

ADDENDUM NUMBER TWO

Date: March 6, 2018

From: McAdams

Re: **UNC Charlotte CRI Entrance Improvements**
UNC Charlotte
CLT-17000

NOTICE TO BIDDERS:

Bidder is hereby notified that this Addendum shall become a part of the Contract Documents, and shall be attached to the Project Manual for the Project.

The following items are intended to revise and clarify the Drawings and the Project Manual.

The bidder shall ensure that his Sub-Bidders are in full receipt of the information contained herein.

ADDENDA ITEMS:

- | | |
|-------------------------------------|-----------|
| A. Contractor RFI | (1) ITEM |
| B. PROJECT MANUAL | (3) ITEMS |
| 1. Contents | |
| 2. Seals | |
| 3. Specifications | |
| C. DRAWINGS | (3) ITEMS |
| 1. Sheet A-1 | |
| 2. Sheet A-2 | |
| 3. Sheet A-3 | |
| D. Supplemental Conditions | (2) ITEMS |
| 1. Duke Duct Bank Asbuilts PDF | |
| 2. Duke Duct Bank Excel Spreadsheet | |

END OF TITLE PAGE

**The John R. McAdams
Company, Inc.**

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Durham, North Carolina 27713
(919) 361-5000

Charlotte, NC
3436 Toringdon Way
Suite 110
Charlotte, North Carolina 28277
(704) 527-0800

CONTRACTOR RFI

1. Will the university allow the orange safety fence in lieu of the 6' chain link fence with screening?

Due to the location and the amount of pedestrian traffic a chain link fence with fabric is necessary. The plans should show the fence location. Depending on sight lines, some areas of the fence may not receive fabric.

PROJECT MANUAL

The following changes have been made to the project manual. The revised sections are included with this addendum and supersede the previous version. The following changes have been made to:

1. Contents
2. Seals
3. Specifications
 - a. Division 07, Section 075600 Liquid Applied Waterproofing:

DRAWINGS

1. Sheet A-1:
 - Note 5: Architectural precast and cast stone shall match the color and texture of the existing PORTAL building.
2. Sheet A-2
 - Note 5: Architectural precast and cast stone shall match the color and texture of the existing PORTAL building.
3. Sheet A-3
 - Further detailing of Cast stone and led light at the entry sign.

SUPPLEMENTAL CONDITIONS

1. As built drawing and detail of Duke duct bank location and depth on the Bioinformatics side of the project.
2. PDF of as built station depths for Duke duct bank mentioned above.

TABLE OF CONTENTS

UNC CHARLOTTE – CRI ENTRANCE IMPROVEMENTS

Division	Section Title	Pages
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VOLUME 1

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

.....	Seals	
.....	Notice to Bidders	
.....	Instructions to Bidders and General Conditions of the Contract	
.....	Supplementary General Conditions	
.....	MBE Guidelines for University of North Carolina Construction Contracts	
003132	Geotechnical Data	
.....	Report of Subsurface Exploration	

General Requirements Subgroup

DIVISION 01 - GENERAL REQUIREMENTS

011000	Summary of Work
012500	Substitution Procedures
013100	Project Management and Coordination
013200	Construction Progress Documentation
013233	Photographic Documentation
013300	Submittal Procedures
014000	Quality Requirements
014200	References
015000	Temporary Facilities and Controls
015639	Temporary Tree and Plant Protection
016000	Product Requirements
017300	Execution
017419	Construction Waste Management and Disposal
017700	Closeout Procedures
017823	Operation and Maintenance Data
017839	Project Record Documents

VOLUME 2

Facility Construction Subgroup

DIVISION 02 - EXISTING CONDITIONS

024116	Demolition
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DIVISION 03 - CONCRETE

033000	Cast-in-place Concrete
033053	Miscellaneous Cast-in-place Concrete

DIVISION 04 - MASONRY

040110	Masonry Cleaning
042000	Unit Masonry
042020	Unit Masonry – 2 (structural concrete and masonry)
047200	Cast Stone Masonry

DIVISION 05 - METALS

057000	Decorative Metal
055213	Pipe and Tube Railings

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

071113 Bituminous Dampproofing
071326 Self-Adhering Sheet Waterproofing
075600 Liquid Applied Silicone Roofing
079200 Joint Sealants

DIVISION 08 - OPENINGS

081113 Hollow Metal Doors and Frames
084213 Aluminum-Framed Entrances
087110 Door Hardware
088000 Glazing
089119 Fixed Louvers

DIVISION 09 - FINISHES

099113 Exterior Painting

DIVISION 22 - PLUMBING

221113 Facility Water Distribution Piping
221313 Facility Sanitary Sewer

DIVISION 26 - ELECTRICAL

260500 Common Work Results for Electrical
260519 Low Voltage Electrical Power Conductors and Cables
260526 Grounding and Bonding for Electrical Systems
260533 Raceway and Boxes for Electrical Systems
260543 Underground Ducts and Raceways for Electrical Systems
260553 Identification for Electrical Systems
262416 Panelboards
262726 Wiring Devices
262816 Enclosed Switches and Circuit Breakers

DIVISION 31 - EARTHWORK

311000 Site Clearing
312000 Earth Moving
312319 Dewatering
315000 Excavation Support and Protection

DIVISION 32 – EXTERIOR IMPROVEMENTS

321400 Unit Paving
328400 Planting Irrigation
329113 Soil Preparation
329119 Landscape Grading
329200 Turf and Grasses
329250 Activity Lawn Construction
329300 Plants
329400 Tree Planting Pit Structural Soils Specifications
329450 Structural Soil Cells
329455 Soil Cell Filler Soil

DIVISION 33 - UTILITIES

330500 Common Work Results for Utilities
334100 Storm Utility Drainage Piping
334600 Subdrainage

FORMS:

Form of Proposal

Identification of Minority Business Participation

.....Affidavit A – Listing of Good Faith Efforts

.....Affidavit B – Intent to Perform Contract with Own Workforce

.....Affidavit C – Portion of the Work to be Performed by HUB Certified/Minority Businesses

.....Affidavit D – Good Faith Efforts

Form of Bid Bond

Form of Construction Contract

Form of Performance Bond

Form of Payment Bond

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

Approval by the University Attorney for the State of North Carolina through the University of North Carolina at Charlotte

END OF TABLE OF CONTENTS

1.1 DESIGN PROFESSIONALS OF RECORD

ARCHITECT

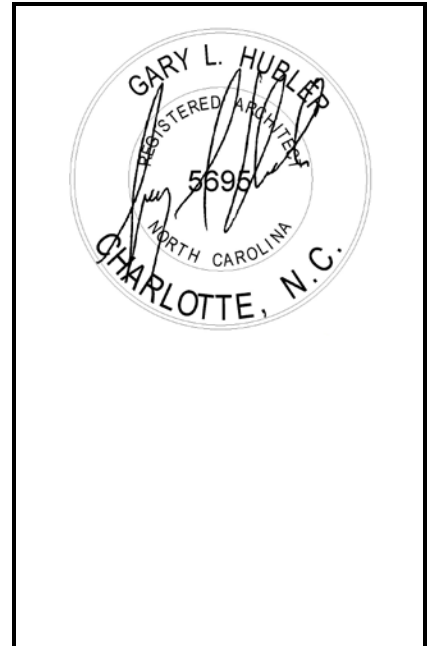
Gary Hubler
#1111

The following Sections:

040110 Masonry Cleaning
042000 Unit Masonry
047200 Cast Stone Masonry
057000 Decorative Metal
071113 Bituminous Dampproofing
071326 Self-Adhering
Sheet Waterproofing

075600 Liquid Applied Silicon Roofing

081113 Hollow Metal Doors and
Frames
084113 Aluminum-Framed Entrances
087110 Door Hardware
088000 Glazing
089119 Fixed Louvers
099113 Exterior Painting

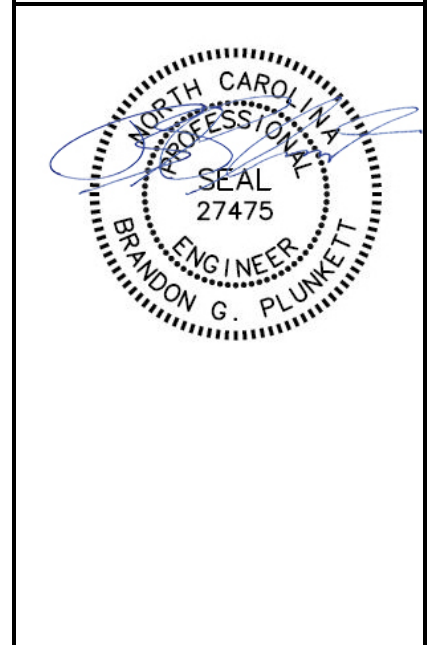


CIVIL ENGINEER

Brandon Plunkett
#27475

The following Sections:

024116 - Demolition
033053 Miscellaneous Cast-in-Place
Concrete
221313 - Facility Sanitary Sewers
221113 - Facility Water Distribution
Piping
311000 - Site Clearing
312000 - Earth Moving
312319 - Dewatering
330500 - Common Work Results for
Utilities
334100 - Storm Utility Drainage Piping
334600 - Subdrainage
315000 - Excavation Support and Pro-
tection

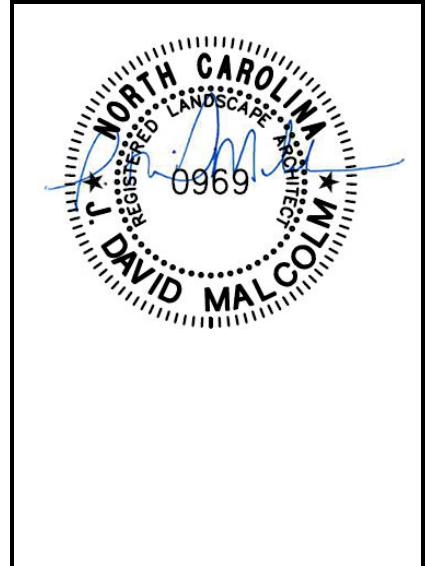


LANDSCAPE
ARCHITECT

David Malcolm
#0969

The following Sections:

015639 - Temporary Tree and Plant Protection
055213 – Pipe and Tube Railings
321400 - Unit Paving
328400 - Planting irrigation
329113 – Soil Preparation
329119 - Landscape Grading
329200 - Turf and Grasses
329300 – Plants
329450 - Structural Soil Cells
329455 - Soil Cell Filler Soil

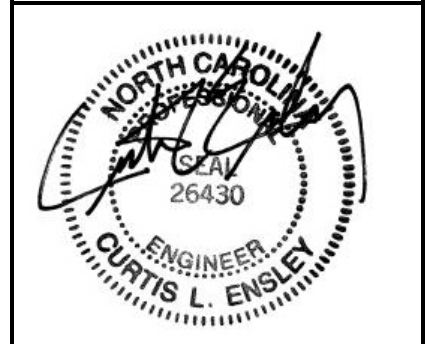


STRUCTURAL
ENGINEER

Curtis L. Ensley
#26430

The following Sections:

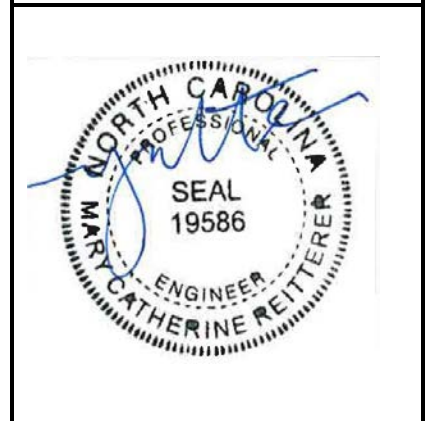
033000 – CIP Concrete
042020 – Unit Masonry



ELECTRICAL
ENGINEER

Kim Humiston, PE
19586

The following Sections:
Division 26



SECTION 075600 - LIQUID APPLIED SILICONE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS AND STANDARDS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Factory Mutual (FM Global) - Approval Guide.
 - 1. Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
- C. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).
- D. ASTM International (ASTM) - Annual Book of ASTM Standards.
 - 1. ASTM D 1079 - Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.
 - 2. ASTM D 1653 - Standard Test Methods for Water Vapor Transmission of Organic Coating Films.
 - 3. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - 4. ASTM D 4798 / D4798M – 1- Standard Practice for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method).
 - 5. ASTM D 6083 - Standard Specification for Liquid Applied Acrylic Coating Used in Roofing
 - 6. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - 7. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
 - 8. ASTM G 26 - Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
 - 9. ASTM G 53 - Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
- E. Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual.
- F. National Roofing Contractors Association (NRCA).
- G. American Society of Civil Engineers (ASCE).
- H. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

1.2 SUMMARY

- A. Section includes liquid applied silicone roofing , flashing and reinforcing of joints and junctions, and roof accessories integrally related to roof installation.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include standard construction details for application over concrete substrate.
 - 2. Provide product data sheets for each type of product indicated in this section.
- B. Shop Drawings:
 - 1. Include standard construction details for application over concrete substrate.
- C. Samples: For each exposed product and for each color and texture specified, 8" x 8".

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranty: For manufacturer's warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For specified systems to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall provide a roofing system that meets or exceeds the criteria listed in this section.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- C. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the current revision of ASCE 7.

DELIVERY, STORAGE, AND HANDLING

- A. Store and handle materials in a manner that will ensure there is no possibility of contamination.

- B. Store in a dry, well ventilated, weather tight location at temperatures between 50°F (10°C) and 90°F (32°C) until the products are ready to be applied (keep from freezing). Do not stack material pallets more than two (2) high.
- C. Do not subject existing roof to unnecessary loading of stockpiled materials.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 FIELD CONDITIONS

- A. Proceed with roofing only when existing and forecasted weather conditions permits
 - 1. Ambient temperatures shall be above 45°F (7.2 °C) when applying water based adhesive. Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with Manufacturers recommendations and guarantee requirements as follows
 - 2. Do not begin work if precipitation is expected within twenty-four hours of application, or if temperatures are expected to fall below 42°F (6°C) during the duration of the job.
 - 3. Upper temperature restriction (both air and substrate) for application of products is 110°F (43°C). If substrate temperatures exceed 110°F (43°C), United Coatings™ products shall be applied during cooler periods of the day. If this is not practical, the substrate shall be cooled with water, and then products applied just after the water has flashed-off.
 - 4. No moisture may be present when applying products. Taking into consideration the UV curing properties of the materials, allow for sufficient daylight hours necessary for curing of materials

1.10 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace roofing that fail(s) in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 20 year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide GAF United Coatings Unisil HS or comparable product by one of the following:
 - 1. GAF Commercial Roofing Products
 - 2. Gaco Western (Firestone)
 - 3. GE Momentive

2.2 ROOF COATING

A. Liquid Silicone Coating: A water-based high solids silicone coating that helps provides superior weatherproofing, ultraviolet resistance, biological resistance and fire retardancy over concrete substrates.

1. Application Rate: 1.0 to 1.5 gal per 100 sf (4.07 to 6.11 L/ 10 m².) per coat.
2. Application Method: Airless sprayer.
3. Application Temperature (air, surface): 32°F (0.0°C) - 110°F (43°C).
4. Dry time: (light rain & foot traffic) White @ 4 hours @ 70°F (21°C) 50% R.H. @ 16 wet mils (406 microns).
5. Color: Terra Cotta

B. FLASHINGS, FABRIC AND BULKING AGENTS

1. Fiber Bulking Agent: A micro-fine manufactured high-tensile polyethylene fiber used as a general thickener used to thicken silicone coatings into spray or brushable mastics allowing for fabrication of cants and filling around irregular surfaces
 - a. Application Rate: 5 gal (19L) total / 125 ft. (38 m) of seam (6 inches (152 mm) wide).
 - b. Application Method: Brush.
 - c. Application Temperature (air, surface): 42°F (5.5°C) – 110°F (43°C).
 - d. Dry Time: 75°F (24°C), 50 percent RH: Approximately 24 - 48 hours.
 - e. Clean up: Water.
2. Reinforcing Fabric: tough, non-woven, stitch-bonded, heat-set polyester designed for roofing and flashing applications per Manufacturers recommendations.
3. Seam Tape: A polymer-backed woven polyester reinforcing fabric designed for application to a wide range of substrates where additional strength is required over seams, splits, transitions, protrusions per Manufacturers recommendations.
 - a. Temperature Limits for Service -30°F to 180°F (-35°C to 82°C)
 - b. Bond Time: Initial bond is immediate; full bond requires approximately 24 hours.

