

CORNELL UNIVERSITY WAR MEMORIAL PHASE 2 - RESTORATION

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ABBREVIATIONS

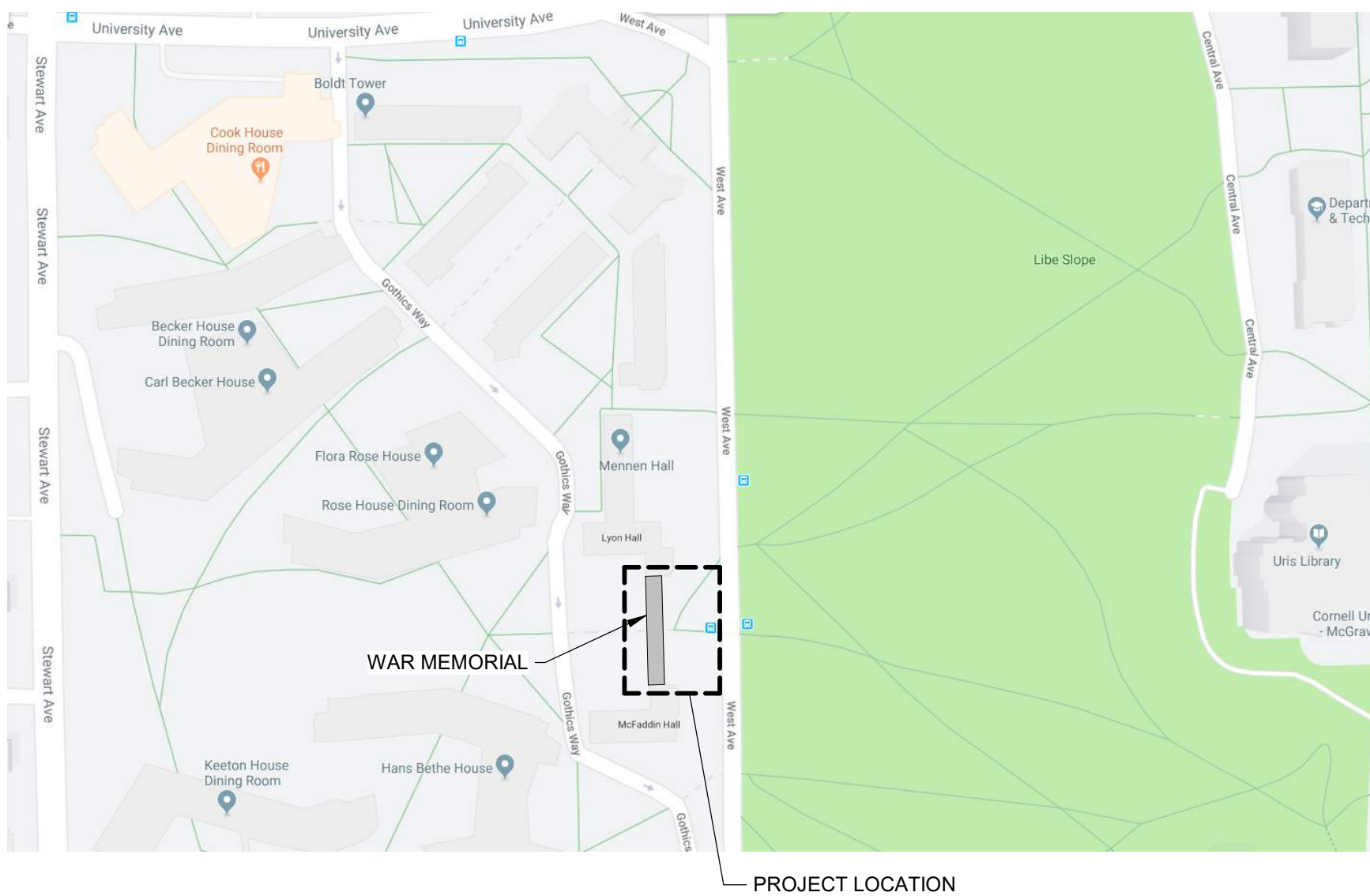
ADDL	-	ADDITIONAL	LLV	-	LONG LEG VERTICAL
AFF	-	ABOVE FINISH FLOOR	MANUF	-	MANUFACTURER
ARCH	-	ARCHITECT (URAL)	MAX	-	MAXIMUM
BM	-	BEAM	MEP	-	MECHANICAL/ELECTRICAL/PLUMBING
BOTT	-	BOTTOM	MIN	-	MINIMUM
CL	-	CENTERLINE	MISC	-	MISCELLANEOUS
CLR	-	CLEAR	NIC	-	NOT IN CONTRACT
CMU	-	CONCRETE MASONRY UNIT	NTS	-	NOT TO SCALE
COL	-	COLUMN	OC	-	ON CENTER
CONC	-	CONCRETE	OHD	-	OVERHEAD DOOR
CONT	-	CONTINUOUS	PL	-	PLATE
Ø	-	DIAMETER	PT	-	PRESSURE TREATED
DIM	-	DIMENSION	REQD	-	REQUIRED
DWG	-	DRAWING	RWC	-	RAIN WATER CONDUCTOR
EA	-	EACH	SIM	-	SIMILAR
EF	-	EACH FACE	SL	-	SLOPING/SLOPED
ELEV	-	ELEVATION	SS	-	STAINLESS STEEL
EQ	-	EQUAL	STL	-	STEEL
EW	-	EACH WAY	STRUC	-	STRUCTURAL
(E)	-	EXISTING	TOS	-	TOP OF STEEL
EX	-	EXISTING	TRANS	-	TRANSVERSE
FND	-	FOUNDATION	TYP	-	TYPICAL
FTG	-	FOOTING	UNO	-	UNLESS NOTED OTHERWISE
HORIZ	-	HORIZONTAL	VERT	-	VERTICAL
IBC	-	INTERNATIONAL BUILDING CODE	VIF	-	VERIFY IN FIELD
IN	-	INCH	W/	-	WITH
INCL	-	INCLUDE (D) (ING)	WF	-	WIDE FLANGE
LLH	-	LONG LEG HORIZONTAL	WWR	-	WELDED WIRE REINFORCEMENT

SYMBOL LEGEND

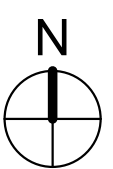
ELEVATION VIEW		DIRECTION OF ELEVATION DRAWING ID NUMBER SHEET NUMBER ON WHICH ELEVATION APPEARS
SECTION VIEW		DIRECTION OF SECTION DRAWING ID NUMBER SHEET NUMBER ON WHICH SECTION APPEARS
SCOPE NOTE		

LIST OF DRAWINGS

CS	COVER SHEET
G0.00	SITE REQUIREMENTS PLAN
G1.00	GENERAL NOTES AND SPECIAL INSPECTIONS
FRD1.00	BASEMENT FLOOR DEMOLITION PLAN
FRD1.01	FIRST FLOOR DEMOLITION PLAN
FRD1.02	ROOF DEMOLITION PLAN
FR1.00	BASEMENT FLOOR PLAN
FR1.01	FIRST FLOOR STRUCTURAL PLAN
FR1.01A	FIRST FLOOR WATERPROOFING PLAN
FR1.01B	FIRST FLOOR PAVING PLAN
FR1.02	ROOF PLAN
FR1.03	ROOF FRAMING PLAN
FR1.04	REFLECTED CEILING PLAN
FR2.00	EXTERIOR ELEVATIONS
FR2.01	CLOISTER INTERIOR ELEVATIONS AND LONGITUDINAL SECTION
FR2.02	LYON/MCFADDIN ELEVATIONS AND CROSS SECTIONS
FR4.01	DETAILS - ROOF FRAMING REPAIRS
FR4.02	DETAILS - ROOF FRAMING REPAIRS
FR4.10	DETAILS - MASONRY
FR4.11	DETAILS - MASONRY
FR4.12	DETAILS - FLAGPOLE
FR4.13	TYPICAL DETAILS - MASONRY
FR4.14	FLAGPOLE ALTERNATE PLAN & DETAILS
FR4.20	ROOFING DETAILS
FR4.21	ROOFING DETAILS
FR4.22	TYPICAL ROOFING DETAILS
FR4.30	STAIR PLAN & DETAILS
FR4.31	PAVING DETAILS
FR4.40	LIGHTING DETAILS
FR4.50	STRUCTURAL DETAILS
FR4.60	SNOW MELT ALTERNATE PLAN & DETAILS
FR4.61	SNOW MELT ALTERNATE PLAN & DETAILS
E001	PH.2 ELECTRICAL SYMBOLS, NOTES, AND DETAILS
E101	PH.2 BASEMENT TUNNEL ELECTRICAL REMOVAL PLANS
E200	PH.2 BASEMENT TUNNEL ELECTRICAL PLANS
E201	PH.2 BASEMENT TUNNEL ELECTRICAL PLANS, ENLARGED PLANS, AND SECTIONS
E220	PH.2 CLOISTER LIGHTING REFURBISHMENT
E221	FLAGPOLE LIGHTING PLANS BASE BID & ALTERNATE 4
F001	PH.2 FIRE PROTECTION TUNNEL SPRINKLER RENEWAL
M001	PH.2 MECHANICAL SYMBOLS, NOTES & SCHEDULES
M100	PH.2 DECK DRAINAGE REMOVALS, TUNNEL VENTILATION PLAN & SECTIONS
M101	PH.2 CLOISTER ROOF AND AREA DRAINAGE RENOVATIONS
M102	PH.2 ROOF DRAIN DETAILS AND DATA
M510	PH.2 SNOWMELT SITE PLAN
M511	PH.2 SNOWMELT SCHEMATIC, NOTES AND SCHEDULES
M512	PH.2 SNOWMELT HEAD END PLANS AND DETAILS
M513	PH.2 SNOWMELT INTEGRATED AUTOMATION PLANS AND DETAILS
M514	PH.2 SNOWMELT DETAILS



LOCATION PLAN
NOT TO SCALE



No. Date Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

COVER SHEET

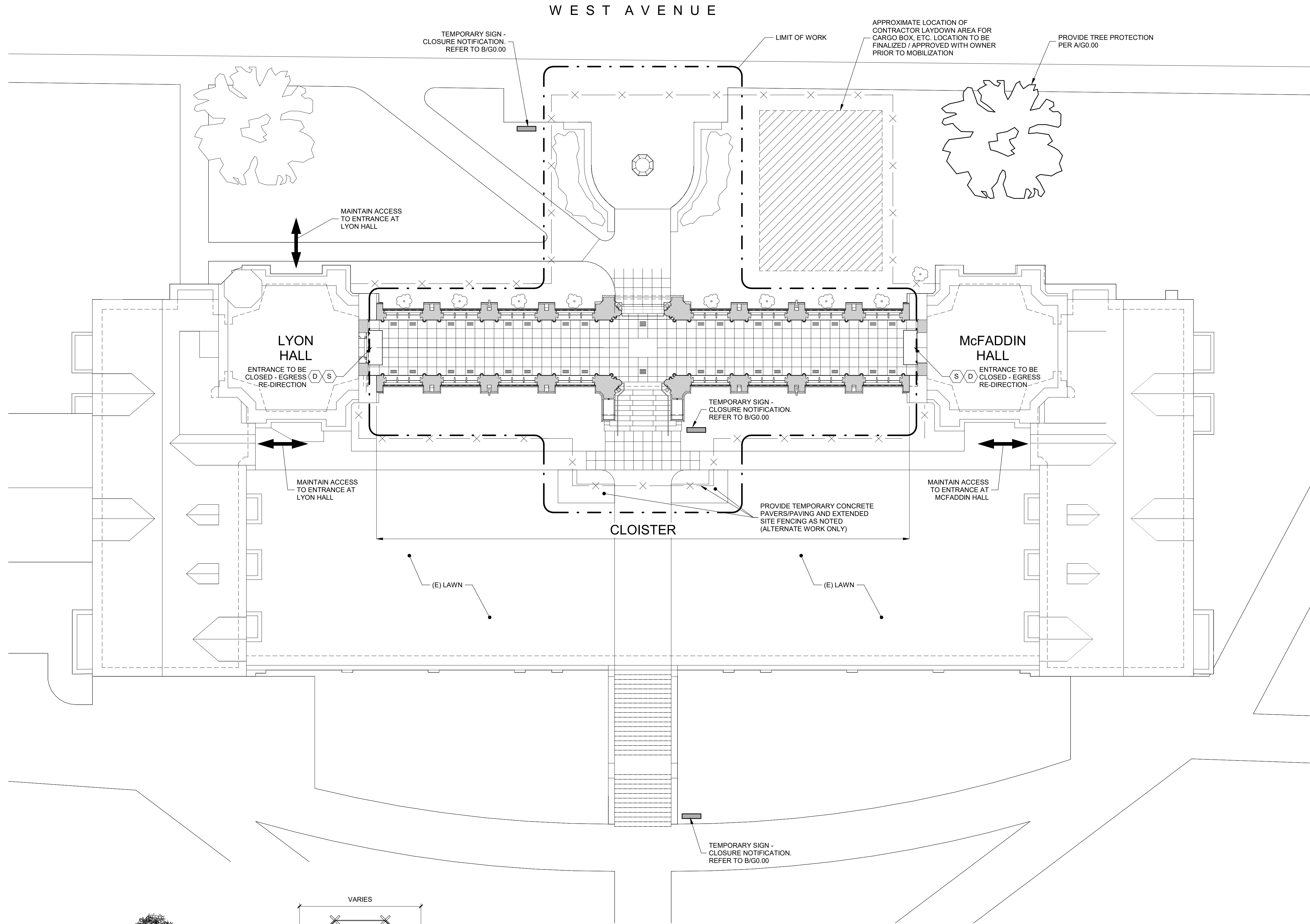
Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

CS

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SITE LOGISTICS NOTES

1. ACCESS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ACCESS TO ALL WORK AREAS. INTERIOR ACCESS TO WAR MEMORIAL BASEMENT TO BE LIMITED TO ADJACENT STAIRCASES WITHIN MCFADDIN OR LYON HALLS.
2. SCAFFOLDING: SCAFFOLDING ACCESS IS TO BE SECURED FROM UNAUTHORIZED USE AT THE END OF EACH WORK DAY TO THE LEVEL THE OWNER DEEMS APPROPRIATE.
3. SITE SECURITY: SIGNAGE AND BARRICADES TO PREVENT ACCESS TO WORK AREAS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SITE SECURITY MEASURES SHALL BE APPROVED BY THE OWNER AND MONITORED ON A DAILY BASIS.
4. BUILDING OCCUPANCY: THE ADJACENT BUILDINGS WILL BE OCCUPIED DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE SCHEDULING OF ALL WORK ACTIVITIES DIRECTLY IMPACTING THE OWNER'S USE OF THE BUILDINGS TO FACILITATE THE ISSUANCE OF NECESSARY NOTIFICATIONS, RELOCATION OF EQUIPMENT / PERSONNEL, ETC.
5. FIRE: UNRESTRICTED ACCESS TO ALL FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED DURING THE COURSE OF CONSTRUCTION.
6. PATHS AND WALKWAYS: ALL PATHS / WALKWAYS IN WORK AREAS SHALL BE MAINTAINED FOR USE BY THE OWNER AT THE END OF EACH WORK DAY.
7. SIDEWALKS / DRIVEWAYS / DOORWAYS: ALL SIDEWALKS, DRIVEWAY, AND MEANS OF EGRESS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION UNLESS SPECIAL PERMISSION IS OBTAINED OR UNLESS OTHERWISE NOTED.
8. PLANTINGS PROTECTION: ALL PLANTINGS IN PROXIMITY TO THE WORK SITE SHALL BE PROTECTED PER A/G0.00. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT TREES, SHRUBS, ROOTS, AND SOIL. DAMAGED TREES AND SHRUBS WILL BE REPLACED IN KIND AND REFLECT THE EXISTING SPECIES TYPE AND MATURITY.
9. SITE PRESERVATION: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE ALL SITE FEATURES, INCLUDING BUT NOT LIMITED TO LANDSCAPING AND FIXTURES, IN A CONDITION THAT MEETS OR EXCEEDS THE ORIGINAL CONDITION OF THE INDIVIDUAL ELEMENTS. REMEDYING DAMAGE WILL BE PERFORMED AT NO COST TO THE OWNER BY THE CONTRACTOR, TO THE LEVEL THE OWNER DEEMS APPROPRIATE.
10. LAWN RESTORATION: AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR IS TO RE-SOD AND/OR RESEED GRASS AREAS IMPACTED BY CONSTRUCTION ACTIVITIES UTILIZING OWNER APPROVED LANDSCAPING CONTRACTOR.
11. TEMPORARY UTILITIES: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND INSTALLATION OF THEIR OWN TEMPORARY POWER CONNECTIONS.
12. SITE CLEANUP: AT THE CLOSE OF EVERY CONSTRUCTION DAY, ALL MATERIALS, TOOLS, AND EQUIPMENT SHALL BE STORED AND SECURED BY THE CONTRACTOR IN DESIGNATED AREAS. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN DESIGNATED RECEPTACLES MANAGED BY THE CONTRACTOR. ALL WORK AREAS SHALL BE TIDED AND BROOM SWEEP OR RAKED TO REMOVE SMALL PIECES OF DEBRIS.
13. MATERIAL DISPOSAL: ALL DEMOLITION OR EXCESS RESTORATION MATERIALS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LEGALLY RECYCLED OR DISPOSED OF OFF-SITE, EXCEPT WHERE OTHERWISE INDICATED AS SALVAGEABLE.
14. DUST CONTROL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING THE SITE TO MINIMIZE THE DEVELOPMENT OF DUST. THE CONTRACTOR SHALL SUBMIT A DUST CONTROL PLAN FOR REVIEW AND APPROVAL BY THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.

SITE LOGISTICS KEY:

- - - DENOTES APPROXIMATE EXTENT OF WORK AREA.
- /// DENOTES APPROXIMATE EXTENT OF APPROVED LAYDOWN / STAGING AREAS.
- x - DENOTES APPROXIMATE EXTENT OF PERIMETER SITE FENCING (6' HIGH CHAIN LINK FENCE) TO BE PROVIDED AND MAINTAINED DURING THE COURSE OF CONSTRUCTION.
- ☁ DENOTES LOCATION OF EXISTING PLANTING.
- ☁ DENOTES LOCATION OF EXISTING PLANTING TO REMAIN AND BE PROTECTED DURING THE COURSE OF CONSTRUCTION. PROTECTION TO INCLUDE THE INSTALLATION OF TEMPORARY SITE FENCING EXTENDING DRIP LINE OF THE SPECIMEN OR AS SHOWN. REFER TO A/G0.00.
- ➔ DENOTES LOCATION OF EXISTING BUILDING ENTRANCES TO BE MAINTAINED DURING THE COURSE OF CONSTRUCTION.
- S DENOTES LOCATION OF EXISTING BUILDING ENTRANCES TO BE CLOSED DURING THE COURSE OF CONSTRUCTION. PROVIDE TEMPORARY SIGNAGE FOR EGRESS REDIRECTION. REFER TO C/G0.00.

PROTECTION PLAN NOTES:

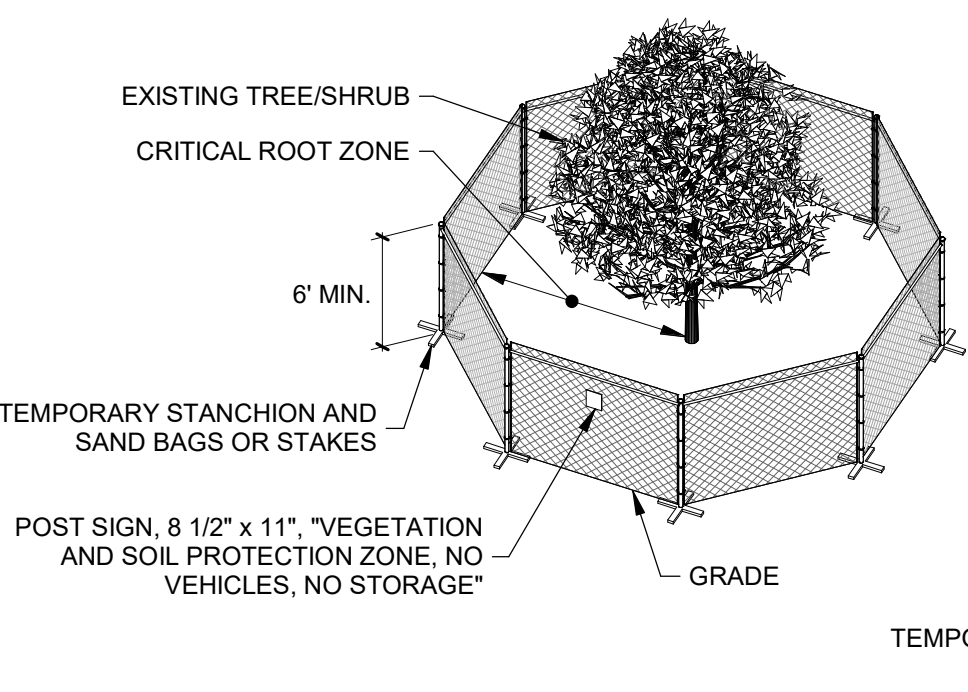
THE CONTRACTOR SHALL PREPARE A COMPREHENSIVE TEMPORARY CONTROL AND PROTECTION PLAN SUBMITTAL FOR THE PROJECT FOR REVIEW/APPROVAL BY THE ENGINEER AND OWNER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. THIS PLAN IS TO INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ACTIVITIES/MEASURES:

1. PRECONSTRUCTION DOCUMENTATION: PRIOR TO MOBILIZATION FOR CONSTRUCTION, THE CONTRACTOR SHALL VISIT THE SITE TO DOCUMENT THE EXISTING CONDITION OF THE SITE FEATURES (I.E., SIDEWALKS, PAVING, FLAG POLE, BIKE RACKS, SITE WALLS, LIGHT FIXTURES, ETC.). FOR INTERIOR FINISHES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ENGINEER TO CONDUCT A PRECONSTRUCTION SURVEY AT APPROXIMATE TO LOCATIONS WHERE WORK IS TO OCCUR TO DOCUMENT EXISTING WATER DAMAGE. DOCUMENTATION (PICTURES, VIDEO, ETC.) SHALL SERVE AS A BASELINE FOR THE REPAIR OF ITEMS DAMAGED DURING THE COURSE OF CONSTRUCTION (TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE).
2. WEATHER PROTECTION PLAN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING MEASURES (I.E., EPDM TARPS/DRAPES, SUPPORTING FRAMES, ETC.) NEEDED TO PROTECT THE INTERIOR OF THE BUILDING AND ADJACENT BUILDINGS FROM DAMAGE BY WEATHER DURING THE COURSE OF CONSTRUCTION.
3. MEP EQUIPMENT PROTECTION: THE MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT WITHIN THE TUNNEL WILL BE REQUIRED TO REMAIN OPERATIONAL DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN MEANS TO PROTECT THE EQUIPMENT FROM CONSTRUCTION DEBRIS AND DUST. PROVIDE AIR TIGHT PLASTIC TENT PROTECTIONS TO AIR INTAKE VENTS DURING WORK HOURS OF DEMOLITION SCOPE. REMOVE ALL PROTECTIONS DURING OFF HOURS.

PROTECTION PLAN KEY:

- D CONTRACTOR SHALL PROVIDE AND MAINTAIN WATER AND DUST SEALS AT DOOR PENETRATIONS WITHIN AND ADJACENT TO THE WORK AREAS WITH PLASTIC AND/OR PLYWOOD AIR-INFILTRATION BARRIERS.

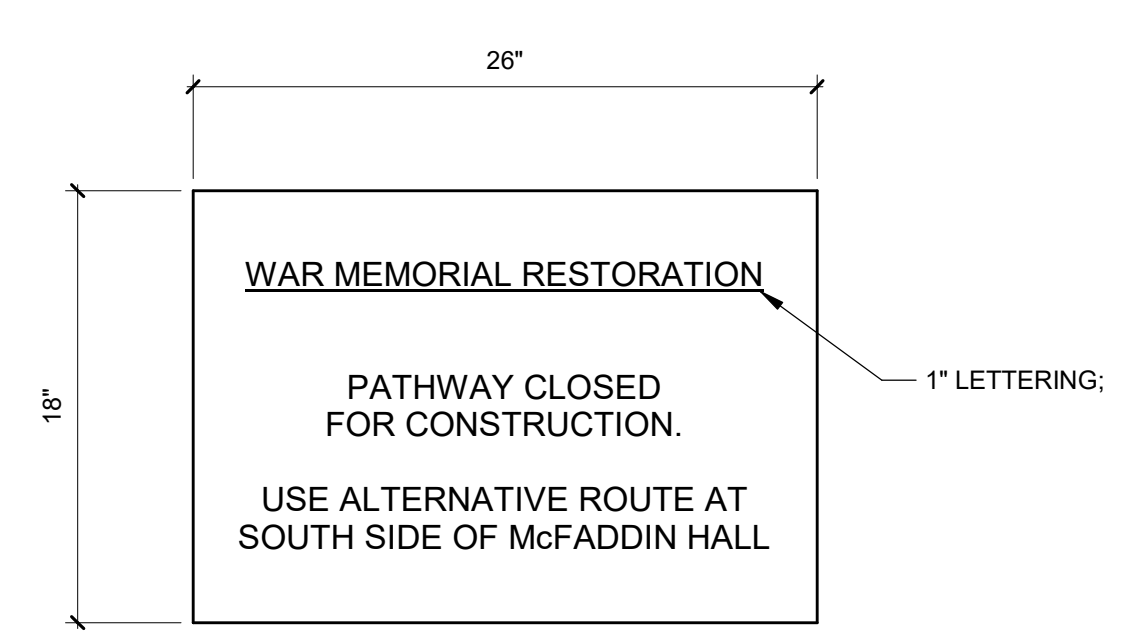
1 SITE PLAN
G0.00 3/32" = 1'-0" N



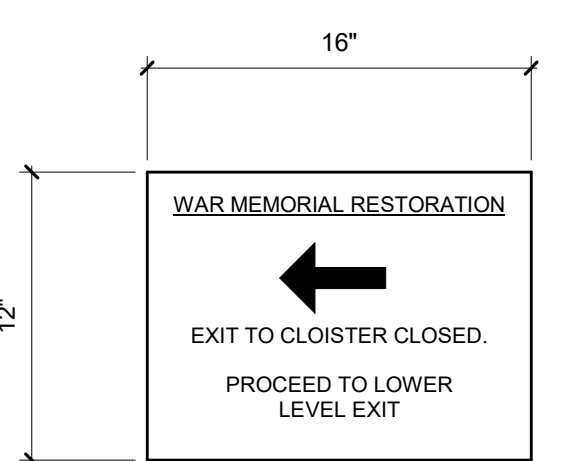
A PROTECTIVE CHAIN LINK CONSTRUCTION FENCING FOR TREES, SHRUBS, ROOTS AND SOIL DETAIL

NOTES:

1. CONTACT DIG SAFELY NEW YORK (DIAL 811) PRIOR TO INSTALLING PROTECTIVE FENCING.
2. PROTECTION ZONE FENCING SHALL BE ERECTED AT THE EDGE OF THE CRITICAL ROOT ZONE OR BEYOND PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.
3. THE PROTECTED CRITICAL ROOT ZONE OF EACH TREE SHALL EXTEND FROM THE TRUNK A MINIMUM DISTANCE OF THE DIAMETER OF THE TRUNK IN INCHES (MEASURED AT 4.5' ABOVE GROUND) MULTIPLIED BY 1.5 FEET OR 5' OUTSIDE OF DRIP LINE, WHICHEVER IS GREATER.
4. CHAIN LINK FENCE SHALL BE MINIMUM 6' HIGH ON ALL SIDES.
5. FENCE SHALL BE SUPPORTED BY VERTICAL POSTS WITH TEMPORARY STANCHIONS AND SAND BAGS.
6. NO VEHICULAR TRAFFIC, STOCKPILING OF MATERIALS OR STORAGE OF EQUIPMENT SHALL BE ALLOWED WITHIN THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE PROJECT MANAGER.
7. FENCING SIGNAGE AS DETAILED MUST BE POSTED IN A VISUALLY PROMINENT LOCATION.
8. MULTIPLE TREE FENCE LAYOUT PREFERRED OVER FENCING EACH TREE INDIVIDUALLY.



B TEMPORARY SIGN DETAIL - EXTERIOR



C TEMPORARY SIGN DETAIL - INTERIOR



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No.	Date	Revisions
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Project Name:

Cornell University War Memorial Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

SITE REQUIREMENTS PLAN

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

G0.00

GENERAL NOTES

1.0 GENERAL

- All work shall conform to the 2020 Existing Building Code of New York State and to all other applicable Federal, State, and local regulations.
- Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
- Contractor shall coordinate openings and penetrations through the structure as shown on the Structural, Mechanical, Electrical, and Plumbing drawings. Provide additional reinforcement as required per the typical details.
- Contractor shall verify and/or establish all existing conditions and dimensions at the site.
- If the existing field conditions do not permit the installation of the work in accordance with the details shown, the Contractor shall notify the Engineer immediately and provide a sketch of the condition with his proposed modification of the details given on the contract documents.
- Where alterations involve the existing supporting structure, the Contractor shall provide shoring and protection required to ensure the structural integrity of the existing structure.
- Bracing, sheeting, shoring, etc., required to support existing buildings, sidewalks, utilities, etc., shall be designed by a Professional Engineer licensed in the State of New York, engaged by the contractor. Contractor to provide signed and sealed detailed shop drawings and calculations indicating all shoring work to be performed for submission and review.
- In no case shall heavy equipment be permitted closer than 8'-0" from any foundation wall. If it is necessary to operate such equipment closer than 8'-0" to the wall, the Contractor shall be the sole responsible party and, at his own expense, shall provide adequate supports or brace the wall to withstand the additional loads superimposed from such equipment.
- Special inspection is required of all construction delineated on the Structural drawings. The Owner shall employ a testing/inspection agency which shall provide personnel with the following minimum qualifications:
 - Certified by National Institute for Certification in Engineering Technologies (NICET), or other recognized comparable organization.
 - For inspection, sampling, testing concrete and masonry: ACI Certified Concrete Field-Testing Technician, Grade I; and Construction Inspector, Level II.
 - Submit periodic reports to Engineer during construction. Certified final inspection report summary for each division of work, submitted by a licensed professional engineer, that special inspections were performed, and that work was performed in accordance with Contract Documents.
- If initial inspections made by the Owner's testing and inspection agency reveal that any portion of the work does not comply with the Contract Documents, additional tests, inspections, and necessary repairs will be made at the Contractor's expense.
- If differences occur within or between drawings and specifications regarding materials, strength, or quantities, the better material, higher strength, and greater quantity indicated, specified, or noted shall be provided.

2.0 EXISTING CONDITIONS

- Verify and/or establish all existing conditions, locations, and dimensions of walls, slabs, framing, utilities, finishes, materials, and systems affecting the work. Notify the Engineer of any discrepancies from information indicated on contract documents prior to ordering materials. Verify clearances required for all new equipment, piping, ductwork, and related components.
- If the Contractor encounters spalls and delaminations not shown on the drawings, the Engineer should be notified immediately for direction and repair recommendations.

3.0 SELECTIVE DEMOLITION

- Where building alterations involve supporting the existing structure, provide shoring and protection to ensure the structural integrity of the existing structure. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain.
 - Contractor is responsible for determining all instances in which shoring is required. Shoring indicated in the Contract Documents may or may not constitute the extent of shoring required.
 - Shoring required to support the existing structure shall be designed by a Professional Engineer licensed in the State of New York, engaged by the Contractor. The Contractor to provide signed and sealed detailed shop drawings and calculations indicating all shoring work to be performed for submission and review.
 - The Contractor's Engineer is responsible for calculating shoring loads based on the means and methods of the shoring operation and the loads in place at that time.
 - Selective Demolition Definitions:
 - Remove:** Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or reinstalled.
 - Remove and Salvage:** Detach from existing construction, in a manner to prevent damage, and deliver to Owner/G.C.
 - Remove and Reinstall:** Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
 - Existing to Remain:** Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
 - Dismantle:** To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
 - The Contractor shall protect the existing building during all selective demolition for the duration of the construction activities.
 - Contractor to monitor vibrations at 3 locations during slab removal. The locations to be monitored are:
 - Ground floor at McFaddin Hall entrance to Cloister
 - Ground floor in Lyon Hall Memorial Room
 - On grade near center of War Memorial
- The maximum allowable vibration in Lyon Hall Shrine or McFaddin Hall is 0.25 inches per second during slab removal. Exceedance events to be reported to Owner and Engineer.
- Selectively demolish components to construct new work or repair/rehabilitation of existing. Only the demolition of existing components required for the installation of the new work shall be done unless shown otherwise. Refer to and coordinate structural, mechanical, electrical, plumbing, and demolition drawings, prior to any demolition work. As per OSHA regulations, prepare and submit to the Engineer a survey report of the conditions of the framing, floors, and walls, etc. Adjacent structure where occupants may be exposed to construction activities, are to be similarly surveyed, reported, and submitted.
 - Patch, repair, or replace existing finishes and materials disturbed during selective demolition. Repairs or replacement shall match adjacent existing, and/or new finish materials and meet the approval of the Engineer/Architect, U.N.O.
 - Remove finishes from existing construction and expose existing construction as required. Notify the Engineer of any deterioration or cracking of the existing construction prior to proceeding with any affected work.
 - Contractor is to coordinate with Structural and MEP drawings to establish the phasing of slab removal and replacement.
 - Coordinate size of openings with tolerances required for stairs, utilities, etc.
 - Do not cut openings in beams, columns, walls, or footings without the approval of the Engineer before field cutting the opening.

