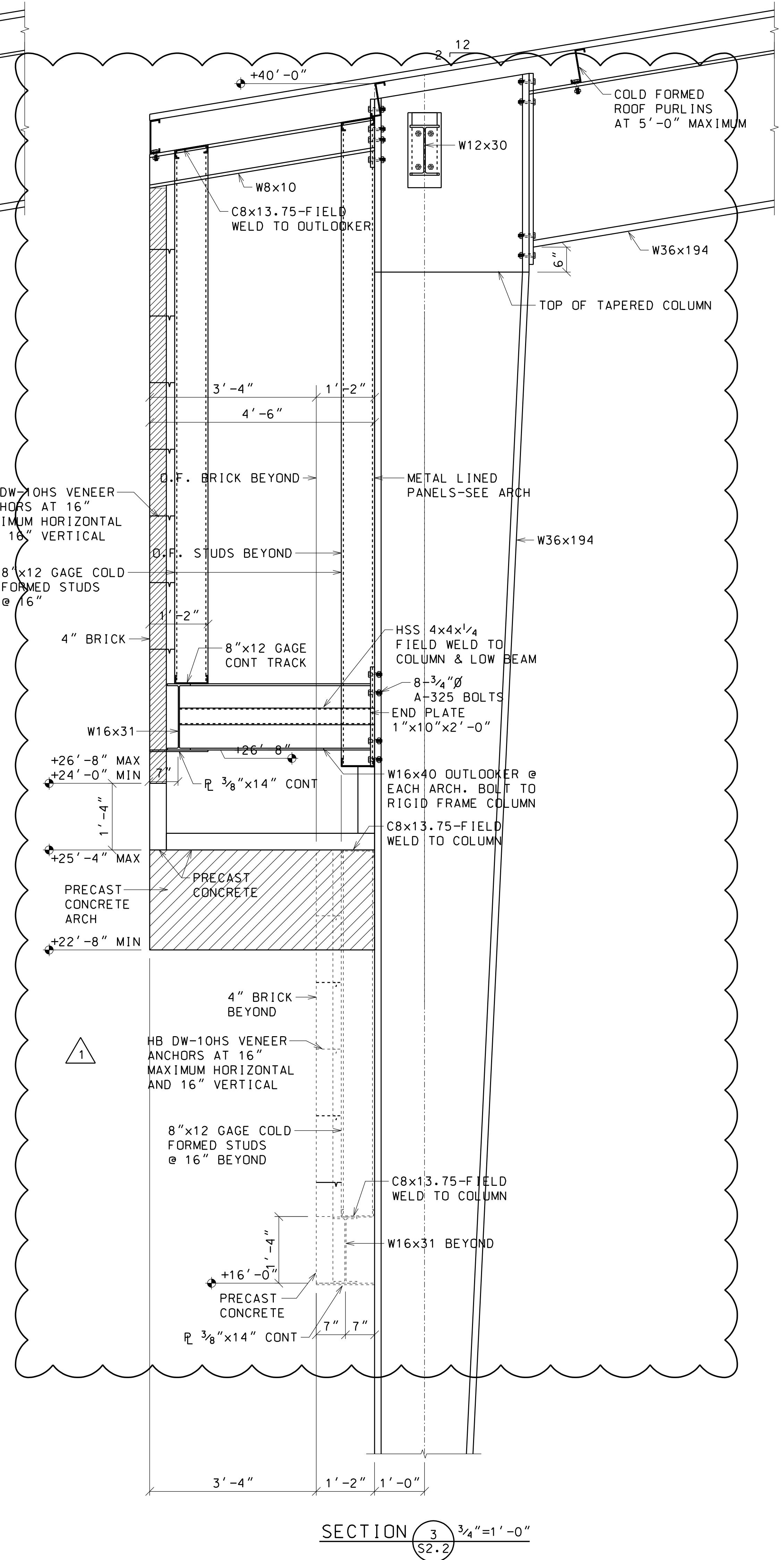
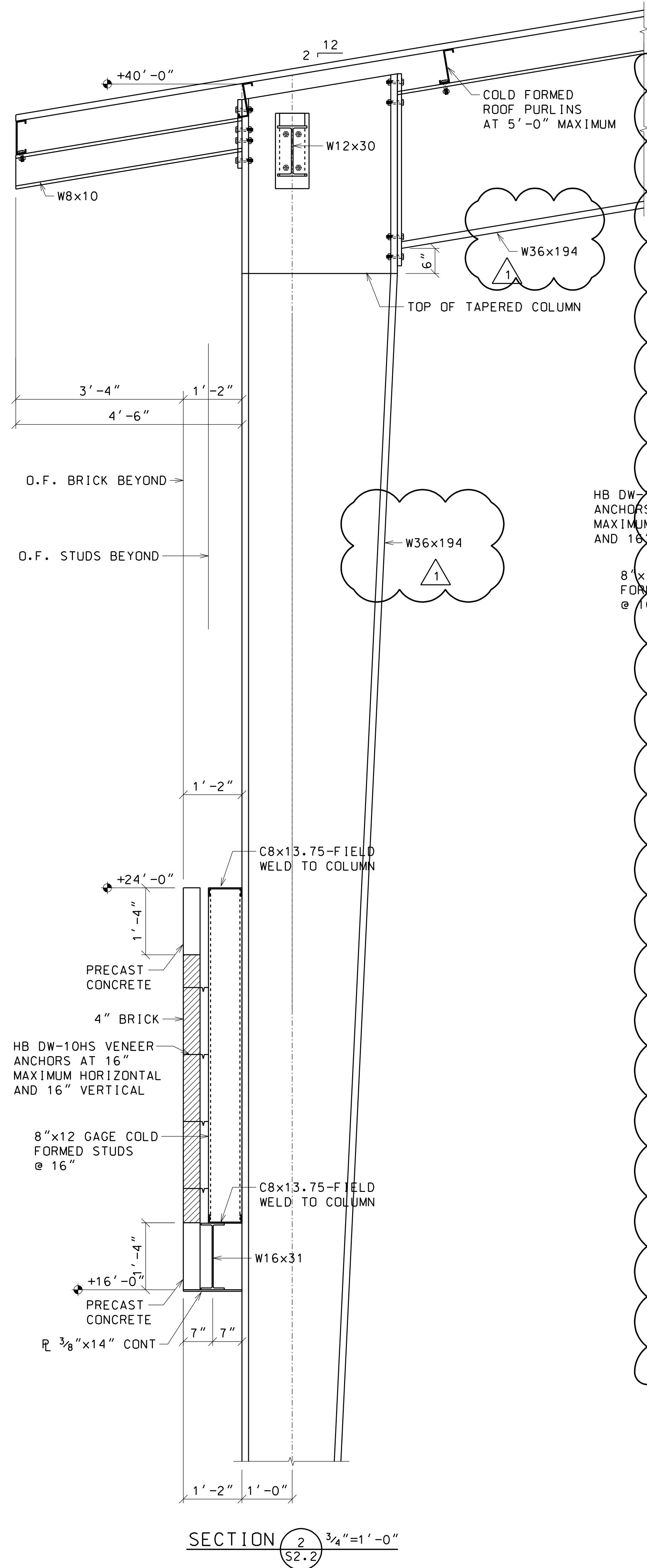
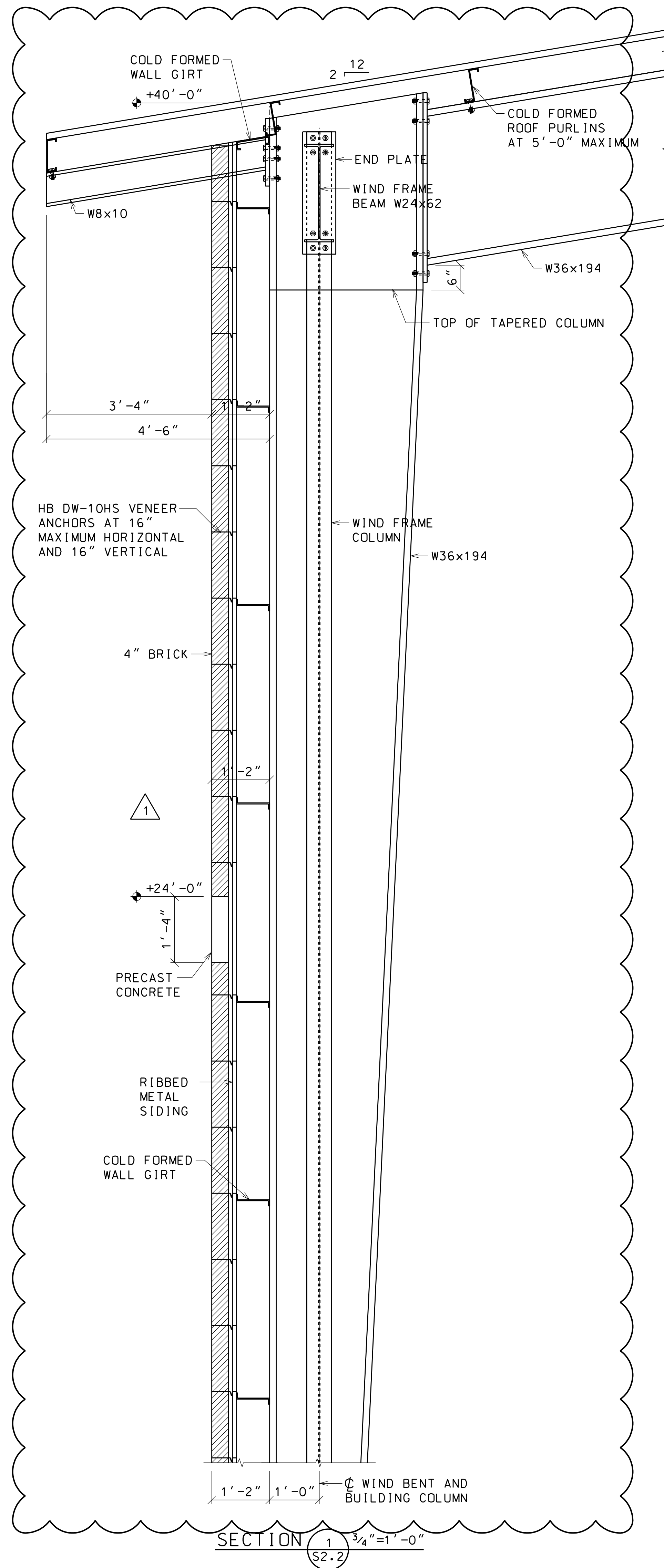
NOTE: ALL STRUCTURAL PLANS AND DETAILS REFLECT FABRICATED STRUCTURAL STEEL COMPONENTS. AN EQUIVALENT PREENGINEERED METAL BUILDING DESIGN CAN BE USED AS A CONTRACTORS OPTION. ALL MEMBER DEPTHS MUST BE EQUAL OR SMALLER.