C. PRIMERS, CLEANERS AND SEALANTS

1. Primer: A two component, water-based, 1 to 1 ratio primer specifically designed for optimizing the adhesion of roof coatings over a concrete.
 - a. Application Rate: Per manufacture recommonation
 - b. Application Method: Brush, roller or sprayer.
 - c. Application Temperature (air, surface): 50°F (10°C) – 110°F (43°C).
 - d. Dry Time: 75°F (24°C), 50 percent RH: 1hour
2. Cleaning Concentrate: Cleaning agent that, when combined with water, penetrates the existing coating or substrate and allows contaminants to be flushed from the surface. It is non-toxic and leaves no pollutants or contaminating by-products to damage the environment. Used for the proper cleaning o concrete and masonry substrates, as well as uncoated roof, deck and wall surfaces.
 - a. Application Rate: 0.67 – 0.50 gallon per 100 ft². (2.73 - 2.03 L/ 10m²).
 - b. Application Method: Low pressure sprayer or broom

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting performance of the Work.
- B. Inspect Preliminary Work / Flashing Details for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory.
- C. Inform Project Architect and Manufacturer's representative when all preliminary work and flashing details will be complete and the Installer is ready to proceed with application roofing membrane.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or the Manufacturer's representative.

3.2 PREPARATION

- A. Moisture Survey: A moisture survey shall be performed on the roof system to determine the suitability of the existing roof for application of the roofing system. Any wet or deteriorated areas shall be removed and replaced.
- B. Preparation of the Roof substrate is the responsibility of the installer, who shall address and correct all of the conditions listed in this section. Examine substrates to receive new roofing. Do not proceed with the installation of the roofing system until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer .
- C. Treatment of Ponding Water Areas: Installer shall make every effort to mechanically eliminate all ponding water areas on the roof prior to application of roofing products. Ponding water is defined as water that does not properly drain and remains on the roof for more than 48 hours after precipitation stops.
- D. Thorough Cleaning / Removal of Existing Paints and Coatings: The substrate shall be pressure-washed with water. A minimum working pressure of 2,000 psi (13MPa) (shall be used to remove all delaminating paint and coatings, dirt, dust, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). All existing silicone-based sealants shall be completely removed from the roof substrate prior to application of roofing products. The operator of the pressure washing equipment shall take special care in avoiding the introduction of water into the existing roof membrane. When encountering roof substrates that have living organisms such as algae, mold or fungus, a bleach solution shall be used to kill and remove these organisms during the roof cleaning.
- E. Deteriorated Seams/Cracks: Repair all delaminated or open seams using method acceptable to the manufacturer.

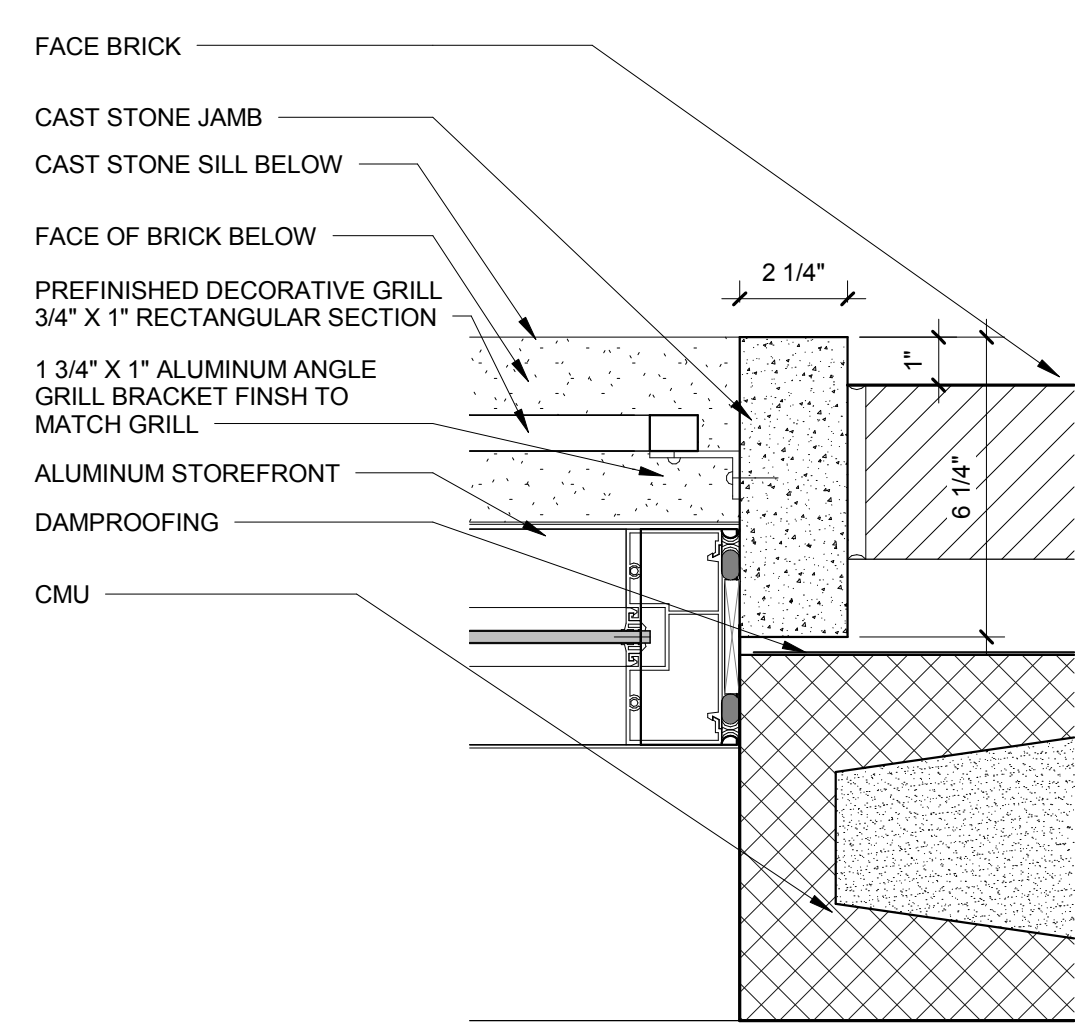
3.3 APPLICATION

- A. Preliminary work consists of substrate preparation and all flashing details. After completion of substrate preparation, all flashing details, penetrations and curbs shall be flashed with either 6 inches (152 mm) reinforcing fabric or seaming tape with roofing coating in accordance with Manufacturers recommendations.
- B. Parapet Walls: All parapet wall details within the roof system shall be secured and sealed with a 6 inches (152 mm) minimum width of reinforcing fabric with roofing coating . All voids and open areas shall be filled with polyurethane foam prior to application.
- C. Penetrations: Roof coating shall be applied around the base of the penetration, extending at least 4 inches (101 mm) onto the vertical and 4 inches (101 mm) onto the base. Embed a 6 inches (152 mm) width of reinforcing fabric using additional roof coating, as necessary. Cut reinforcing fabric to accommodate the shape of the penetration.
- D. Roof Coating:
 - 1. Spray-apply base coat of roofing membrane at the rate of 1.25 gal per 100 square feet. Allow coating to dry (enough to walk on), and then inspect for defects, flaws or areas of insufficient coverage. Correct any unsatisfactory conditions. Do **NOT** exceed 24 hours between coats.
 - 2. Spray-apply finish coat of roofing membrane at the rate of 1.50 gal per 100 square feet. Allow coating to dry (enough to walk on), and then inspect for defects, flaws or areas of insufficient coverage. Correct any unsatisfactory conditions. Do **NOT** exceed 24 hours between coats.
 - 3. When coating is dry enough to walk on, inspect the final roof surface for flaws, areas of insufficient coverage, insufficient thickness, etc. The specified dry membrane thickness is 42 mils in the field of the roof. All unsatisfactory areas must be repaired within 24 hours.

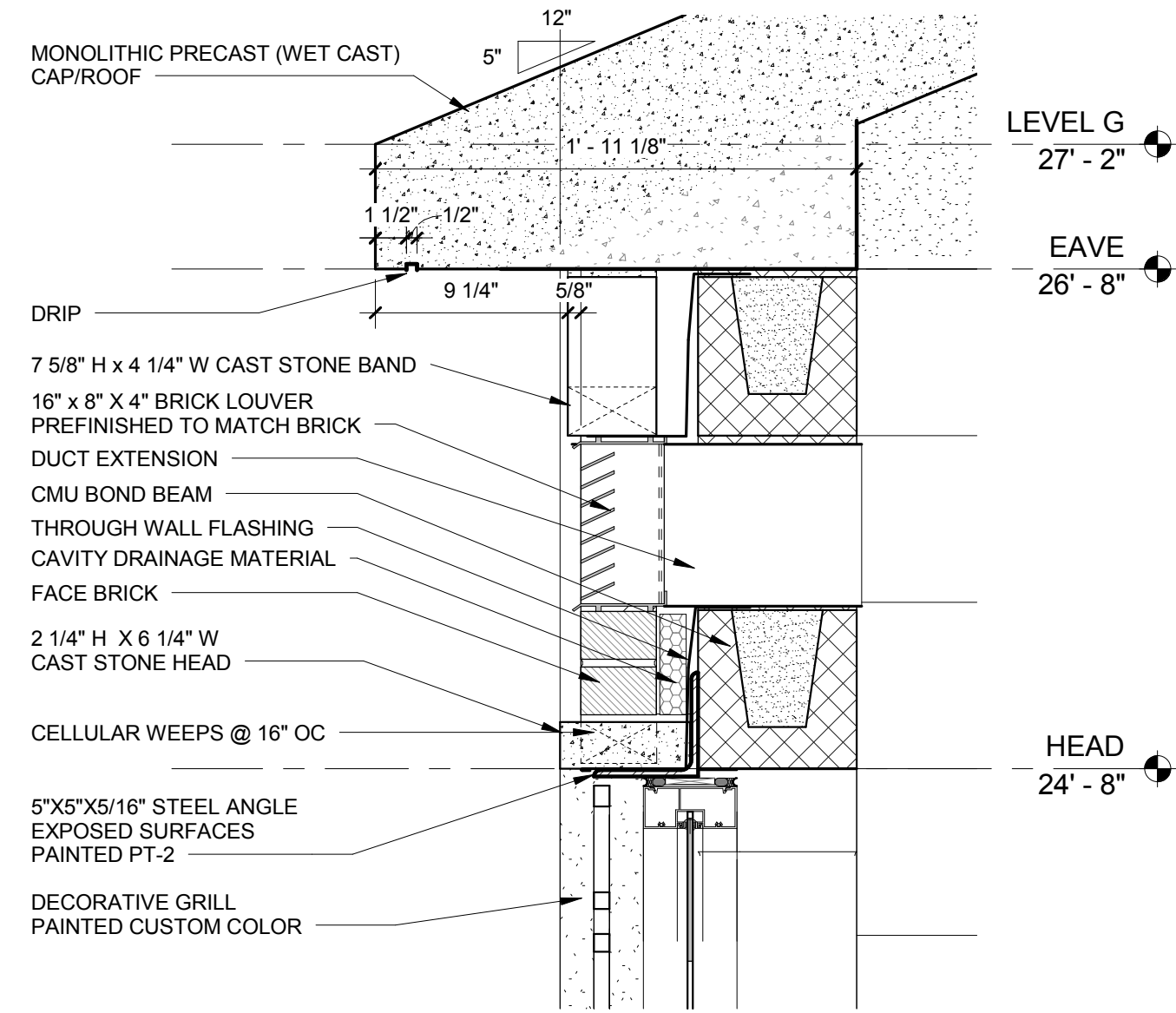
3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
 - 2. Adhesion test is required to ensure an adhesion minimum of 2.0 PLI.
- C. Prepare test and inspection reports.

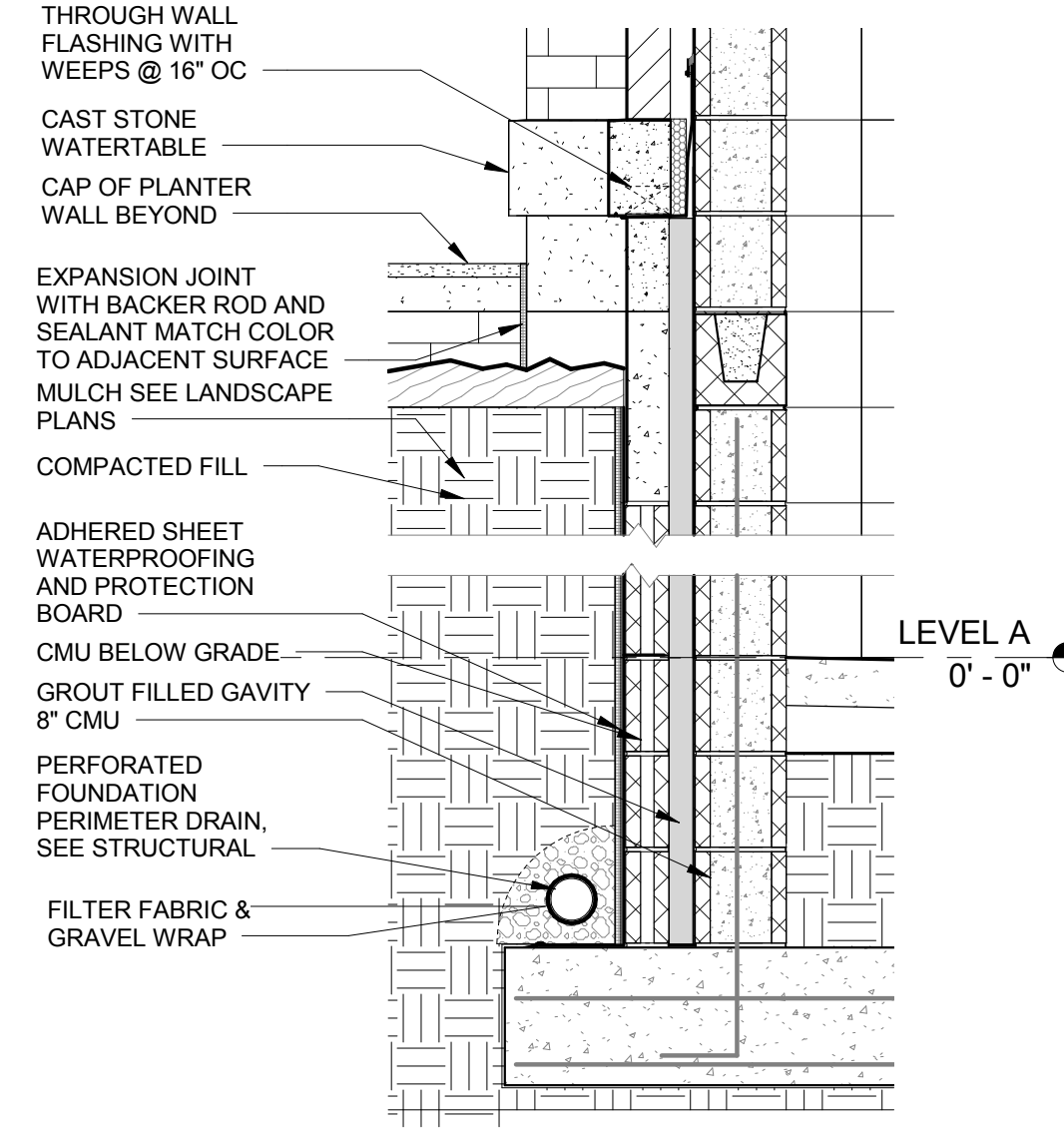
END OF SECTION 075600



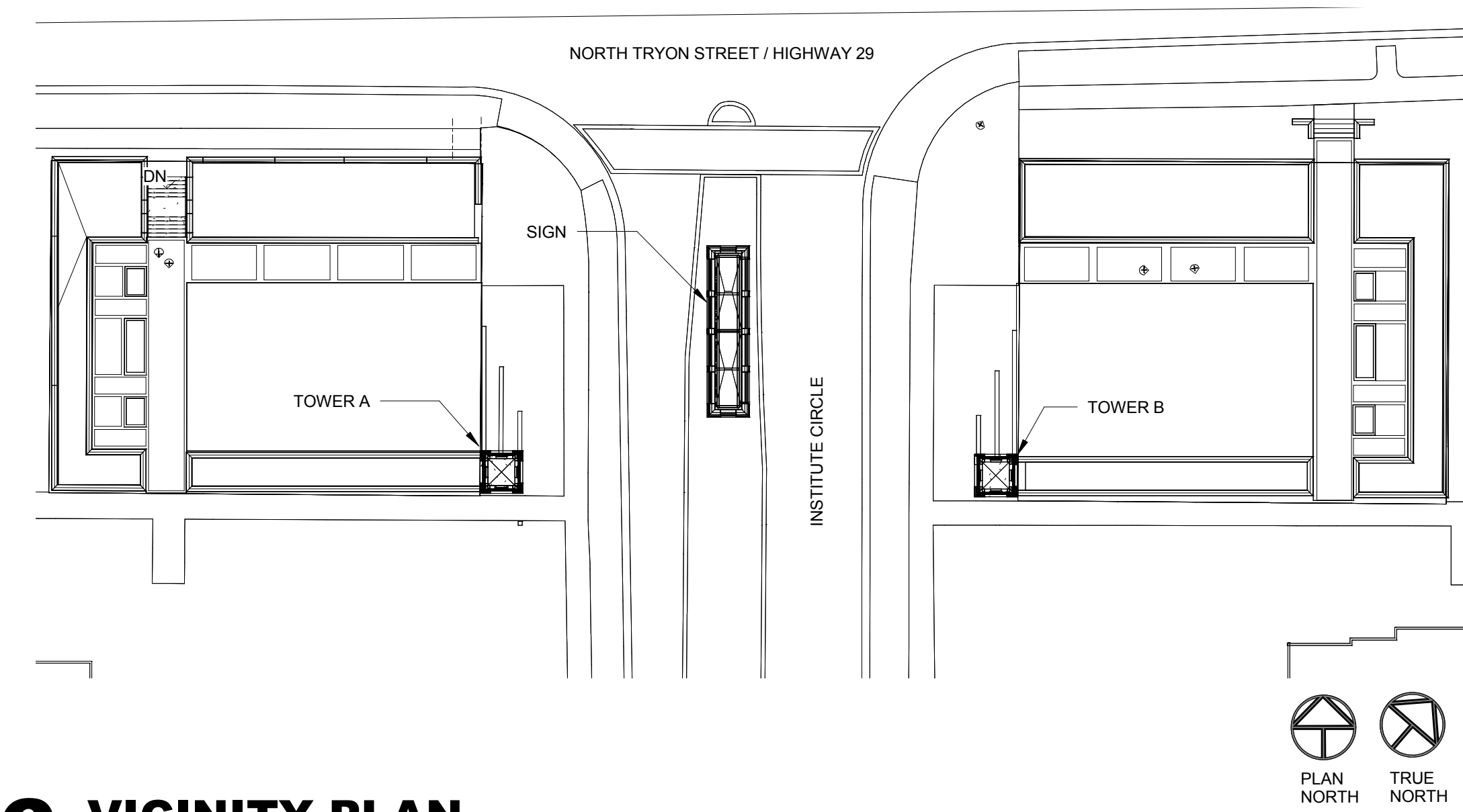
3 DETAIL WINDOW JAMB
SCALE: 3" = 1'-0"