4.0 CONCRETE

- Concrete shall be reinforced, detailed, and constructed in accordance with the Building Code Requirements for Structural Concrete (ACI 318-14) and relevant supporting ACI standards.
- All concrete shall have minimum 28-day compressive strength as follows:
 - First floor structural deck, concrete staircase, sidewalks and footings: 5,000 psi
 - Basement mechanical pads: 4,000 psi
- Air Entrainment to be 6% +/- 1.5% in all concrete work.
- Galvanized (Zinc-Coated) Reinforcing Steel: ASTM A767. Use galvanized-steel or plastic coated wire ties to fasten zinc-coated steel reinforcement.
- Zinc-Coated Repair: Repair cut and damaged zinc coatings with zinc repair material according to ASTM A780.
- All hooks on reinforcement bars shown in sections and details are to be standard hooks per ACI, unless noted otherwise.
- Galvanized (Zinc-Coated) Steel Welded Wire Reinforcement: (W.W.R.) ASTM A1060. Minimum lap of W.W.R. shall be 12 inches.
- Placing of concrete shall not start until the placement of reinforcing has been approved by the Owner's inspection agency.

- The following minimum concrete cover shall be provided for reinforcement placed in cast-in-place concrete (non-prestressed) U.N.O.:
 - Concrete cast against and permanently exposed to earth: 3"
 - Concrete exposed to earth or weather:
 - No. 6 through No. 18 bars: 2"
 - No. 5 bar, #W1 or D31 wire, and smaller: 1.5"
- All inserts shall be galvanized or stainless steel.
- Contraction joint spacing in slab on grade is as follows U.N.O. on drawings:
 - Contractor is to submit proposed layout for review by Engineer before placing slab on grade (not structural slab).
 - Provide maximum spacing 2.5 x slab thickness (in feet) with a maximum aspect ratio of 1.5.
- Provide Special Inspections for all concrete construction and related work in compliance with IBC 2018 – Chapter 17 – "Special Inspections and Tests".

5.0 MASONRY

- Masonry has been designed in accordance with the Building Code Requirements for Masonry Structures (TMS 402-16) and shall be constructed in accordance with Specifications for Masonry Structures (TMS 602-16), except where otherwise modified by these General Notes and Specifications.
- Replacement Stone: Sizes, profiles, engravings, inscriptions, and exposed surface finishes shall match the existing / original stone units.
 - Limestone shall be Indiana Oolitic Limestone, standard buff, and shall comply with ASTM C568. Color, finish, and grain to match existing.
 - Building stone shall be local bluestone from approved supplier. Color, finish, and grain to match existing.
- Mortar: All mortar shall conform to ASTM C270 Type N for all existing masonry.
 - Color / Profile: As approved during mockups.
- All stone anchors, dowels, and veneer ties shall be 304 stainless steel.
- Limestone repair mortar shall be single-component, cementitious, mineral based, premixed patching mortar, Jahn M70 by Cathedral Stone Products, Inc.
 - Color / Profile: As approved during mockups
- Stone adhesive for repairing limestone shall be single component, cementitious material, MasonRE Adhesive, by Cathedral Stone products, Inc.
- Injection materials for repairing cracks in limestone units shall be as follows:
 - Cracks up to 3/16 inch wide: Jahn M30 Micro Injection Adhesive
 - Cracks 3/16 to 9/16 inch wide: Jahn M40 Crack and Void Injection Grout
- Structural Adhesive for setting anchors into masonry shall be Hilti HIT-HY 270.
- Cleaning: All masonry shall be cleaned by specified methods.
- Material samples and mockups are required and shall be reviewed and approved by the Engineer prior to the commencement of work.

6.0 STRUCTURAL STEEL

- Fabrication and erection of structural steel shall conform to AISC 360-10, Fifteenth Edition of the AISC Steel Construction Manual (LRFD - Load and Resistance Factor Design), ANSI/AISC 360-16 Specification for Structural Steel Buildings, and AISC 303-16 Code of Standard Practice, except Section 4.4.1.b of the Code which shall not be applicable to this project. Section 4.4.1.b of the Code shall not imply that the approval constitutes the owner's acceptance of all responsibility for the design adequacy of any detail configuration of connections developed by the fabricator as part of his preparation of these shop drawings.
- Structural Steel:
 - ASTM A-36 for Channels, Angles, and Plates (U.N.O.)
- Steel angles and plates, along with bolts and washers, in direct contact with exterior finish masonry and all exposed structural steel, shall be hot-dipped galvanized.

7.0 STRUCTURAL STAINLESS STEEL

- Structural stainless steel has been designed in accordance with AISC Steel Design Guide 27 "Structural Stainless Steel" for all structural stainless steel, except where otherwise noted or modified by these general notes and specifications.
- Structural Stainless Steel:
 - ASTM A276, Type S30400 (304) for Beams, Tees, Channels, and Angles
- All structural stainless steel shall have the following minimum design properties:
 - Minimum Yield Strength for S30400 (304), Fy = 30 ksi
 - Minimum Modulus of Elasticity, E = 28,000 ksi for S30400.

8.0 POST INSTALLED ANCHORS

A. General Requirements:

- Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to the edge of substrate. Install anchors in accordance with spacing and edge clearances indicated on the drawings.
- Anchors shall be installed by qualified personnel in accordance with the Contract Documents.
- The installation of post installed anchors shall be in accordance with the Manufacturer's Printed Installation Instructions (MPII).

B. Adhesive Anchors:

- Adhesive anchors denoted on the structural drawings have been designed in accordance with IBC 2015, ACI 318-14 Chapter 17, and shall have been tested in accordance with ACI 308.4.
- Anchors installed into grout filled or solid masonry, hollow masonry, or multi-wythe masonry walls shall use Hilti HIT-HY 270 hybrid adhesive, U.N.O. Steel anchor element shall be Hilti Stainless HAS rod or continuously deformed steel rebar as noted.
- Provide a composite mesh screen tube for all anchors into unreinforced masonry, hollow CMU, or hollow brick walls using Hilti HIT-HY 270 hybrid adhesive according to the Manufacturer's recommendations for appropriate size screen tube.
- All anchors to be installed in accordance with ICC Report and Manufacturer's recommendations. Anchor diameter, spacing and embedment depths are noted in sections and details.
- Anchor Specifications (As noted in sections and details):
 - "Stainless HAS Rod" material shall meet the requirements of ASTM F593 CW (AISI 304/316), with HAS Stainless Steel Nut material meeting the requirements of ASTM F594, with HAS Stainless Steel Washers meeting the requirements of AISI 304 or AISI 316 conforming to ASTM A240.
- The Contractor must install all adhesive anchors according to the following criteria in order to achieve the design parameters used to determine the adhesive anchor capacity:
 - Substrate temperature at time of anchor installation shall be at least 50 degrees F.
 - Moisture condition of substrate at the time of installation shall be considered "dry".
 - All holes must be hammer drilled, no core drilling unless approved by the Engineer. If core drilling is approved, the hole must be intentionally roughened using the manufacturer's recommended roughing drill bit (Hilti Roughening tool, TE-YRT).

9.0 STRUCTURAL WOOD

- All structural dimensional lumber exterior exposed or in contact with masonry or concrete, unless noted otherwise on the drawings, shall be Southern Pine No. 2 or better, treated per AWPA standards, having the following minimum properties:
 - Fb = 1100 psi, 1000 psi, 925 psi, 800 psi, and 750 psi (for 4", 6", 8", 10", and 12" depths, respectively), Fc perpendicular = 565 psi, Fv = 175 psi, E = 1,400,000 psi.
 - Shall be treated with ACQ, to a net retention of 0.25 pcf, for above grade applications.
 - After treatment, kiln-dry preservative treated lumber to a maximum moisture content of 19%.
- All sawn lumber shall be sound, below 19% moisture content, free from warp, stamped in accordance with the American Institute of Timber Constructors's "Construction Manual", and shall be manufactured to comply with PS20 of 'American Softwood Lumber Standards'.

- All bolts are to receive washers at both ends; carriage bolts at nut side only.
- All hardware and connectors in contact with preservative treated wood shall be stainless steel.
- Keep structural wood protected during delivery, storage, handling and erection. Do not store in areas excessively high in humidity.
- Provide 2" nominal thickness full depth solid blocking for joists and rafter at ends and at supports.

10.0 SHEATHING AND WOOD DECKING

- Plywood shall be identified with the APA grade-trademark of the American Plywood Association and shall be installed in accordance with the project specifications.
- Plywood face grain shall be perpendicular to supports. Joints in plywood are to be staggered. Nailing and screwing of plywood floor/roof diaphragms shall comply with APA requirements, and unless noted otherwise, fasteners are to conform to "Fastening Schedule" Table 2304.10.1 of IBC 2018.
- Plywood for low slope roof sheathing shall be 1" tongue and groove and shall conform to APA PS-1 rated sheathing, 48/24, exterior, 48" x 96" plywood, and shall be two span continuous.
- Plywood for steep-slope roof sheathing shall be of a thickness to match existing and shall conform to APA PS-1 rated sheathing, 48/24, exterior, 48" x 96" plywood, and shall be two span continuous. Provide lumber blocking at edge supports as indicated, otherwise, use panel edge clips, tongue and groove plywood.

11.0 DESIGN LOADS

- Dead:
Dead loads vary based on actual building construction. Refer to complete set of Contract Documents for determining dead loads.
- Live:
Cloister:
Stairs:
Roof Live:
- | |
|---------|
| 100 psf |
| 100 psf |
| 20 psf |
- Snow:
Roof Snow (Steep Slope Roof):
Roof Snow (Low Slope Roof):
Ground Snow Load – Pg:
Flat-Roof Snow Load – Ps:
Exposure Factor – Ce:
Thermal Factor – Ct:
Snow Load Importance Factor – Is:
- | |
|----------|
| 25.4 psf |
| 30.2 psf |
| 40 psf |
| 30.2 psf |
| 0.30 |
| 1.20 |
| 1.00 |
- Wind: (Main Wind Force Resisting System)
Ultimate Design Wind Speed Vw:
Nominal Design Wind Speed Vw:
Risk Category:
Exposure Category:
Internal Pressure Coefficient:
Components and Cladding:
- | |
|--|
| 115 mph |
| 90 mph |
| II |
| B |
| +/- 0.18 |
| To be designed in accordance with ASCE 7-16. |

SPECIAL INSPECTION NOTES:

- Refer to required special inspections and testing per IBC 2018 – Chapter 17, AISC 360-10, Chapter N for Steel Construction for additional information.
- Refer to General Notes and Specifications for additional information regarding testing and inspection.
- Continuous Special Inspection is defined as "the full-time observation of work requiring special inspection by an approved Special Inspector who is present in the area where the work is being performed." When Continuous inspection is required, 100% of the work must be inspected and it must be inspected as the work is being performed.
- Periodic Special Inspection is defined as "the part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work." When periodic inspection is indicated, inspection of less than 100% of the work may be acceptable for certain items.
- Observe "O" is defined as Special Inspections which are required to be observed on a random basis for tasks that are more periodic in nature. Operations need not be delayed pending these inspections.
- Perform "P" is defined as Special Inspections which are required for each welded joint or member, for each bolted connection, and for each steel element. These are tasks which must be performed at each joint or member.
- Refer to IBC 2018 – Chapter 17 for reference standards and further explanation of the items in the tables below.
- Provide Continuous or Periodic Special Inspections for the following items, as required by IBC 2018 – Chapter 17 and all applicable amendments.
- Provide Continuous or Periodic Special Inspections for the following Adhesive Anchor items, as required by ESR-4144 (Hilti HIT-HY 270), ACI 308.4-11, and IBC 2018. The Special Inspector must verify the initial installations of each type and size of adhesive anchor by construction personnel on site. Subsequent installations of the same anchor type and size by the same construction personnel are permitted to be performed in the absence of the special inspector. Any change in the anchor product being installed or the personnel performing the installation requires an initial inspection.
- Any work which has been covered or otherwise made inaccessible prior to review by the Special Inspector is subject to removal or exposure, at no additional cost to the Owner.

SPECIAL INSPECTION OF CONCRETE CONSTRUCTION PER IBC 2018		
VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
1. Inspection of all reinforcing steel. Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters	-	X
2. Inspect anchors post-installed in hardened concrete members: a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. b. Mechanical anchors and adhesive anchors not defined in section a above	X	- X
3. Verify use of required design mix.	-	X
4. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	-
5. Inspect concrete and shotcrete placement for proper application techniques.	X	-
6. Verify maintenance of specified curing temperature and techniques.	-	X
7. Inspect formwork for shape, location, and dimensions of the concrete member being formed.	-	X

SPECIAL INSPECTION & QUALITY ASSURANCE OF ADHESIVE ANCHORS INSTALLED IN CONCRETE MASONRY PER ESR-4143 & ESR-4144 (Hilti HIT-HY 270) & IBC 2018		
VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
1. Anchor type.		X
2. Anchor dimensions.		X
3. Masonry type.		X
4. Masonry compressive strength.		X
5. Adhesive identification and expiration date.		X
6. Hole dimensions.		X
7. Hole cleaning procedures.		X
8. Anchor spacing.		X
9. Edge distances.		X
10. Masonry wall thickness.		X
11. Anchor embedment.		X
12. Base material temperature.		X
13. Installation torque and adherence to the manufacturer's printed installation instructions.		X

* Denotes special inspections designated as Periodic shall be required Continuously for anchors installed in horizontal or upwardly inclined orientations to resist sustained tension loads.

SPECIAL INSPECTION OF SOILS PER IBC 2018		
VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity and consistent with Geotechnical Report.	-	X
2. Verify excavations are extended to proper depth and have reached proper material.	-	X
3. Perform classification and testing of compacted fill materials.	-	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	-
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly	-	X



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Seal:



Tracy D. Marcotte P.E. - Lic. No. 101792

No. Date Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

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Drawing Title:

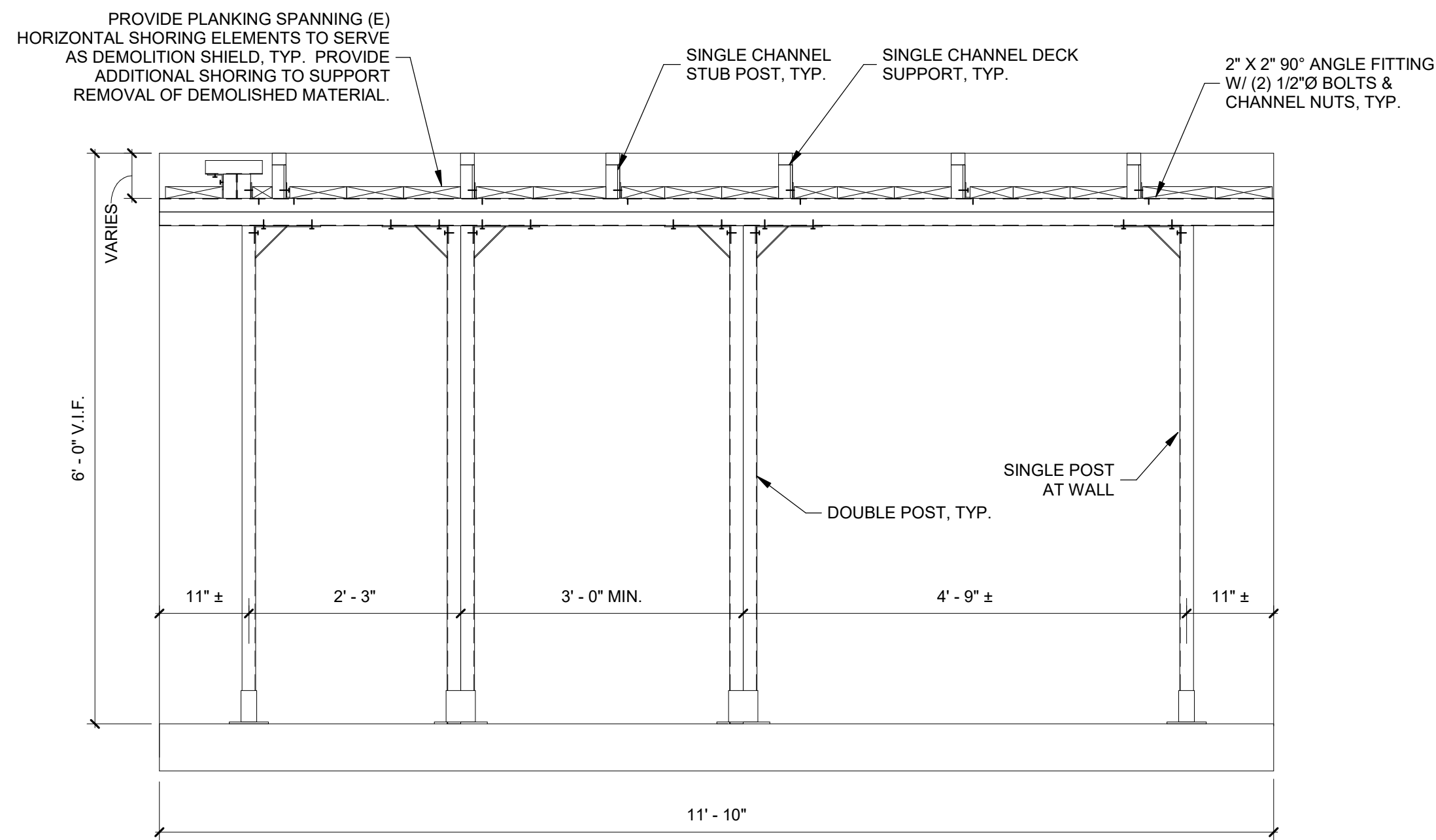
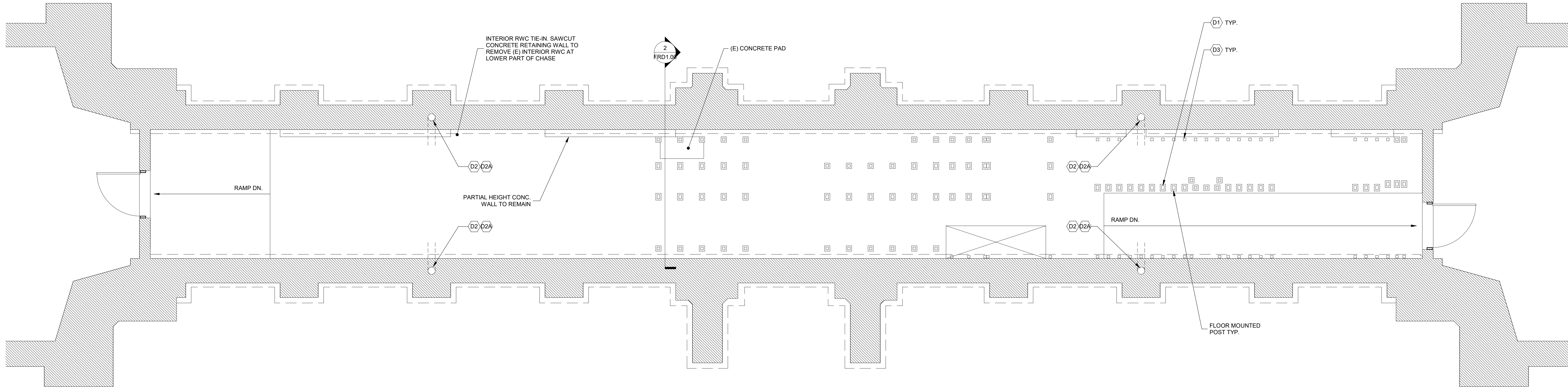
**GENERAL NOTES AND
SPECIAL
INSPECTIONS**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

G1.00



1 BASEMENT FLOOR DEMO PLAN
FRD1.00 1/4" = 1'-0"

NOTE: CONTRACTOR TO PROVIDE SHORING TO SUPPORT DEMOLITION SHIELD AT LOCATIONS WITHOUT (E) SHORING. CONTRACTOR MAY RELOCATE (E) SHORING FOLLOWING DEMOLITION OR PROVIDE NEW.

- LEGEND**
- SEE FR1.01 FOR CONCRETE REMOVAL SCOPE.
 - HORIZONTAL SHORING ELEMENTS NOT SHOWN ON PLAN FOR PURPOSE OF DRAWING CLARITY. REFER TO 2/FRD1.00 FOR TYPICAL HORIZONTAL SHORING ELEMENTS.
- DENOTES LOCATION OF EXISTING SHORING POST.
 - DENOTES WALL FOOTING EXTENTS
 - DENOTES MASS MASONRY WALL
 - D1 DENOTES LOCATION OF EXISTING SHORING SYSTEM COMPONENT TO BE REMOVED FOLLOWING CONCRETE SLAB REPAIRS.
 - D2 BASE BID: SAW CUT AND REMOVE CONCRETE/MASONRY TO REMOVE (E) INTERIOR RWC VERT. & HORIZ. RUNS. REFER TO M-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
 - D2A ALTERNATE NO. 3: CONCRETE AND (E) INTERIOR RWC TO REMAIN.
 - D3 DENOTES LOCATION OF EXISTING WALL-MOUNTED SHORING COMPONENT TO BE REMOVED.

2 SECTION - (E) SHORING DEMOLITION SHIELD DETAIL
FRD1.00

NOTE: SHORING AND DEBRIS SHIELD TO BE DESIGNED BY NY STATE LICENSED PROFESSIONAL ENGINEER. DESIGN FOR SELF-WEIGHT PLUS ALL CONSTRUCTION LOADS.



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**BASEMENT FLOOR
DEMOLITION PLAN**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

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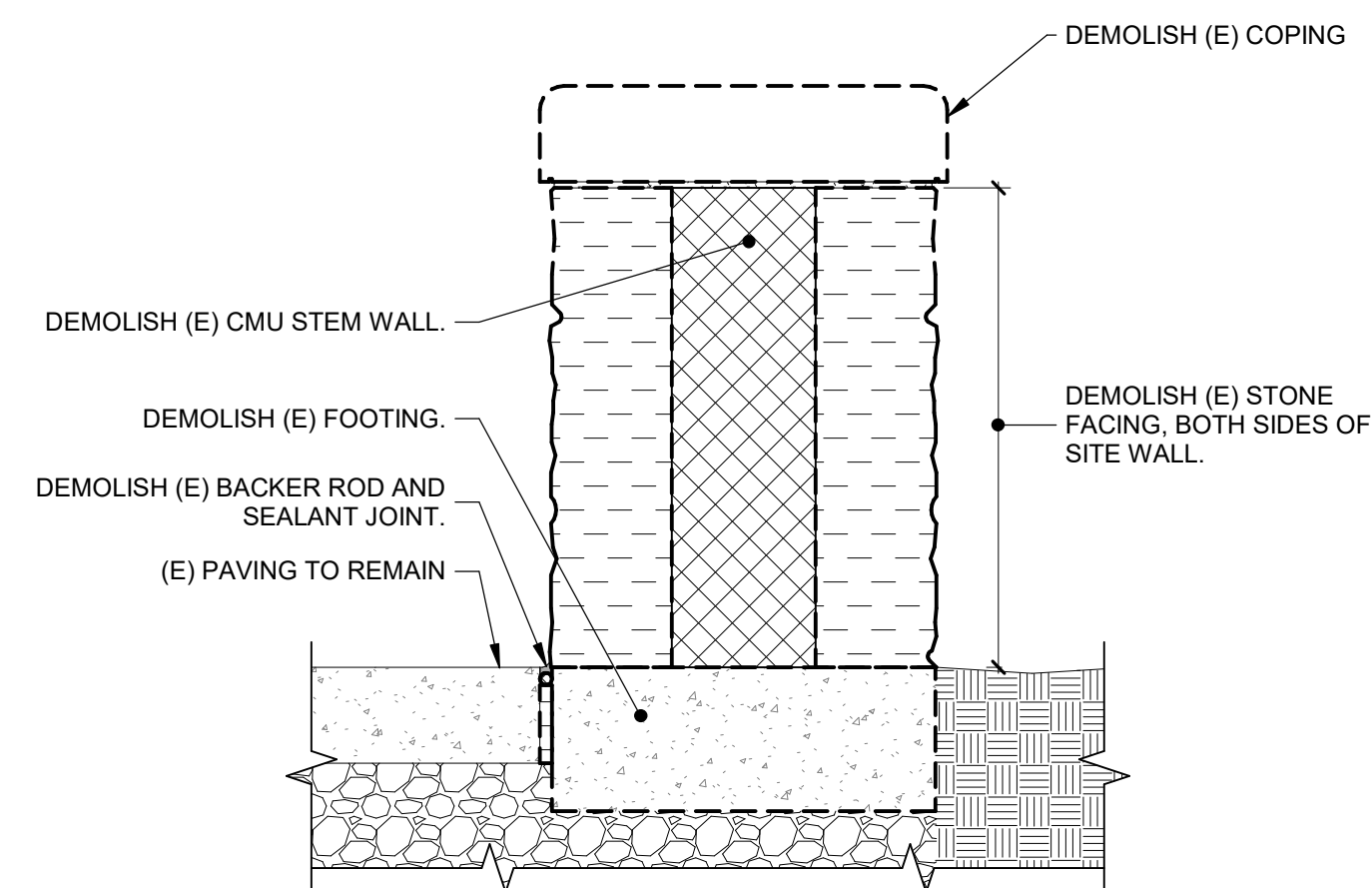
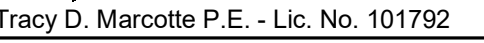
Consultant:

**Peterson Guadagnolo
Consulting Engineers PC**



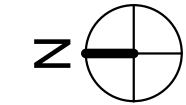
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2 SECTION - SITE WALL REMOVAL
FRD1.01 1 1/2" = 1'-0"

1 FIRST FLOOR DEMO PLAN
FRD1.01 1/4" = 1'-0"



LEGEND

- (D1) REMOVE (E) PAVING SETTING BED AND EXISTING WATERPROOFING. REFER TO FR1.01 FOR DEMOLITION OF STRUCTURAL DECK.
- (D2) DISMANTLE (E) STONE STEP AND SALVAGE FOR REINSTALLATION. REMOVE (E) SETTING BED AND EXISTING WATERPROOFING.
- (D3) BASE BID:
(E) PAVING TO REMAIN.
- (D3A) ALTERNATE NO. 1:
REMOVE (E) CONCRETE PAVING ON GRADE. REFER TO 1/FR4.30 AND 1/FR4.61.
- (D4) NOT USED.
- (D5) DISMANTLE (E) INSCRIPTED GRANITE STONE AND SALVAGE FOR REINSTALLATION.
- (D6) BASE BID:
(E) STONE STEPS TO REMAIN. REFER TO 1/FR4.30.
- (D6A) ALTERNATE NO. 1:
REMOVE (E) STONE STEPS AND TOP OF (E) CONCRETE STRINGERS AND BRICK SHIMS. REFER TO 1/FR4.60.
- (D7) STONE CAP TO REMAIN.
- (D8) BASE BID:
(E) DRY WELL TO REMAIN.
- (D8A) ALTERNATE NO. 3:
EXCAVATE VOLUME OF SOIL APPROXIMATELY 4' DEEP, 2' LONG BY 2' WIDE BENEATH DOWNSPOUT.
- (D9) BASE BID:
REMOVE (E) DOWNSPOUT AND (E) INTERIOR RWC.
- (D9A) ALTERNATE NO. 3:
REMOVE (E) DOWNSPOUT.
- (D10) BASE BID:
(E) FLAGPOLE TO REMAIN AND BE REFURBISHED IN PLACE. REFER TO SHEET FR4.12 FOR ADDITIONAL INFORMATION.
- (D10A) ALTERNATE NO. 4:
(E) FLAGPOLE TO BE RELOCATED. REFER TO SHEET FR4.14 FOR ADDITIONAL INFORMATION.
- (D11) REMOVE (E) SITE WALLS, FOUNDATIONS, AND SHRUBS.

No.	Date	Revisions
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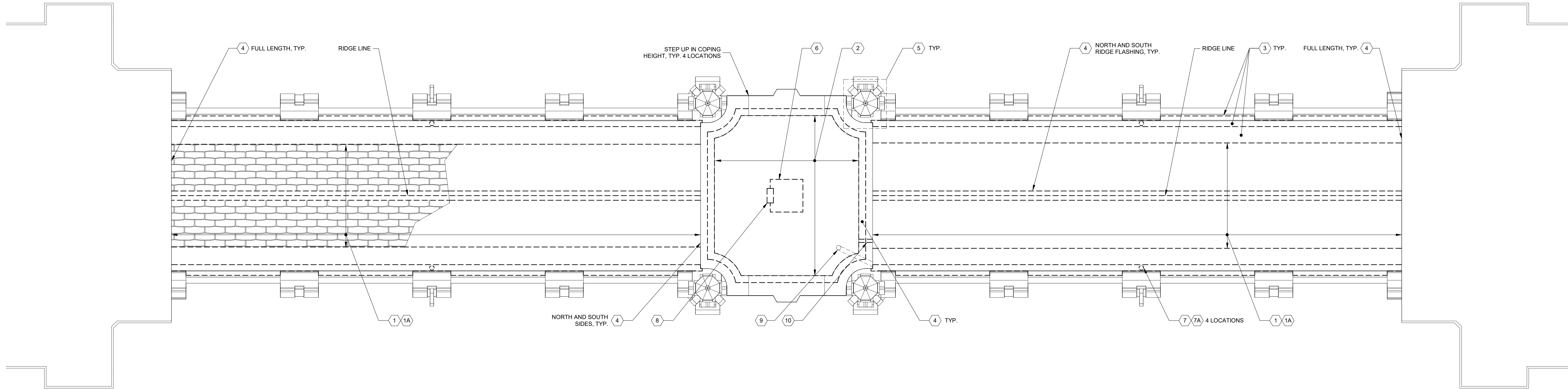
FIRST FLOOR DEMOLITION PLAN

Job Number: E2019010A

Date: 02/15/23	Scale: As indicated
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Drawing Number:

FRD1.01



1 ROOF DEMO PLAN
FRD1.02 1/4" = 1'-0"

NOTE: REFER TO FR1.03 FOR ROOF DECK DEMOLITION AND REPAIRS NOT SHOWN FOR CLARITY.

- LEGEND**
- 1 BASE BID:
DISMANTLE (E) SLATE ROOFING AND UNDERLAYMENT BACK TO ROOF DECK, CULLING ACCEPTABLE SLATES SUITABLE FOR REUSE TO SET ASIDE FOR ATTIC STOCK.
 - 1A ALTERNATE NO. 5:
DISMANTLE (E) SLATE ROOFING AND UNDERLAYMENT BACK TO SHEATHING, SALVAGING 50% OF THE SLATE FOR REINSTALLATION ON THE WEST ELEVATION SLOPES. PROVIDE EXCESS ACCEPTABLE SLATE TO OWNER.
 - 2 REMOVE (E) LOW SLOPE ROOFING TO DECK.
 - 3 REMOVE (E) METAL GUTTER LINER AND ASSOCIATED FLASHING AND SEALANT.
 - 4 REMOVE (E) METAL FLASHING.
 - 5 (E) METAL FLASHING WITHIN CHANNEL BETWEEN FINIAL AND TOWER TO REMAIN.
 - 6 REMOVE (E) ROOF HATCH.
 - 7 BASE BID:
REMOVE (E) ROOF OUTLET, DOWNSPOUT AND INTERIOR RWC.
 - 7A ALTERNATE NO. 3:
REMOVE (E) ROOF OUTLET AND DOWNSPOUT.
 - 8 REMOVE (E) LIGHTING AND WIRING.
 - 9 (E) LOW SLOPE ROOF DRAIN TO REMAIN.
 - 10 REMOVE (E) SCUPPER AND LCC DOWNSPOUT.