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(334) 213-3070 FAX (334) 213-4020

SHEET TITLE : TOILET BUILDING FOUNDATION PLAN AND ROOF FRAMING PLAN  
JOB NO. : 22.359  
DRAWN BY : RLD  
DATE : 10.16.24  
REVISED DATE : 11.04.24  
REVISED DATE :  
REVISED DATE :  
SHEET NO. : S1.3

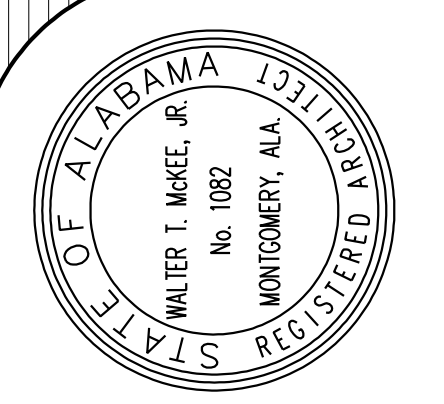
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COLD FORMED METAL STUD PROPERTIES				
STUD	DESIGNATION	Ix	Sx	MOMENT ALLOWABLE
8"x12 GA	800S250-97	12.8 IN <sup>4</sup>	3.2 IN <sup>3</sup>	102.7 IN-K

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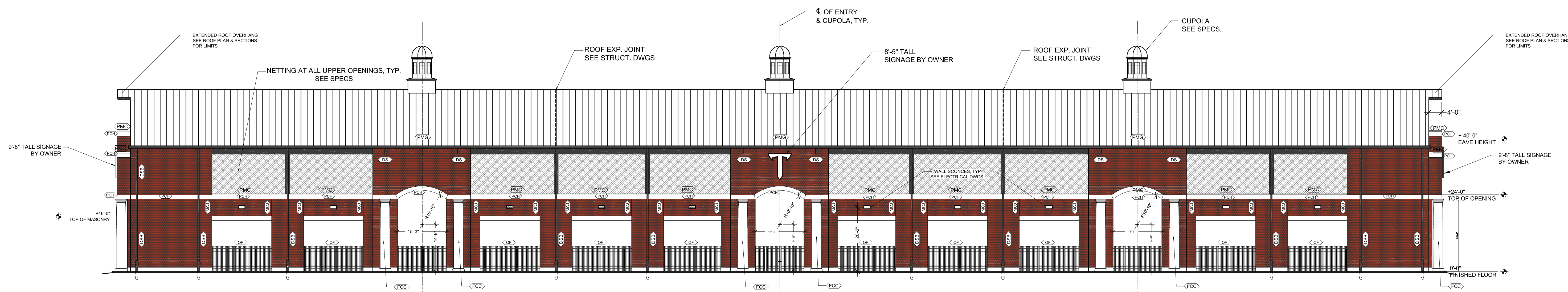
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JOB NO. : 22.359  
DRAWN BY : RLD  
DATE : 10.16.24  
REVISED DATE : 10.30.24  
REVISED DATE :  
REVISED DATE :  
SHEET NO. : S2.2



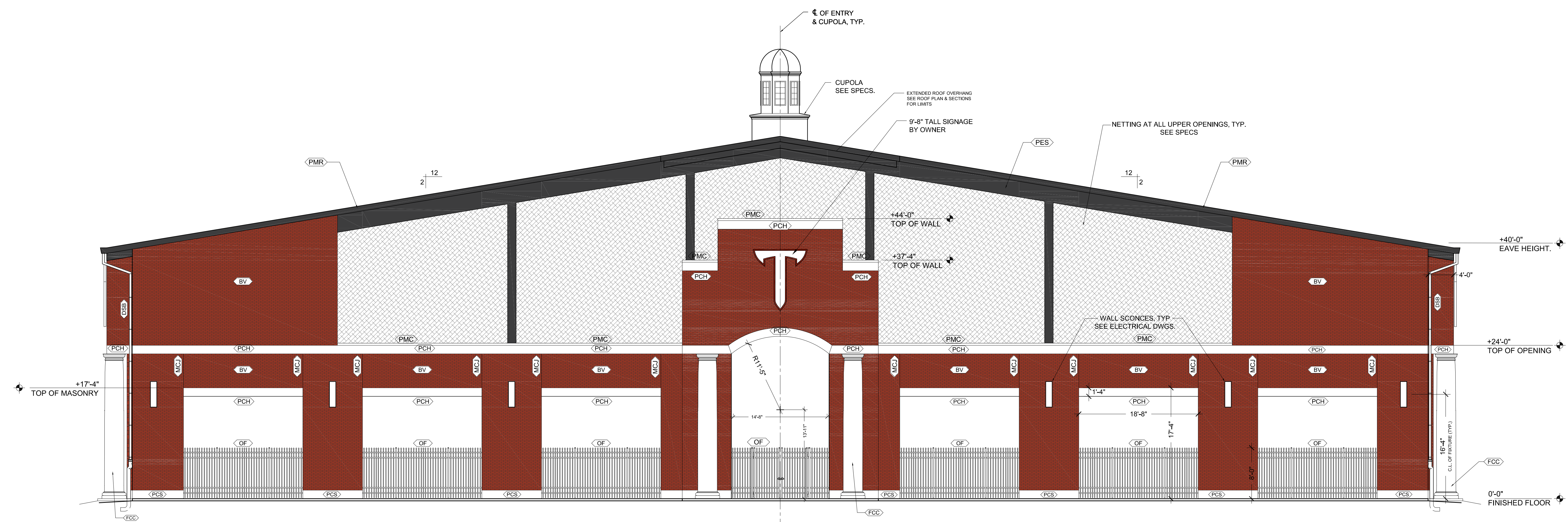
GORDON L. DAVIS  
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P.O. BOX 241371  
MONTGOMERY, ALABAMA 36124-1371  
(334) 213-3070 FAX (334) 213-4020



EXTERIOR ELEVATION LEGEND	
SYMBOL	DESCRIPTION
	BUILDING SECTION SYMBOL
(DSB)	REFINISHED METAL DOWNSPOUT TO BOOT
(DS)	REFINISHED METAL DOWNSPOUT
(MCJ)	MASONRY CONTROL JOINT LOCATIONS
(MRP)	METAL ROOF PANELS
(BV)	BRICK VENEER
(CS)	CAST STONE
(OF)	ORNAMENTAL FENCING
(PMG)	REFINISHED METAL GUTTER
(PMR)	REFINISHED METAL RAKE TRIM
(PME)	REFINISHED METAL EAVE TRIM
(PCH)	PRE-CAST CONCRETE HEADER
(PES)	PAINTED EXPOSED STRUCTURE
(FCC)	3" FIBERGLASS COLUMN COVER
(PMC)	REFINISHED METAL CAP



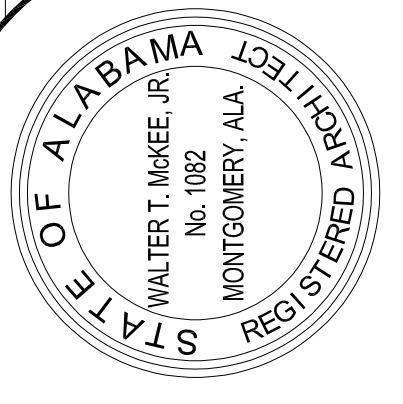
**1 EAST / WEST EXTERIOR ELEVATION (BASE BID)**  
SCALE: 1/16" = 1'-0"