4 DETAIL HEAD / EAVE
SCALE: 1 1/2" = 1'-0"



5 SECTION @ PLANTER
SCALE: 3/4" = 1'-0"



6 VICINITY PLAN
SCALE: 1/32" = 1'-0"

GENERAL NOTES

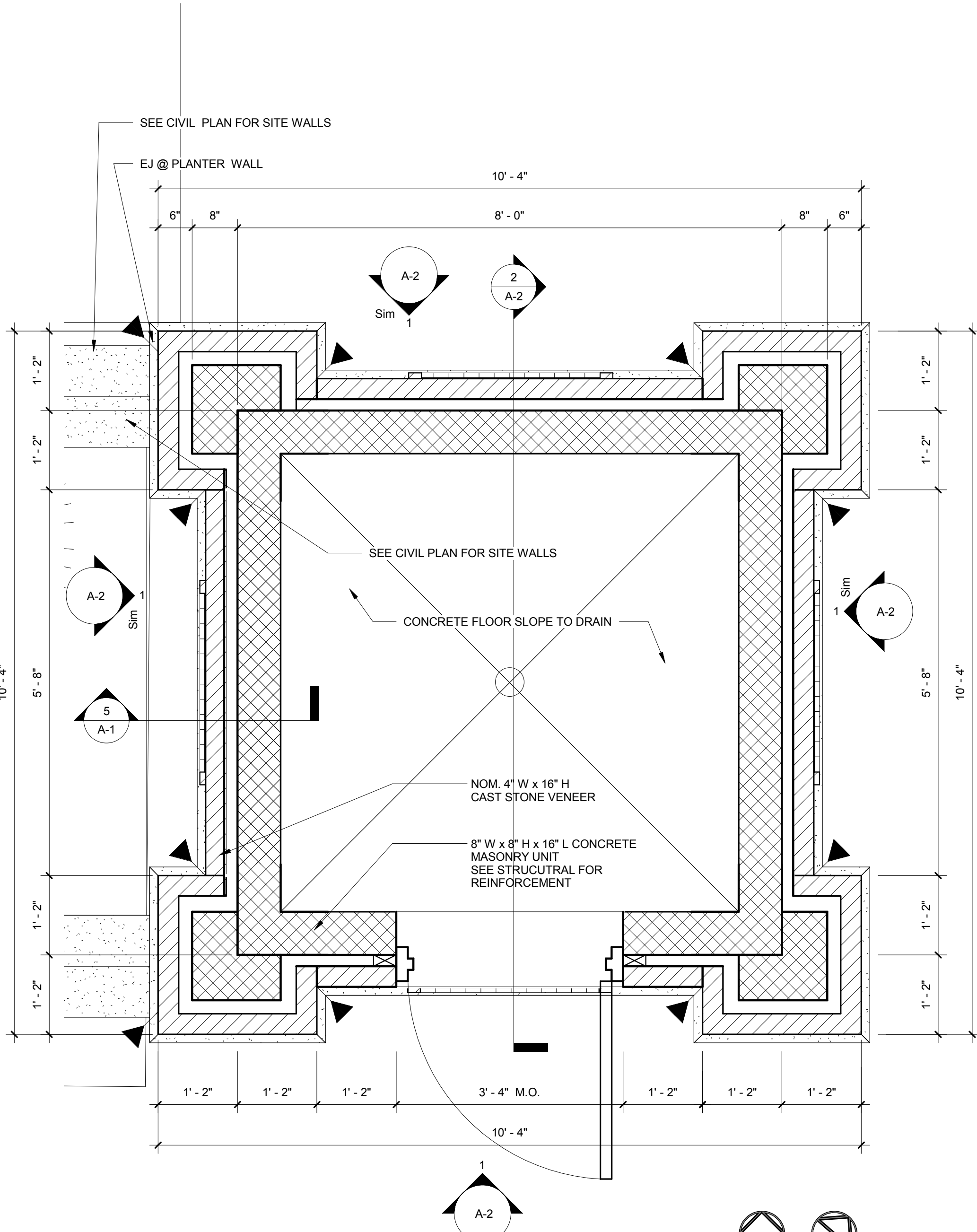
- PROJECT INCLUDES TWO IDENTICAL TOWERS. THE EAST TOWER A IS SHOWN AND THE WEST TOWER B IS OPPOSITE HAND.
- MASONRY DIMENSIONS ARE NOMINAL TO FACE OF MASONRY.
- SLOPE TOP OF PRECAST 1/4" / 12" MINIMUM
- FACE BRICK SHALL MATCH SIZE, COLOR AND TEXTURE OF THE EXISTING PORTAL BUILDING. PROVIDE SAMPLES FOR OWNER AND ARCHITECT APPROVAL 14 CALENDAR DAYS PRIOR TO BID DATE.
- ARCHITECTURAL PRECAST AND CAST STONE SHALL MATCH THE COLOR AND TEXTURE OF THE EXISTING PORTAL BUILDING.

SYMBOLS LEGEND
SCALE: 12" = 1'-0"

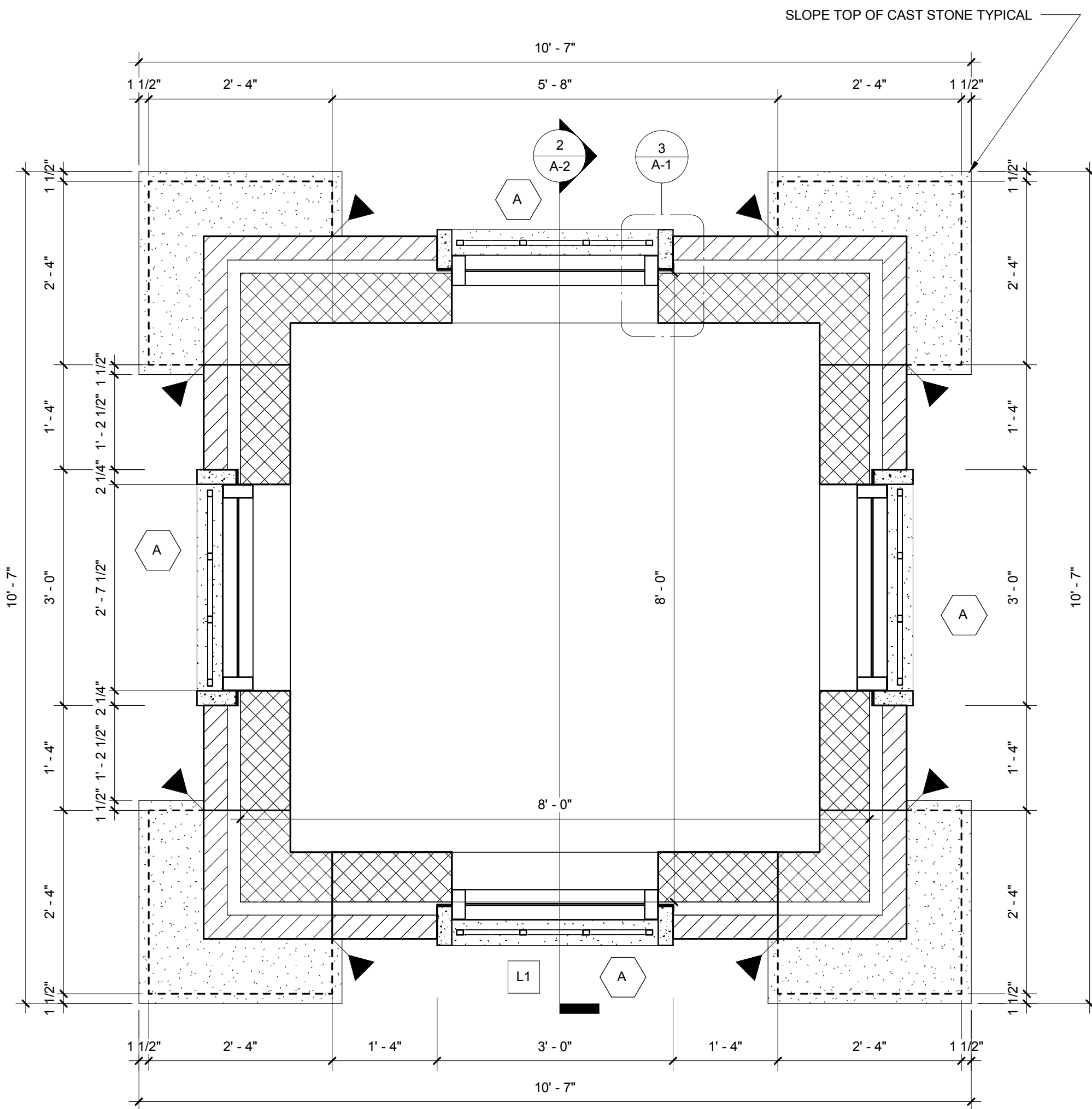
- WINDOW TAG: 11 (Symbol: 11 in circle)
- DOOR TAG: 101 (Symbol: 101 in circle)
- EQUIPMENT TAG: 11 (Symbol: 11 in circle)
- ROOM TAG: Room name 101, ROOM SCHEDULE NO.
- CEILING TAG: APC1 1'-0" (Symbol: APC1 1'-0" in circle)
- DETAIL SECTION: XX-XXXXX (Symbol: XX-XXXXX in circle)
- ELEVATION CALLOUT: 1 Ref A101 Ref (Symbol: A101 in circle)
- DETAIL AREA CALLOUT: 1 SIM A101 (Symbol: A101 in circle)
- WALL & BUILDING SECTION CALLOUT: 1 SIM A101 (Symbol: A101 in circle)
- SECTION ELEVATION: LEVEL NAME 100'-0" (Symbol: 100'-0" in circle), ELEVATION ABOVE FIRST FLOOR GRADE
- SPOT ELEVATION: 1'-0" (Symbol: 1'-0" in circle)

LEGEND

- BRICK (SECTION): (Hatched pattern)
- CAST STONE (SECTION): (Stone pattern)
- CONCRETE OR PRECAST: (Stippled pattern)
- CMU (SECTION): (Cross-hatched pattern)
- EARTH: (Horizontal line pattern)



1 FLOOR PLAN
SCALE: 3/4" = 1'-0"



2 PLAN ABOVE PILASTERS
SCALE: 3/4" = 1'-0"

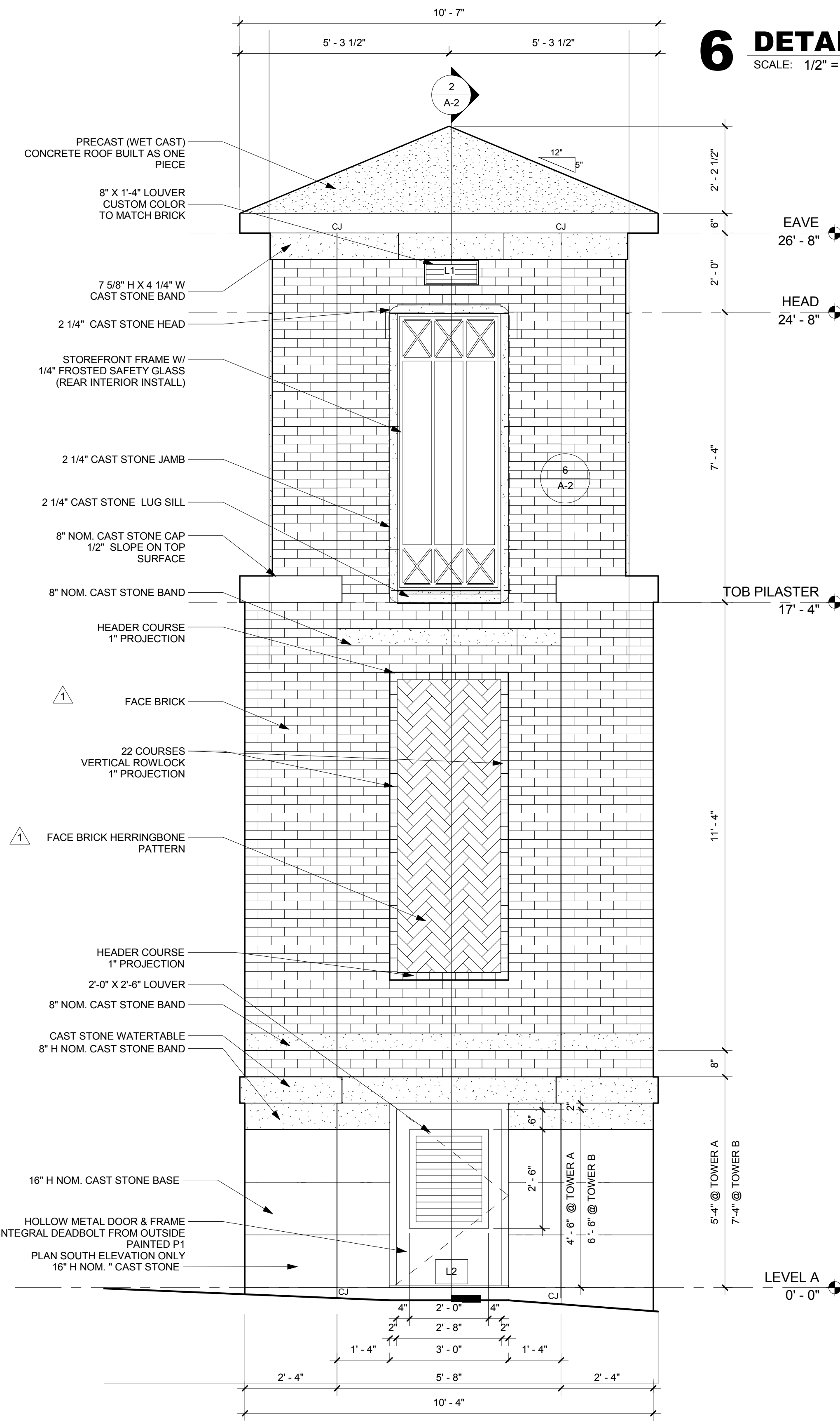
REVISIONS

NO.	DATE	DESCRIPTION
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2	2018-03-06	ADD 2