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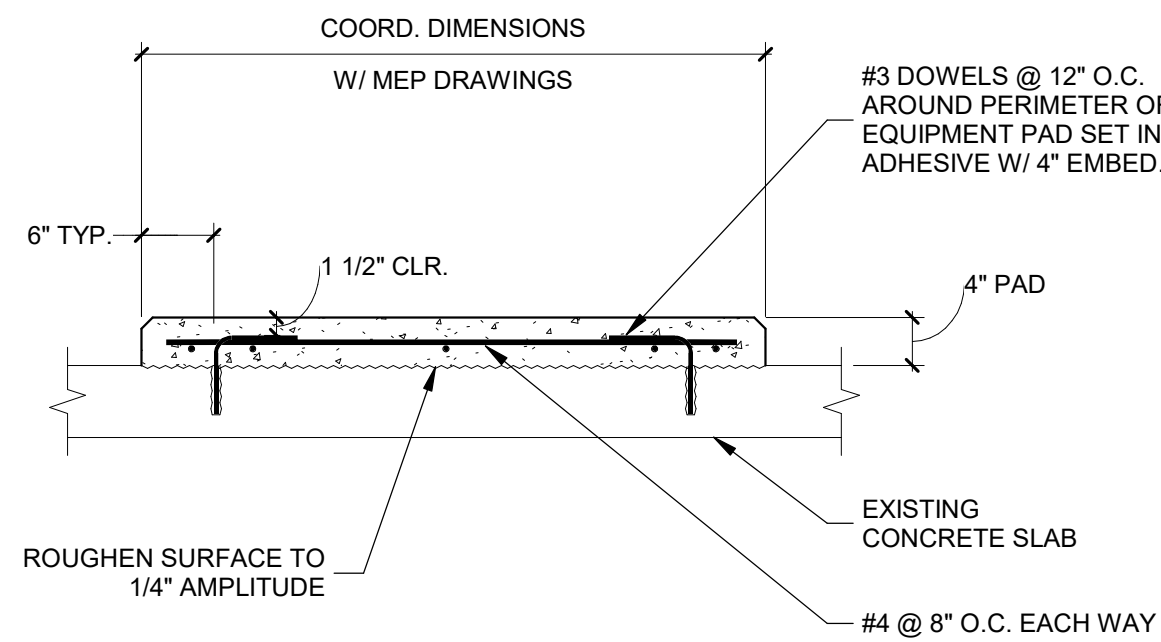
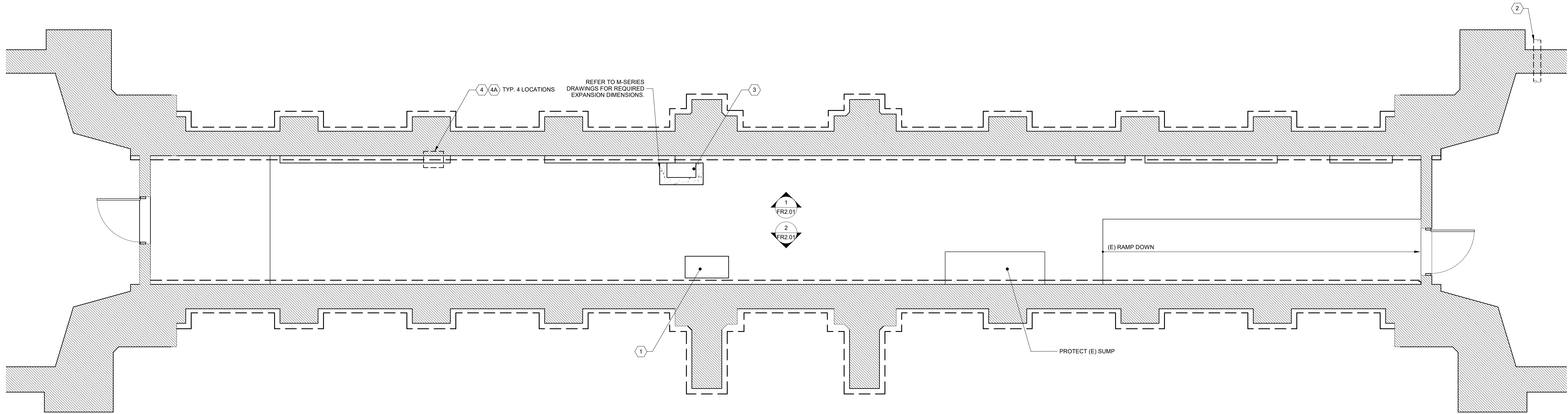
**ROOF DEMOLITION
PLAN**

Job Number: E2019010A

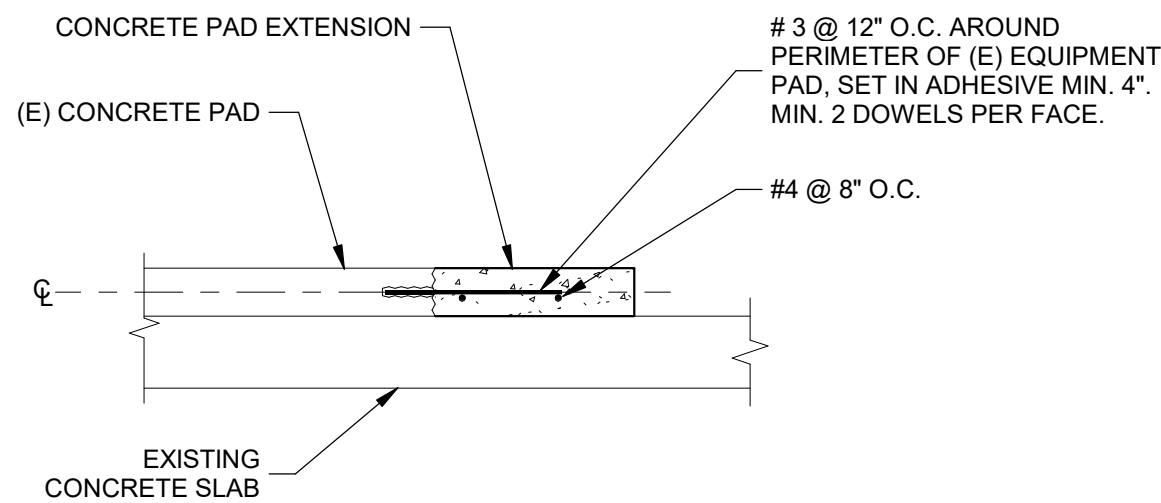
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FRD1.02



- A EQUIPMENT PAD ON SLAB ON GRADE**
N.T.S.
- NOTES:
- COORDINATE SIZE & LOCATION W/ EQUIPMENT REQUIREMENTS.
 - CHAMFER ALL EDGES 1\"/>



- B EQUIPMENT PAD EXTENSION**
N.T.S.

- 1 BASEMENT FLOOR PLAN**
FR1.00 1/4\"/>
- LEGEND**
- PROVIDE 4\"/>
 - EXCAVATE SOIL AND CORE (E) CONCRETE UTILITY TUNNEL WALL FOR CONDUIT FEED FOR EXTERIOR FLAGPOLE LIGHTING. REFER TO E-SERIES DWGS FOR ADDITIONAL INFORMATION.
 - EXPAND (E) CONCRETE PAD FOR BASE MOUNTED PUMPS. REFER TO DETAIL B/FR1.00 AND M-SERIES DWGS FOR ADDITIONAL INFORMATION.
 - BASE BID:
REPAIR CONCRETE AND MASONRY AT LOCATION OF NEW INTERIOR RWC PENETRATION. REFER TO M-SERIES DWGS FOR ADDITIONAL INFORMATION.
 - ALTERNATE NO. 3:
CONCRETE AND (E) INTERIOR RWC TO REMAIN. NO WORK REQUIRED.



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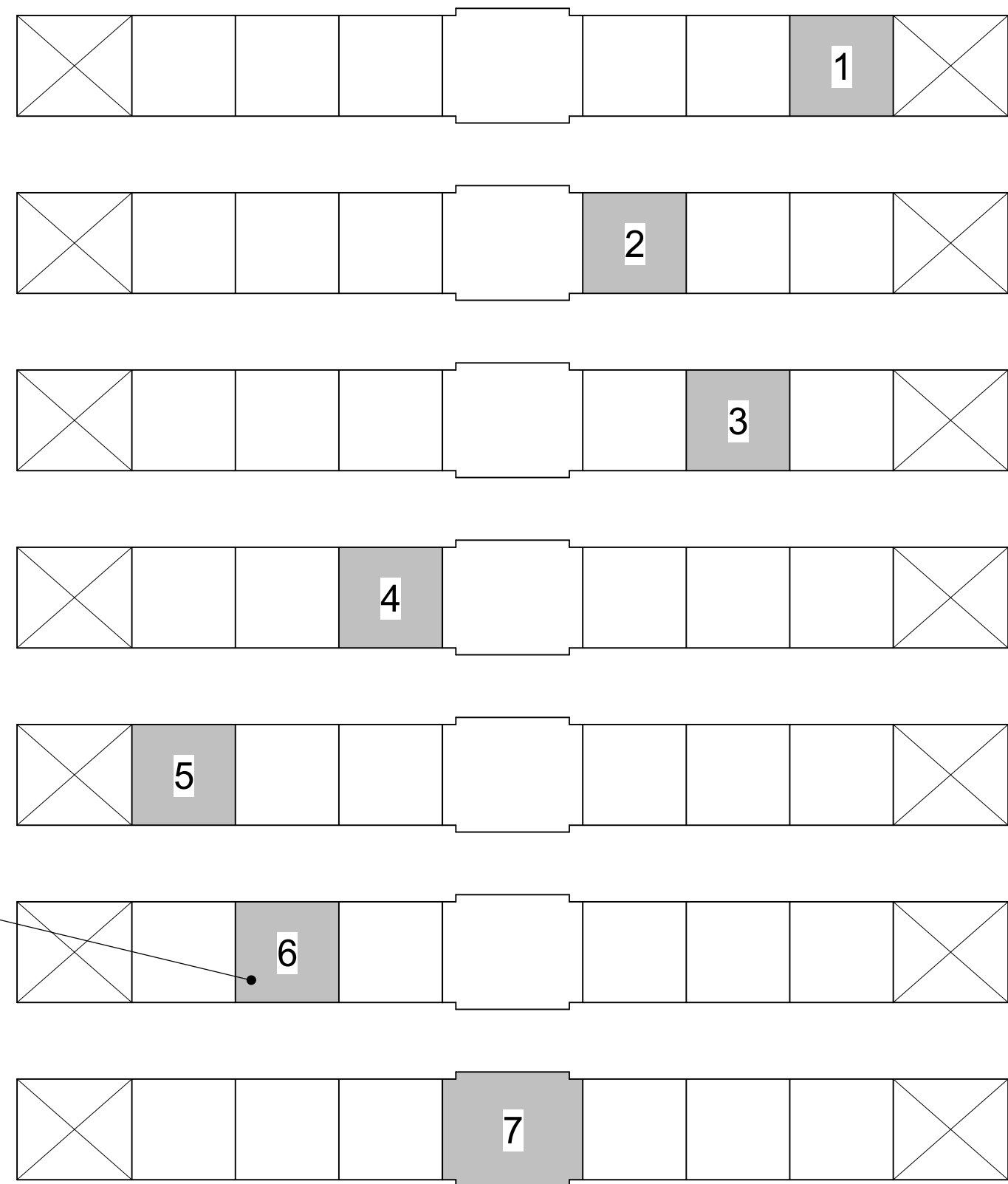
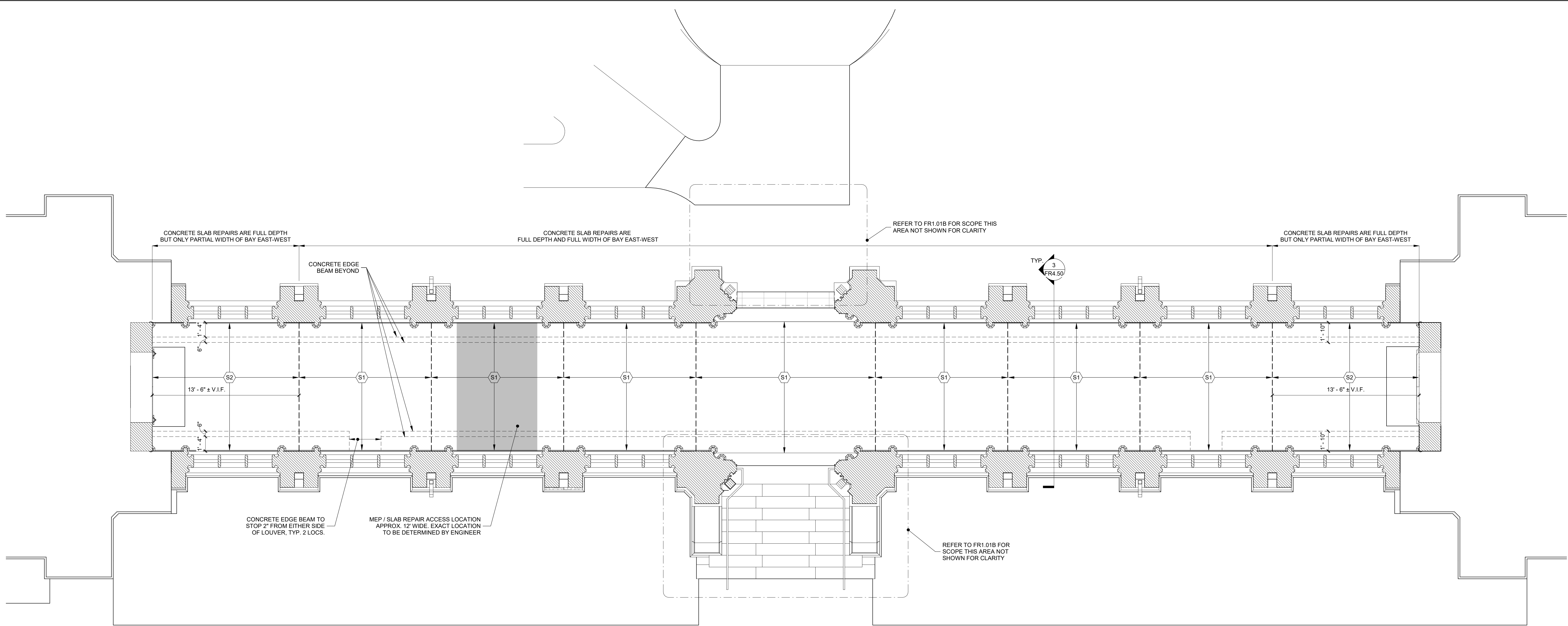
**BASEMENT FLOOR
PLAN**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

FR1.00

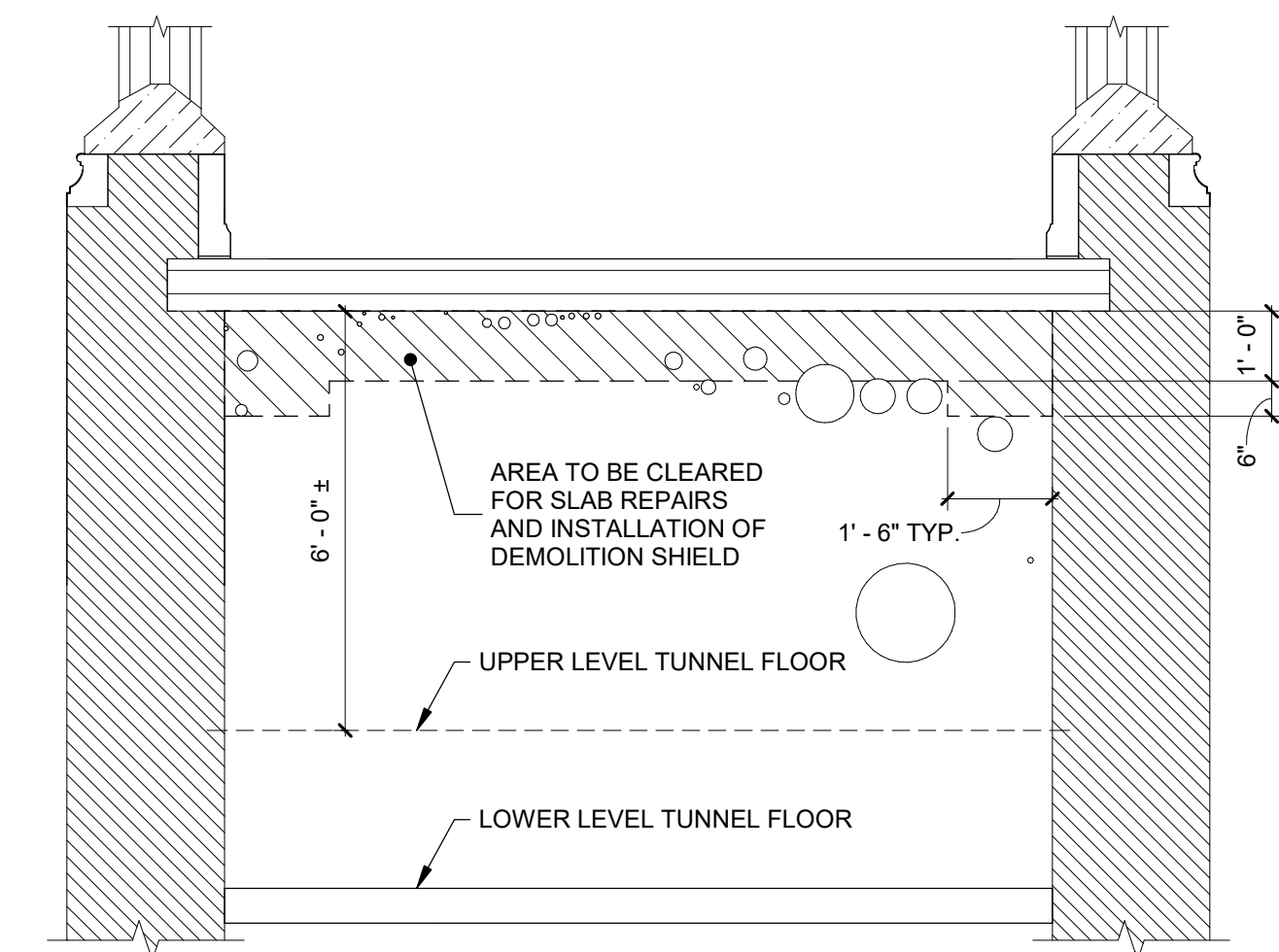


1 FIRST FLOOR STRUCTURAL PLAN

FR1.01 1/4" = 1'-0"

- RECOMMENDED REPAIR SEQUENCE**
- LAYOUT OF PARTIAL AND FULL WIDTH CONCRETE REPAIRS BY ENGINEER.
 - SURVEY SLAB FOR REQUIRED TOPPING SLAB THICKNESS AND PITCH. COORDINATE PITCH AT PARTIAL AND FULL WIDTH REPAIR AREAS.
 - REMOVE CONCRETE FOR PARTIAL WIDTH REPAIRS.
 - PLACE CONCRETE FOR PARTIAL WIDTH REPAIRS TO ORIGINAL SLAB DEPTH. PROVIDE ROUGHENED CONCRETE SURFACE FOR BOND TO TOPPING.
 - PROVIDE GALVANIC ANODES IN CONCRETE TO REMAIN. ANODES TO BE SPACED AT 24" O.C., STAGGERED.
 - REMOVE CONCRETE FOR PHASED FULL WIDTH REPAIRS. LIMIT TO 12 FT. SECTION WIDTH.
 - PROVIDE DRAINS AND CONNECTIONS FOR DE-ICING SYSTEM.
 - PLACE CONCRETE IN PHASED FULL WIDTH REPAIRS. INCLUDE TOPPING SLAB IN PLACEMENT AND TOPPING FOR PARTIAL WIDTH REPAIR AREAS. REFER TO FR1.01B FOR REQUIRED SLOPES. CONTRACTOR'S OPTION: IN AREAS OF FULL WIDTH SLAB REPLACEMENT, CONTRACTOR MAY PROVIDE A MONOLITHIC SLOPE STRUCTURAL SLAB IN LIEU OF A SEPARATE SLOPED TOPPING. REFER TO FR4.31 FOR ADDITIONAL INFORMATION.
 - PROVIDE WATERPROOFING ASSEMBLY PER FR1.01A.
 - BASE BID: PROVIDE SNOW MELT SYSTEM AND SETTING BED FOR PAVING STONES. PER E-SERIES DWGS.
 - PROVIDE NEW PAVING PER FR1.01B.

- CONCRETE REPAIRS KEY LEGEND**
- (S1) PROVIDE TEMPORARY PROTECTION IN UTILITY TUNNEL. REMOVE SECTION OF CONCRETE SLAB, 12'-0" LONG MAX. PROVIDE FORM WALLS, REINFORCEMENT AND PLACE SLAB IN RECOMMENDED OR APPROVED ALTERNATE PHASING PLAN. SEE FR4.50 FOR DETAILS.
- (S2) PERFORM PARTIAL WIDTH CONCRETE SLAB REPAIRS. ALLOW ENGINEERING REVIEW OF SLAB SECTIONS TO REMAIN FOR PURPOSES OF DELINEATING EXACT EXTENTS OF CONCRETE REMOVAL FOR PARTIAL WIDTH REPAIRS. FOR PURPOSES OF BID, ASSUME 100 SF OF PARTIAL WIDTH REPAIRS. REFER TO 4/FR4.50 FOR ADDITIONAL INFORMATION.



2 BASEMENT MECHANICAL - TYPICAL SECTION

FR1.01 3/8" = 1'-0"

- NOTES:**
- CEILING SECTION BEING CLEARED TO ALLOW FOR INSTALLATION OF SLAB WORK PLATFORM AND SHORING.
 - ACCESS FOR SLAB REPAIR AREA TO BE FROM SLAB OPENING ON EACH SIDE.
 - FORMWORK TO BE FULLY REMOVED AT THE END OF THE CONSTRUCTION PERIOD.



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Seal:

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No. Date Revisions
Project Name:
Cornell University War Memorial Phase 2 - Restoration

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FIRST FLOOR STRUCTURAL PLAN

Job Number: E2019010A
Date: 02/15/23 Scale: As indicated
Drawing Number:

FR1.01



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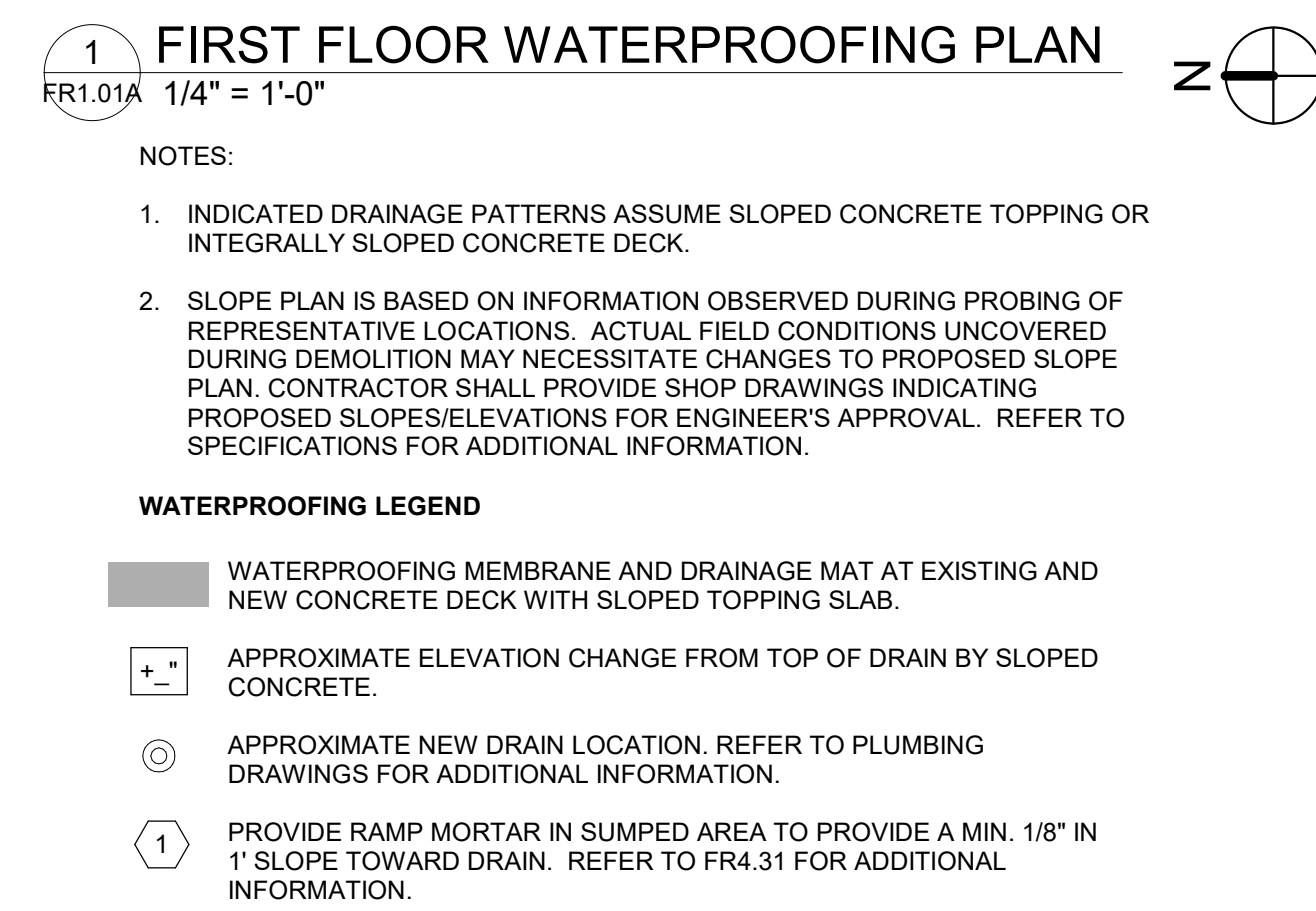
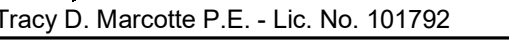
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FIRST FLOOR WATERPROOFING PLAN

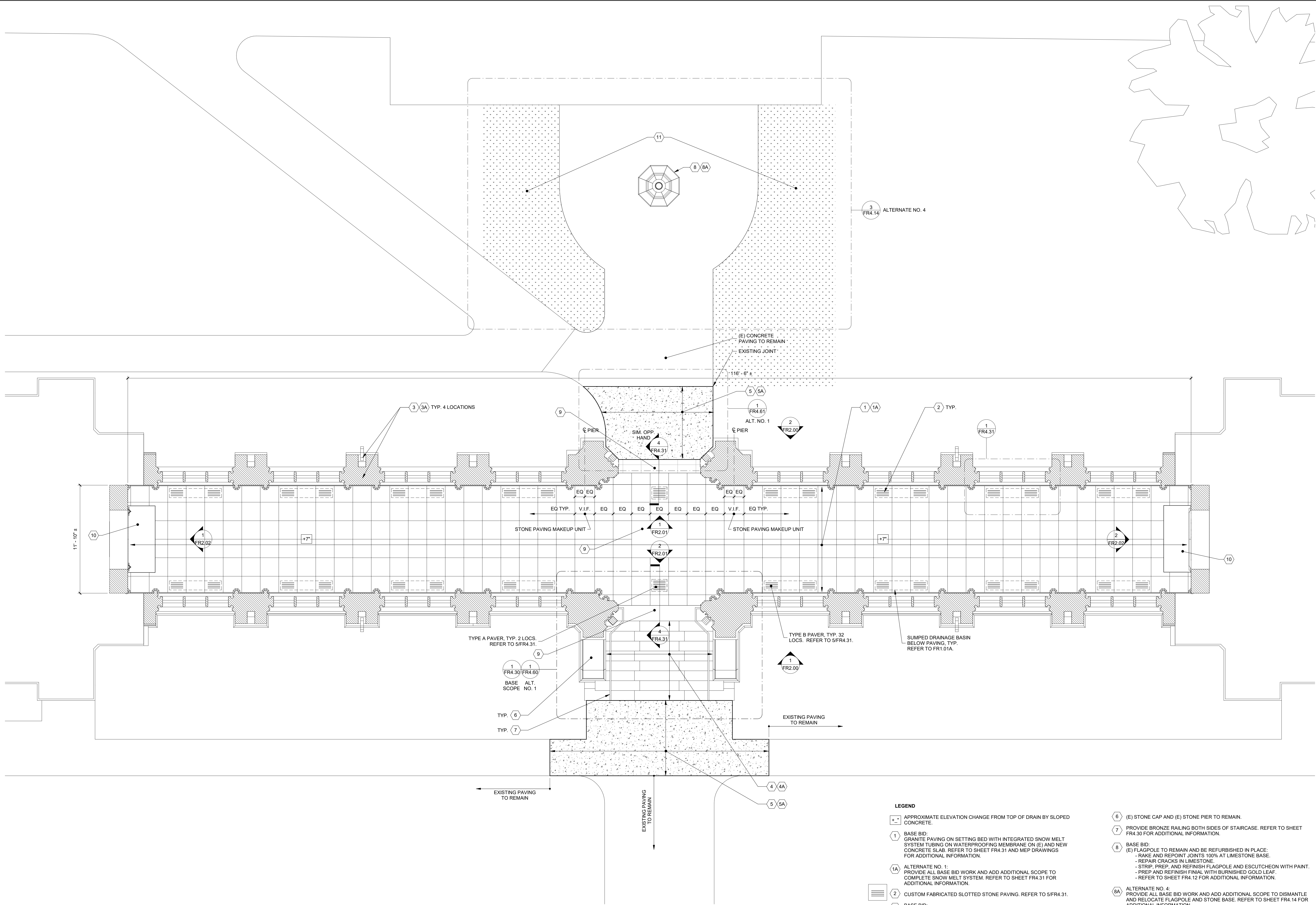
Job Number: E2019010A

Date: 02/15/23 Scale: 1/4" = 1'-0"

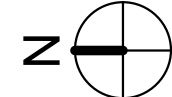
Drawing Number:

FR1.01A

2/14/2023 3:17:20 PM



1 FIRST FLOOR PAVING PLAN
FR1.01B 1/4\" = 1'-0"



LEGEND

- APPROXIMATE ELEVATION CHANGE FROM TOP OF DRAIN BY SLOPED CONCRETE.
- BASE BID: GRANITE PAVING ON SETTING BED WITH INTEGRATED SNOW MELT SYSTEM TUBING ON WATERPROOFING MEMBRANE ON (E) AND NEW CONCRETE SLAB. REFER TO SHEET FR4.31 AND MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- ALTERNATE NO. 1: PROVIDE ALL BASE BID WORK AND ADD ADDITIONAL SCOPE TO COMPLETE SNOW MELT SYSTEM. REFER TO SHEET FR4.31 FOR ADDITIONAL INFORMATION.
- 2 CUSTOM FABRICATED SLOTTED STONE PAVING. REFER TO 5/FR4.31.
- BASE BID: PROVIDE PVC INTERIOR RIWC INSTALLED IN (E) WALL CHASE. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- ALTERNATE NO. 3: PROVIDE DOWNSPOUT AND DRYWELL. REFER TO J/FR4.22.
- BASE BID: RESTORE STONE STEPS. REFER TO 1/FR4.30.
- ALTERNATE NO. 1: PROVIDE CONCRETE SUB-STEPS AND GRANITE STEPS, SNOW MELT SYSTEM AND ANCHORAGE FOR METAL HANDRAILS. REFER TO 1/FR4.60.
- BASE BID: (E) CONCRETE PAVING TO REMAIN.
- ALTERNATE NO. 1: PROVIDE CONCRETE SLAB ON GRADE WITH SNOW MELT SYSTEM. REFER TO 2/FR4.60 AND 1/FR4.61.

- (E) STONE CAP AND (E) STONE PIER TO REMAIN.
- PROVIDE BRONZE RAILING BOTH SIDES OF STAIRCASE. REFER TO SHEET FR4.30 FOR ADDITIONAL INFORMATION.
- BASE BID: (E) FLAGPOLE TO REMAIN AND BE REFURBISHED IN PLACE:
 - RAKE AND REPOINT JOINTS 100% AT LIMESTONE BASE.
 - REPAIR CRACKS IN LIMESTONE.
 - STRIP, PREP, AND REFINISH FLAGPOLE AND ESCUTCHEON WITH PAINT.
 - PREP AND REFINISH FINAL WITH BURNISHED GOLD LEAF.
 - REFER TO SHEET FR4.12 FOR ADDITIONAL INFORMATION.
- ALTERNATE NO. 4: PROVIDE ALL BASE BID WORK AND ADD ADDITIONAL SCOPE TO DISMANTLE AND RELOCATE FLAGPOLE AND STONE BASE. REFER TO SHEET FR4.14 FOR ADDITIONAL INFORMATION.
- REINSTALL INSCRIBED STONE. REFER TO 4/FR4.31.
- REINSTALL STONE STEP. REFER TO 4/FR4.31 (SIM.).
- RESTORE LANDSCAPING UPON COMPLETION OF WORK.