**2 NORTH / SOUTH EXTERIOR ELEVATION (BASE BID)**  
SCALE: 1/8" = 1'-0"

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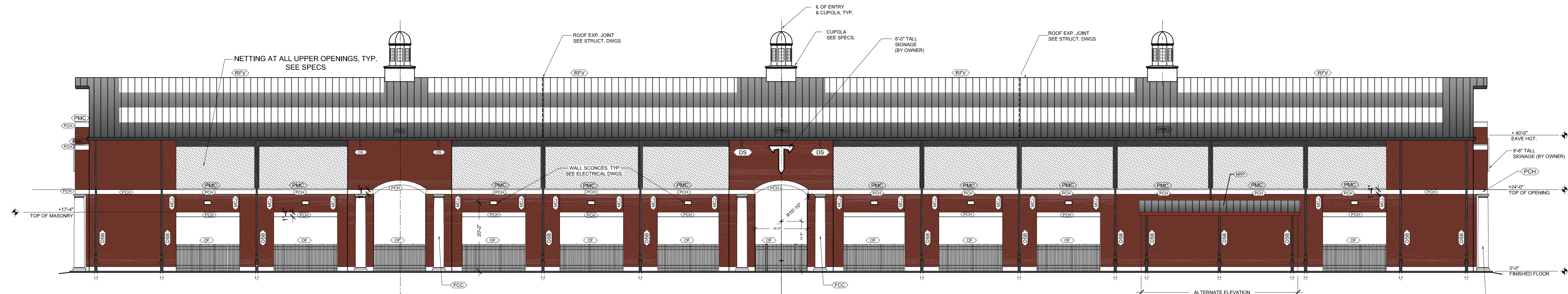


SHEET TITLE : EXTERIOR ELEVATIONS (BASE BID)  
MCKEE JOB # : 22.339  
DRAWN BY : LAB / DTC  
DATE : 10.24.24  
REVISED DATE : 11.2.24  
REVISED DATE :  
REVISED DATE :

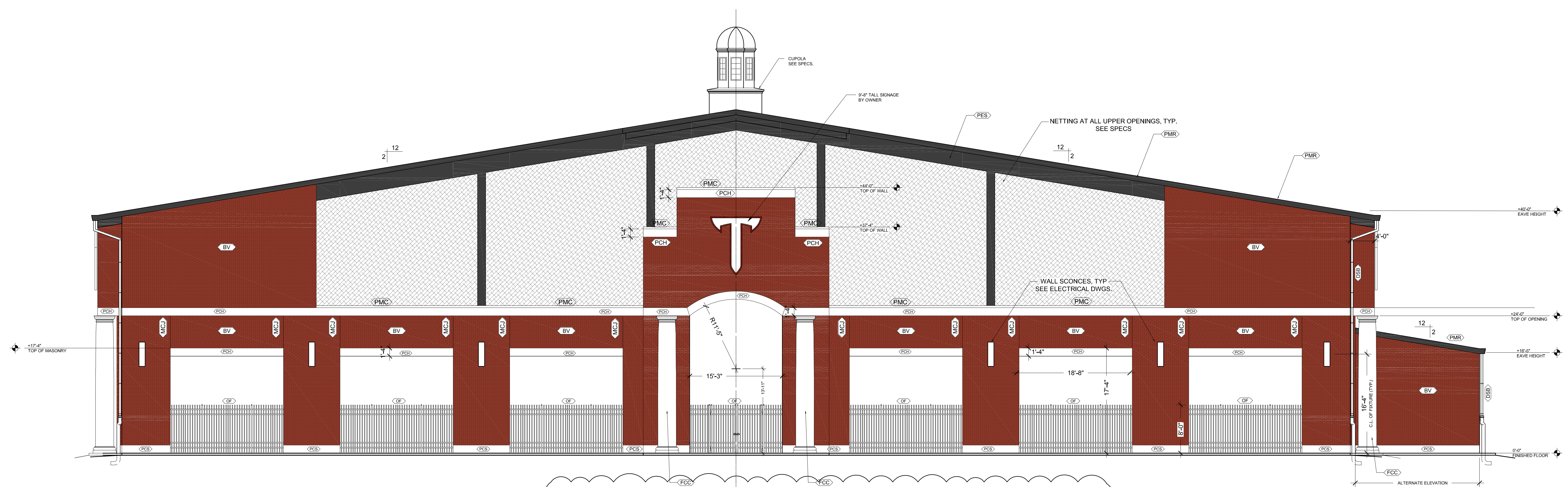
SHEET NO. : **A4.1**



EXTERIOR ELEVATION LEGEND	
SYMBOL	DESCRIPTION
	BUILDING SECTION SYMBOL
	PREFINISHED METAL DOWNSPOUT TO BOOT
	PREFINISHED METAL DOWNSPOUT
	MASONRY CONTROL JOINT LOCATIONS
	METAL ROOF PANELS
	BRICK VENEER
	CAST STONE
	ORNAMENTAL FENCING
	PREFINISHED METAL GUTTER
	PREFINISHED METAL RAKE TRIM
	PREFINISHED METAL EAWE TRIM
	PRE-CAST CONCRETE HEADER
	PAINTED EXPOSED STRUCTURE
	3" FIBERGLASS COLUMN COVER
	PREFINISHED METAL CAP



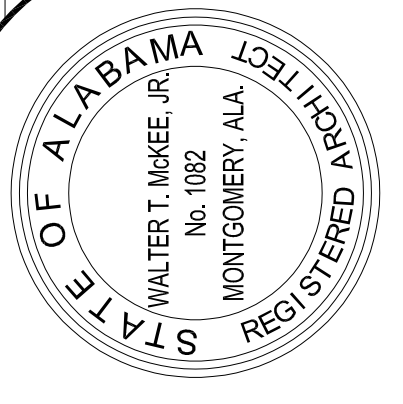
**3 EAST / WEST EXTERIOR ELEVATION (ALTERNATE)**  
SCALE: 1/16" = 1'-0"