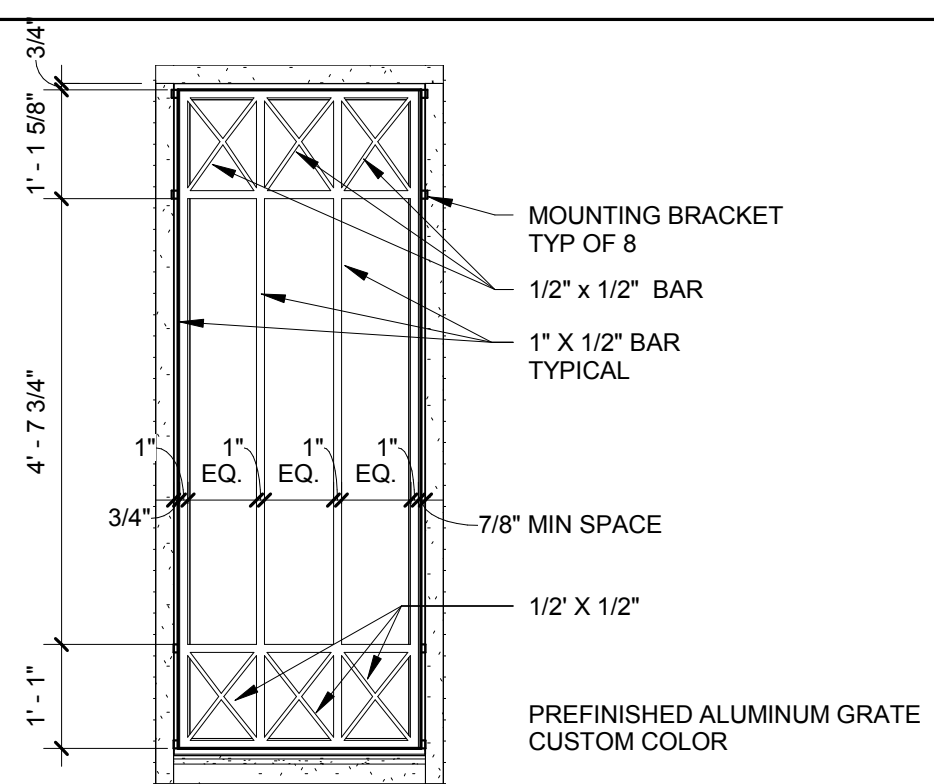
UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
CHARLOTTE, NC 28213

UNCC CRI ENTRY
BID SET - NOT FOR CONSTRUCTION
CHARLOTTE, MECKLENBURG COUNTY, NORTH CAROLINA

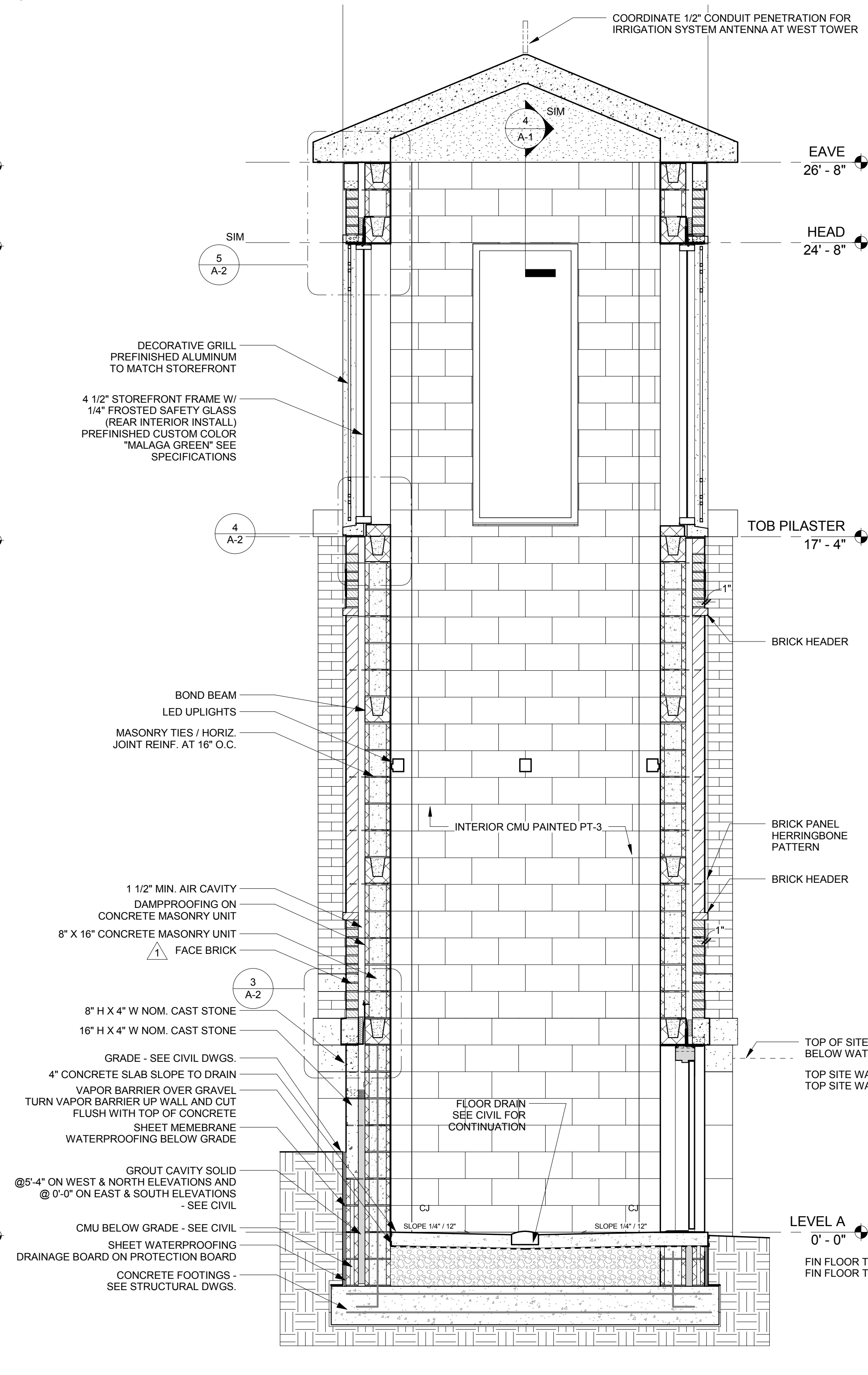
PROJECT NO:	2512
CHECKED BY:	GLH
DRAWN BY:	GEP
DATE:	02-26-2018
SHEET:	A-1



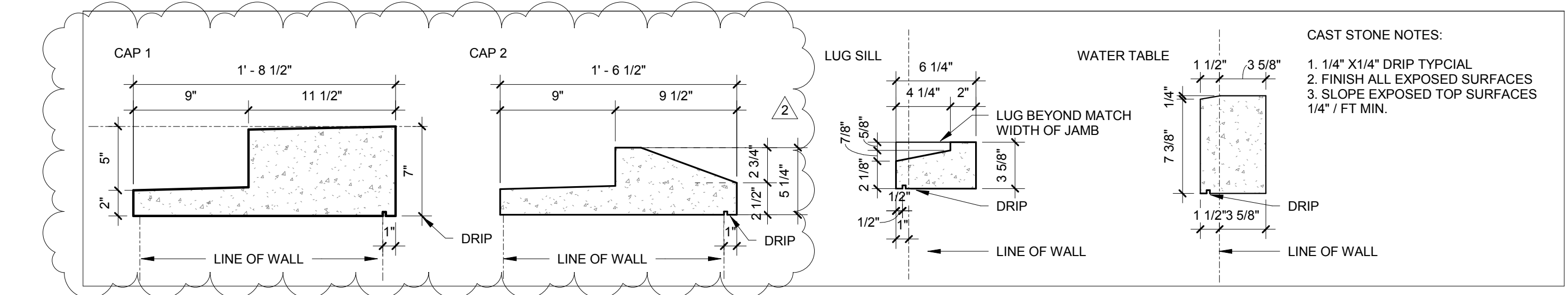
1 SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



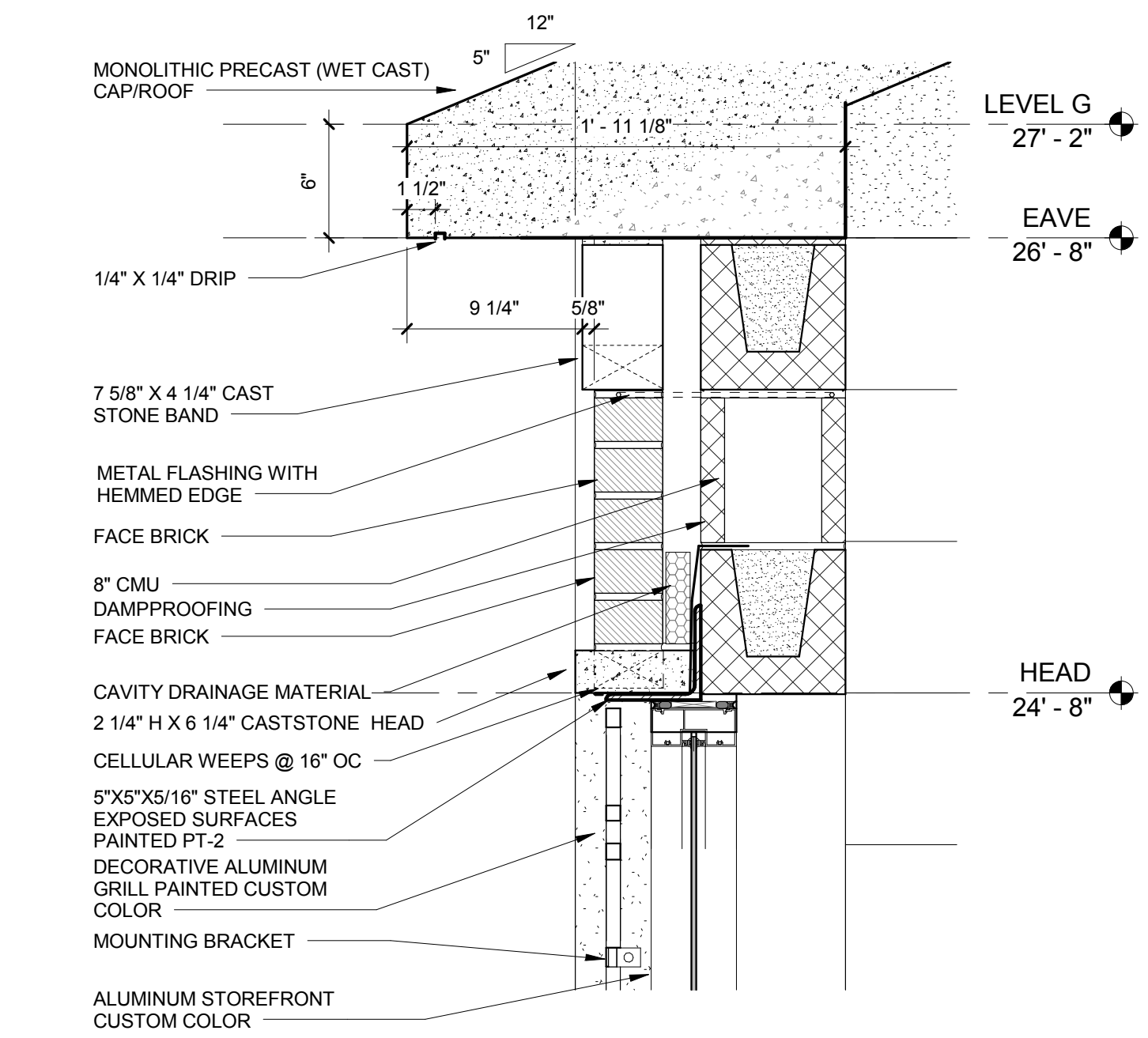
6 DETAIL DECORATIVE GRILL
SCALE: 1/2" = 1'-0"



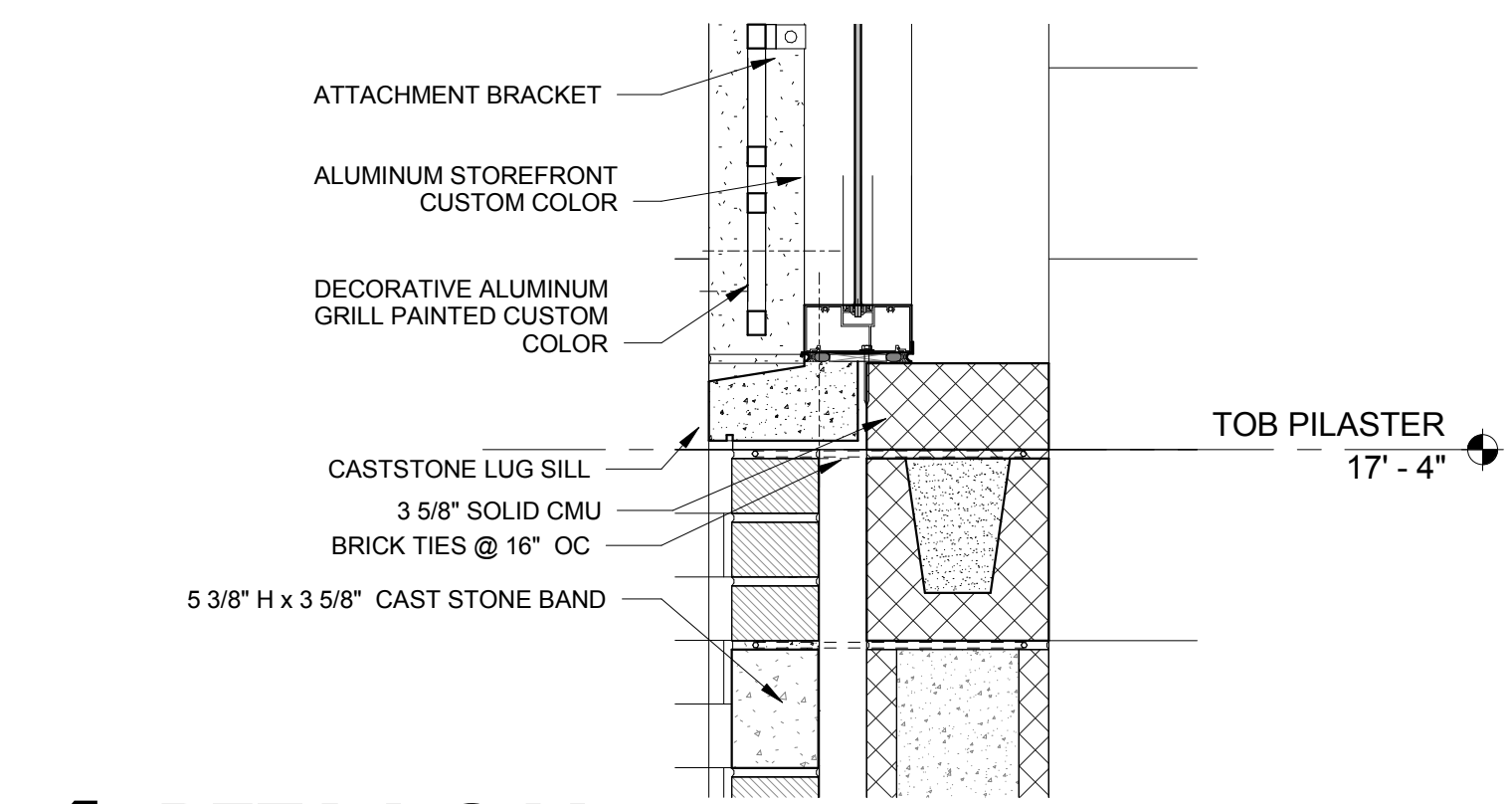
2 SECTION
SCALE: 1/2" = 1'-0"



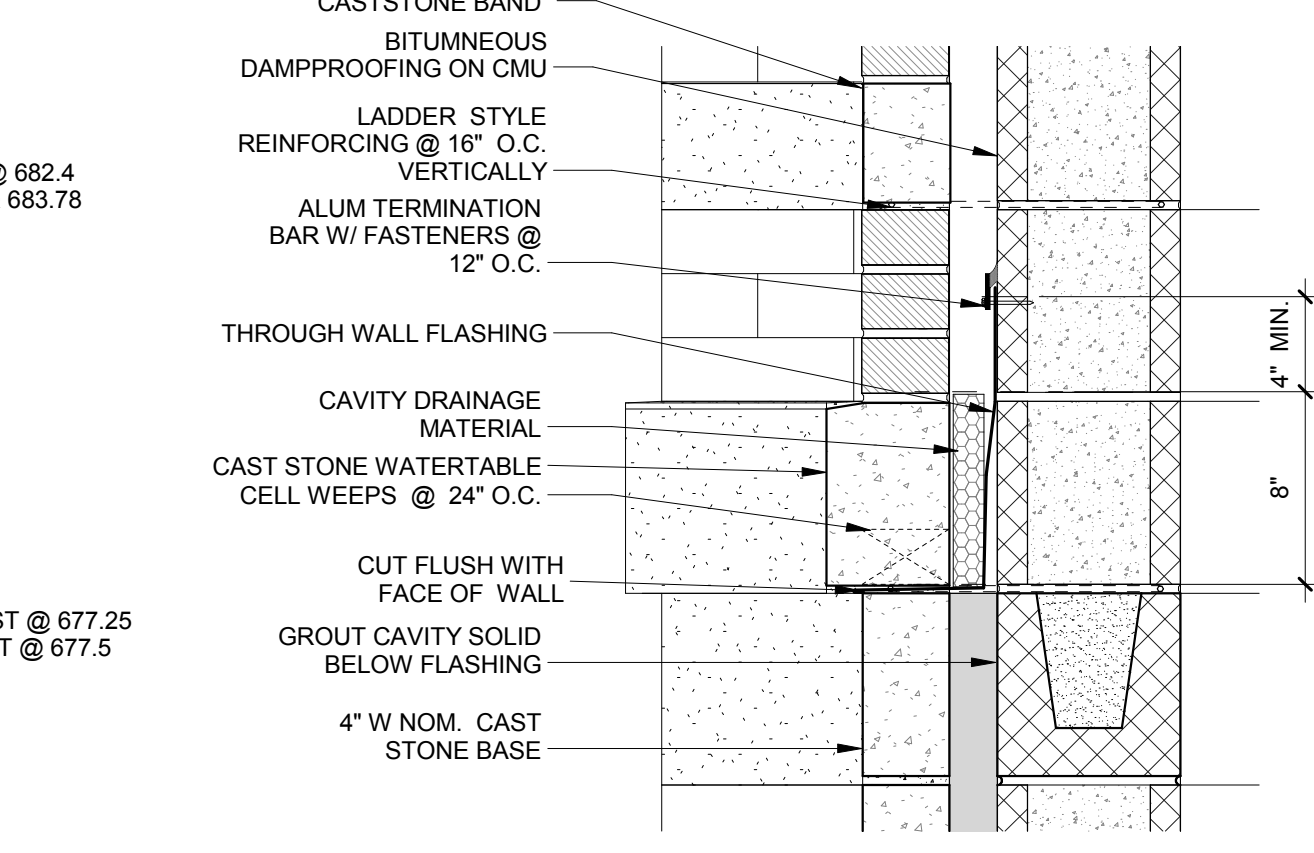
7 CAST STONE SPECIAL SHAPES
SCALE: 1 1/2" = 1'-0"