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Seal:



Tracy D. Marcotte P.E. - Lic. No. 101792

No.	Date	Revisions
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Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

**FIRST FLOOR PAVING
PLAN**

Job Number: E2019010A

Date: 02/15/23 Scale: 1/4\" = 1'-0"

Drawing Number:

FR1.01B



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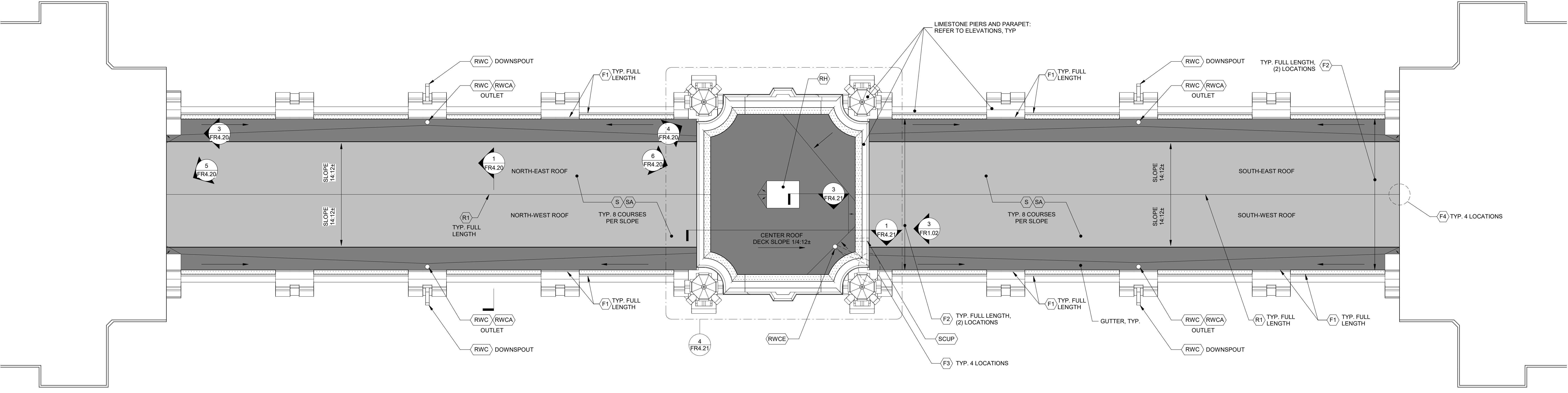


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1 ROOF PLAN
1/4" = 1'-0"



SOUTH-WEST ELEVATION ONLY:
(E) ABANDONED SCUPPER OPENING
TO BE REPAIRED, OVERFLOW
LOCATION TO BE CORED AND SET
WITH SOLID COPPER SLEEVE.

ICE DAM PROTECTION MEMBRANE
UP VERTICAL ON MASONRY MIN. 4"
AND EXTENDING ONTO ROOF DECK
MIN. 18"

STEPPED COPPER
COUNTERFLASHINGS TO BE
REPLACED PER TYPICAL DETAILS

SLATE BASE FLASHINGS TO BE
REPLACED PER TYPICAL DETAILS

SOUTH-WEST ELEVATION ONLY:
(E) DOWNSPOUT TO BE REMOVED
PER DEMOLITION DRAWINGS.

SOUTH-WEST ELEVATION ONLY:
(E) COPPER PIPING TO REMAIN
FOR CENTER ROOF DRAINAGE

CRICKET, GUTTER LINER AND
COUNTERFLASHINGS IN
CREVICE PER 4/FR4.20.



BASE SCOPE: (E) 4" SQUARE
LEAD-COATED COPPER
DOWNSPOUT TO BE REMOVED.

ALTERNATE NO. 3: (E) 4"
SQUARE LEAD-COATED
COPPER DOWNSPOUT TO BE
REMOVED AND REPLACED
WITH NEW 4" Z-T COATED
ROUND COPPER ASSEMBLY.



- NOTES:
1. PROTECT ALL EXISTING ROOF SURFACES AND FLASHINGS TO REMAIN. EXTERIOR LIGHT FIXTURES, WINDOWS, AND ROOF TOP EQUIPMENT FROM DAMAGE DURING THE COURSE OF THE WORK. PROTECT ALL INTERIOR FINISHES, FURNISHINGS, AND CONTENTS FROM DAMAGE DURING THE COURSE OF THE WORK.
 2. COORDINATE LOCATIONS OF ALL REGLETS TO BE CUT WITH ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
 3. ROOF SLOPES SHOWN ON THE ROOF PLANS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING ROOF SLOPE IN FIELD WITH ENGINEER AFTER TEAR-OFF.
 4. WHERE FLASHINGS INTERFACE WITH MASONRY, REPOINT ALL DETERIORATED MORTAR JOINTS LOCATED BEHIND EXISTING FLASHINGS PRIOR TO INSTALLATION OF FLASHINGS.
 5. DO NOT OVERLOAD THE EXISTING ROOF AREAS WITH PERSONNEL, MATERIALS, OR EQUIPMENT. DO NOT STORE MATERIALS OR EQUIPMENT ON EXISTING / NEW ROOF AREAS.
 6. COORDINATE ROOFING WORK WITH OTHER WORK TO BE UNDERTAKEN AS PART OF THE PROJECT AND ENSURE PROPER SEQUENCING OF THE WORK.
 7. ALL CRICKETS SHALL PROVIDE MIN. 1/4" IN 12" SLOPE. ACCOUNT FOR UNDERLYING DECK PITCH, AND DIRECT WATER TO OUTLETS.
 8. EXISTING ROOF SYSTEMS ARE BELIEVED TO CONSIST OF THE FOLLOWING:

- STEEP SLOPE ROOF:
SLATE SHINGLES (GRADUATED, THICKNESS VARIES FROM 1/2" TO 1")
1 LAYER OF ASPHALT SATURATED ROOFING FELT
WOOD DECKING (T&S), THICKNESS UNKNOWN
- BUILT-IN GUTTER:
LEAD COATED COPPER
1 LAYER OF ROSIN PAPER
1 LAYER OF ASPHALT SATURATED ROOFING FELT
PLYWOOD SHEATHING, THICKNESS UNKNOWN
2X WOOD FRAMING AT 18" O.C. +/-
- LOW SLOPE ROOF:
MULTI-PLY COAL TAR PITCH W/ GRAVEL
WOOD DECKING, 1-3/4" THICK
2X WOOD FRAMING AT 24" O.C.

- LEGEND:
- SLOPE TRANSITION. APPROX. LOCATION OF SLOPE CHANGES IN GUTTER FRAMING OR TAPERED INSULATION.
 - SLOPE DIRECTION.
 - (S) BASE BID: SLATE ROOF REPLACEMENT WITH NEW SLATE. PERMIT STRUCTURAL ENGINEER REVIEW OF EXPOSED DECKING. REFER TO ROOF FRAMING PLAN FOR DECKING/BLOCKING REPLACEMENT REQUIREMENTS. PROVIDE GRADUATED SLATE ROOFING AT OP UNDERLAYMENTS PER FR4.20 AND TYPICAL ROOFING DETAILS USING NEW SLATE. REFER TO 2/FR1.02 FOR OVERVIEW OF PURPLE SLATE LAYOUT.
 - (SA) ALTERNATE NO. 5: SLATE ROOF REPLACEMENT WITH SALVAGED AND NEW SLATE. PERMIT ENGINEER REVIEW OF EXPOSED DECKING. REFER TO ROOF FRAMING PLAN FOR DECKING/BLOCKING REPLACEMENT REQUIREMENTS. PROVIDE GRADUATED SLATE ROOFING AT OP UNDERLAYMENTS PER FR4.20 AND TYPICAL ROOFING DETAILS USING SALVAGED SLATE ON WEST ELEVATION SLOPES AND NEW SLATE ON EAST ELEVATION SLOPES AND RIDGE CAP. REFER TO 2/FR1.02 FOR OVERVIEW OF PURPLE SLATE LAYOUT.
 - GUTTER LINER AND LOW SLOPE ROOFING REPLACEMENT. PERMIT STRUCTURAL ENGINEER REVIEW OF EXPOSED DECKING. REFER TO ROOF FRAMING PLAN FOR DECKING/BLOCKING REPLACEMENT REQUIREMENTS. PROVIDE FLUID-APPLIED ROOFING/GUTTER LINER SYSTEM WITH PERIMETER BASE FLASHINGS AND TERMINATIONS PER FR4.20 AND FR4.21.
 - (F1) COPPER COUNTERFLASHING REPLACEMENT AT LIMESTONE COPING STONES. PROVIDE COUNTERFLASHINGS INTO PREPARED REGLETS. REFER TO 2/FR4.20.
 - (F2) COPPER FLASHINGS REPLACEMENT AT MASONRY WALLS. PERMIT ENGINEER REVIEW OF MASONRY REGLETS. ASSUME REGLETS SHALL REQUIRE DEPTH ENHANCEMENT AND CLEANING TO PREPARE FOR COUNTERFLASHINGS. PROVIDE BASE FLASHINGS INTERWOVEN WITH EVERY COURSE OF SLATE. REFER TO GUTTER LINER KEY NOTE FOR BASE FLASHINGS AT GUTTER LINER. PROVIDE COPPER COUNTERFLASHINGS, REGLETTED INTO MASONRY JOINTS PER TYPICAL ROOFING DETAILS. REPOINT MASONRY JOINTS OR LEAD TEE CAP TO SEAL WHERE DESIGNATED.
 - (F3) CONSTRICTED AREA FLASHING REPLACEMENT. PERMIT ENGINEERING REVIEW OF CONSTRICTED FLASHING WORK PRIOR TO PROCEEDING WITH COUNTERFLASHING AND FLUID-APPLIED BASE FLASHING SCOPE PER 4/FR4.20.
 - (F4) COPPER SADDLE BASE FLASHING INSTALLATION. IN LIEU OF STEPPED BASE FLASHING FOR SLATES, PROVIDE CUSTOM-FABRICATED COPPER FLASHING THAT TRANSITIONS SLOPE TO SLOPE AT WALL PER 5/FR4.20 AND 6/FR4.20.
 - (R1) SLATE RIDGE CAP. PROVIDE SLATE RIDGE CAP AT OP COPPER BASE FLASHING AND ICE-WATER PROTECTION MEMBRANE PER TYPICAL ROOFING DETAILS.
 - (RH) ROOF HATCH REPLACEMENT. PROVIDE ROOF HATCH MOUNTED TO NEW CURB. REFER TO 2/FR4.02 (ASSUME 36" BY 36"). FLASHING AND ROOFING PER LOW SLOPE ROOFING REPLACEMENT KEY NOTE.
 - (RWC) BASE BID: PROVIDE GUTTER OUTLET AND INTERNAL WATER CONDUCTOR PER 2/FR4.20, SHEET FR2.00 AND PLUMBING DWGS.
 - (RWCA) ALTERNATE NO. 3: IN LIEU OF INTERNAL WATER CONDUCTOR, PROVIDE RED COPPER GUTTER OUTLET AND Z-T COATED PLAIN ROUND COPPER DOWNSPOUT PER J/FR4.22.
 - (RWCE) CENTER ROOF OUTLET TO REMAIN. TERMINATE ROOFING TO EXIST 3" COPPER PIPE TO REMAIN PER 1/FR4.21.
 - (SCUP) CENTER ROOF SCUPPER INSTALLATION. REMOVE EXISTING SCUPPER MATERIALS, AND REBUILD MASONRY OPENING SOLID. CORE MASONRY PARAPET TO PROVIDE OVERFLOW SCUPPER. PROVIDE 3" DIA COPPER PIPE SCUPPER. TERMINATE FLUID APPLIED ROOFING TO PIPE. REFER TO 2/FR4.21.

2 PURPLE SLATES LAYOUT, TYP.
N.T.S.
NOTE: PURPLE SLATES DISTRIBUTED RANDOMLY
3-4 SLATES PER COURSE.

3 CENTER ROOF ELEVATIONS, TYP.
N.T.S.
NOTE: COUNTERFLASHINGS, GUTTER LINER DETAILS,
AND SLATE BASE FLASHINGS SIM TO FR4.21 DETAILS
FOR OPPOSITE END OF ROOFING.

4 OVERVIEW - EXISTING DOWNSPOUT, TYP
N.T.S.
NOTE: REFER TO DETAIL 3/FR4.11 FOR INFORMATION ON MASONRY REPAIRS
AT DOWNSPOUT REMOVAL LOCATIONS.

No.	Date	Revisions
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Project Name:
**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:
100% CONSTRUCTION DOCUMENTS

Drawn:	DCS
Checked:	CC
Approved:	TDM

Drawing Title:
ROOF PLAN

Job Number: E2019010A
Date: 02/15/23 Scale: As indicated

Drawing Number:

FR1.02



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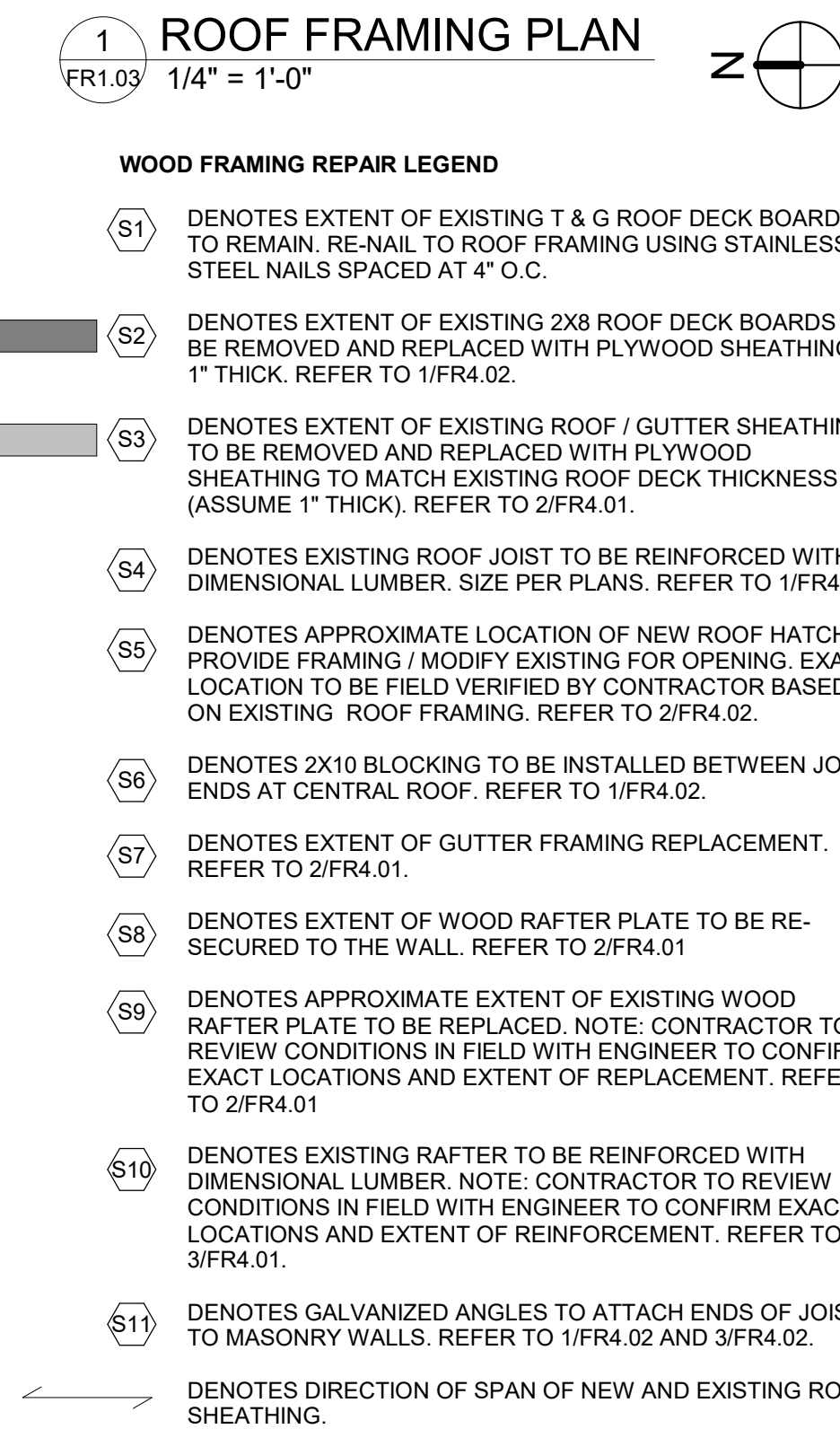
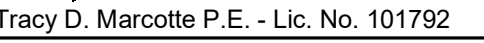
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No.	Date	Revisions
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Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

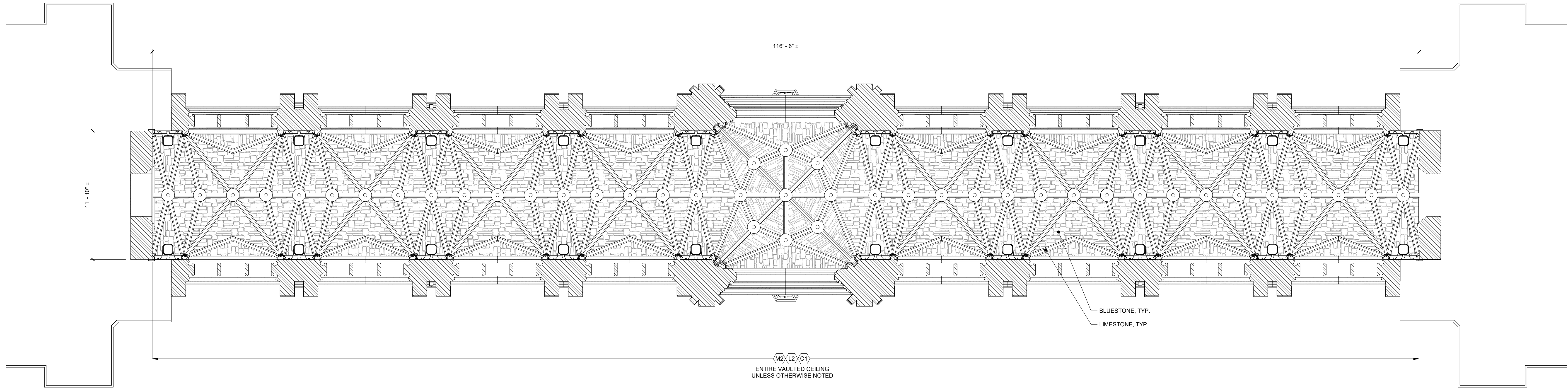
ROOF FRAMING PLAN

Job Number: E2019010A

Date: 02/15/23	Scale: As indicated
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Drawing Number:

FR1.03



1 REFLECTED CEILING PLAN
FR1.04 1/4" = 1'-0"
NOTE: ADDITIONAL CLEANING IS COVERED UNDER AN OPTION.
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MASONRY RESTORATION LEGEND

- M2 DENOTES EXTENT OF LOCALIZED STONE REPOINTING AT
VAULTED CEILING (ASSUME 100 L.F.). REFER TO DETAIL 11FR4.11.
- L2 DENOTES EXTENT OF LOCALIZED LIMESTONE REPOINTING AT
VAULTED CEILING (ASSUME 100 L.F.). REFER TO DETAIL 11FR4.11.
- C1 DENOTES EXTENT OF 100% MASONRY CLEANING:
• LIMESTONE (GENERAL): PRESATURATE WITH WATER
(UTILIZING MISTING EQUIPMENT, SOAKER HOSES, ETC.)
FOLLOWED BY LOW PRESSURE POWER WASHING.
• BLUESTONE (GENERAL): GENERAL WASHDOWN.



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Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

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Checked:

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TDM

Drawing Title:

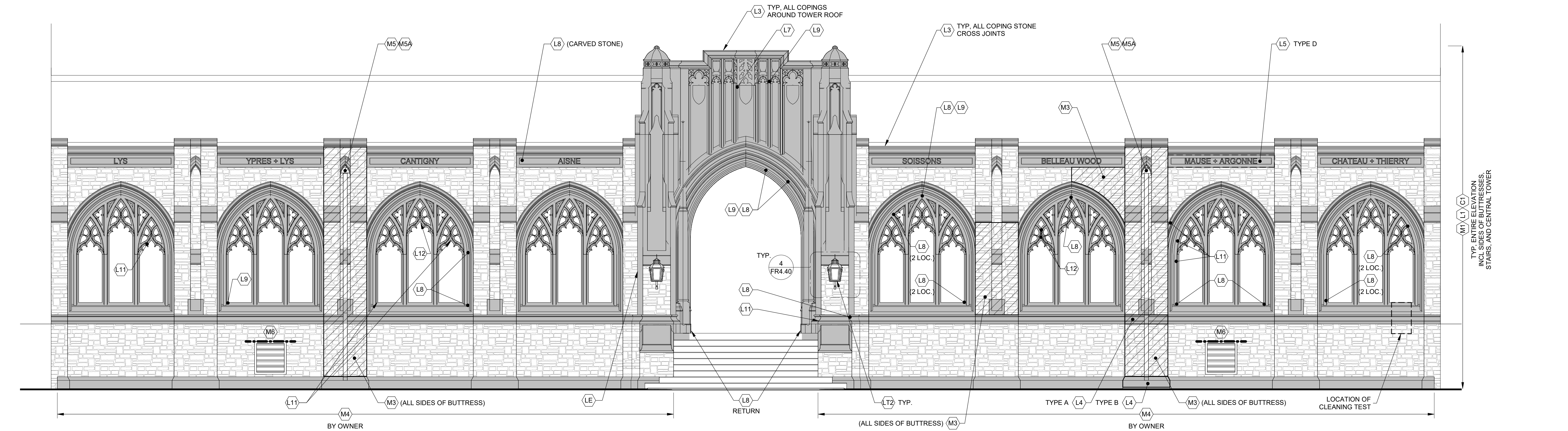
REFLECTED CEILING
PLAN

Job Number: E2019010A

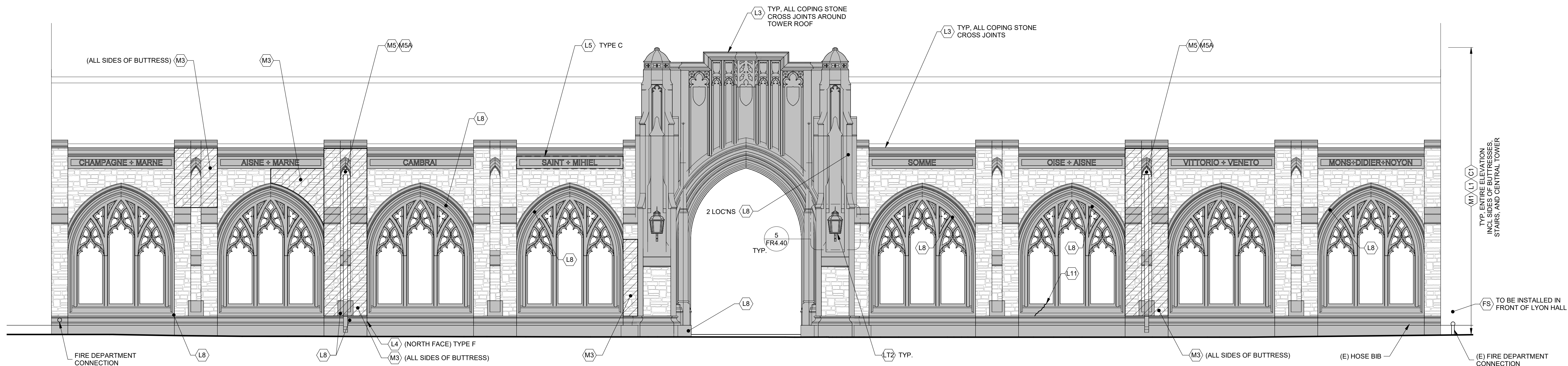
Date: 02/15/23 Scale: 1/4" = 1'-0"

Drawing Number:

FR1.04



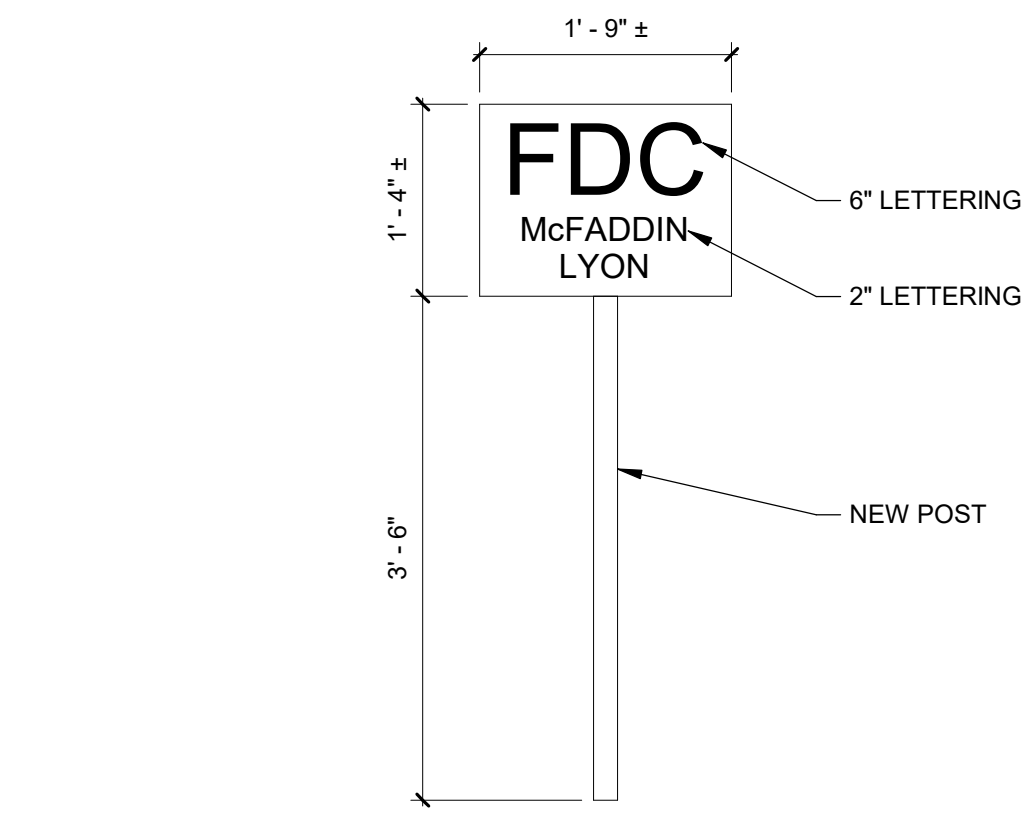
1 WEST ELEVATION
1/4" = 1'-0"
NOTE: ADDITIONAL CLEANING IS COVERED UNDER AN OPTION.
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.



2 EAST ELEVATION
1/4" = 1'-0"
NOTE: ADDITIONAL CLEANING IS COVERED UNDER AN OPTION.
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MASONRY RESTORATION LEGEND

- | | | | |
|-------|---|-------|---|
| (M1) | DENOTES EXTENT OF 100% STONE REPOINTING, INCLUDING SIDES OF TOWER AND TRACERY. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. | (L5) | DENOTES LOCATION OF DETERIORATED LIMESTONE WITH CARVED INSCRIPTION TO BE REPLACED IN KIND. REFER TO FR4.10 FOR ADDITIONAL INFORMATION. |
| (M3) | DENOTES AREA OF CRACKED STONE MASONRY NEAR (E) DOWNSPOUT. LOCALLY REPLACE CRACKED STONE UNITS. ASSUME 500 STONES TOTAL. REFER TO DETAIL 5/FR4.11. | (L7) | DENOTES LOCATION OF MISSING FINIAL TO BE REPLACED WITH CARVED LIMESTONE TO MATCH EXISTING. REFER TO DETAIL 2/FR4.11. |
| (M4) | DENOTES EXTENT OF EXISTING IVY VEGETATION ALONG WALLS TO BE REMOVED (BY OWNER). REFER TO DETAIL 6/FR4.11. | (L8) | DENOTES LOCATION OF LIMESTONE SPALL TO BE REPAIRED W/ REPAIR MORTAR. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. |
| (M5) | DENOTES LOCATION OF FORMER DOWNSPOUT PENETRATION TO BE INFILLED WITH STONE MASONRY (ASSUME 1 SF PER LOCATION). REFER TO DETAIL 3/FR4.11. | (L9) | DENOTES LOCATION OF LIMESTONE SPALL TO BE REPAIRED VIA PINS / ADHESIVE. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. |
| (M5A) | ALTERNATE NO. 3: LOCALLY INFILL W/ MASONRY AROUND NEW DOWNSPOUT. REFER TO DETAIL 3/FR4.11. | (L10) | (NOT USED) |
| (M6) | DENOTES LOCATION OF EXISTING VENT TO BE REPLACED. REPLACE LOOSE STEEL LINTEL AND LOCALLY RECONSTRUCT MASONRY AROUND VENT OPENING. REFER TO DETAIL 6/FR4.11. | (L11) | DENOTES LOCATION OF CRACKED LIMESTONE TO BE REPAIRED VIA CRACK INJECTION. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. |
| (L1) | DENOTES EXTENT OF 100% LIMESTONE REPOINTING, INCLUDING SIDES OF CENTRAL TOWER AND TRACERY. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. | (L12) | DENOTES LOCATION OF LIMESTONE TRACERY TO BE STABILIZED. REFER TO DETAIL 4/FR4.11. |
| (L3) | DENOTES LOCATION OF NEW ARMORED SEALANT JOINTS AT LIMESTONE COPINGS. REFER TO FR4.13 FOR ADDITIONAL INFORMATION. | (C1) | DENOTES EXTENT OF 100% MASONRY CLEANING: <ul style="list-style-type: none">LIMESTONE (GENERAL): PRESATURATE WITH WATER (UTILIZING MISTING EQUIPMENT, SOAKER HOSES, ETC.) FOLLOWED BY LOW PRESSURE POWER WASHING.BLUESTONE (GENERAL): GENERAL WASHDOWN. |
| (L4) | DENOTES LOCATION OF CRACKED / DAMAGED LIMESTONE TO BE REPLACED IN KIND WITH LIMESTONE. REFER TO FR4.10 FOR ADDITIONAL INFORMATION. | (L12) | DENOTES (E) HISTORIC LIGHT FIXTURE TO BE RESTORED, REPATINATE AND REFINISH METAL. PROVIDE GLASS LENSES AND RELAMP. REFER TO DETAILS 4 AND 5/FR4.40. SEE ELECTRICAL DRAWINGS FOR DETAILS ON ELECTRICAL WORK. |
| (LE) | REMOVE SURFACE-MOUNTED WIRE, ANCHORS AND PATCH HOLES. | (FS) | PROVIDE FIRE DEPARTMENT CONNECTION SIGNAGE PER DETAIL 3/FR2.00. EXACT LOCATION TBD IN FIELD BY OWNER. |



3 FIRE DEPARTMENT CONNECTION SIGNAGE
FR2.00



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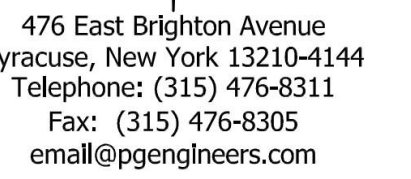


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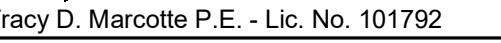


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Consulting Engineers PC**



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NOTE: ADDITIONAL CLEANING IS COVERED UNDER AN OPTION.
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.