**4 NORTH / SOUTH EXTERIOR ELEVATION (ALTERNATE)**  
SCALE: 1/8" = 1'-0"

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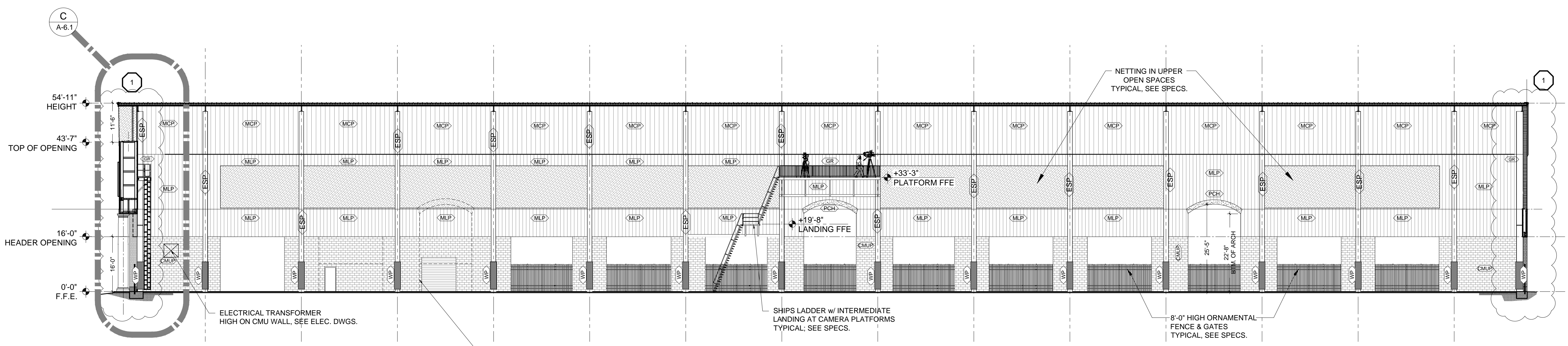


SHEET TITLE : EXTERIOR ELEVATIONS (ALTERNATE)  
MCKEE JOB # : 22.339  
DRAWN BY : LAB / DTC  
DATE : 10.24.24  
REVISED DATE : 11.24.24  
REVISED DATE :  
REVISED DATE :

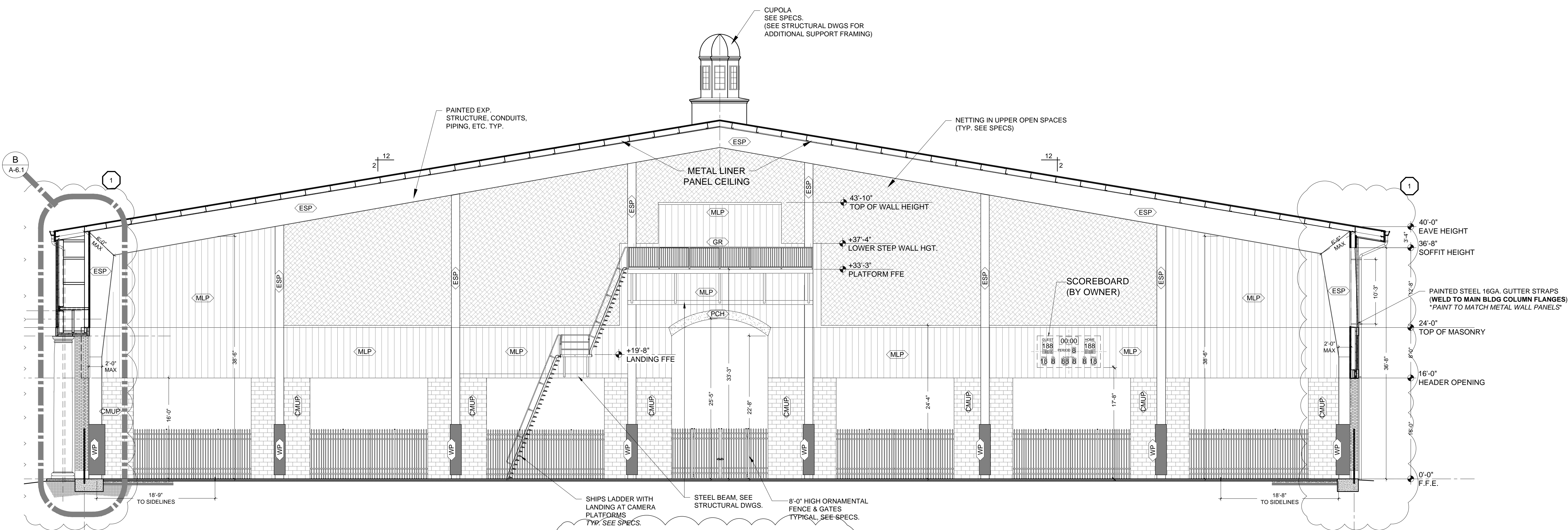
SHEET NO. : **A4.2**



BUILDING SECTION LEGEND	
SYMBOL	DESCRIPTION
CMUP	CONCRETE MASONRY UNIT - PAINT
MLP	METAL WALL LINER PANELS - TYPE 1, SEE SPECS
MCP	METAL CEILING PANELS, SEE SPECS
GR	METAL GUARD RAIL - PAINT
WP	WALL PADS
ESP	EXPOSED STRUCTURE - PAINT



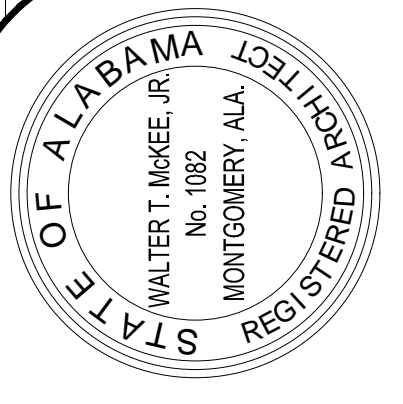
**2 BUILDING SECTION**  
SCALE: 1/16" = 1'-0"