5 DETAIL HEAD / EAVE @ LOUVER
SCALE: 1 1/2" = 1'-0"

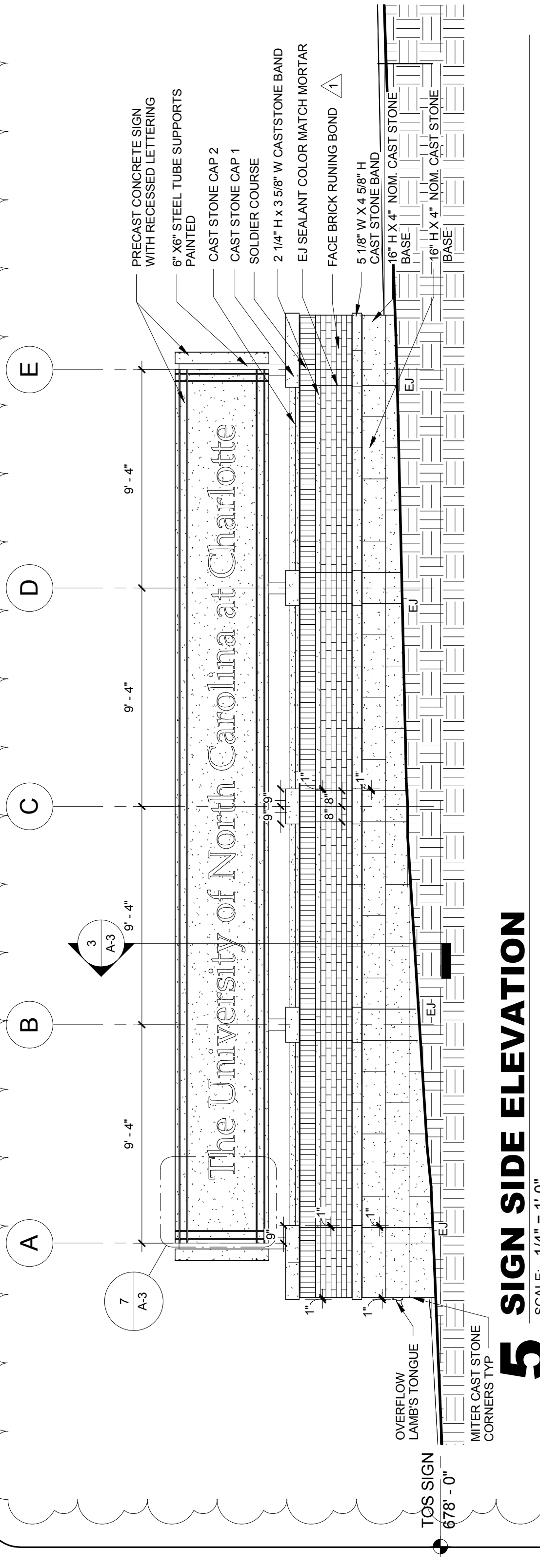


4 DETAIL SILL
SCALE: 1 1/2" = 1'-0"

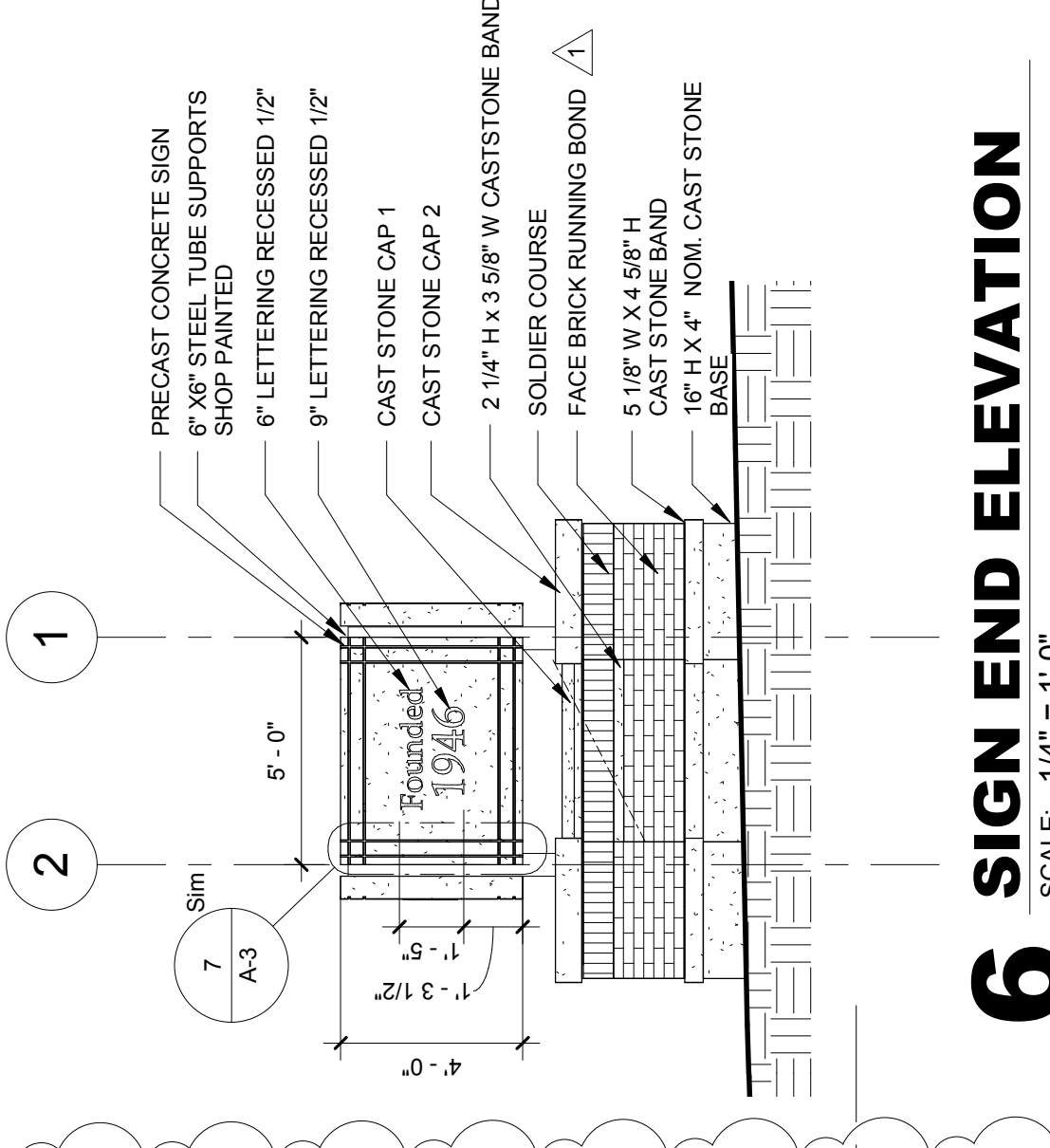


3 DETAIL FLASHING
SCALE: 1 1/2" = 1'-0"

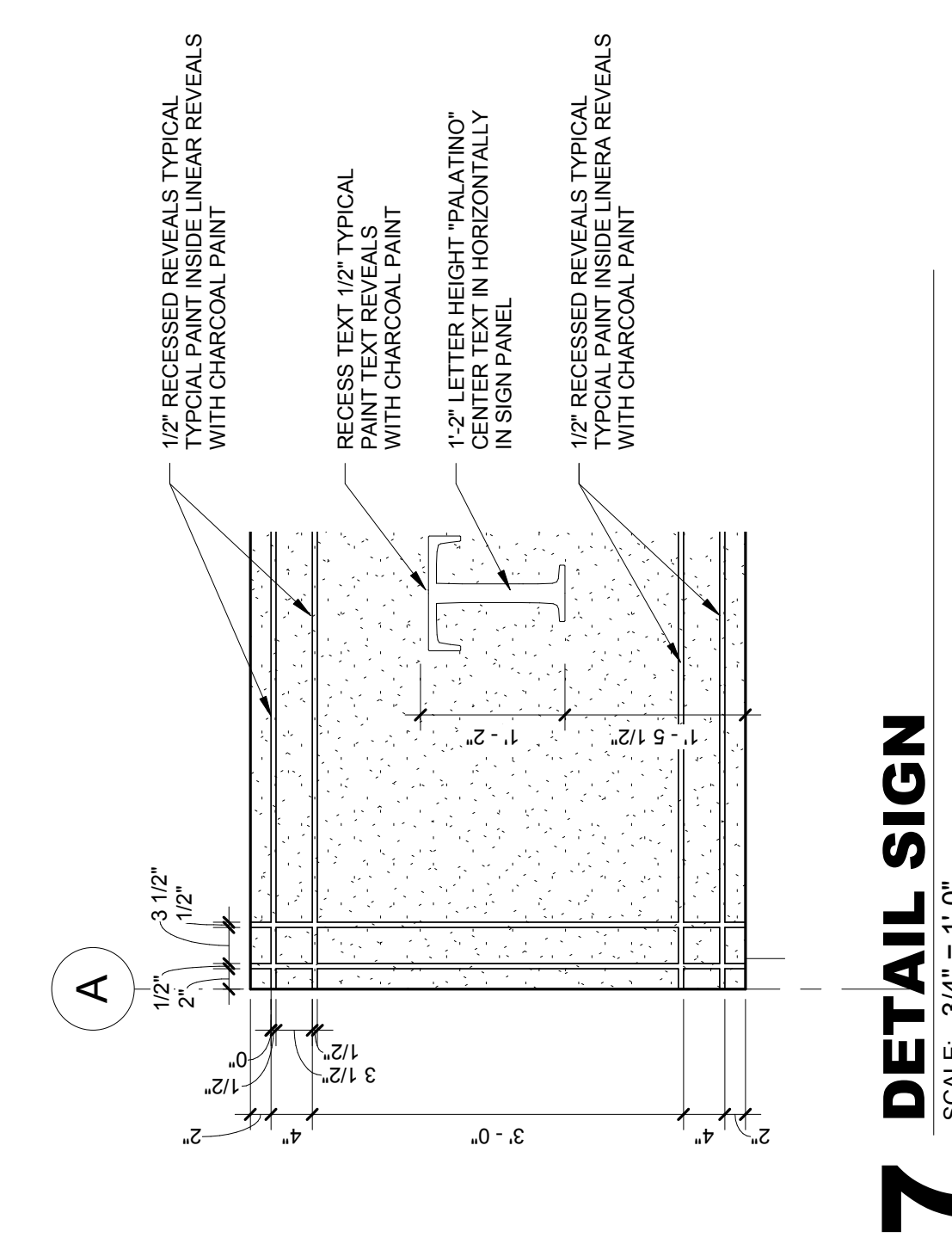
NO.	DATE	DESCRIPTION
1	2018-02-26	ADD 1
2	2018-03-06	ADD 2



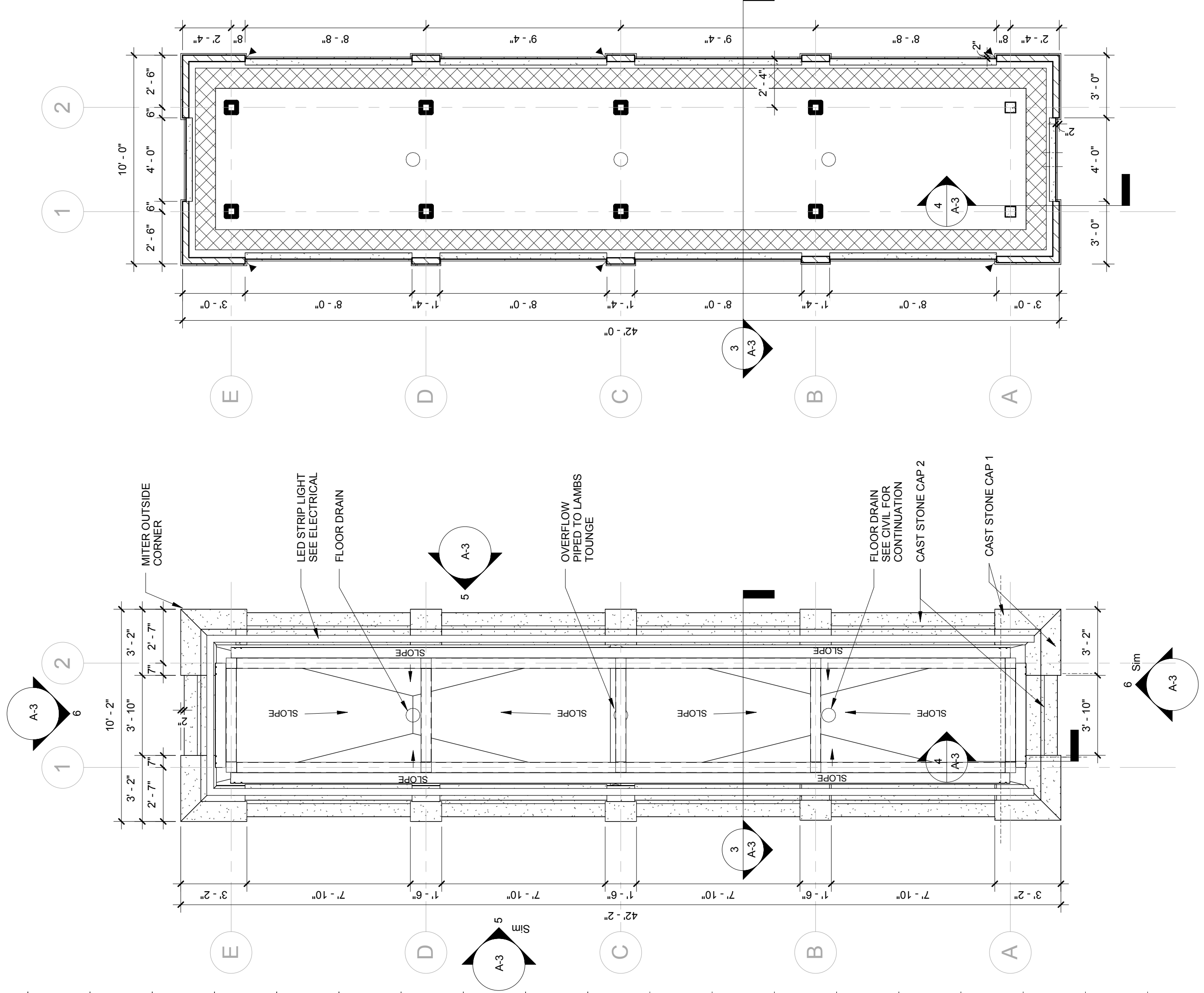
5 SIGN SIDE ELEVATION
SCALE: 1/4" = 1'-0"