NOTE: ADDITIONAL CLEANING IS COVERED UNDER AN OPTION.
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MASONRY RESTORATION LEGEND

- | | |
|---|--|
|  | <p>1. DENOTES EXTENT OF 100% LIMESTONE REPOINTING, INCLUDING TRACERY. REFER TO FR4.13 FOR ADDITIONAL INFORMATION.</p> |
|  | <p>6. DENOTES LOCATION OF INSCRIBED LIMESTONE DEDICATION PLAQUE TO BE REPLACED IN KIND. REFER TO FR4.10 FOR ADDITIONAL INFORMATION.</p> |
|  | <p>13. DENOTES EXTENT OF SALT DEPOSITIONS ALONG BASE OF LIMESTONE TO BE REMOVED. REFER TO DETAIL 7/FR4.11.</p> |
|  | <p>1. DENOTES EXTENT OF 100% MASONRY CLEANING:</p> <ul style="list-style-type: none"> • LIMESTONE (GENERAL), PRESATURATE WITH WATER (UTILIZING MISTING EQUIPMENT, SOAKER HOSES, ETC.) FOLLOWED BY LOW PRESSURE POWER WASHING. |
|  | <p>1. DENOTES (E) HISTORIC LIGHT FIXTURE TO BE RESTORED, REPATINATE AND REFINISH METAL. PROVIDE GLASS LENSES AND RELAMP. REFER TO DETAIL 1/FR4.40 FOR ADDITIONAL INFORMATION. SEE ELECTRICAL DRAWINGS FOR DETAILS ON ELECTRICAL WORK.</p> |

2/14/2023 3:20:41 PM

No.	Date	Revisions
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Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Assessment:

Drawing Title:

CLOISTER INTERIOR ELEVATIONS & LONGITUDINAL SECTION

Job Number: E2019010A

Date: 02/15/23	Scale: 1/4" = 1'-0"
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Drawing Number:

FR2.01



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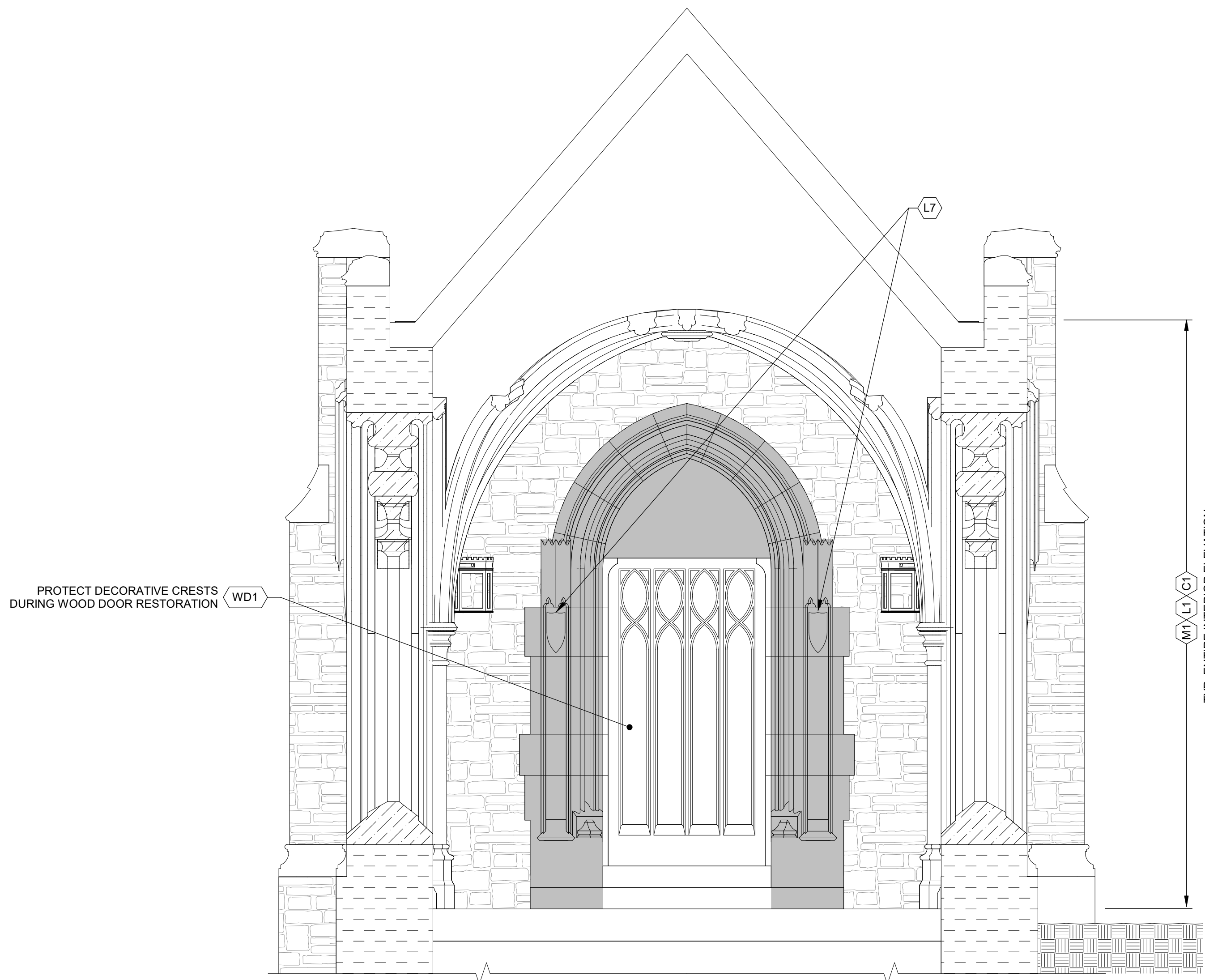


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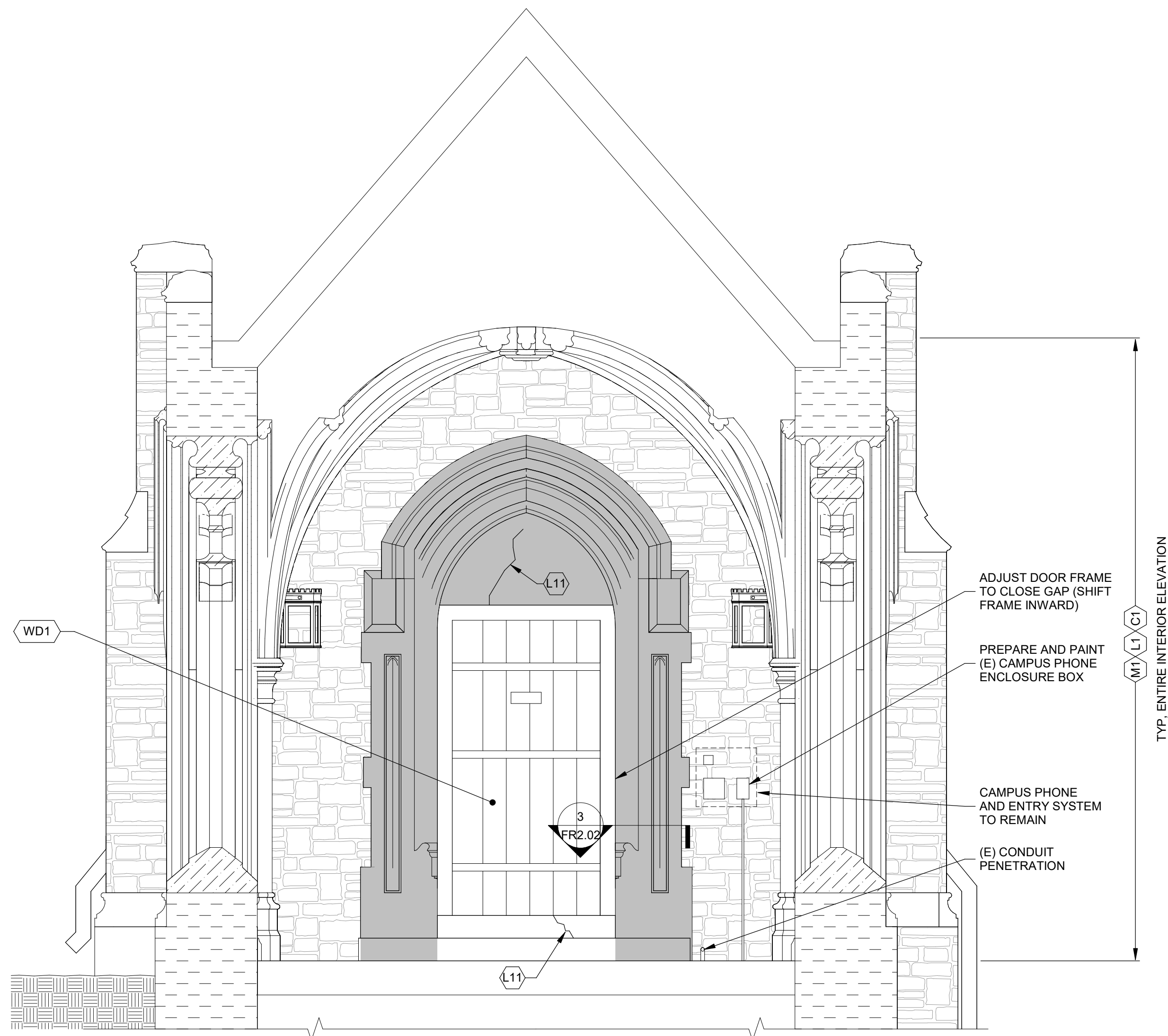
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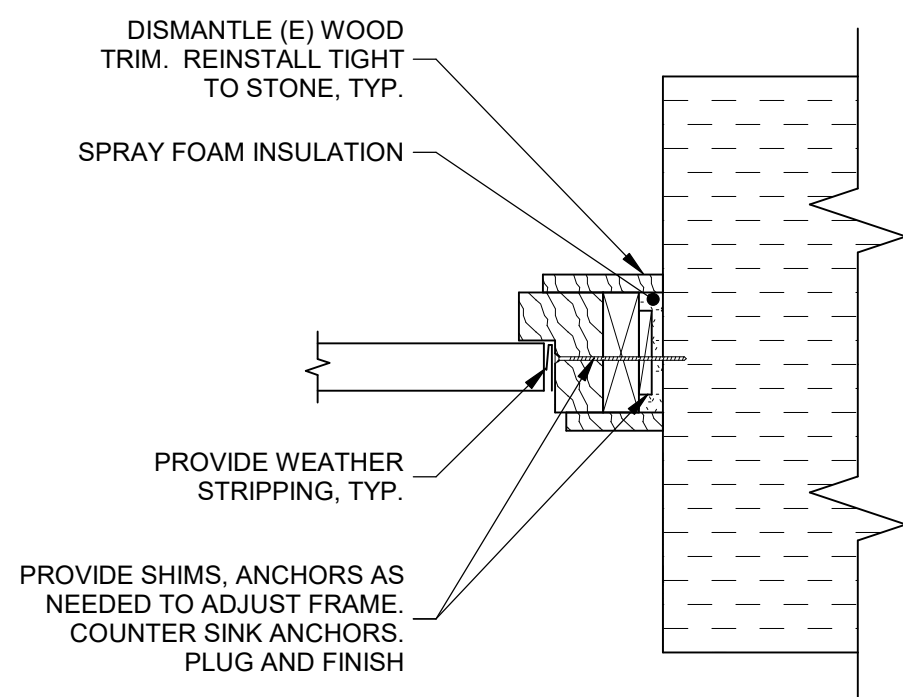
1 ELEVATION/SECTION - FACING NORTH
FR2.02 1/2" = 1'-0"



2 ELEVATION/SECTION - FACING SOUTH
FR2.02 1/2" = 1'-0"

MASONRY RESTORATION LEGEND

- (MT)** DENOTES EXTENT OF 100% STONE REPOINTING. REFER TO FR4.13 FOR ADDITIONAL INFORMATION.
- (L1)** DENOTES EXTENT OF 100% LIMESTONE REPOINTING, INCLUDING TRACERY. REFER TO FR4.13 FOR ADDITIONAL INFORMATION.
- (L7)** DENOTES LOCATION OF MISSING FINIAL TO BE REPLACED WITH CARVED LIMESTONE TO MATCH EXISTING. REFER TO DETAIL 2/FR4.11.
- (L11)** DENOTES LOCATION OF CRACKED LIMESTONE TO BE REPAIRED VIA CRACK INJECTION. REFER TO FR4.13 FOR ADDITIONAL INFORMATION.
- (C1)** DENOTES EXTENT OF 100% MASONRY CLEANING:
 - LIMESTONE (GENERAL): PRESATURATE WITH WATER (UTILIZING MISTING EQUIPMENT, SOAKER HOSES, ETC.) FOLLOWED BY LOW PRESSURE POWER WASHING.
 - BLUESTONE (GENERAL): GENERAL WASHDOWN.
- (WD1)** STRIP (E) FINISH. REPAIR WOOD DOOR AND REFINISH.



3 (E) DOOR JAMB PLAN DETAIL
FR2.02 N.T.S.

No.	Date	Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

**LYON/McFADDIN
ELEVATIONS &
CROSS SECTIONS**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

FR2.02



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Consultant:

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Consulting Engineers PC**

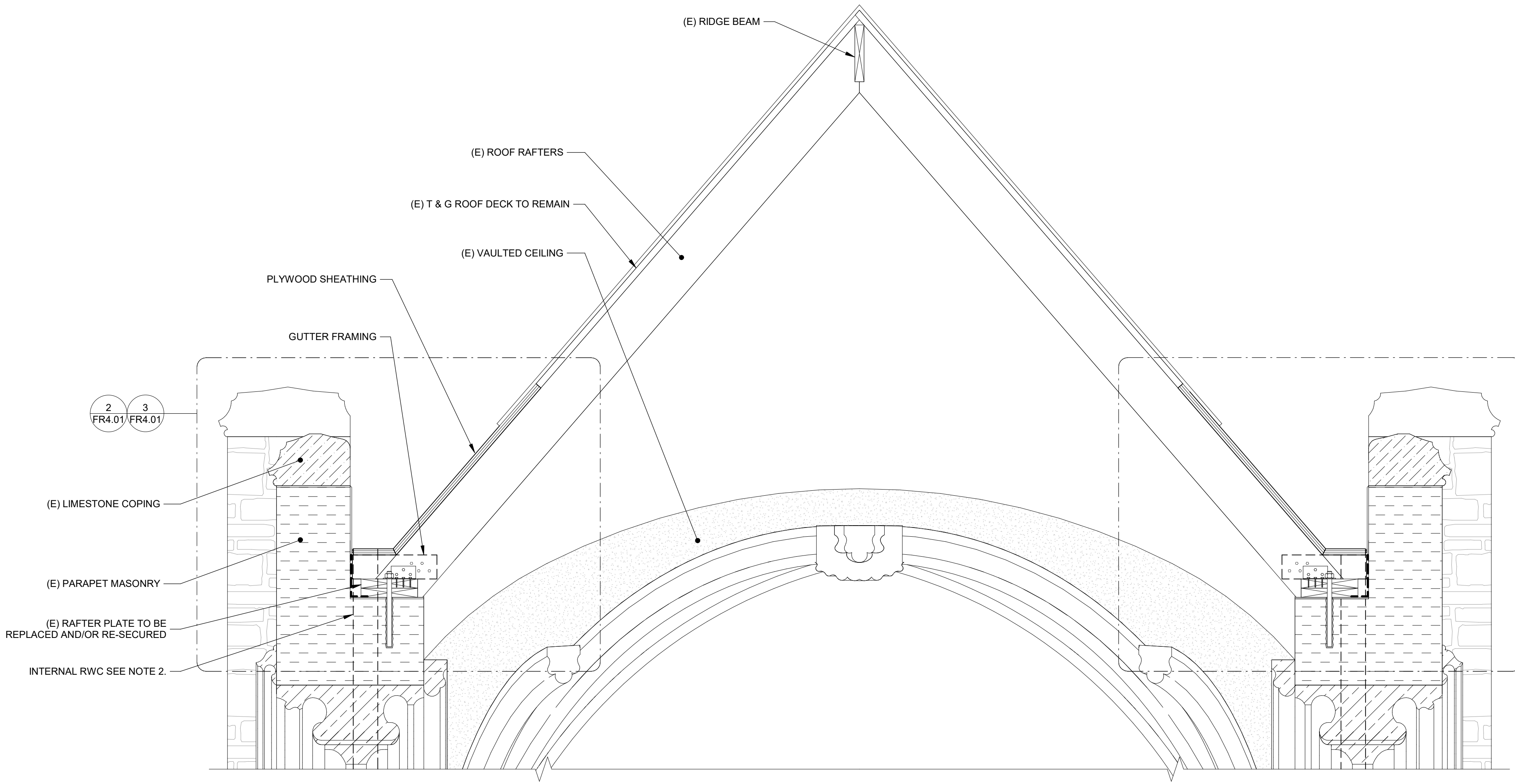


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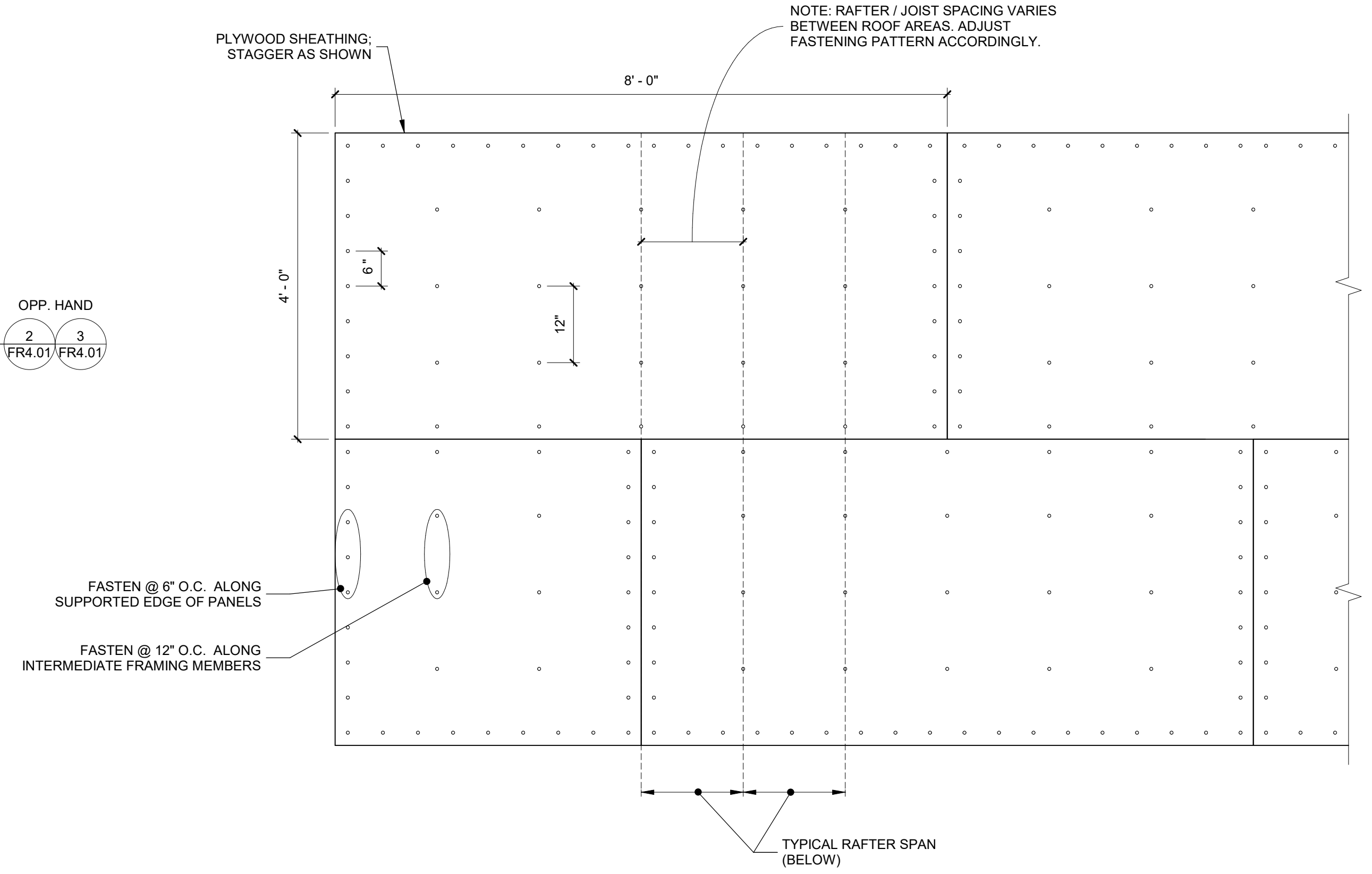


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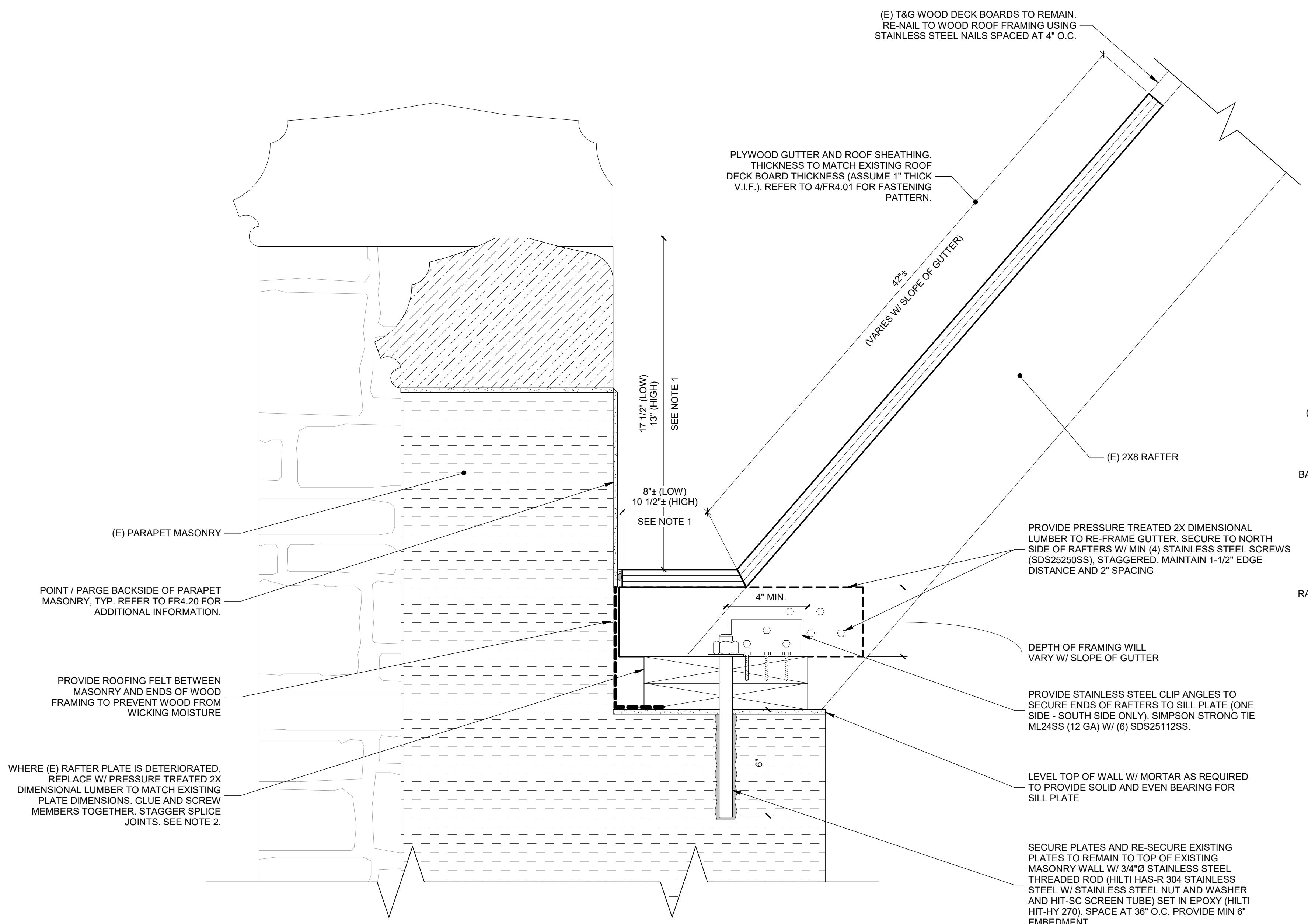


1 SECTION - ROOF FRAMING
1" = 1'-0"

- NOTE:
1. ROOFING NOT SHOWN FOR CLARITY. REFER TO FR4.20 FOR ROOFING RELATED DETAILS AND SCOPE.
 2. COORDINATE NEW FRAMING AND MODIFICATIONS TO EXISTING FRAMING WITH INTERNAL DRAIN LOCATIONS.

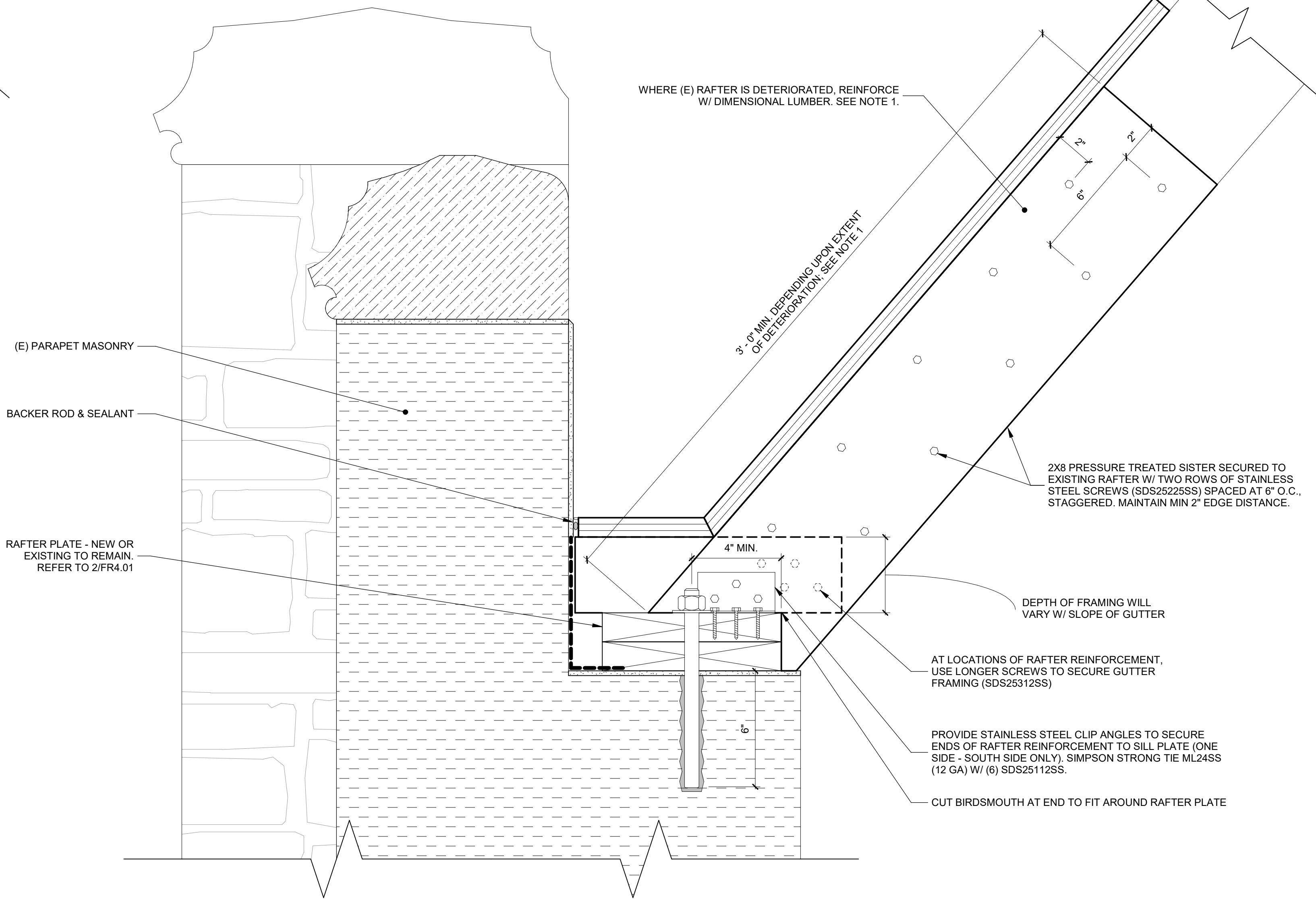


4 ROOF SHEATHING - FASTENING PATTERN
3/4" = 1'-0"



2 SECTION - GUTTER FRAMING REPLACEMENT
3" = 1'-0"

- NOTES:
1. GUTTER FRAMING TO BE COORDINATED WITH PROPOSED SLOPE AND ROOFING SYSTEM. REFER TO FR4.20 FOR ADDITIONAL INFORMATION.
 2. REVIEW CONDITION OF RAFTER PLATE IN FIELD WITH ENGINEER TO DETERMINE EXTENT OF REPLACEMENT.
 3. ROOFING AND FLASHING NOT SHOWN FOR CLARITY.



3 SECTION - RAFTER REINFORCEMENT
3" = 1'-0"

- NOTES:
1. REVIEW CONDITION OF WOOD FRAMING IN FIELD WITH ENGINEER TO DETERMINE LOCATIONS AND EXTENTS OF RAFTER REINFORCEMENT.

No.	Date	Revisions
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Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

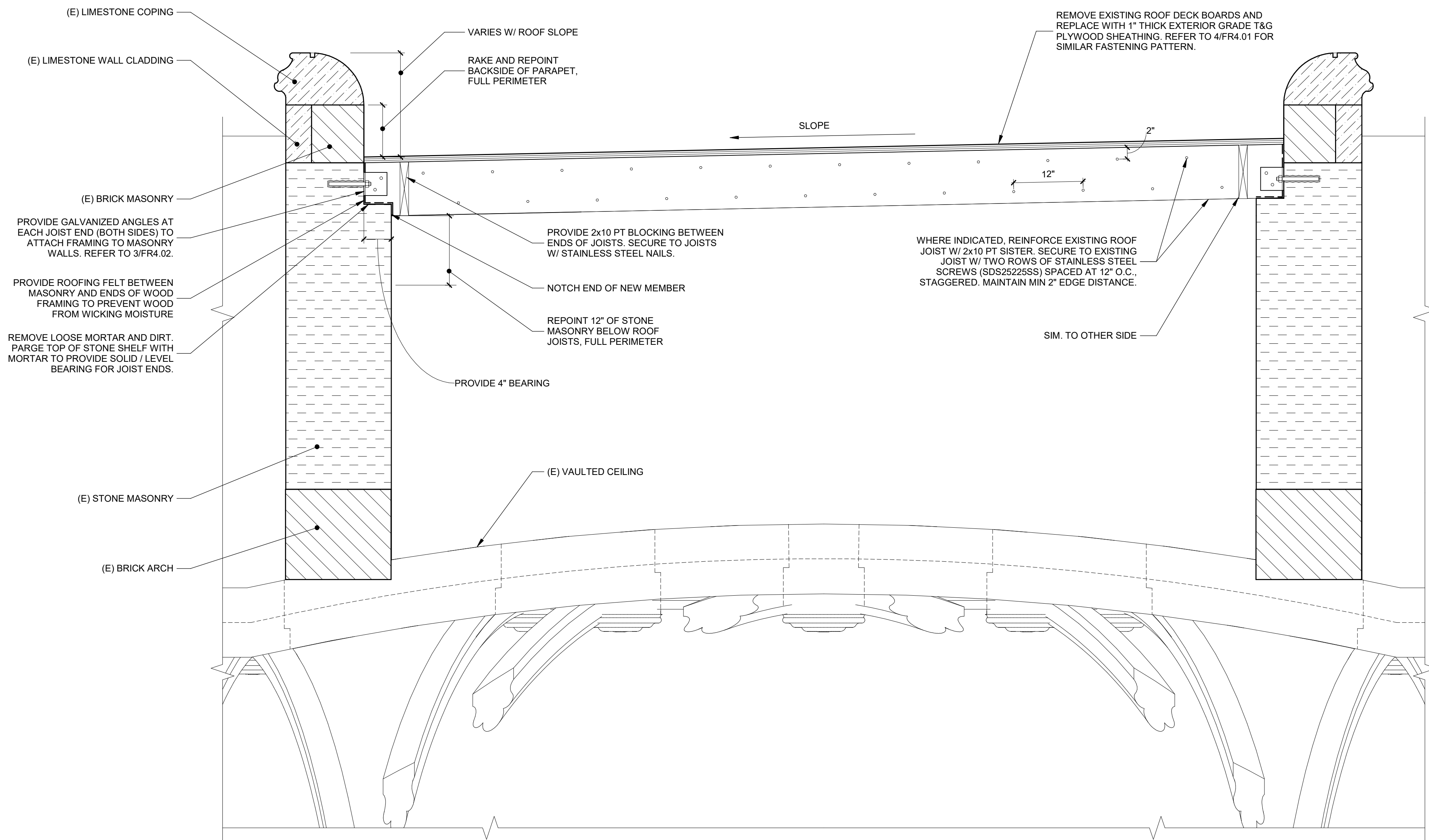
**DETAILS - ROOF
FRAMING REPAIRS**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

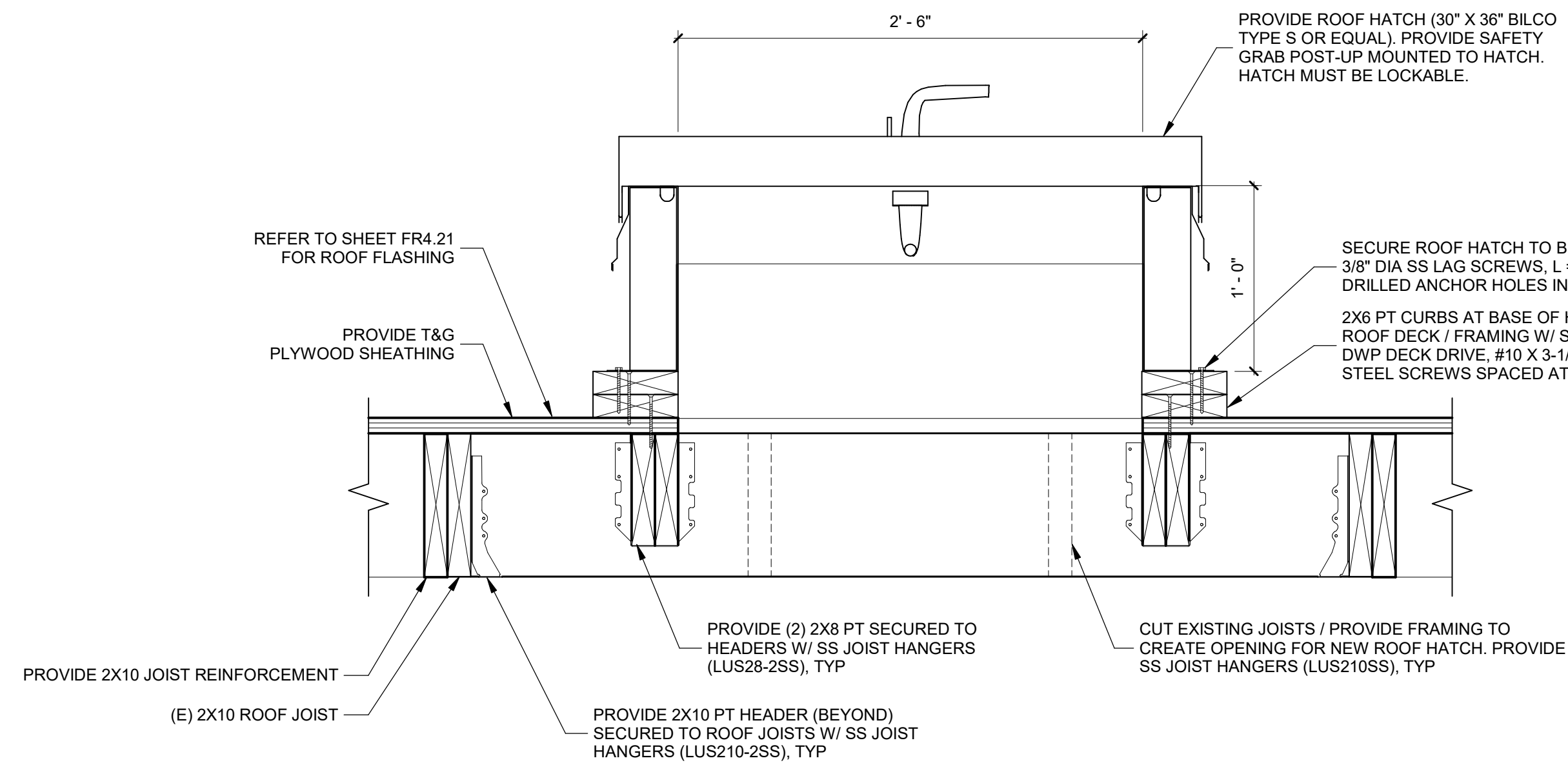
Drawing Number:

FR4.01

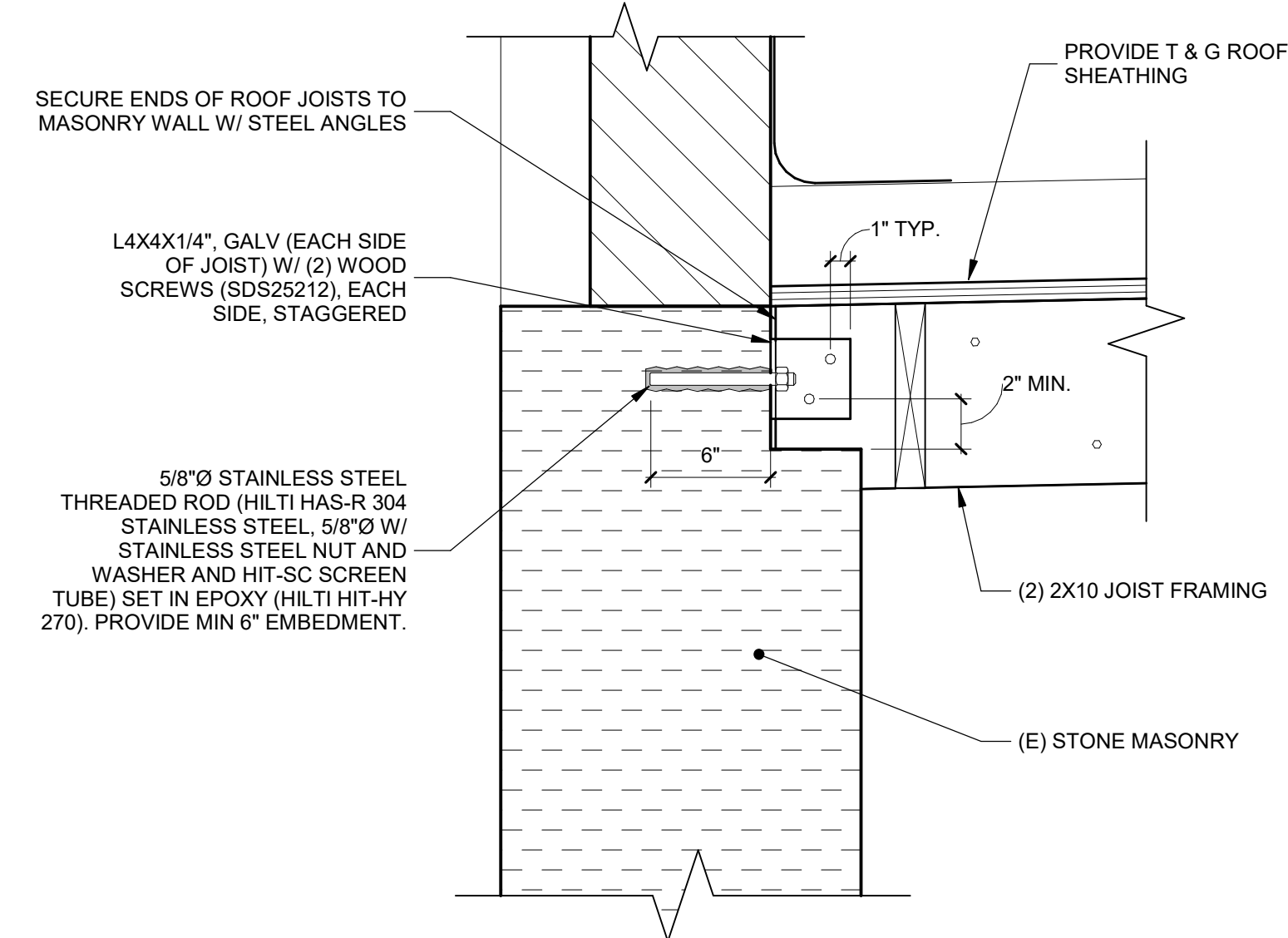


1 SECTION - ROOF FRAMING REPAIRS
FR4.02 1" = 1'-0"

NOTE:
1. ROOFING NOT SHOWN FOR CLARITY. REFER TO FR4.20 FOR ROOFING RELATED DETAILS AND SCOPE.



2 SECTION - ROOF FRAMING AT NEW ROOF HATCH
FR4.02 1 1/2" = 1'-0"



3 DETAIL JOIST ATTACHMENT TO MASONRY WALLS
FR4.02 1 1/2" = 1'-0"



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Drawing Title:

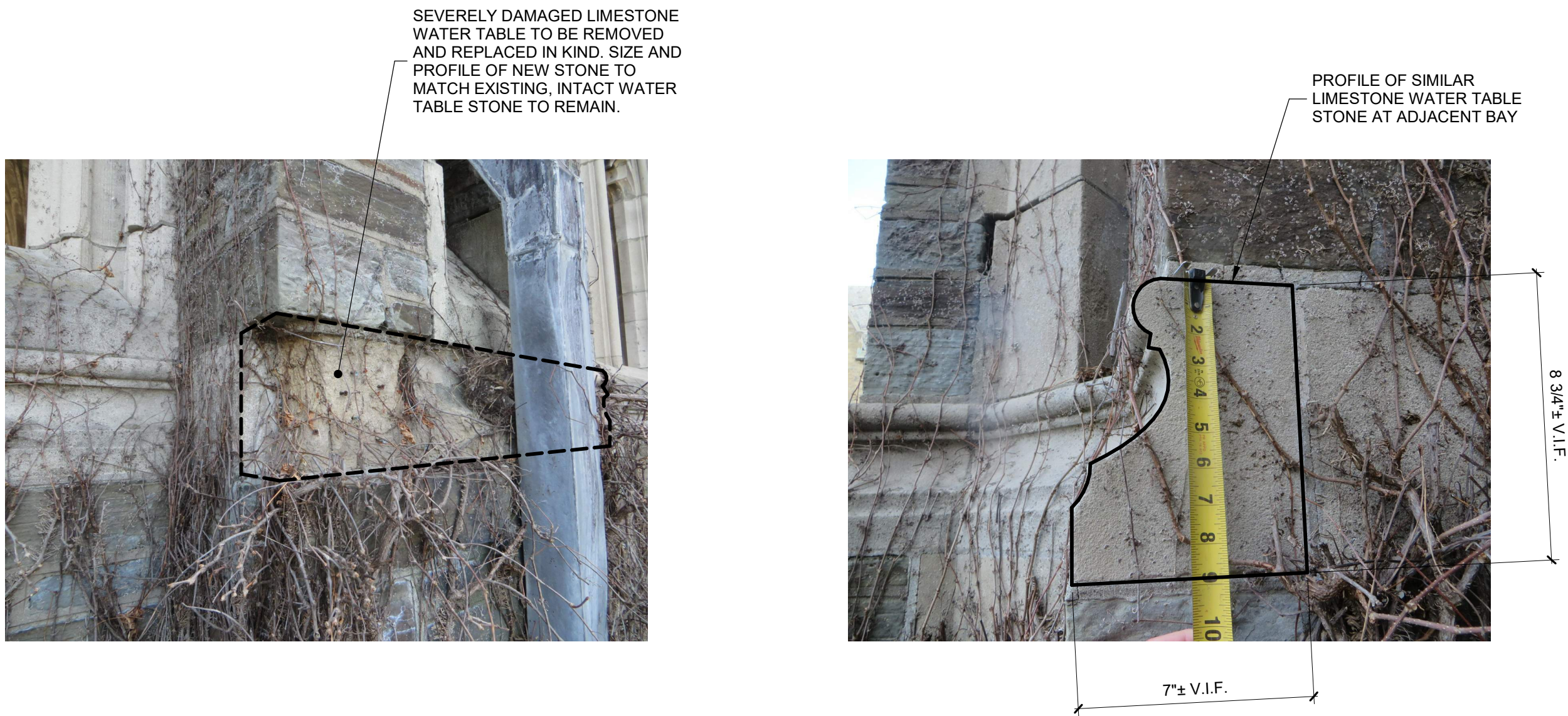
**DETAILS - ROOF
FRAMING REPAIRS**

Job Number: E2019010A

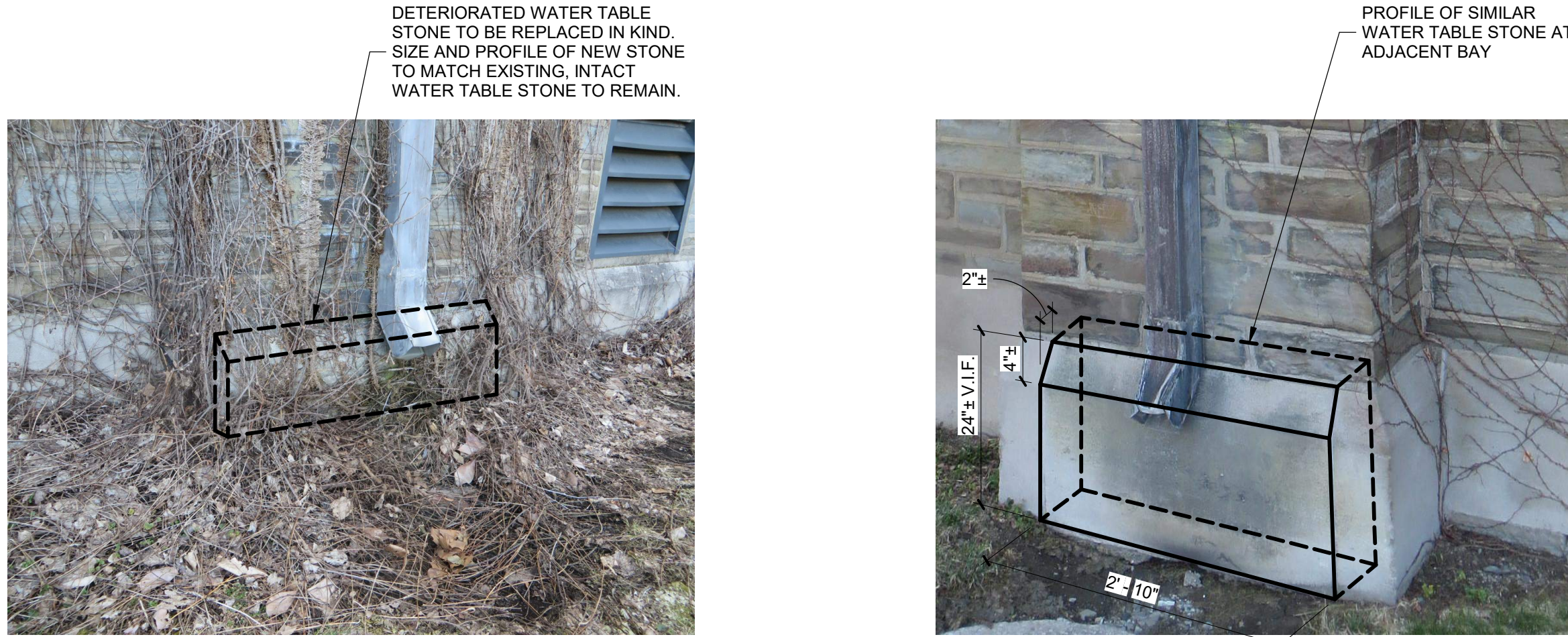
Date: 02/15/23 Scale: As indicated

Drawing Number:

FR4.02



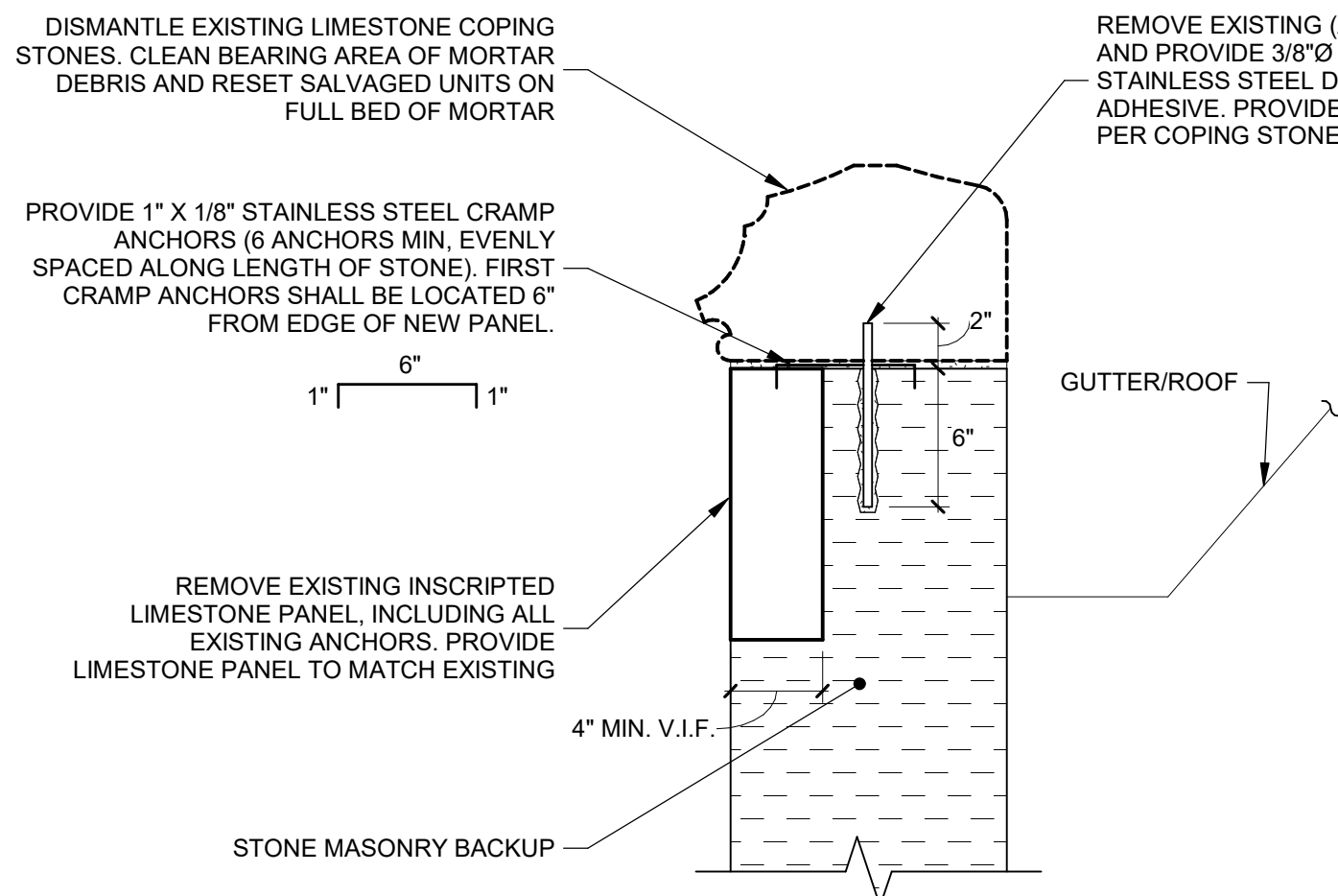
A DETAIL - TYPE A STONE REPLACEMENT
N.T.S.



B DETAIL - TYPE B STONE REPLACEMENT



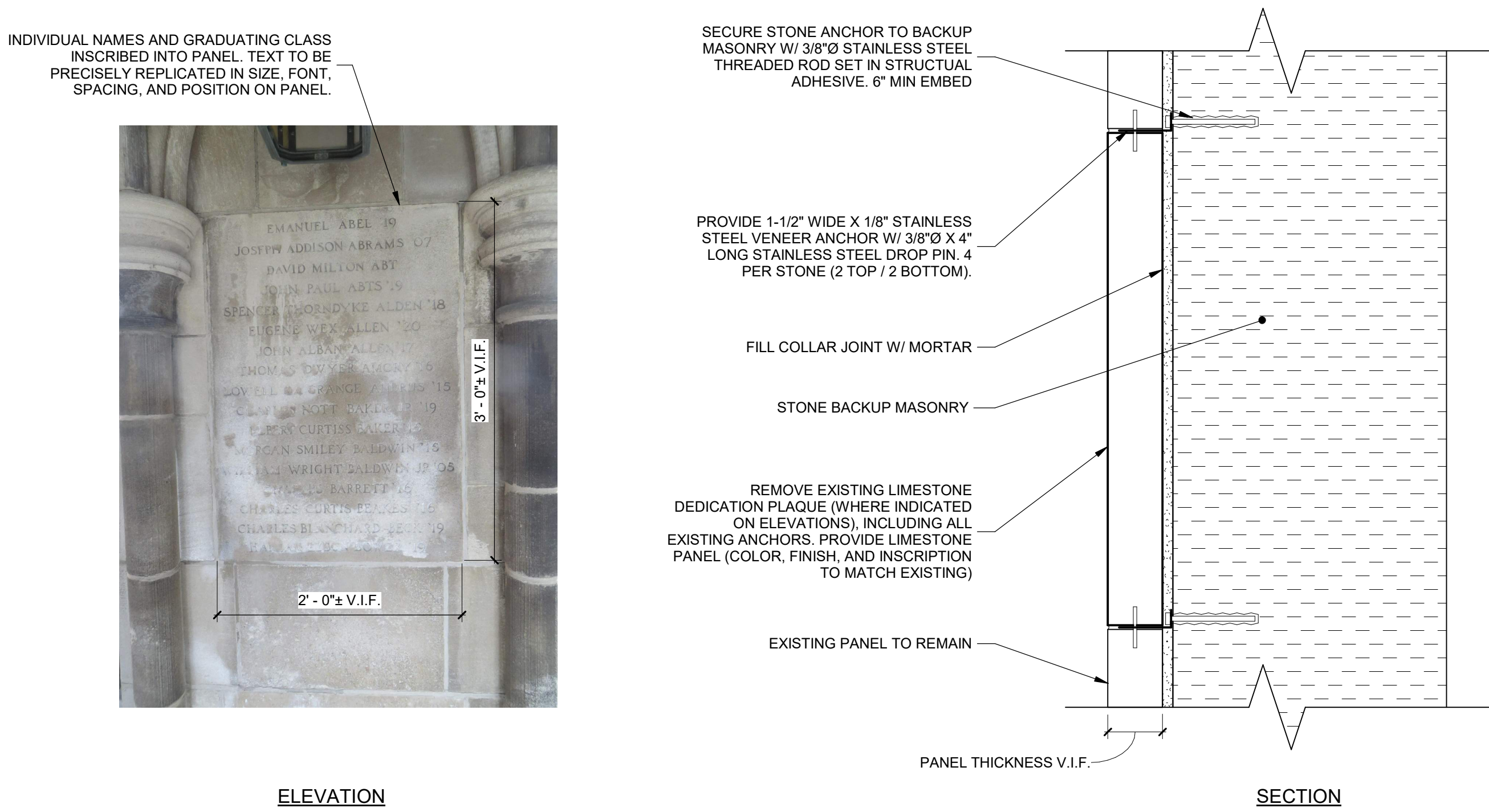
ELEVATION



SECTION



D DETAIL - TYPE D STONE REPLACEMENT
(REFER TO DETAIL C/FR4.10 FOR ADDITIONAL INFORMATION)



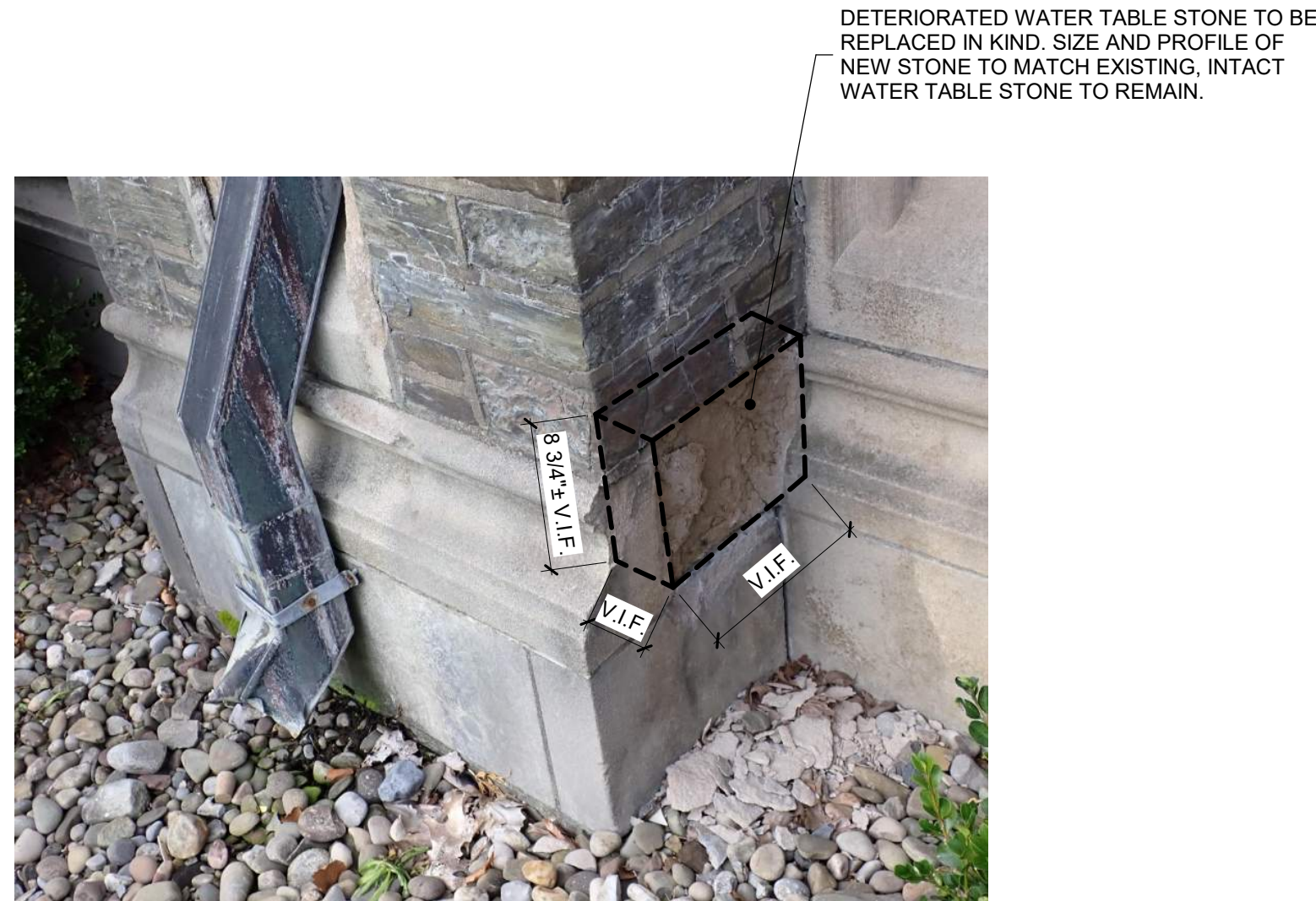
ELEVATION

SECTION

E TYPE E STONE - INSCRIBED DEDICATION PLAQUES
NOTE: TYPE E1 SHOWN. OTHER TYPE E PANELS ARE SIMILAR, BUT WITH DIFFERENT INSCRIPTIONS.

REPLACEMENT STONE GENERAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS, PROFILES, ENGRAVING, AND LETTERING FOR ALL REPLACEMENT STONE.
- NEW STONE SHALL MATCH EXISTING IN COLOR AND FINISH.
- NEW STONE SHALL REPLICATE ORIGINAL ENGRAVINGS AND / OR INSCRIPTIONS.
- REVIEW EXISTING CONDITIONS IN THE FIELD WITH THE ENGINEER TO CONFIRM STONE ANCHORAGE.
- REMOVE ALL EXISTING ANCHORAGES AND PROVIDE STAINLESS STEEL ANCHORAGES FOR SECURING STONE IN PLACE.
- RECONSTRUCT IN KIND ANY SURROUNDING MASONRY OR CONSTRUCTION THAT IS DISTURBED AS THE RESULT OF REPLACING A STONE UNIT.



F DETAIL - TYPE F STONE REPLACEMENT



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War Memorial
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Drawing Title:

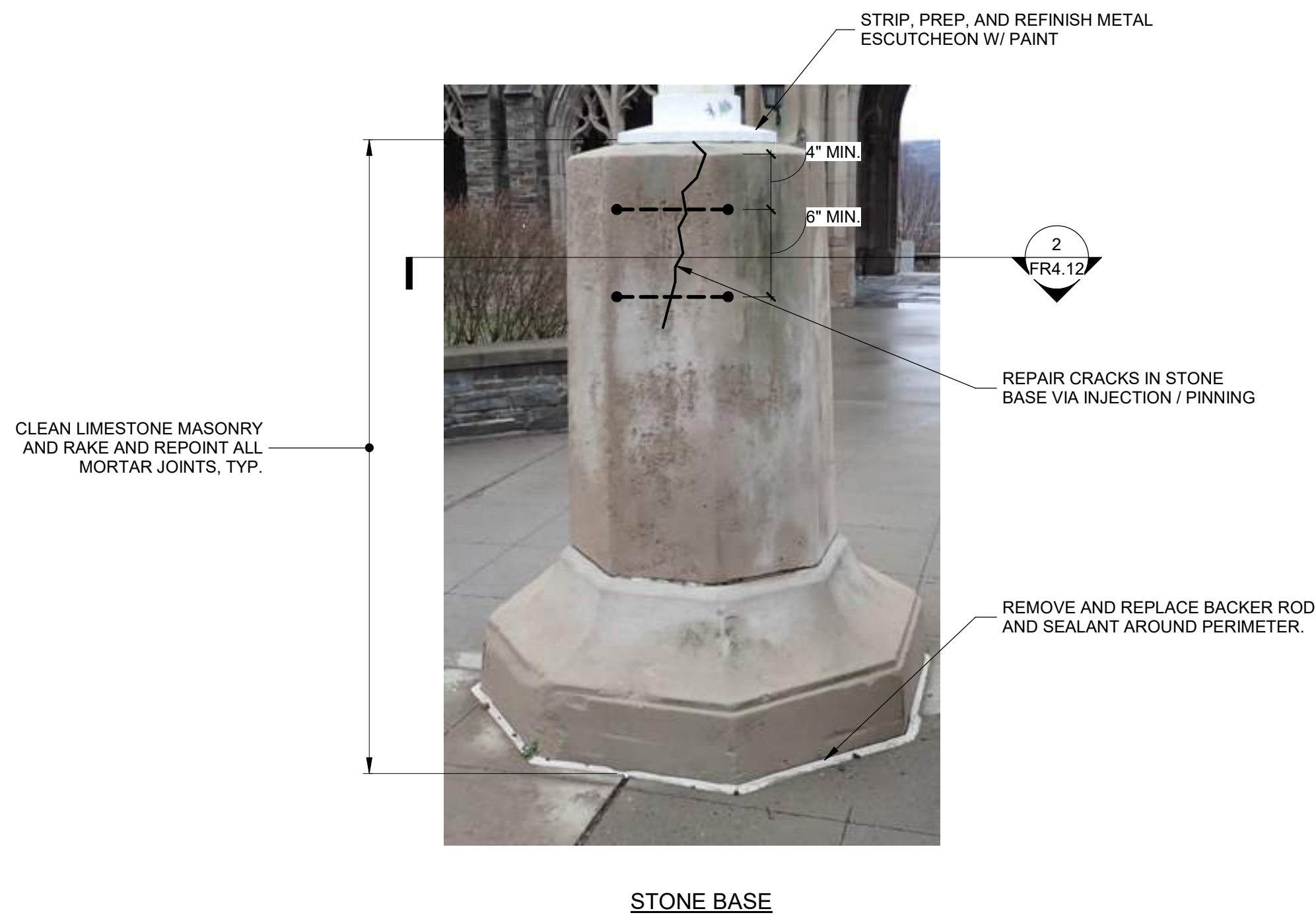
DETAILS - MASONRY

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

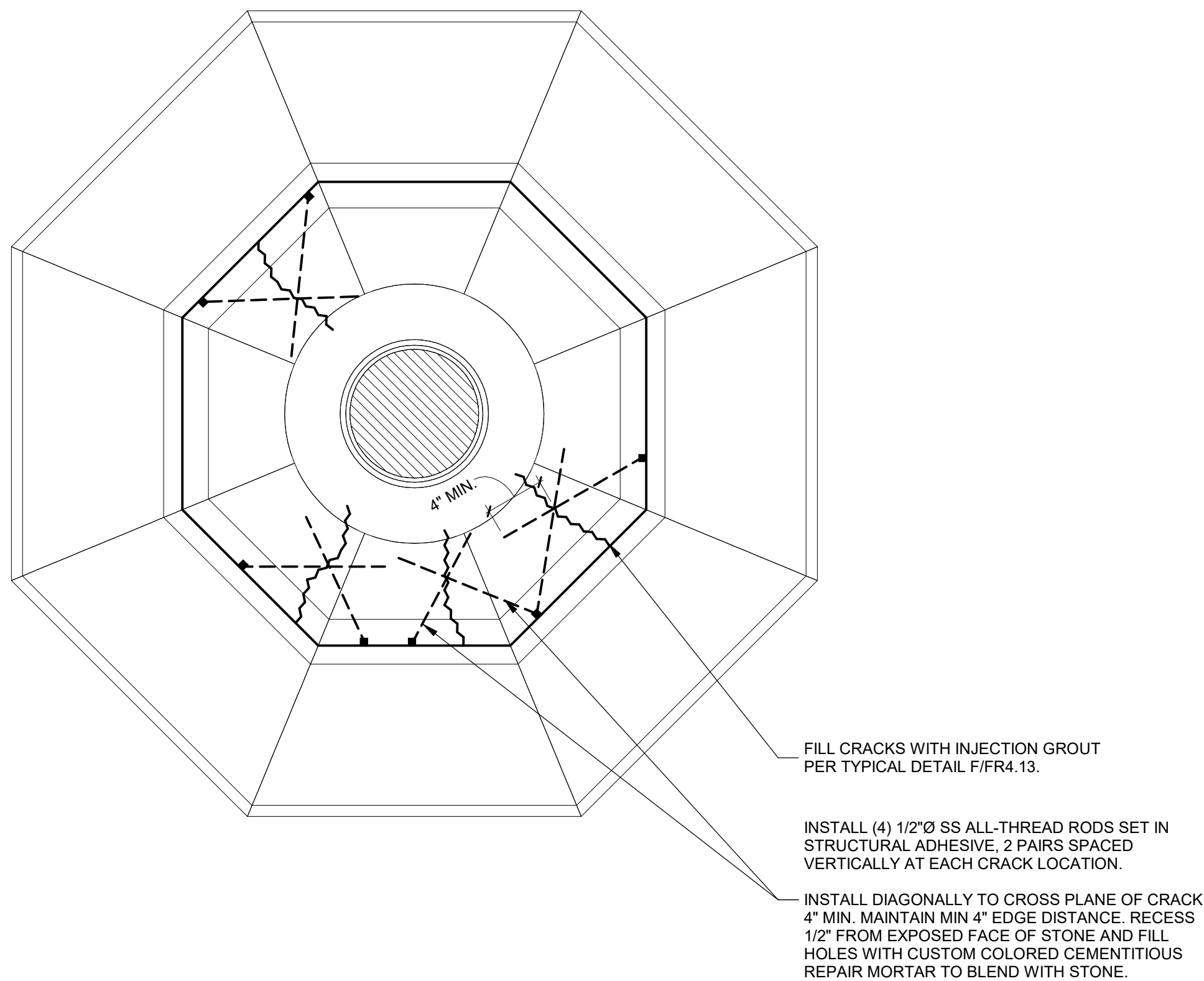
FR4.10



STONE BASE



FLAGPOLE / FINIAL



SECTION - STONE CRACK REPAIR

2 FR4.12 1 1/2" = 1'-0"

1 DETAIL - FLAGPOLE REFURBISHMENT
FR4.12 SCALE: NTS



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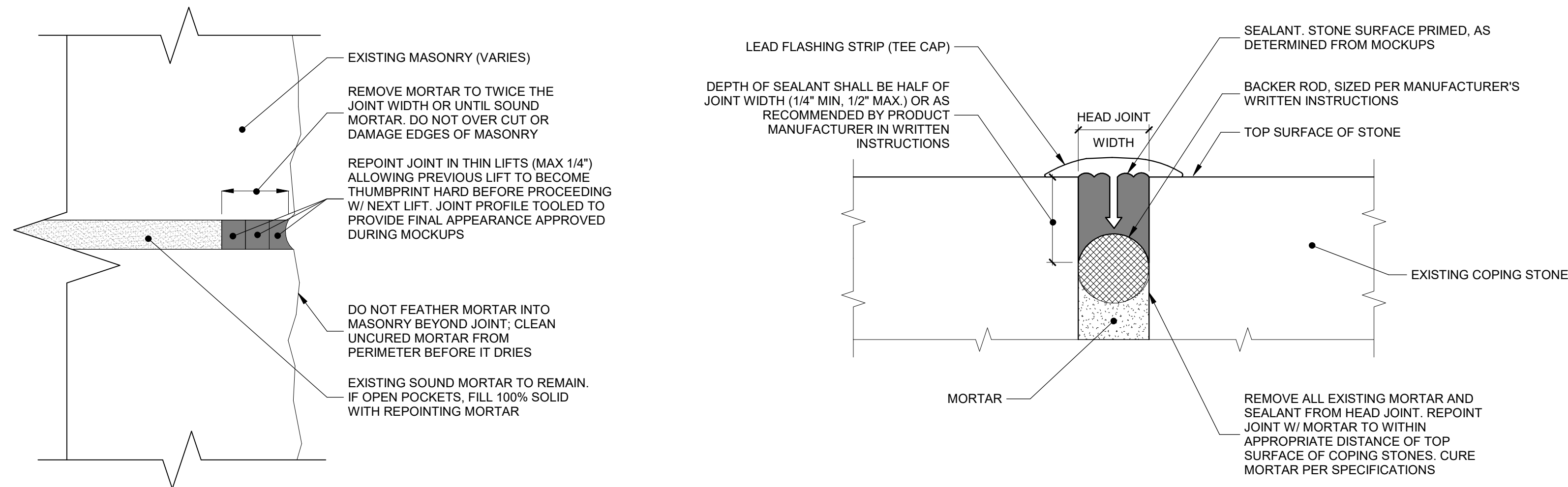