**1 BUILDING SECTION**  
SCALE: 1/8" = 1'-0"

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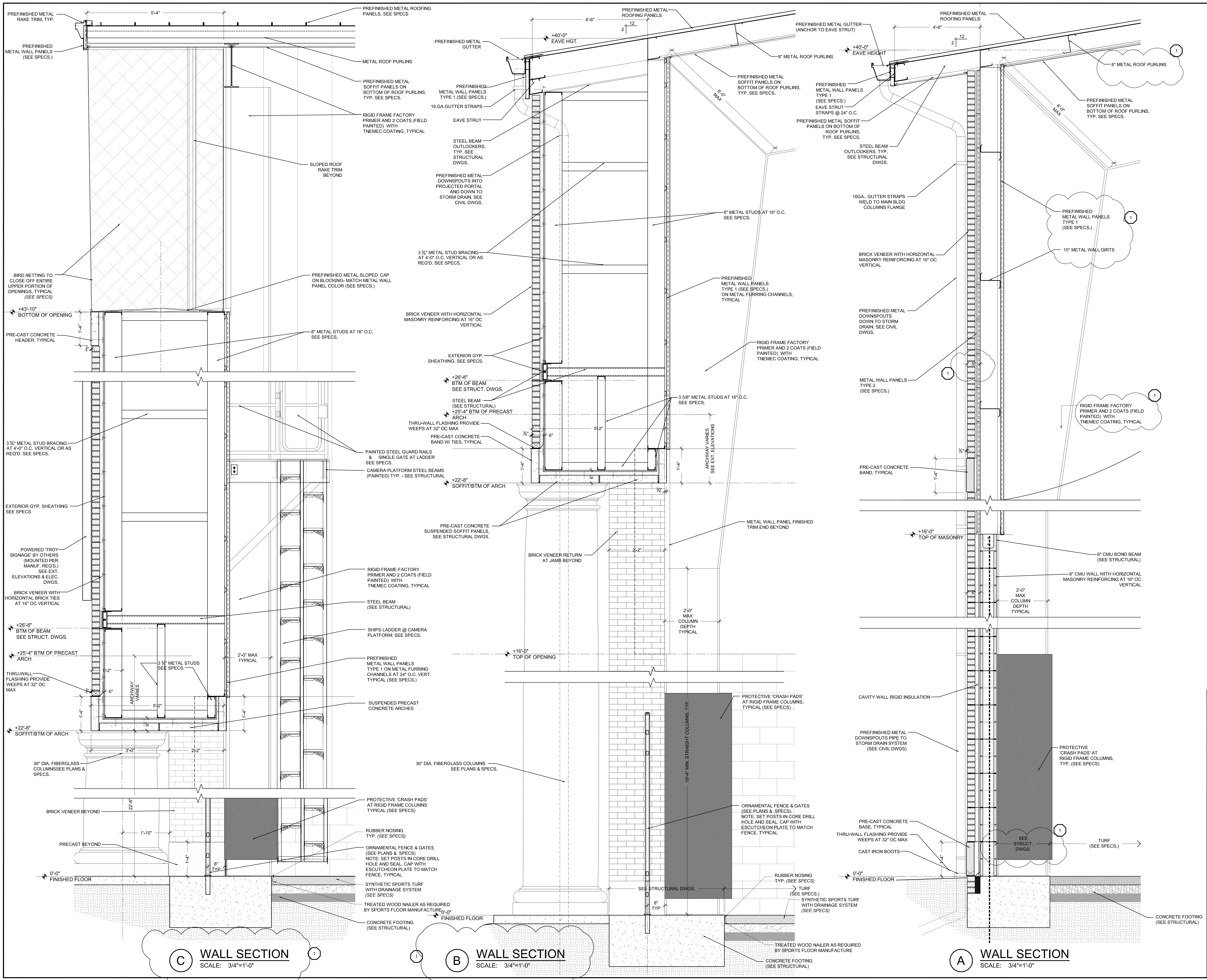


SHEET TITLE : BUILDING SECTIONS  
MCKEE JOB # : 22.339  
DRAWN BY : LAB / DTC  
DATE : 10.24.24  
REVISED DATE : 11.24.24  
REVISED DATE :  
REVISED DATE :

SHEET NO. : **A5.1**

- Z:\2022\22-339 Indoor Football Practices for Troy UCAD Drawings\Architectural\A5.1 Building Sections.dwg  
- Sunday, November 3, 2024 6:47:20 AM

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-Saturday, November 2, 2024 1:57:07 PM



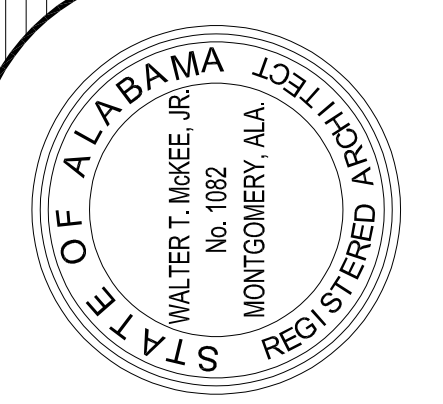
**C WALL SECTION**  
SCALE: 3/4"=1'-0"