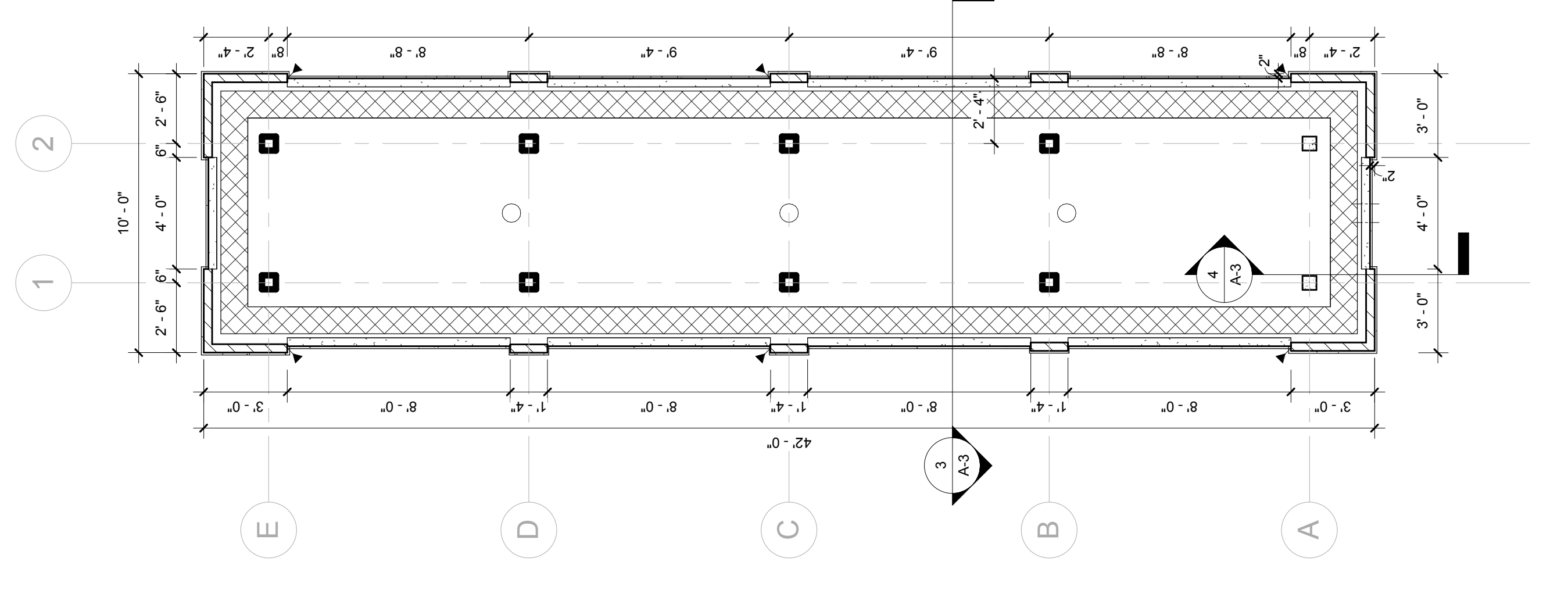
6 SIGN END ELEVATION
SCALE: 1/4" = 1'-0"



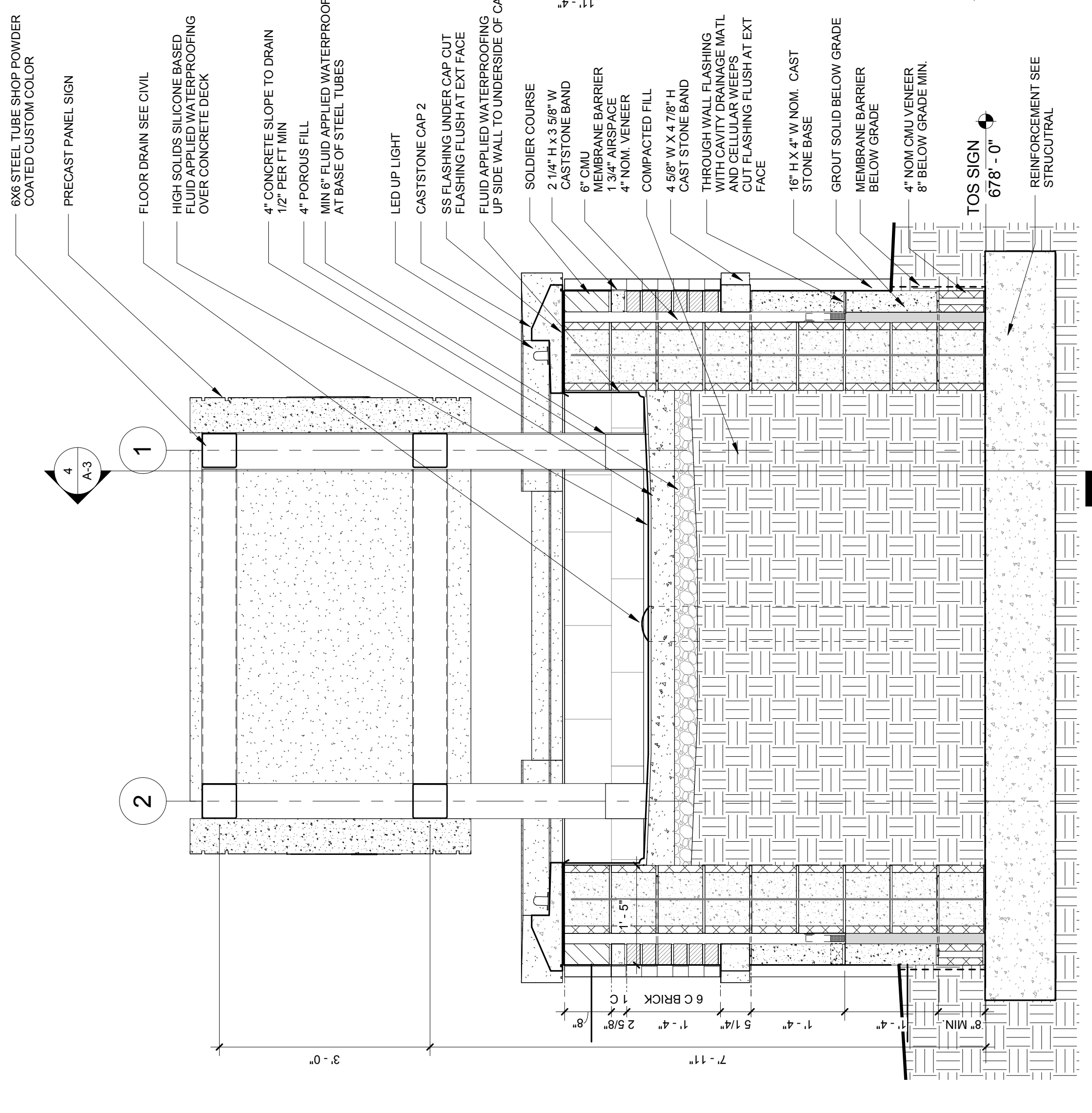
7 DETAIL SIGN
SCALE: 3/4" = 1'-0"



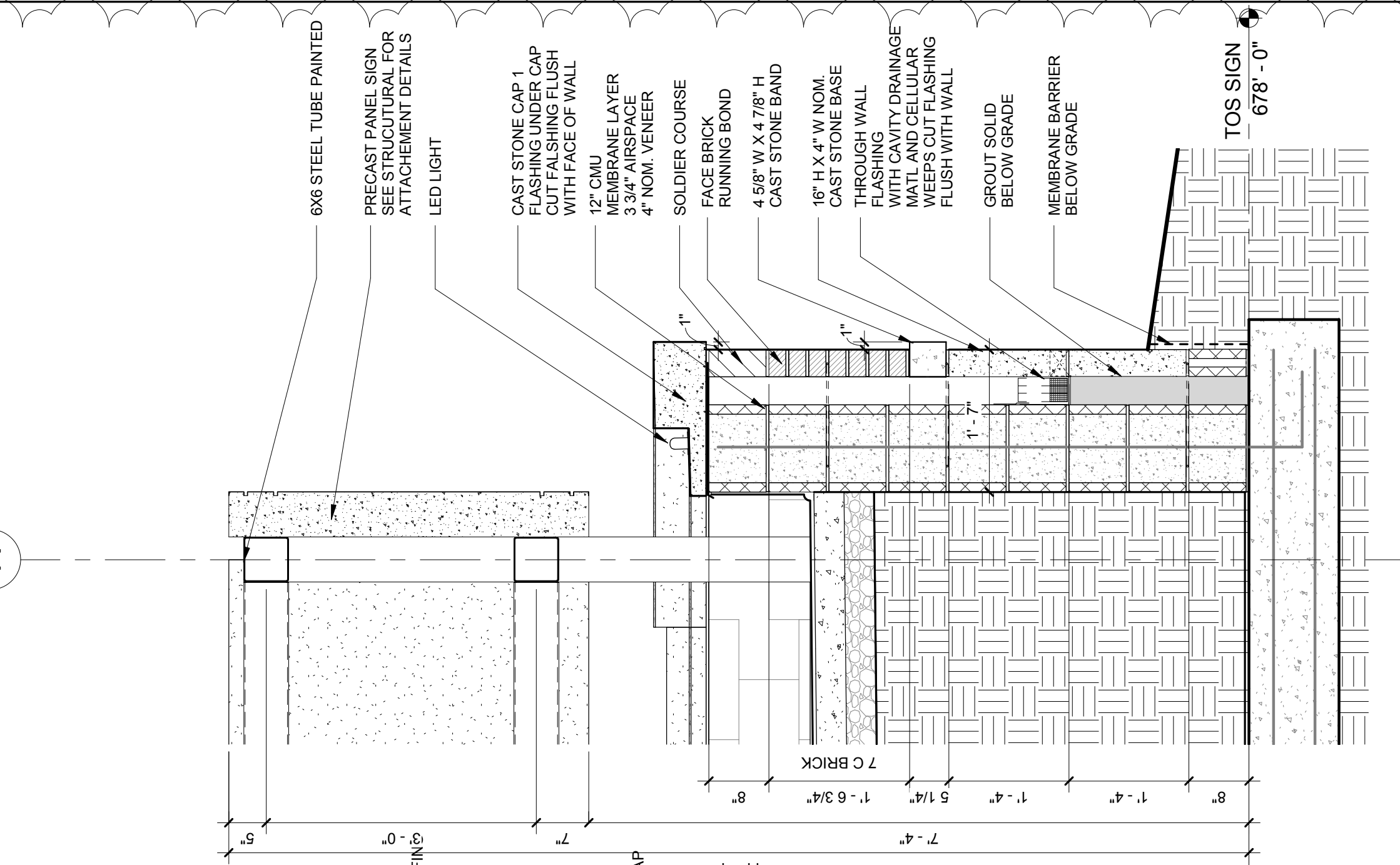
1 SIGN PLAN
SCALE: 1/4" = 1'-0"



2 SIGN BASE
SCALE: 1/4" = 1'-0"



3 SECTION SIGN @ B
SCALE: 3/4" = 1'-0"

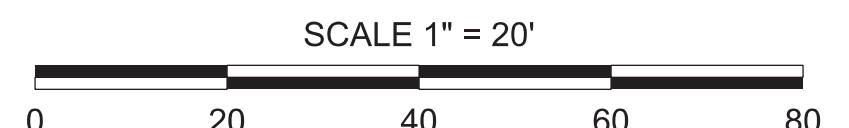
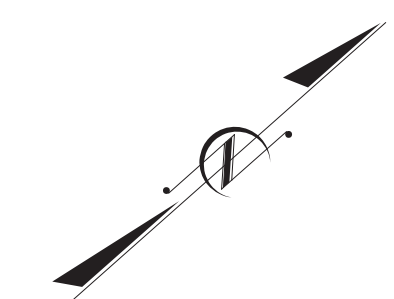
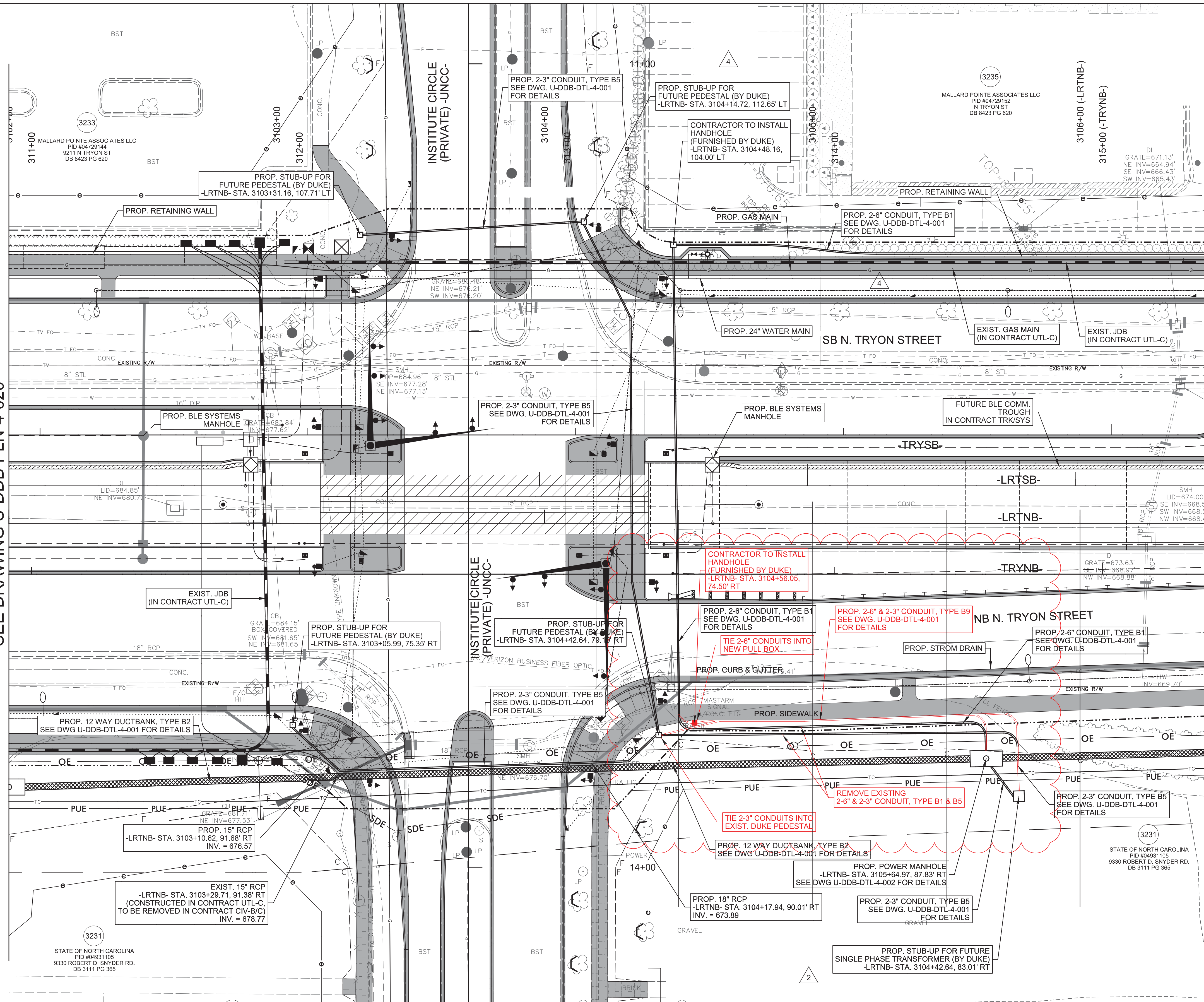