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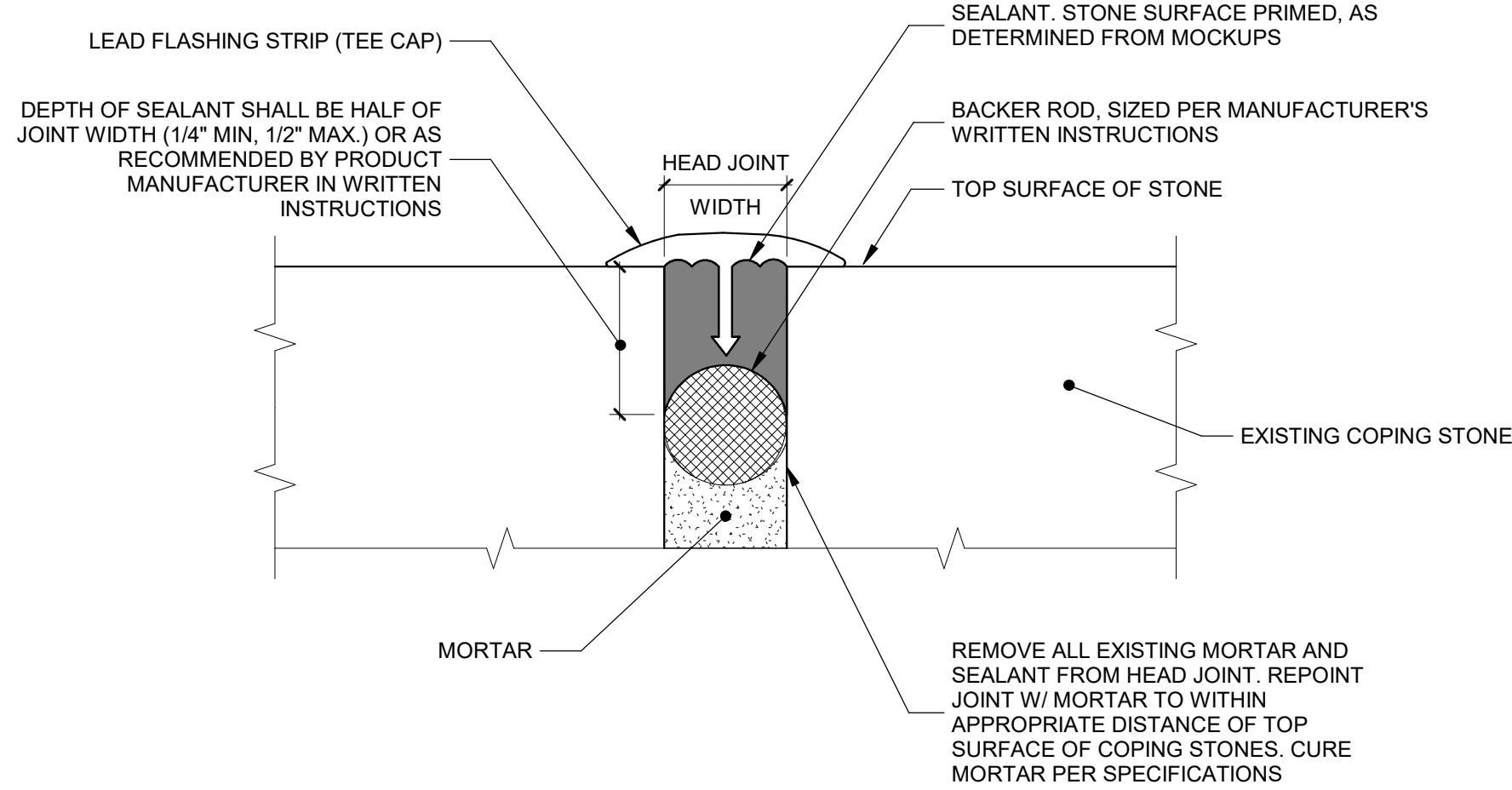


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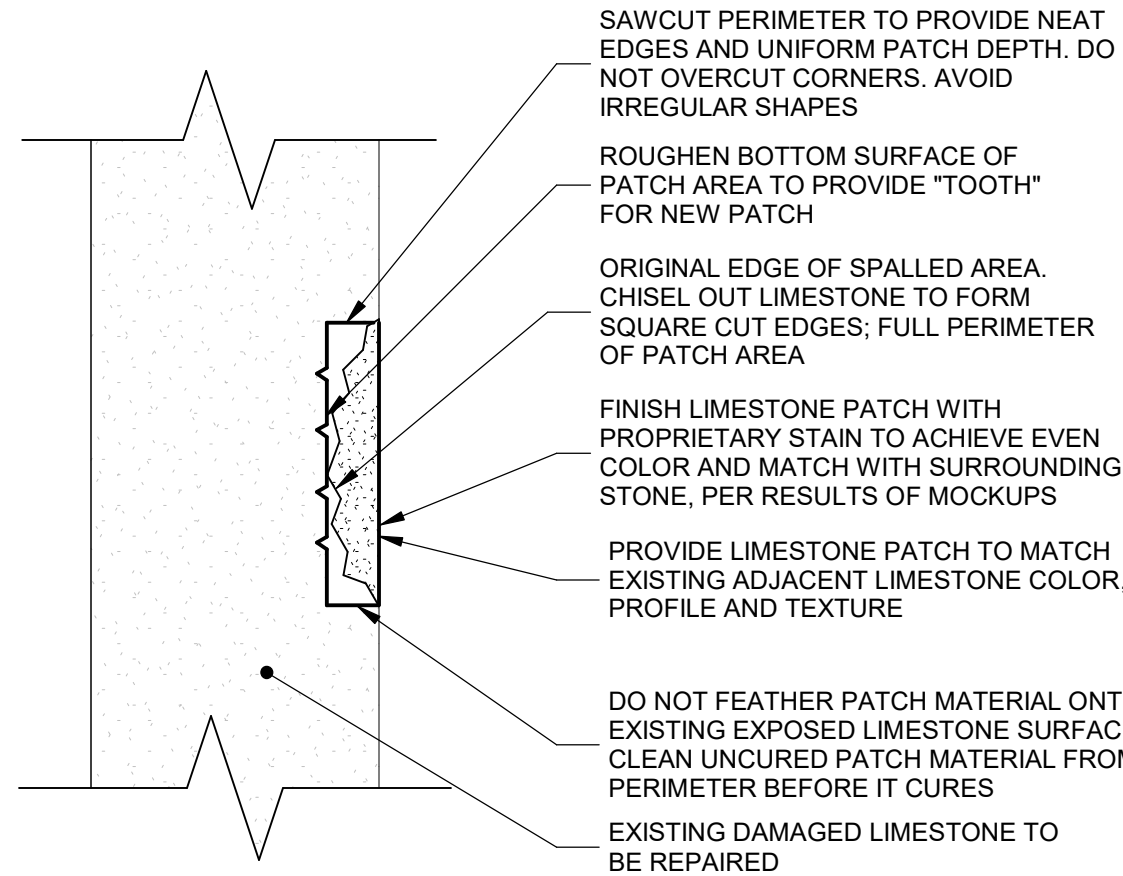


A STONE REPOINTING

NOTE: BLUESTONE JOINT AND SUBSTRATE SHOWN; LIMESTONE JOINT SIMILAR EXCEPT JOINT PROFILE TO BE STRUCK FLUSH.

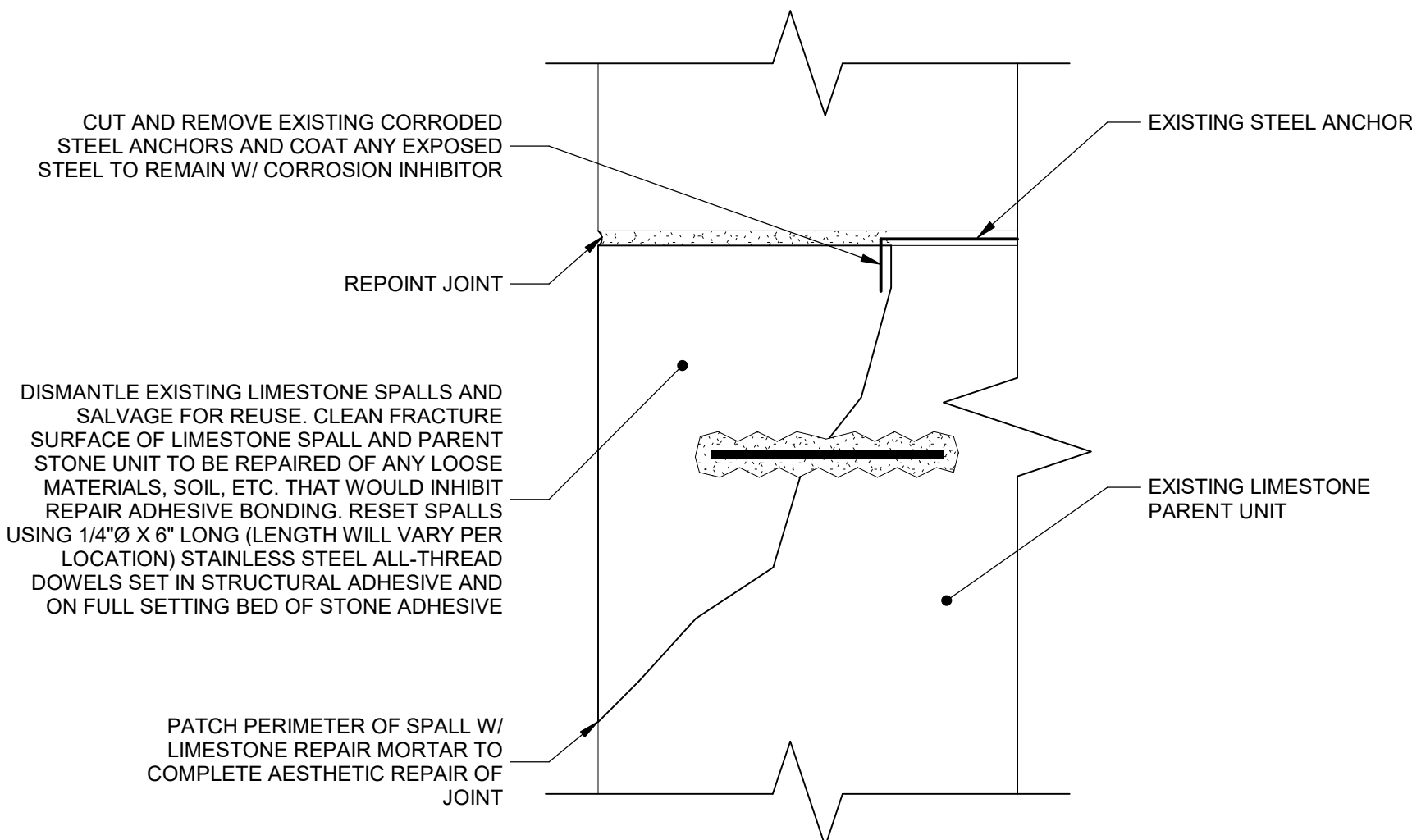


B ARMORED SEALANT JOINT



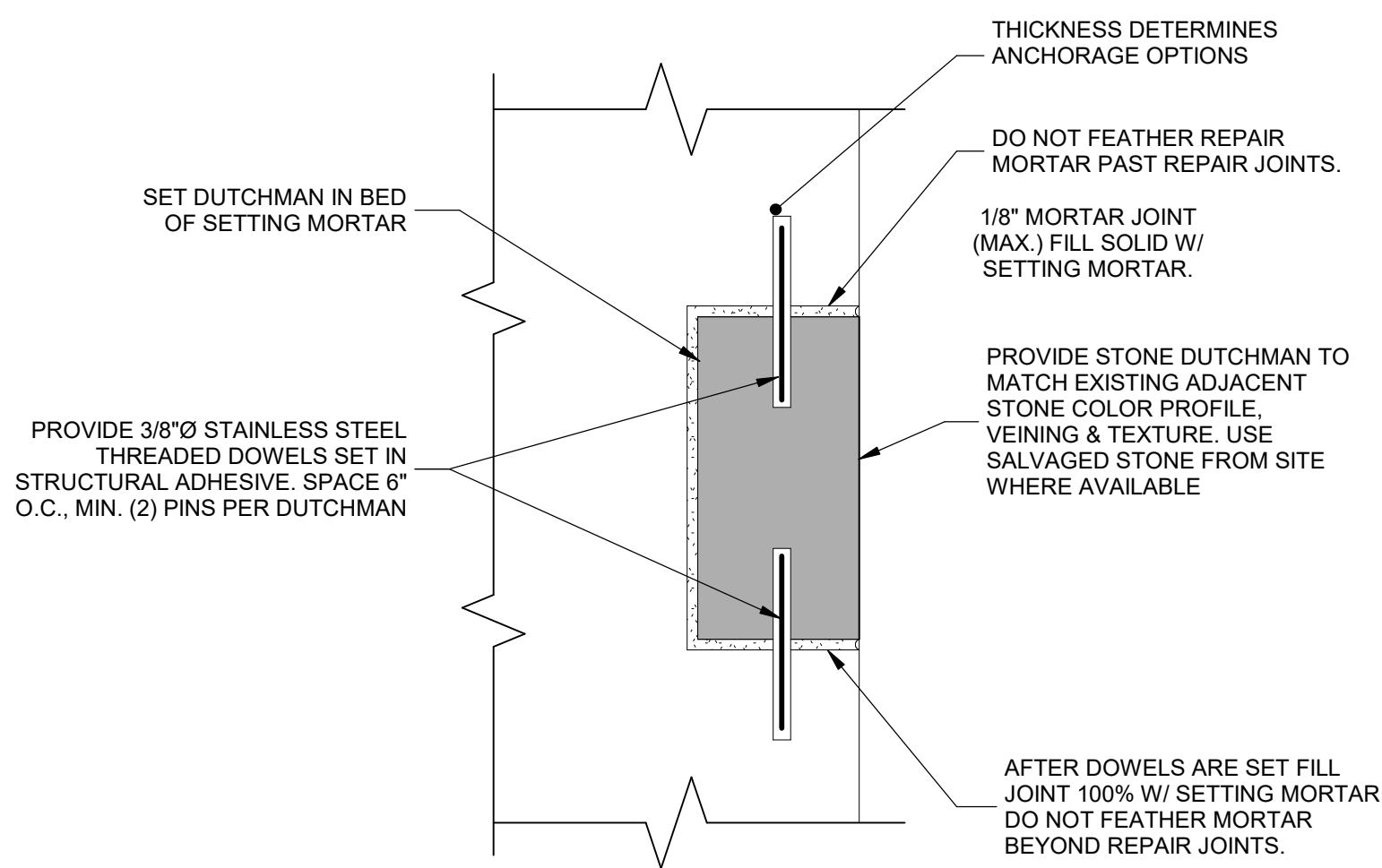
C LIMESTONE SPALL REPAIR W/ REPAIR MORTAR

NOTE: FOR PRICING PURPOSES, ASSUME AVERAGE REPAIR AREA OF 3\"/>



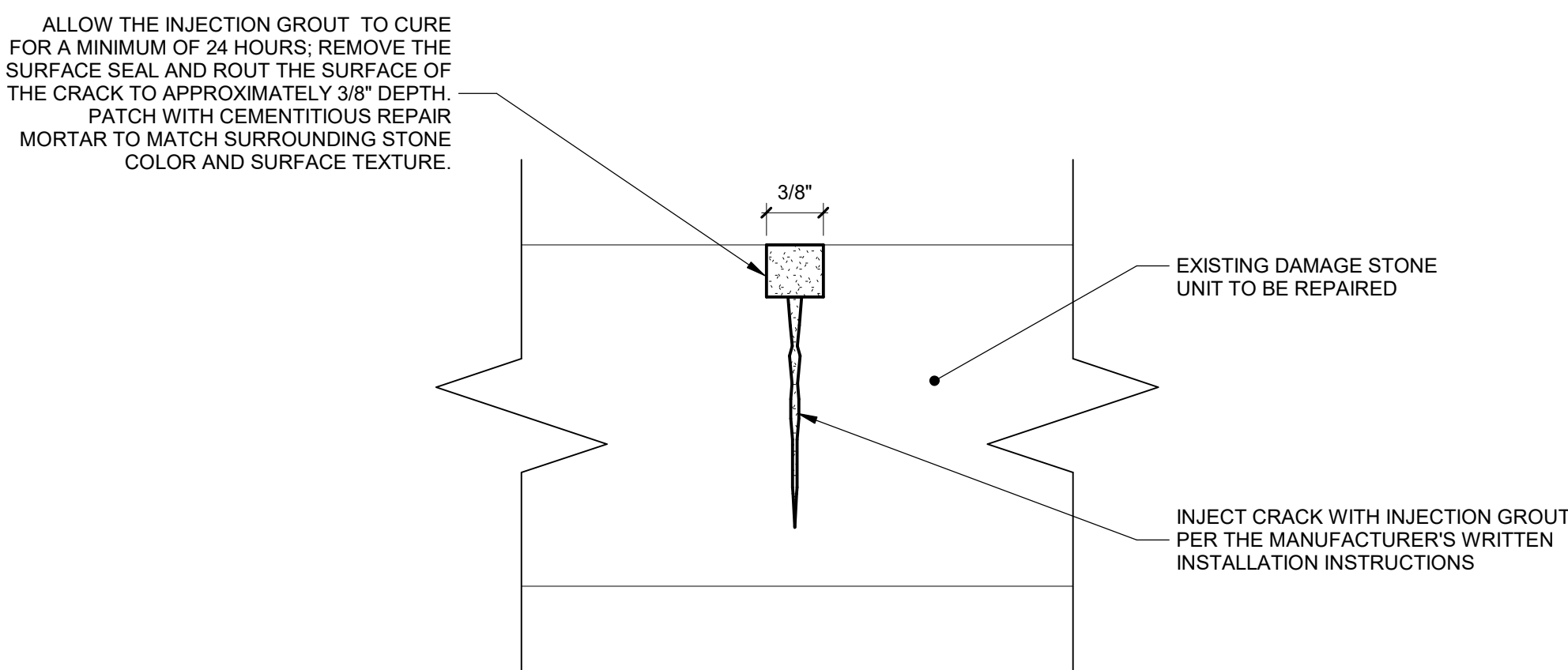
D LIMESTONE SPALL REPAIR W/ PINS & ADHESIVE

NOTE: CONTRACTOR SHALL COORDINATE W/ THE ENGINEER DURING CONSTRUCTION TO REVIEW/FINALIZE REPAIRS ON A CASE BY CASE BASIS.



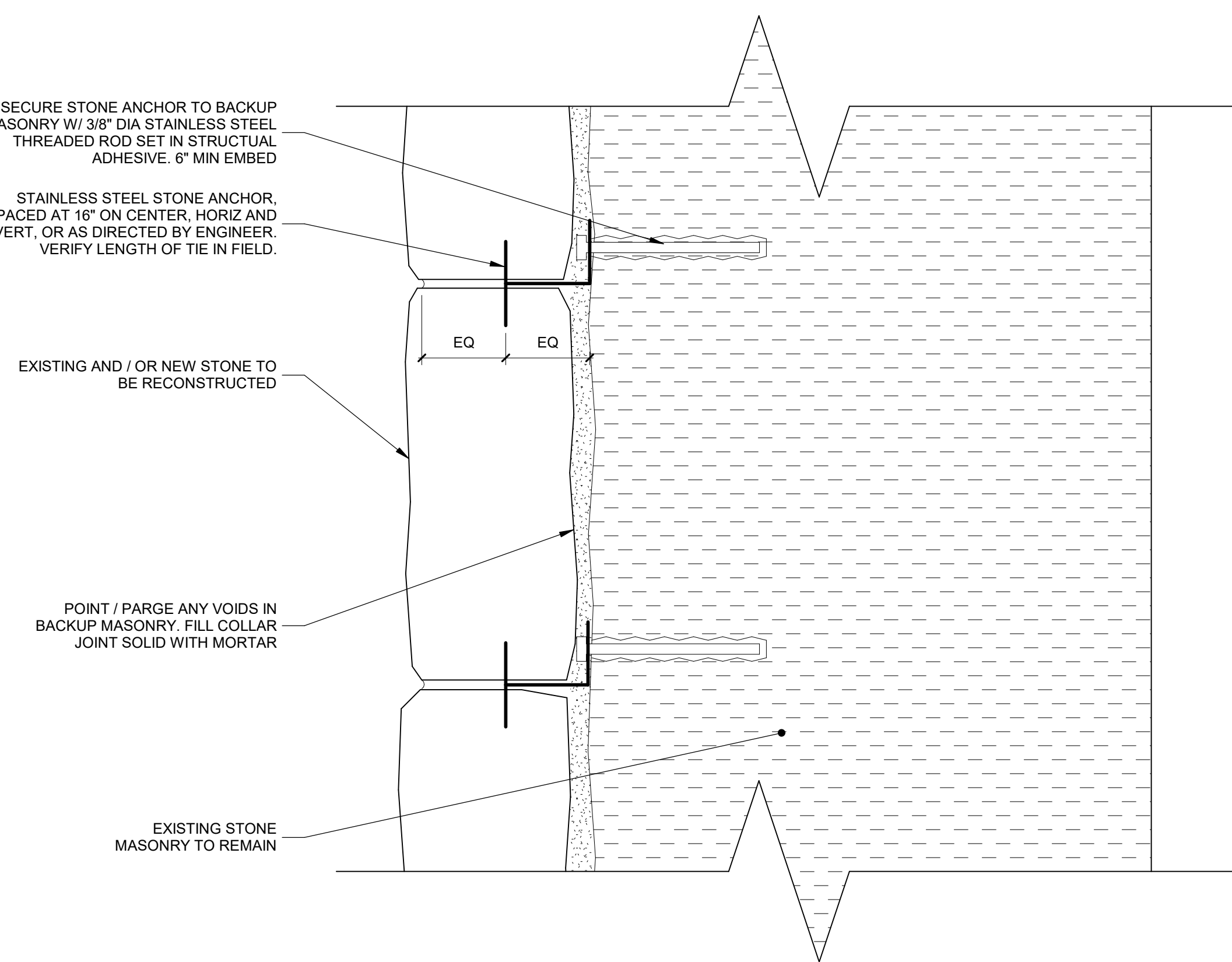
E LIMESTONE STONE DUTCHMAN REPAIR (ALLOWANCE SCOPE)

- NOTES:
1. CONTRACTOR SHALL COORDINATE W/ THE ENGINEER DURING CONSTRUCTION TO REVIEW/FINALIZE DUTCHMAN REPAIRS ON A CASE BY CASE BASIS.
 2. FOR PRICING PURPOSES, ASSUME AVERAGE DUTCHMAN SIZE OF 3\"/>

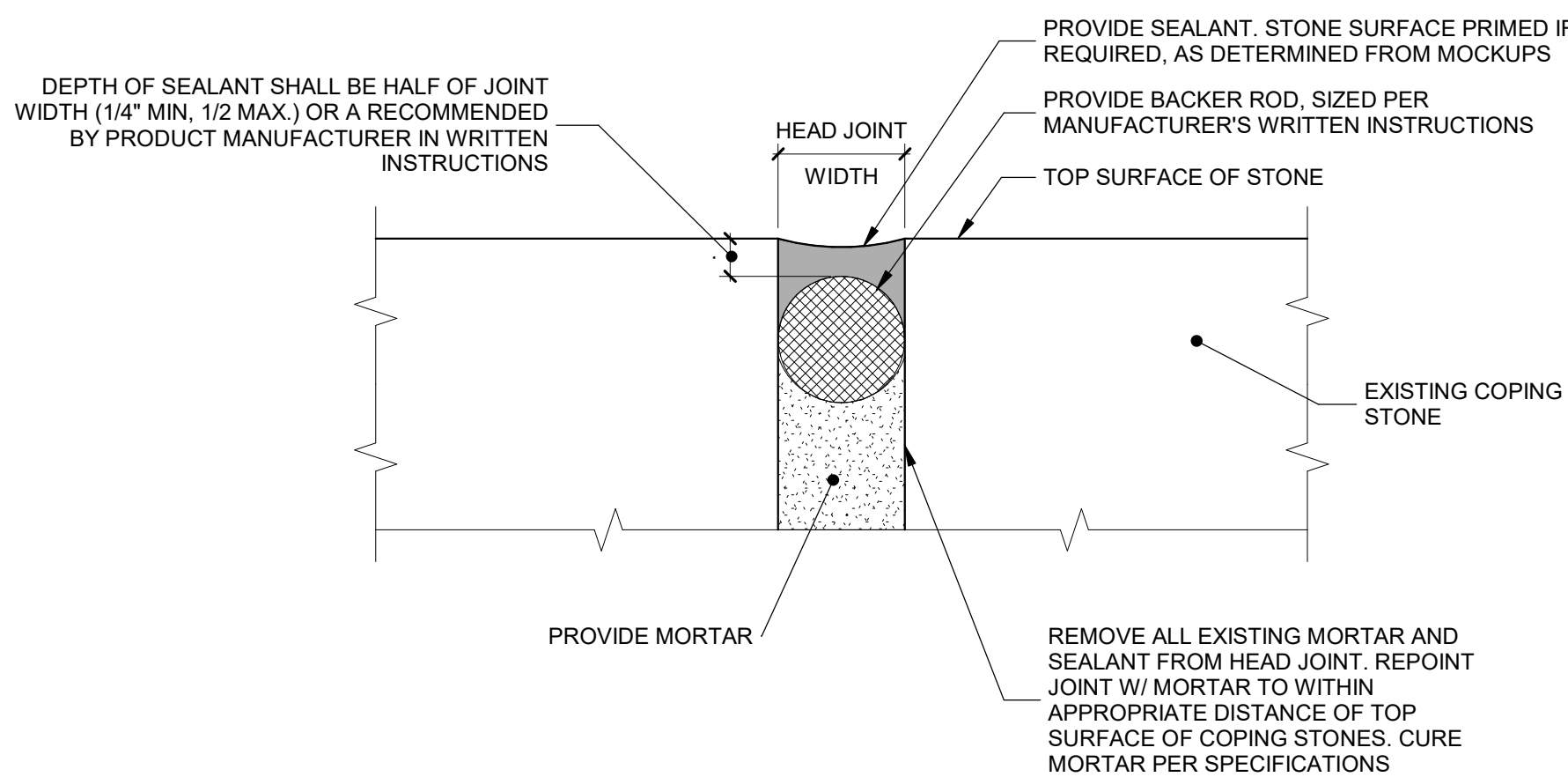


F LIMESTONE CRACK REPAIR VIA INJECTION

NOTE: FOR PRICING PURPOSES, ASSUME AVERAGE CRACK LENGTH OF 12 INCHES.



G STONE RECONSTRUCTION



H SEALANT JOINT DETAIL

NOTE: SEALANT TO EXTEND ACROSS TOP OF HEAD JOINT AND DOWN BOTH VERTICAL FACES OF JOINT.