**B WALL SECTION**  
SCALE: 3/4"=1'-0"

**A WALL SECTION**  
SCALE: 3/4"=1'-0"

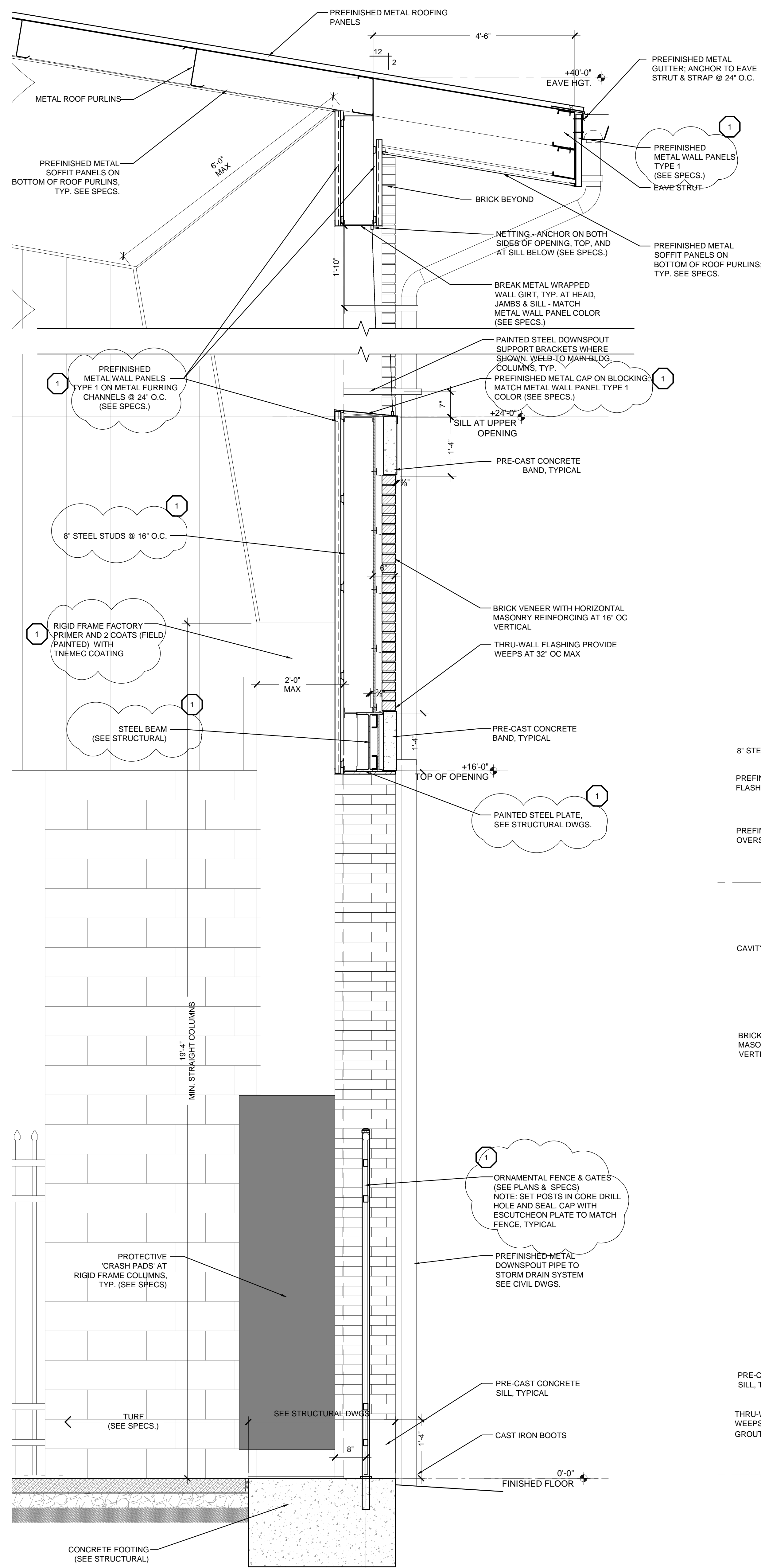
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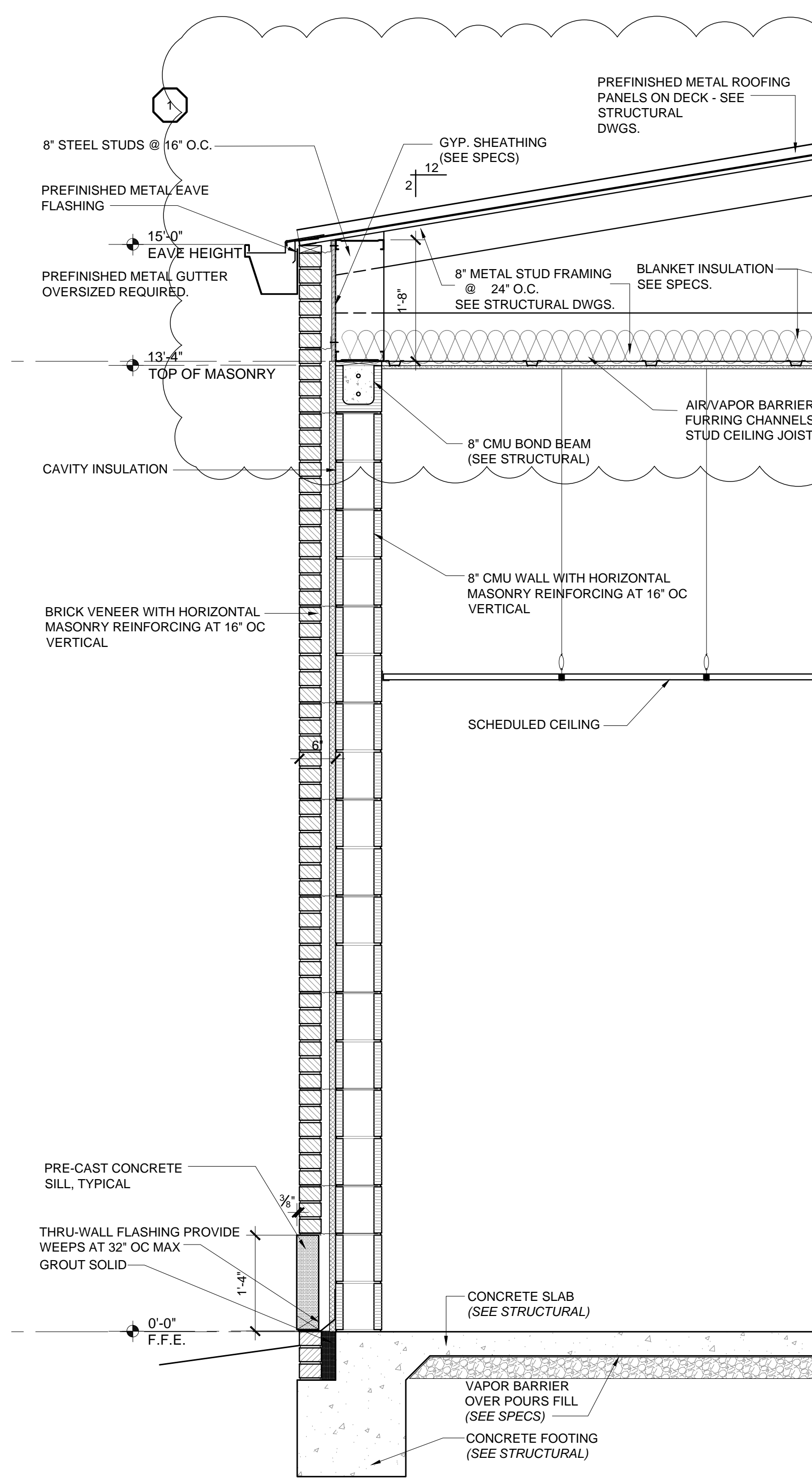