4 SECTION SIGN
SCALE: 3/4" = 1'-0"

NO.	DATE	DESCRIPTION
1	2018-02-26	ADD 1
2	2018-03-06	ADD 2

MATCHLINE -LRTNB- STA. 3102+00
SEE DRAWING U-DDB-PLN-4-020

MATCHLINE -LRTNB- STA. 3106+50 SEE DRAWING U-DDB-PLN-4-022



NO.	DATE	REVISION	BY	DWN	CHK	APR

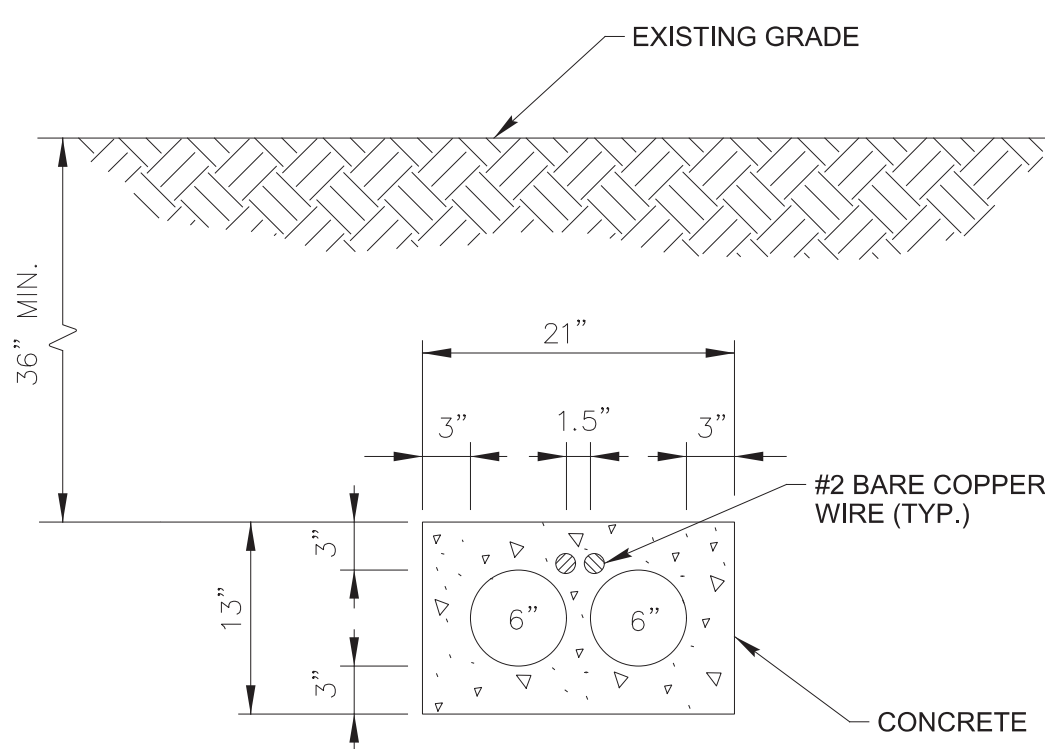

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 NC License Number F-0991



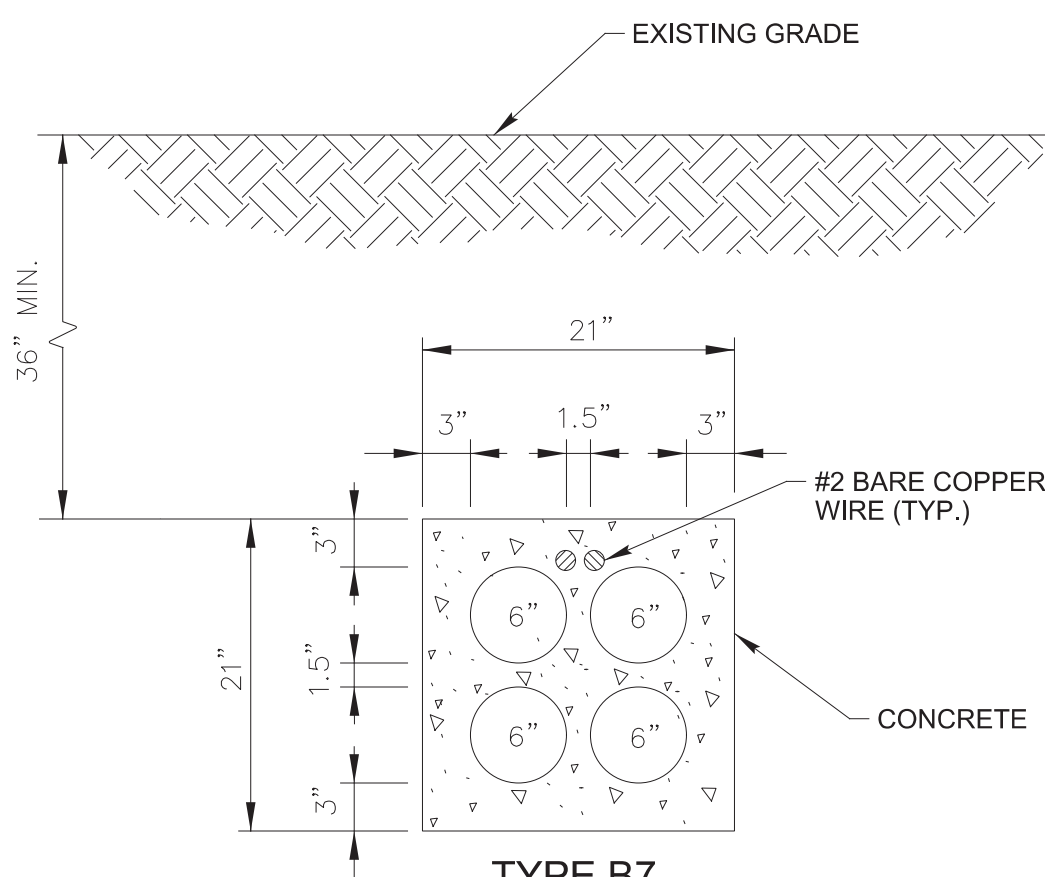
PREPARED BY: LSB
 DRAWN BY: LSB
 CHECKED BY: MBE
 APPROVED BY: ZAL

LYNX BLUE LINE EXTENSION
NORTHEAST CORRIDOR LIGHT RAIL PROJECT
 CIVIL - SEGMENTS B AND C - VOLUME 5
 DUKE DUCT BANK PLANS - SEGMENT C
 -LRTNB- STATION 3102+00 TO STATION 3106+50