SHEET TITLE :	WALL SECTIONS
MCKEE JOB # :	22.339
DRAWN BY :	LAB / DTC
DATE :	10.24.24
REVISED DATE :	11.2.24
REVISED DATE :	
REVISED DATE :	
SHEET NO. :	<b>A6.1</b>

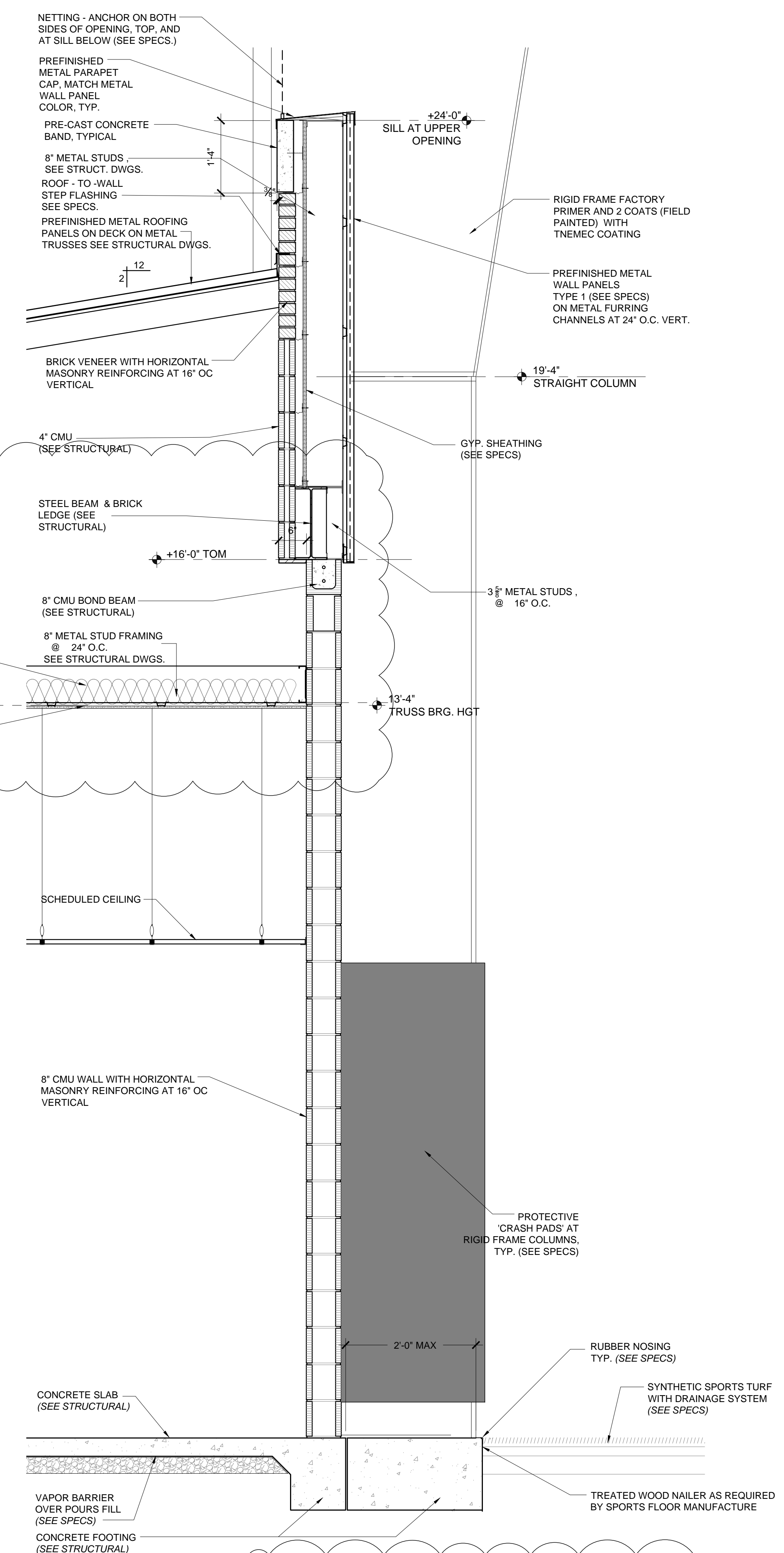




**C WALL SECTION**  
SCALE: 3/4"=1'-0"



**B WALL SECTION (ALTERNATE)**  
SCALE: 3/4"=1'-0"



**A WALL SECTION (ALTERNATE)**  
SCALE: 3/4"=1'-0"

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SHEET TITLE :	WALL SECTIONS (ALTERNATE)
MCKEE JOB # :	22.339
DRAWN BY :	LAB / DTC
DATE :	10.24.24
REVISED DATE :	11.2.24
REVISED DATE :	
REVISED DATE :	

SHEET NO. : **A6.2**

- Z:\2022\22-339 Indoor Football Practice for Troy UCAD Drawings\Architectural\A6.2 Wall Sections.dwg  
 - Monday, November 4, 2024 9:43:47 AM