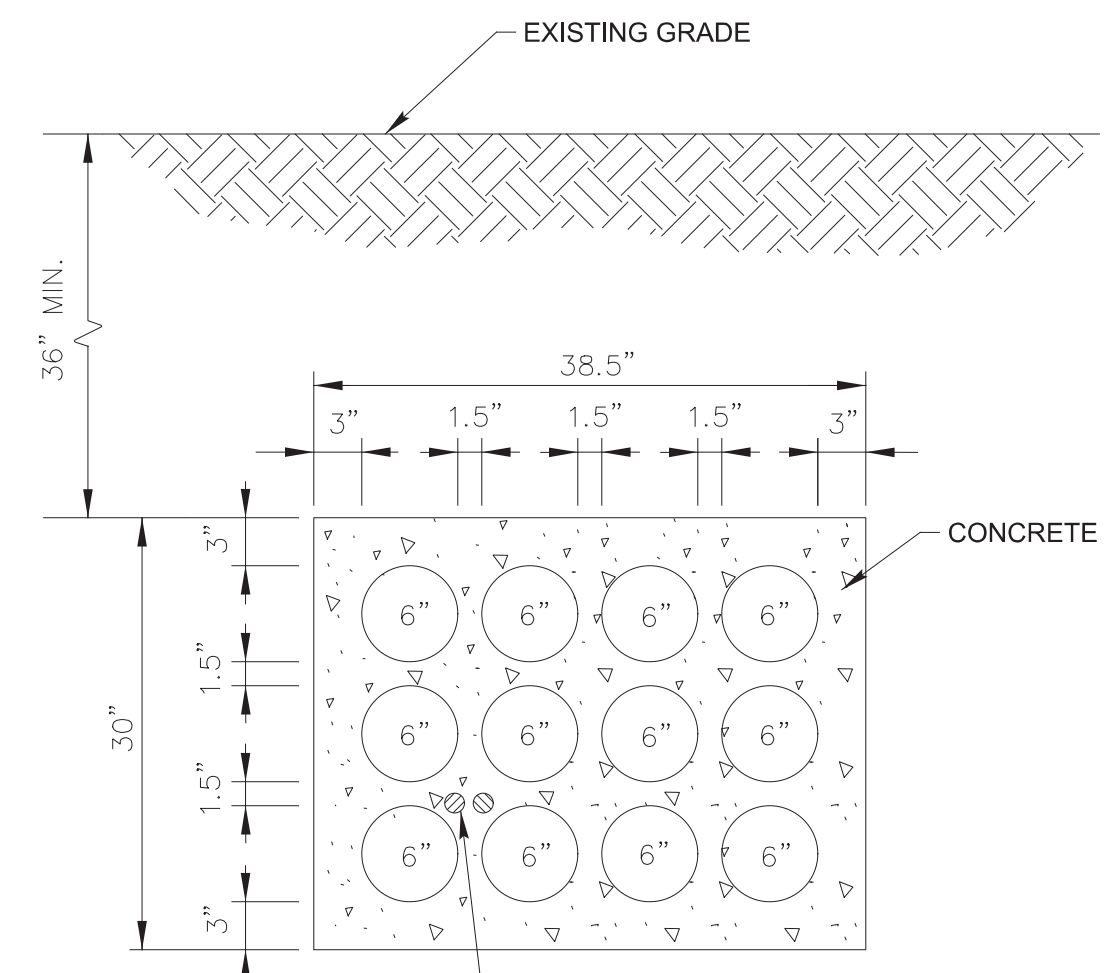
DATE: 06/07/17
 SHEET: CIV-B/C-1820
 DRAWING: STV_03_XX_001
 CONTRACT NO.: 3



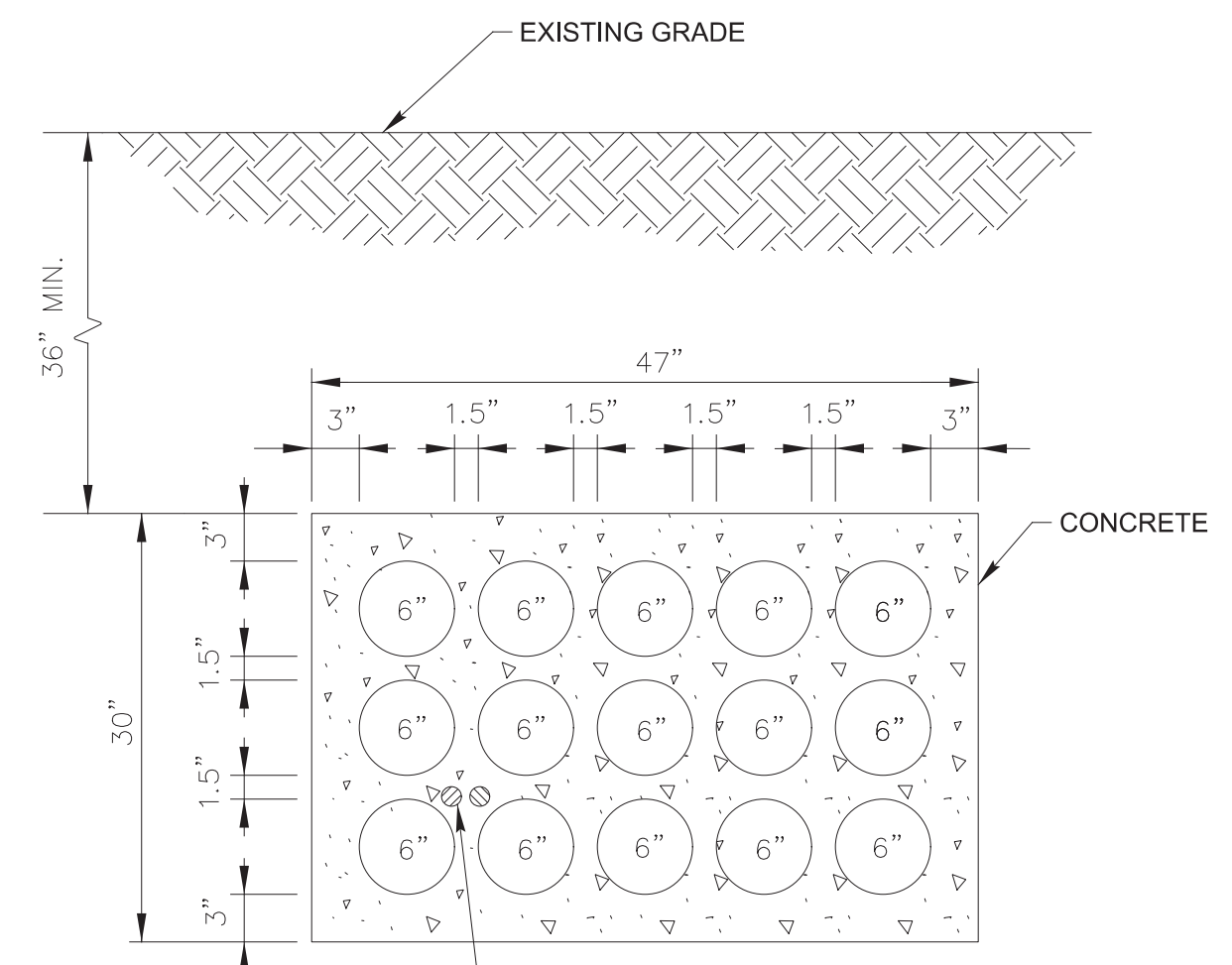
TYPE B1



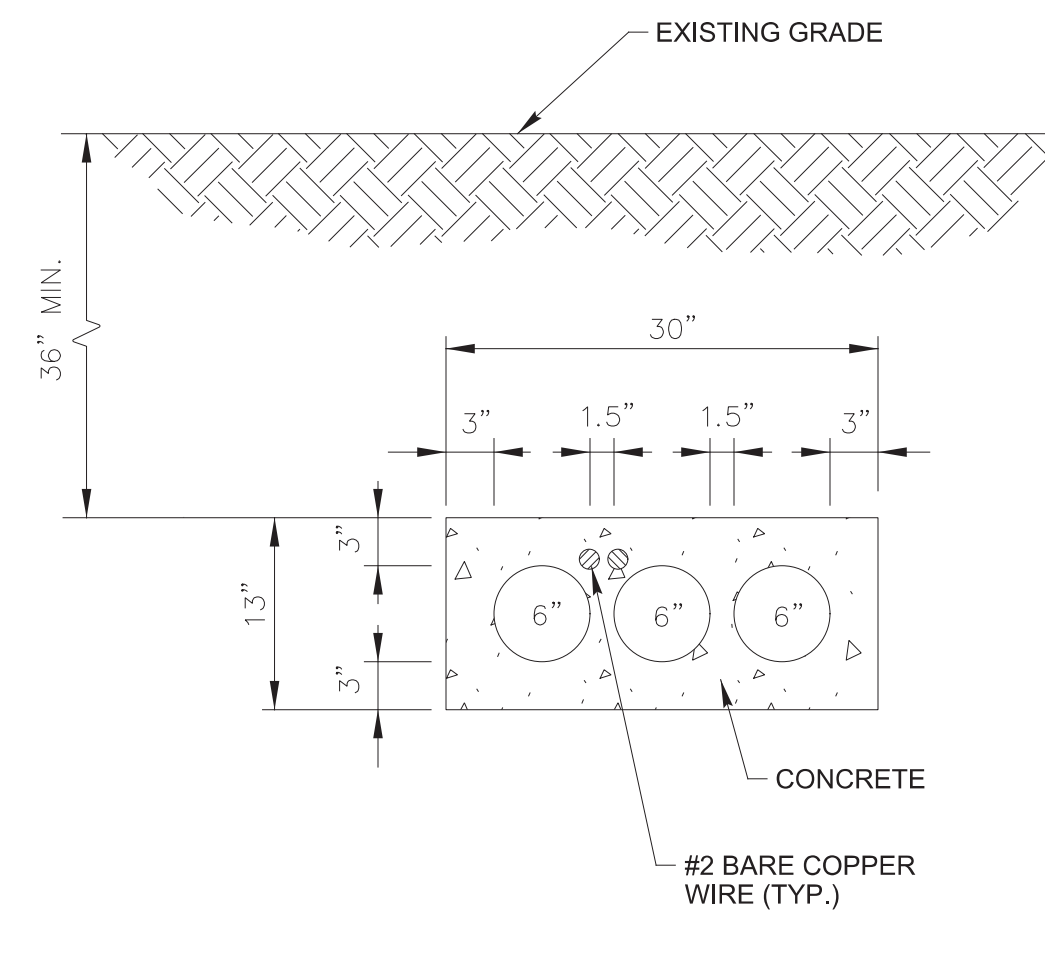
TYPE B7



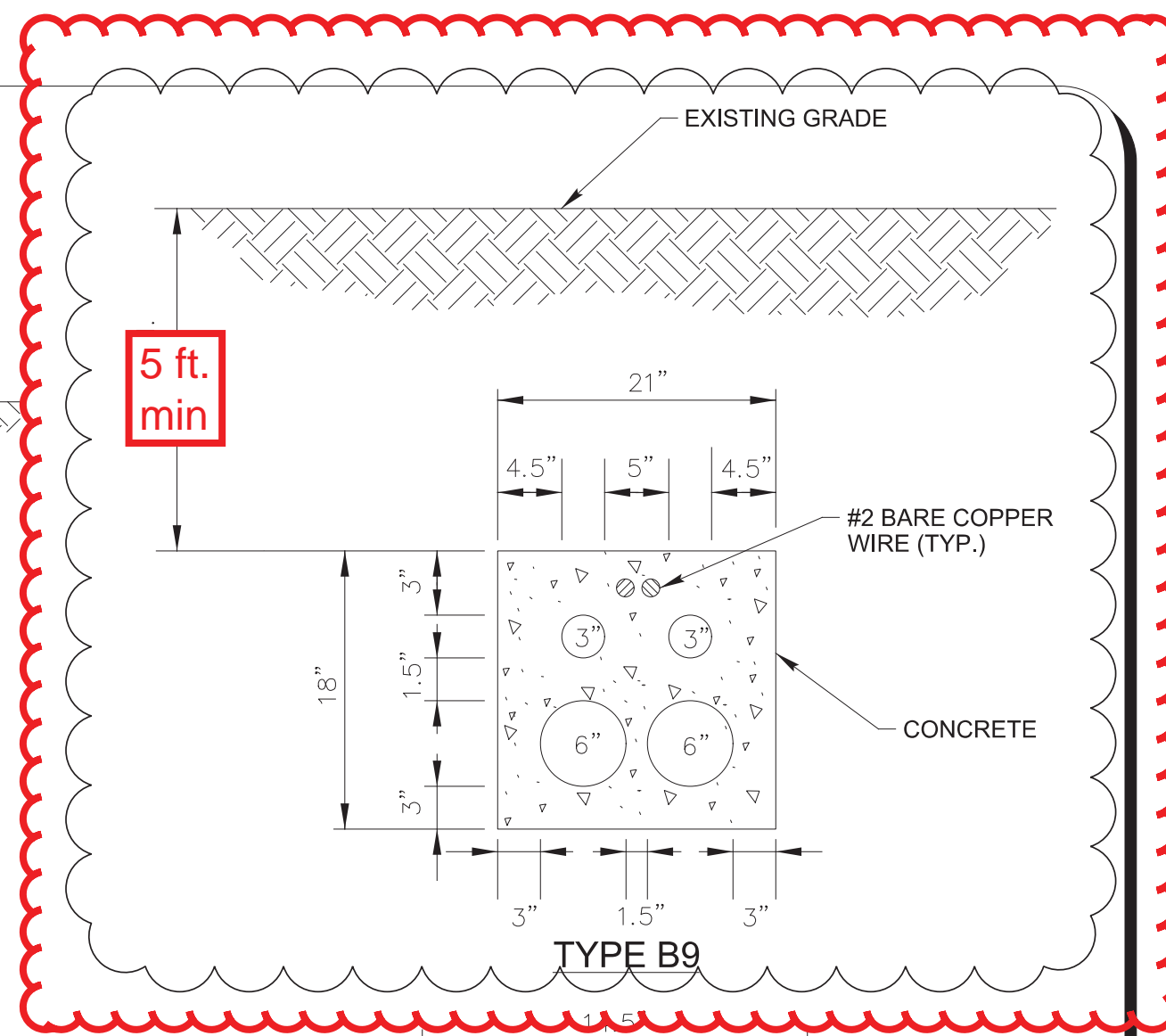
TYPE B2



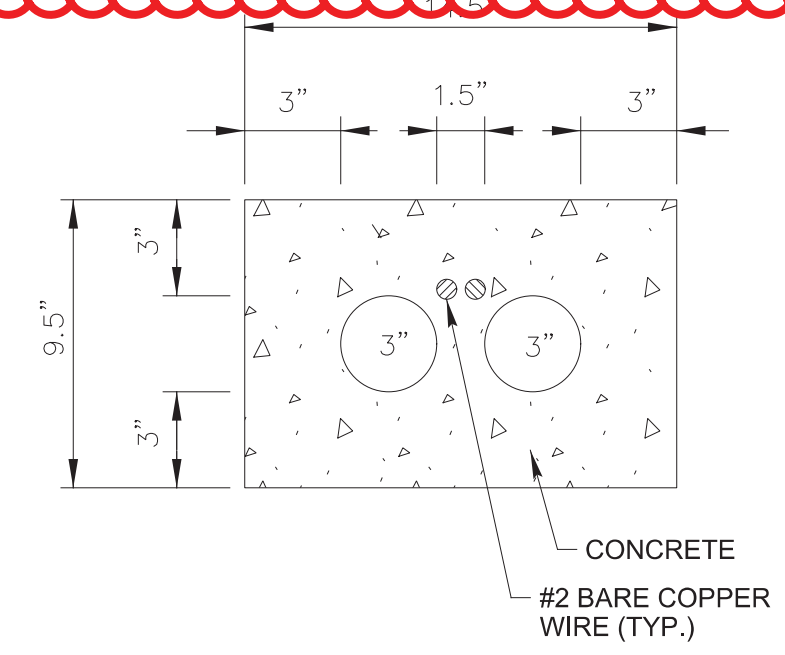
TYPE B3



TYPE B4

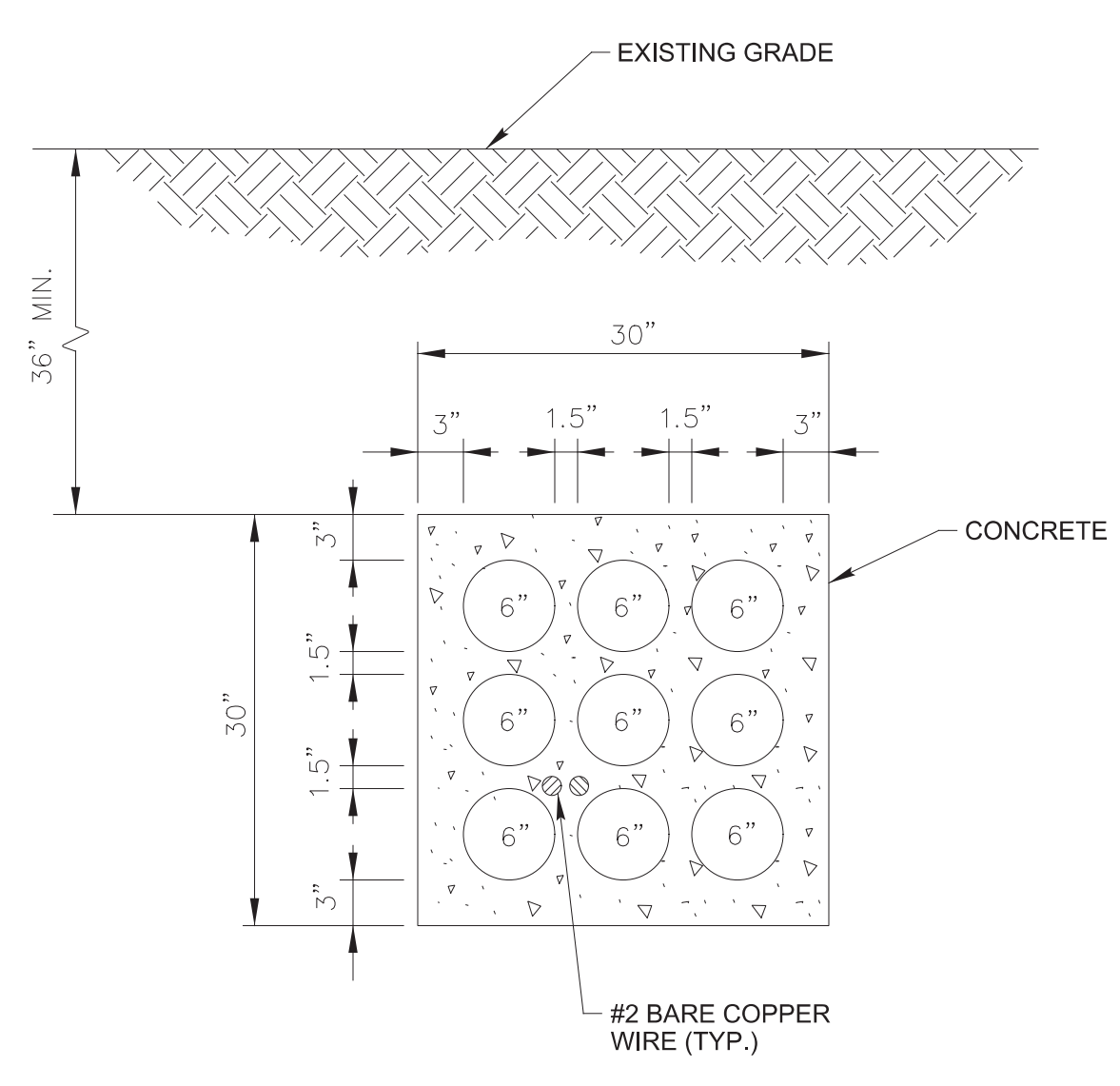


TYPE B9

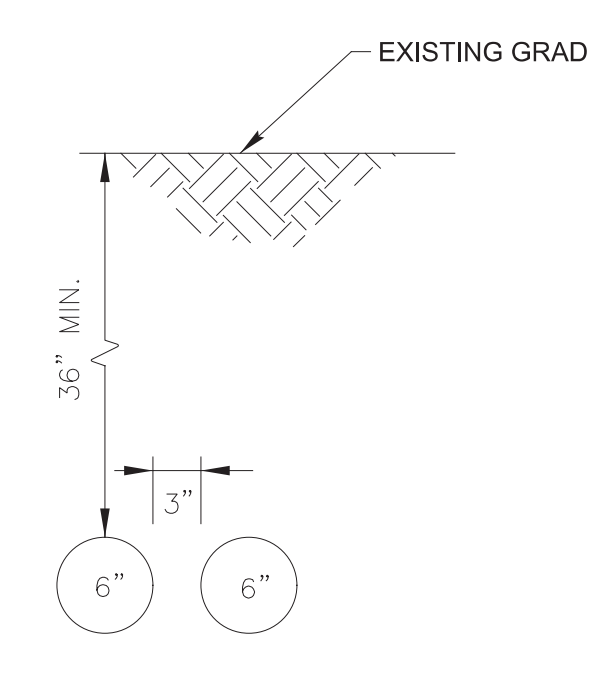


TYPE B5

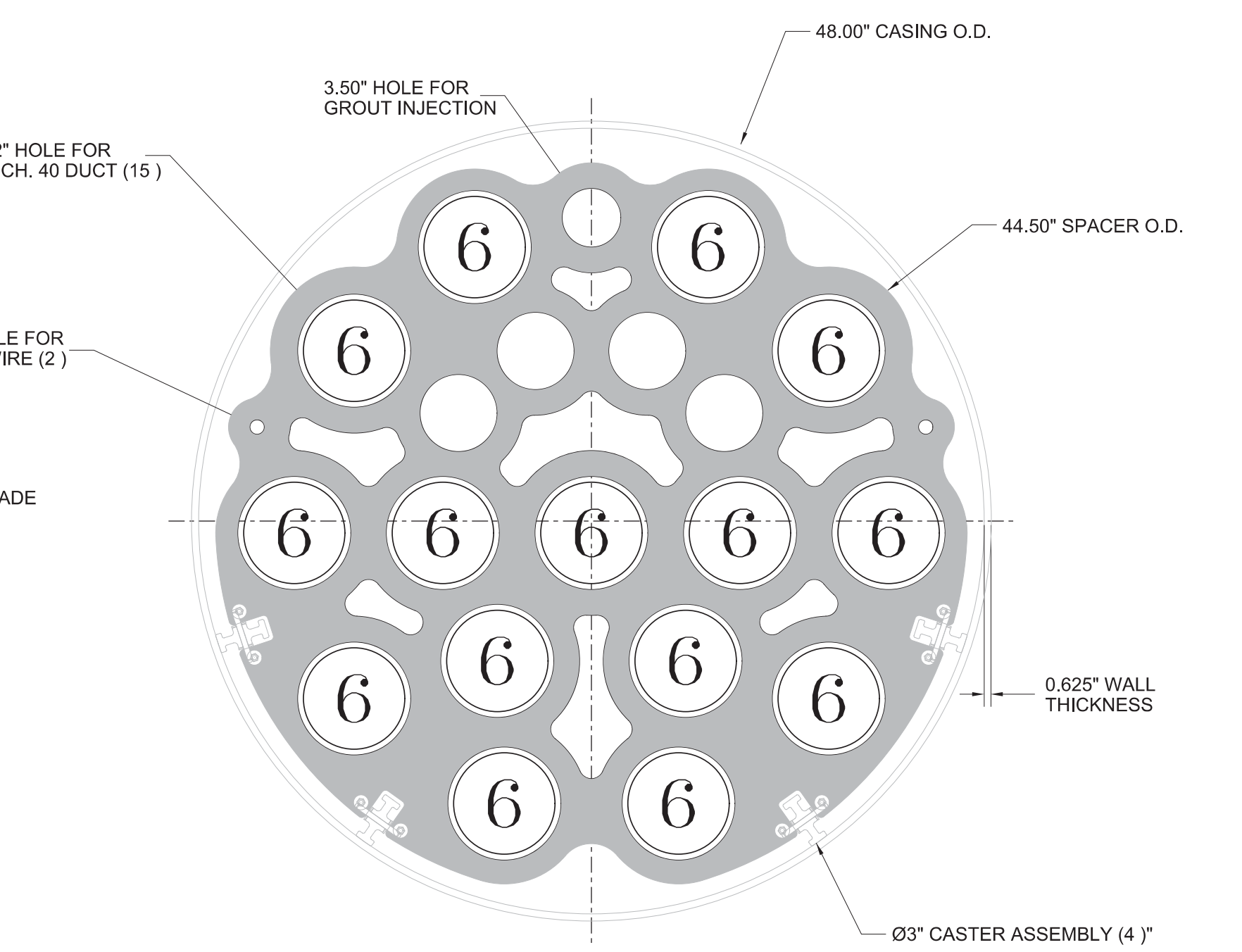
DUCT BANK DETAILS



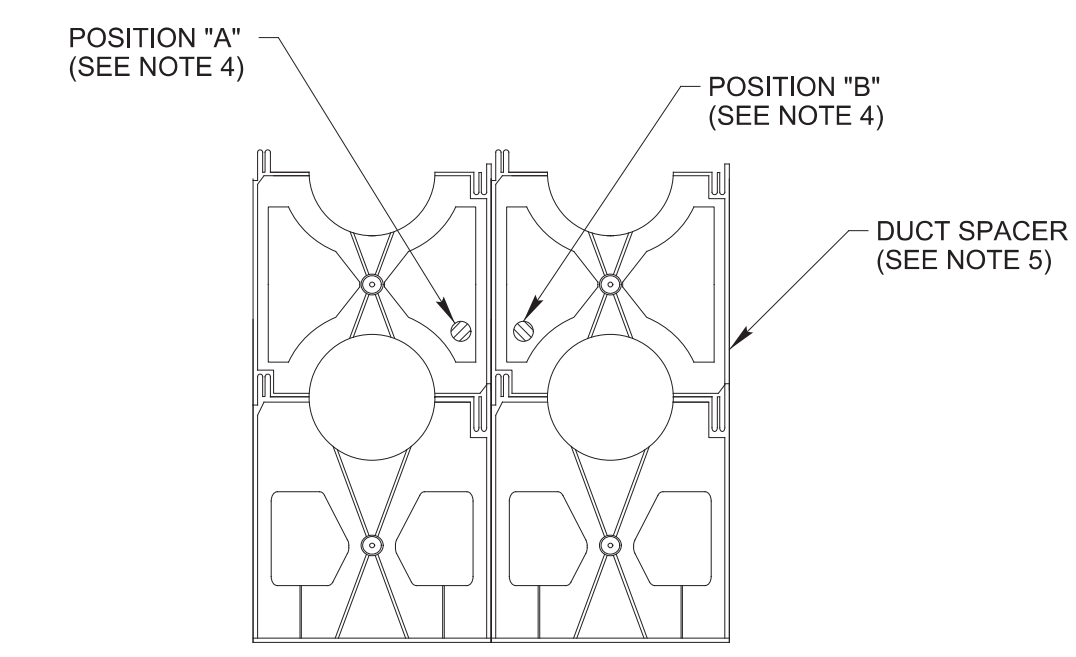
TYPE B6



TYPE B8



15 EA. 6" BORE SPACER IN A 48" OD X 0.625" WALL STEEL CASING



CONDUIT SPACER (END VIEW)

- NOTES:
- ALL CONDUITS SHALL BE SIX INCH TYPE DB PVC UNLESS NOTED OTHERWISE.
 - ALL CONDUITS ARE ENCASED IN CONCRETE. MINIMUM 3500 PSI.
 - DUCTS SHOULD BE SPREAD OUT AS THEY ENTER THE MANHOLES SEPARATED FROM EACH OTHER BY 4" (OUTSIDE OF DUCT TO OUTSIDE OF DUCT).
 - ALTERNATE THE POSITION OF THE #2 BARE COPPER WIRE FROM "A" TO "B" IN THE CONDUIT SPACERS.
 - DUCT SPACERS SHALL BE INSTALLED EVERY EIGHT FEET ALONG THE DUCT ROUTE.
 - SECURE CONDUITS TO BORE SPACERS BY INSTALLING ONE OF THE FOLLOWING ON EACH SIDE OF EACH BORE SPACER AS SHOWN BY THE PHANTOM LINES:
 - 5/8" WIDE X 0.030 THICK 201 STAINLESS STEEL BANDS & BUCKLES HAVING A MIN. BREAKING STRENGTH OF 1875 LBS.
 - 3/4" WIDE POLYPROPYLENE STRAPPING HAVING A 1400 LB BREAKING STRENGTH, 7% MAX. STRETCH, & STEEL SEALS.
 - USE ONE BORE SPACER FOR EVERY 8 FEET OF ENCASED DUCT BANK.
 - THE CASING ID MUST BE SMOOTH AND FREE FROM RIDGES, PROJECTIONS AND SEAMS THAT MIGHT IMPEDE THE ROLLING OF WHEELS.

NOT TO SCALE

NO.	DATE	REVISION	BY	DWN	CHK	APR

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 DRAWN BY: LSB
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 APPROVED BY: ZAL

LYNX BLUE LINE EXTENSION
 NORTHEAST CORRIDOR LIGHT RAIL PROJECT
 CIVIL - SEGMENTS B AND C - VOLUME 5
 DUKE DUCT BANK PLANS - SEGMENT C
 DETAILS (SHEET 1 OF 2)

DATE: 06/07/17
 SHEET: CIV-B/C-1823
 DRAWING: STV_03_XX_002
 CONTRACT NO.: 3



Station	Sidewalk Elevation	Duct Elevation	Scope(H.I.) Elevation	Depth
3104+42	680.04	677.44	681.06	3.62'
3104+79	679.02	673.52	680	6.48'
3105+07	678.14	672.64	679.2	6.56'
3105+45	677.04	671.54	678.32	6.78'