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Drawing Title:

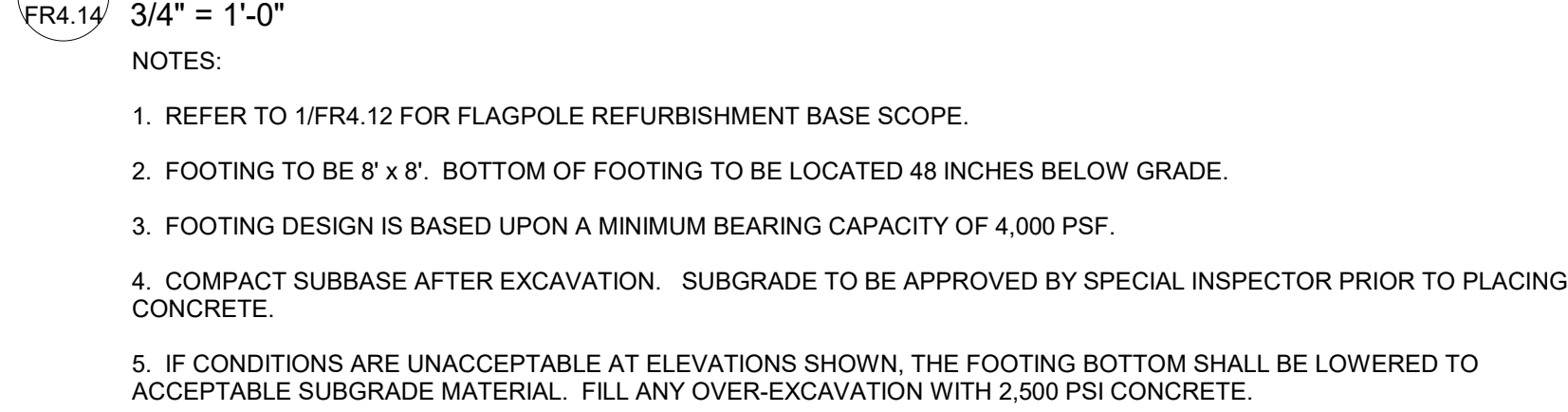
**TYPICAL DETAILS -
MASONRY**

Job Number: E2019010A

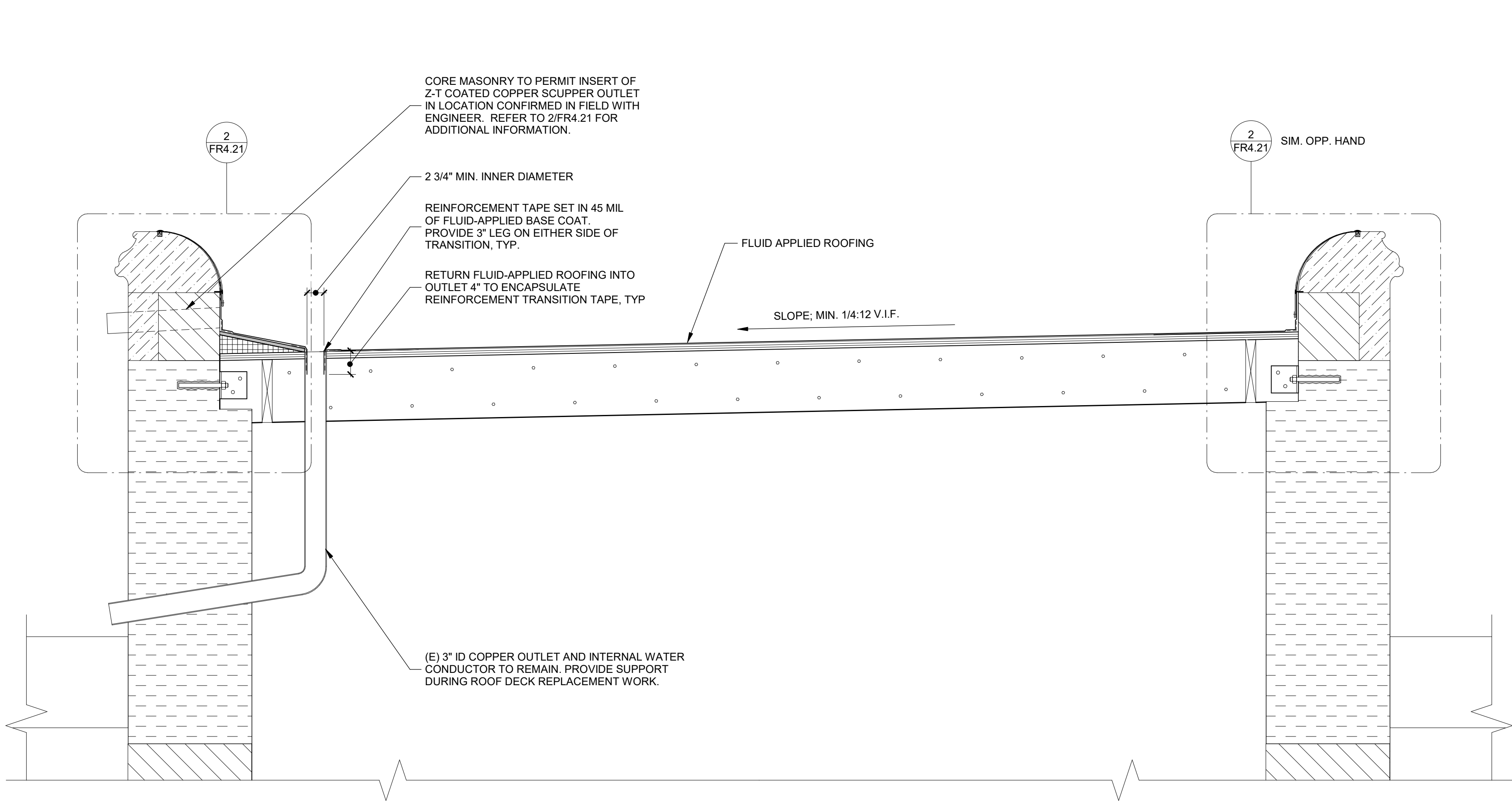
Date: 02/15/23 Scale: As indicated

Drawing Number:

FR4.13

Drawing Number:

FR4.14

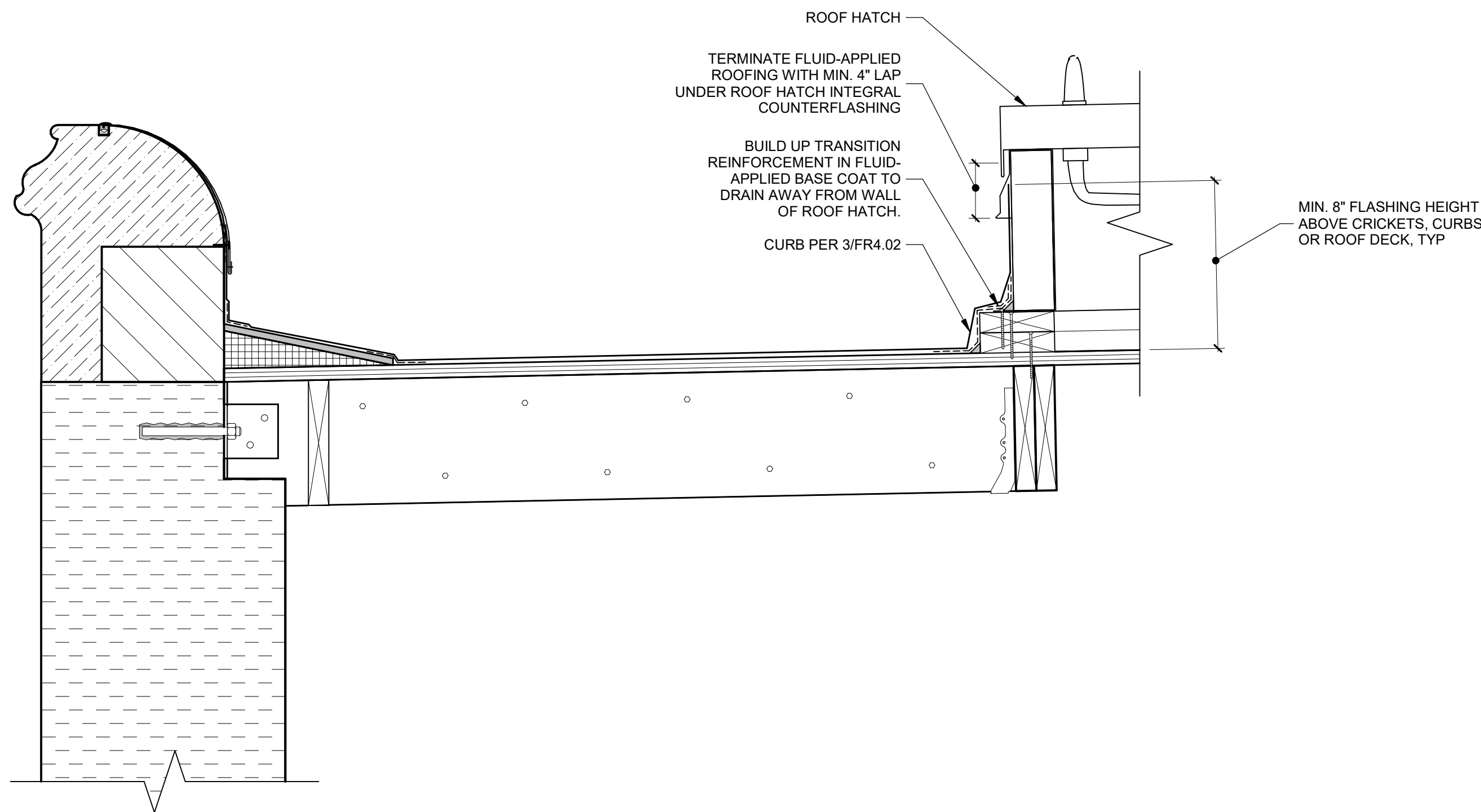


1 SECTION - ROOFING REPAIRS

FR4.21 1" = 1'-0"

NOTE:

1. REFER TO FR4.02 FOR FRAMING RELATED DETAILS AND SCOPE.



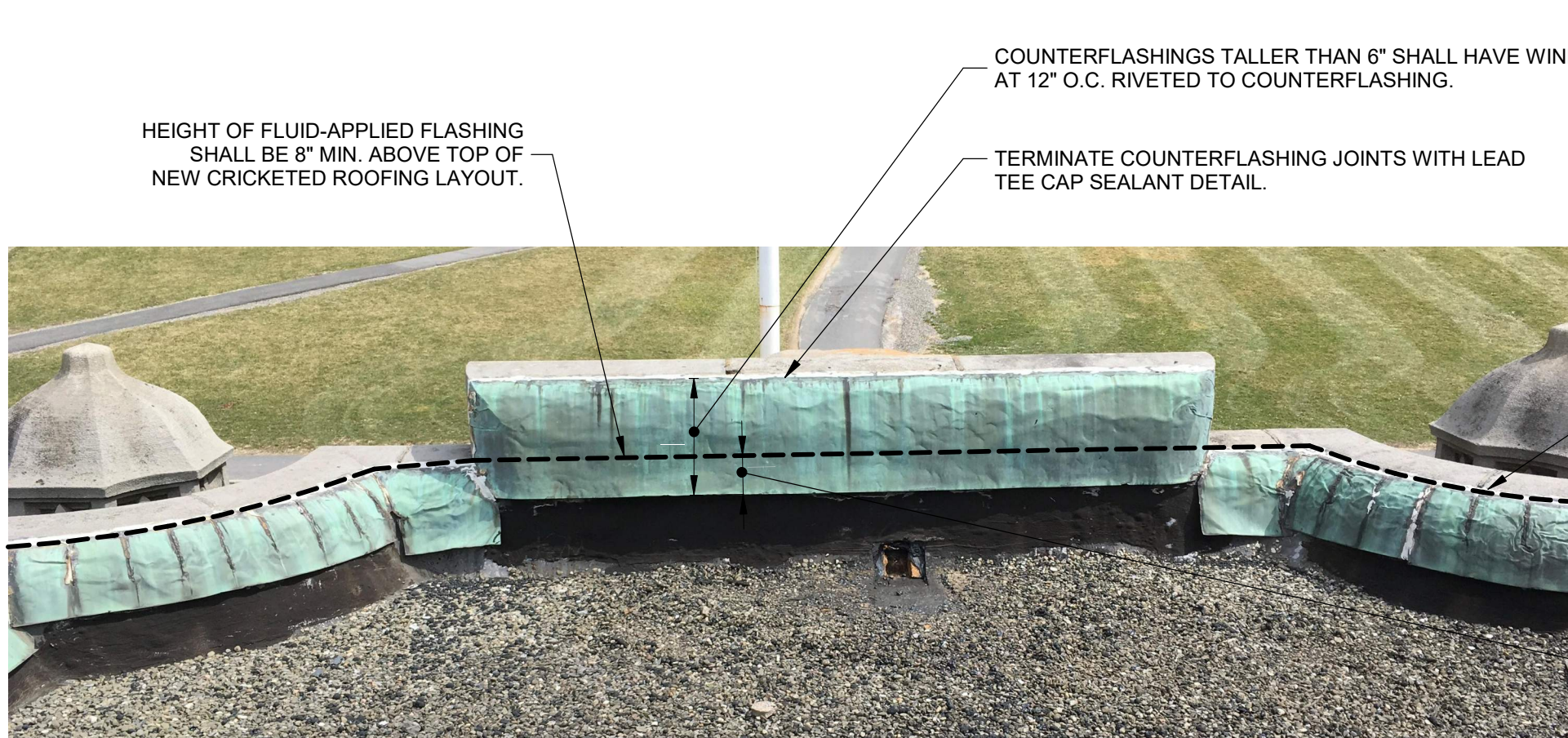
3 SECTION - FLUID-APPLIED ROOFING AT ROOF HATCH

FR4.21 1 1/2" = 1'-0"



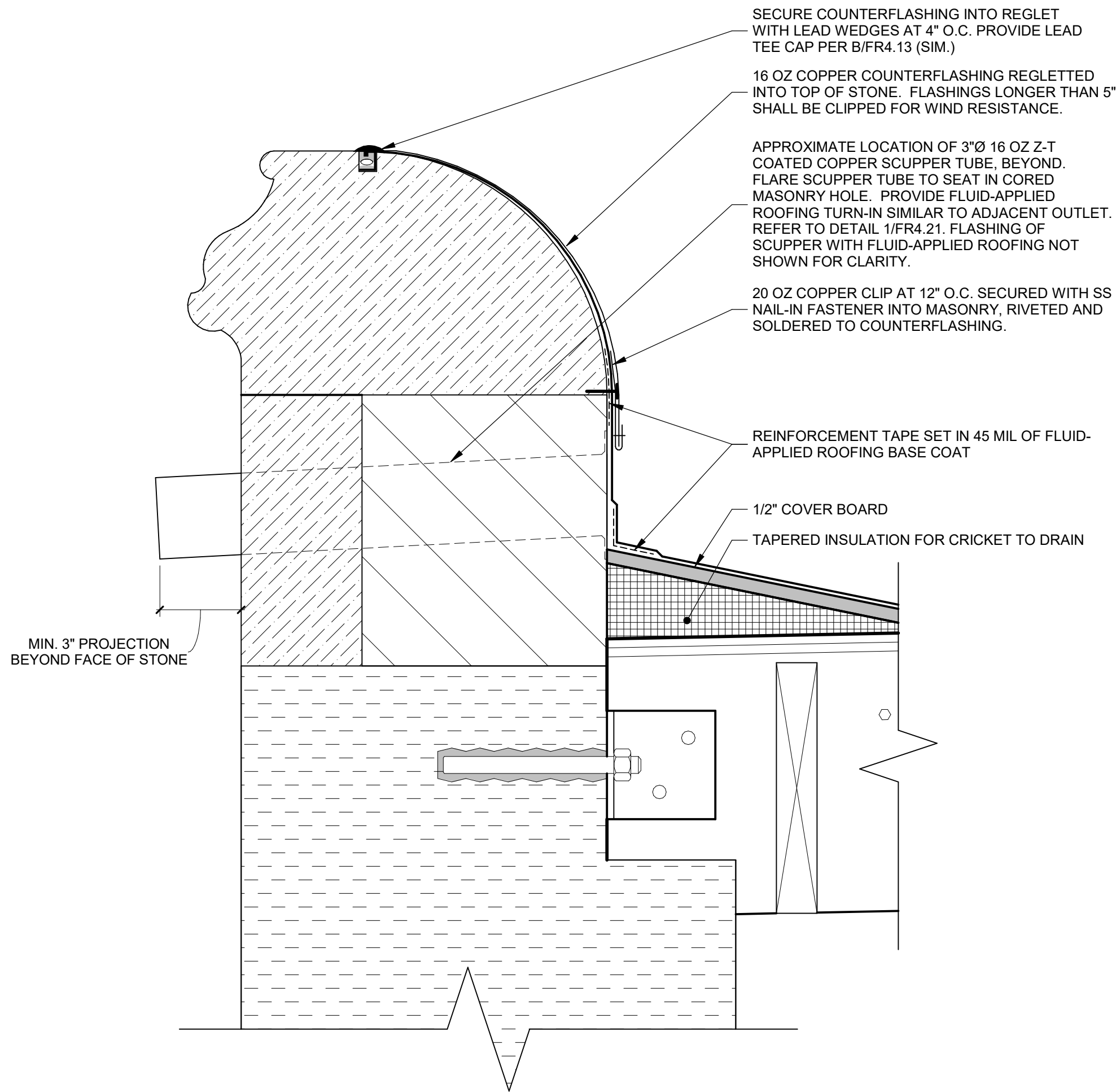
5 WEST PARAPET COUNTERFLASHING

FR4.21 N.T.S.



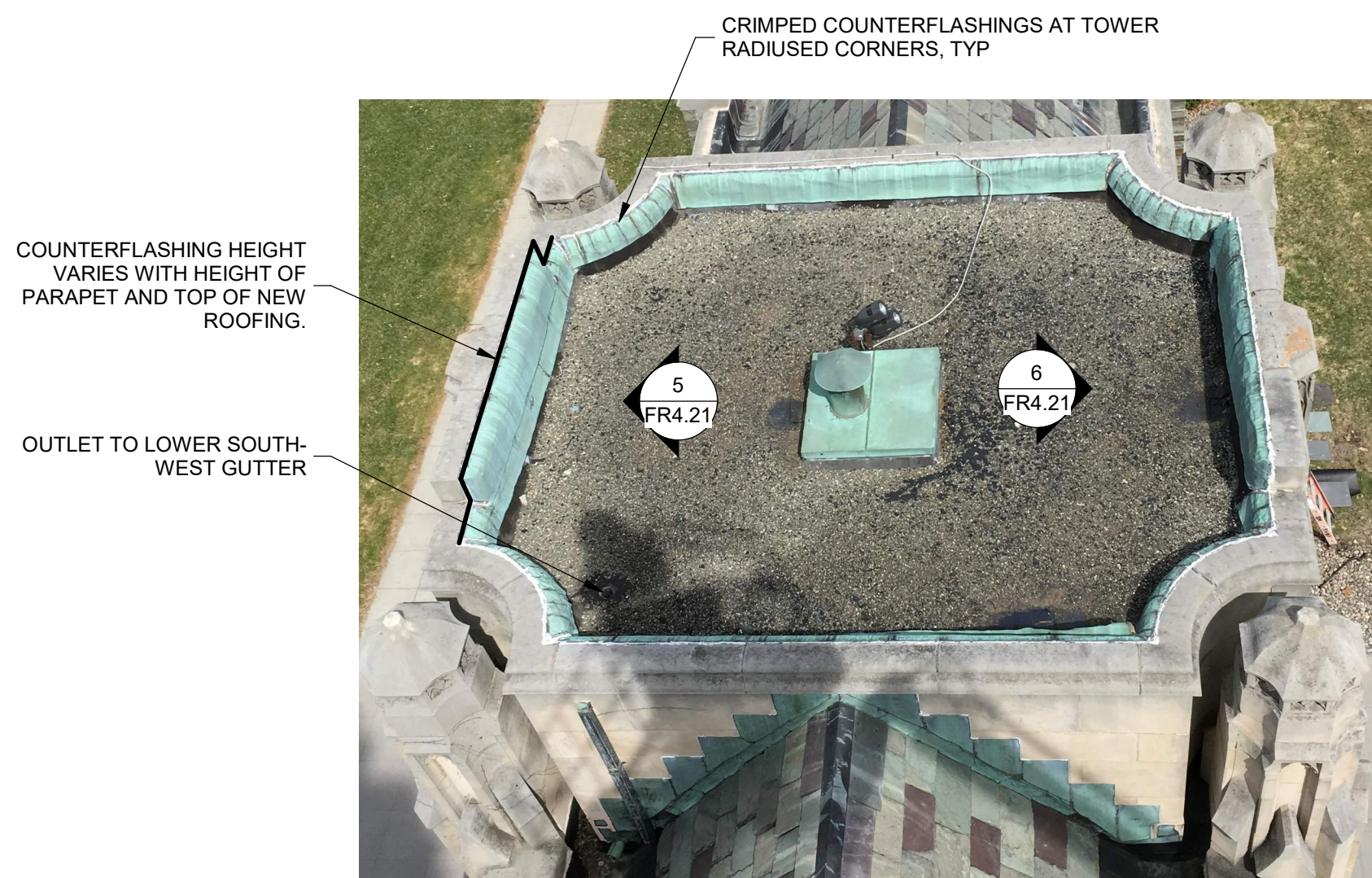
6 EAST PARAPET COUNTERFLASHING

FR4.21 N.T.S.



2 DETAIL - COUNTERFLASHING AND SCUPPER OUTLET

FR4.21 3" = 1'-0"



4 CENTER ROOF COUNTERFLASHINGS OVERVIEW

FR4.21 N.T.S.

NOTES:

1. ALL COUNTERFLASHINGS TERMINATE INTO REGLET ON TOP OF STONE AND SEALED WITH LEAD TEE CAP JOINT.
2. COUNTERFLASHING HEIGHTS VARY ACCORDING TO HEIGHT OF PARAPET, AND FINISHED TOP OF ROOFING.

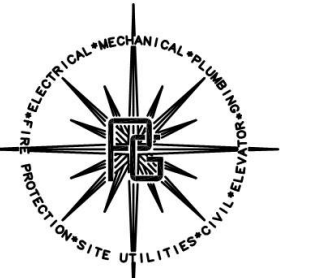


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ROOFING DETAILS

Job Number: E2019010A

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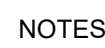
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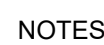


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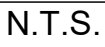
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1. LAYOUT OF STEPPED COUNTERFLASHING IN MASONRY DEPENDS UPON SIZE OF BRICKS AND COURSING. PLAN FLASHING TO PROVIDE MIN. 8" HEIGHT ABOVE ROOFING, BUT NOT GREATER THAN 12". U.N.O. REVIEW ALL REGLET LOCATIONS WITH ENGINEER BEFORE PROCEEDING.
2. FLASHINGS GREATER THAN 8" SHALL HAVE RIVETED AND SOLDERED 24 OZ COPPER TABS TO SECURE EXPOSED SIDE OF COUNTERFLASHING. SECURE TABS TO WALL ABOVE BASE FLASHINGS WITH STAINLESS STEEL NAIL-IN ANCHOR.
3. SAWCUTS TO FORM REGLETS INTO BRICK ARE NOT PERMITTED UNLESS SPECIFIED TO DO SO. IF SPECIFIED, ONLY INDICATED LOCATIONS PERMITTED.



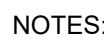
1. REFER TO SLATE ROOFING SPECIFICATION FOR SLATE SCHEDULE.
2. REFER TO FR1.03 FOR ROOF DECKING AND FRAMING SCOPE NOT SHOWN FOR CLARITY
3. REFER TO 6/FR4.20 FOR RIDGE FLASHING ENDWALL CONDITION.



1. RIVETS FOR 16 AND 20 OZ COPPER SHEET SHALL BE COPPER. RIVETS FOR 24 OZ COPPER SHALL BE STAINLESS STEEL.
2. DIRECTION OF LAPS FROM TOP TO BOTTOM TO MATCH DIRECTION OF WATER FLOW



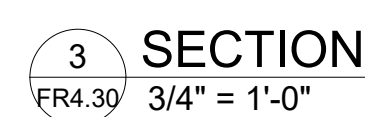
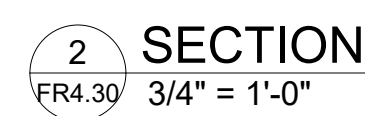
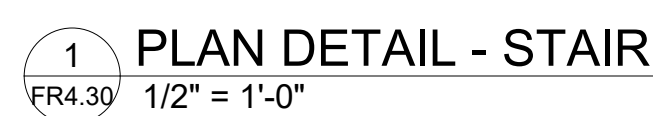
1. GUTTER LINER, UNDERLAYMENTS, AND ROOF DECKING NOT SHOWN FOR CLARITY.
2. ONLY STARTER, RIDGE CAP, AND 8TH COURSE SLATES WILL BE UNPUNCHED FROM SLATE PROVIDER. HOLE SPACING PROVIDED FOR REFERENCE.
3. STARTER COURSE NOT SHOWN FOR CLARITY, BUT SHALL COMPLY WITH IDENTICAL SLATE LAP REQUIREMENTS.
4. SLATE GAP WIDTH CAN VARY BY SLATE THICKNESS, TYPICALLY 0 TO 1/4". PER ASTM C406, UP TO 1/8" OF DIMENSIONAL TOLERANCE IN SLATES IS PERMITTED, AND THE GAP MAY BE USED TO ACCOMMODATE THIS VARIATION. GAP MAY ALSO BE USED TO ACHIEVE LAP LAP REQUIREMENTS. IF 3/8" OR GREATER GAPS ARE CONSIDERED DURING LAYOUT, REPORT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.



1. UNIFORM EXPOSURE AND WIDTHS SHOWN TO ILLUSTRATE RIDGE CAP LAYOUT. ACTUAL RIDGE CAP LAYOUT TO ACCOMMODATE SLATE WIDTH VARIATIONS. REFER TO SLATE SCHEDULE FOR GRADUATED PATTERN, AND TYPICAL DETAILS FOR RANDOM WIDTH LAP REQUIREMENTS.
2. HIDDEN COPPER RIDGE FLASHING NOT SHOWN FOR CLARITY; REFER TO DETAIL G/FR4.22.



NOTE: NEW GUTTER LINER AND OTHER SCOPE AS INDICATED IN 2/FR4.20

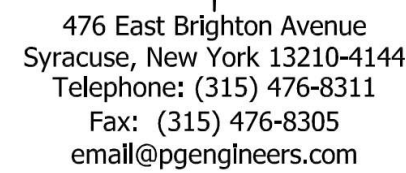




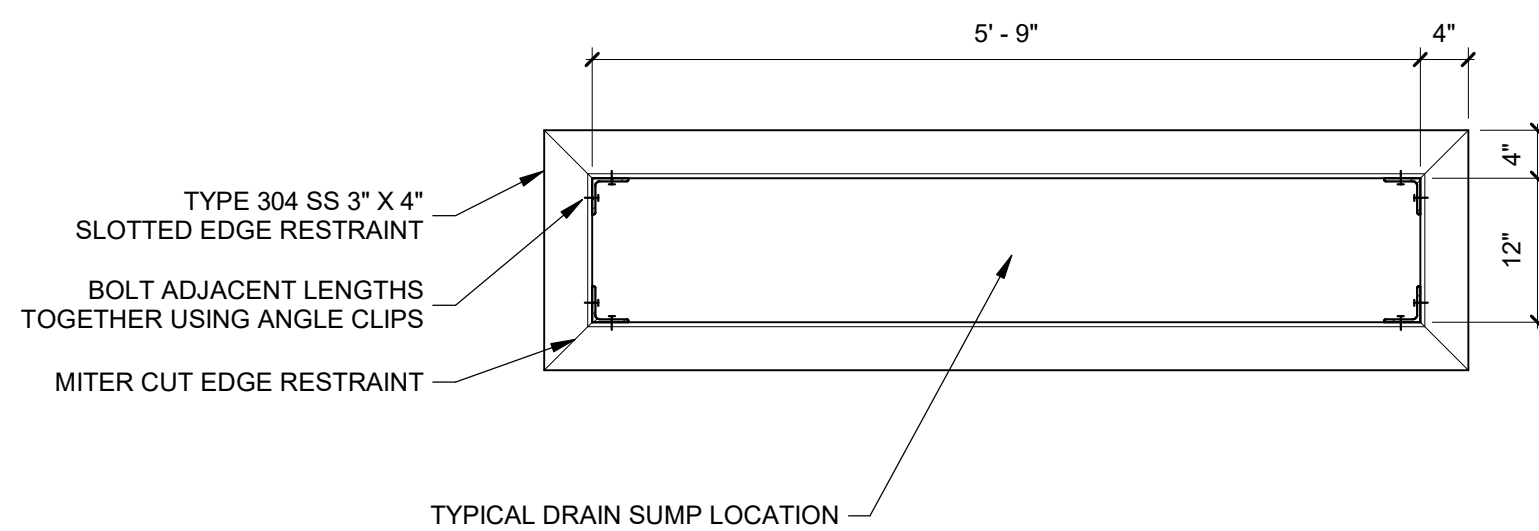
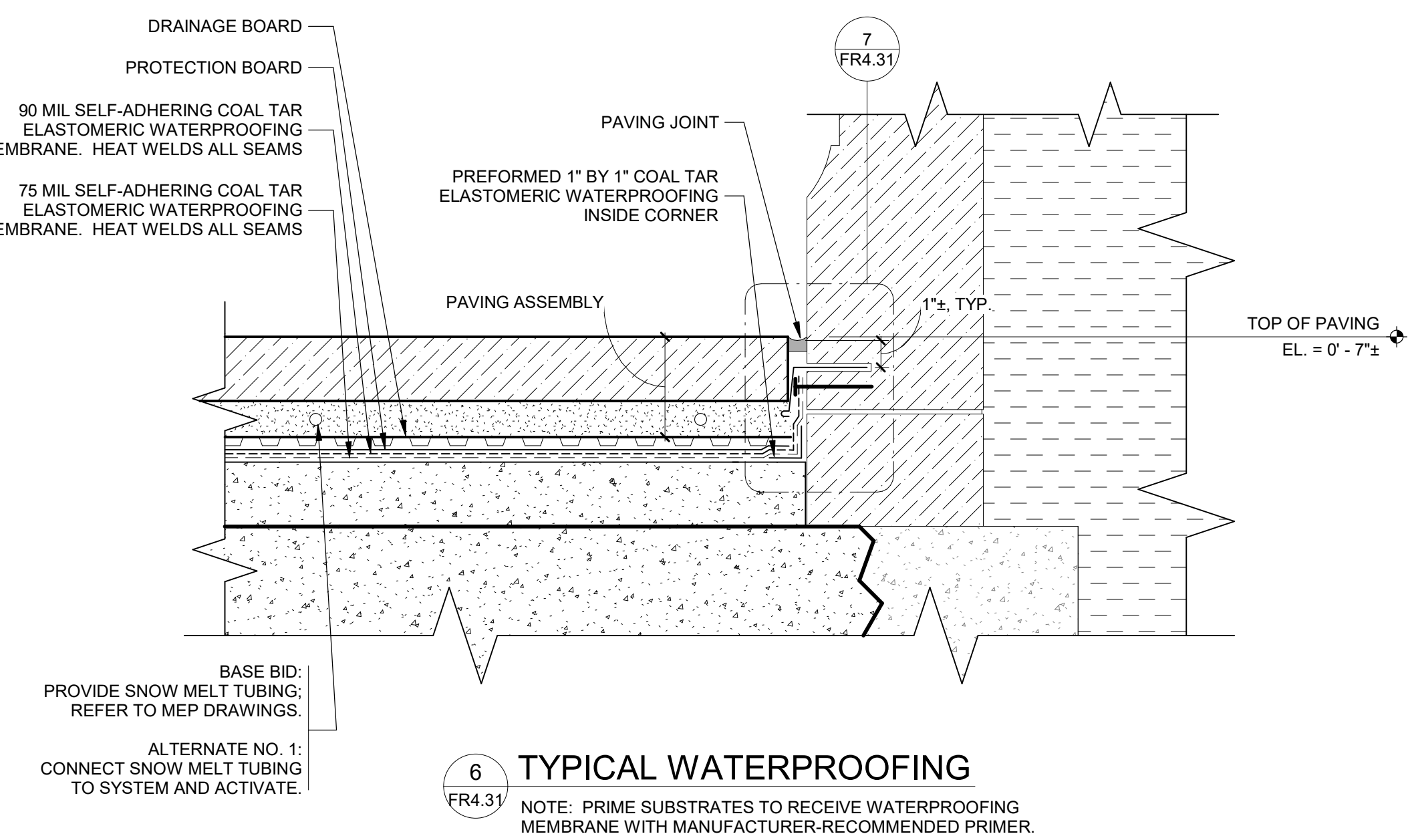
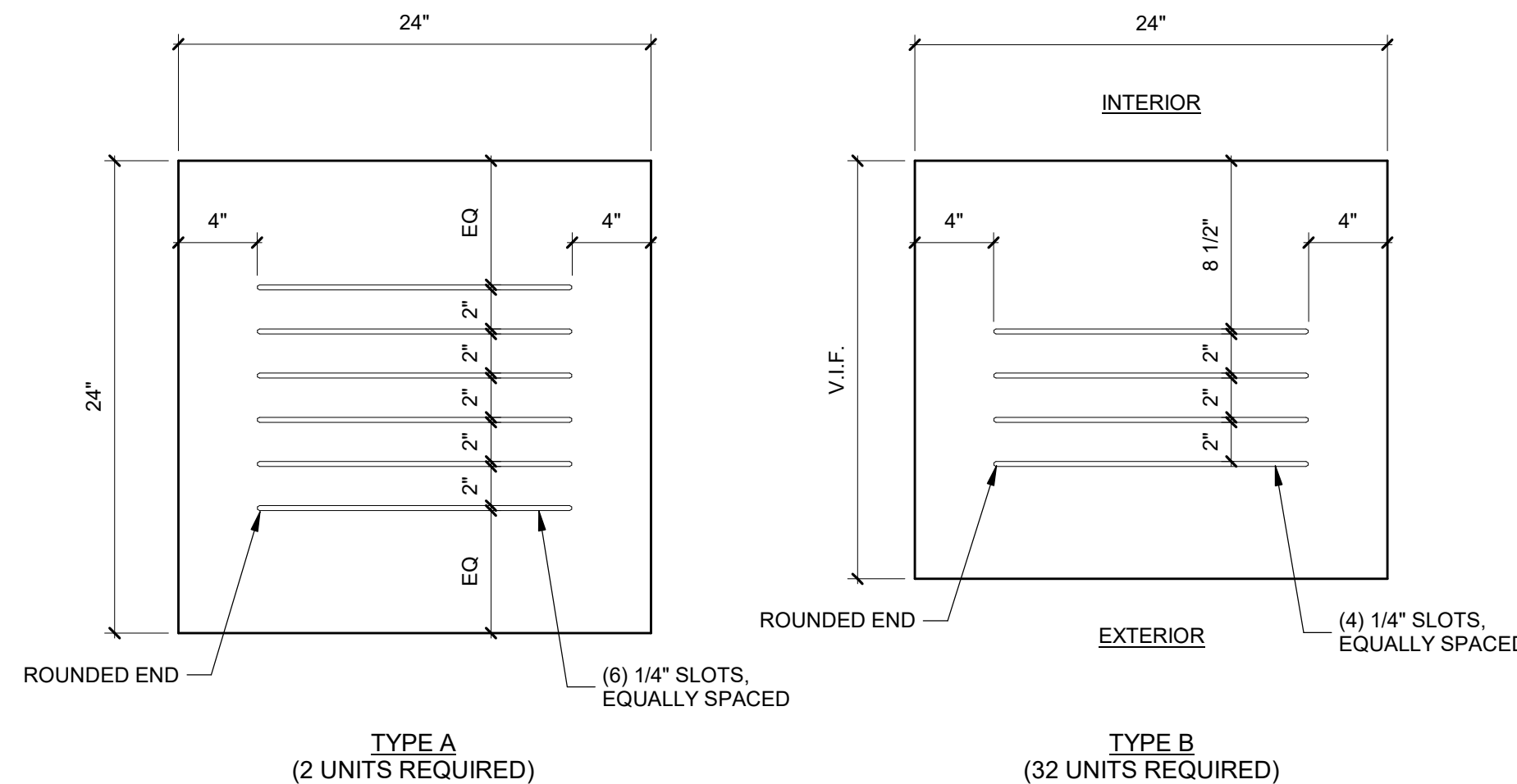
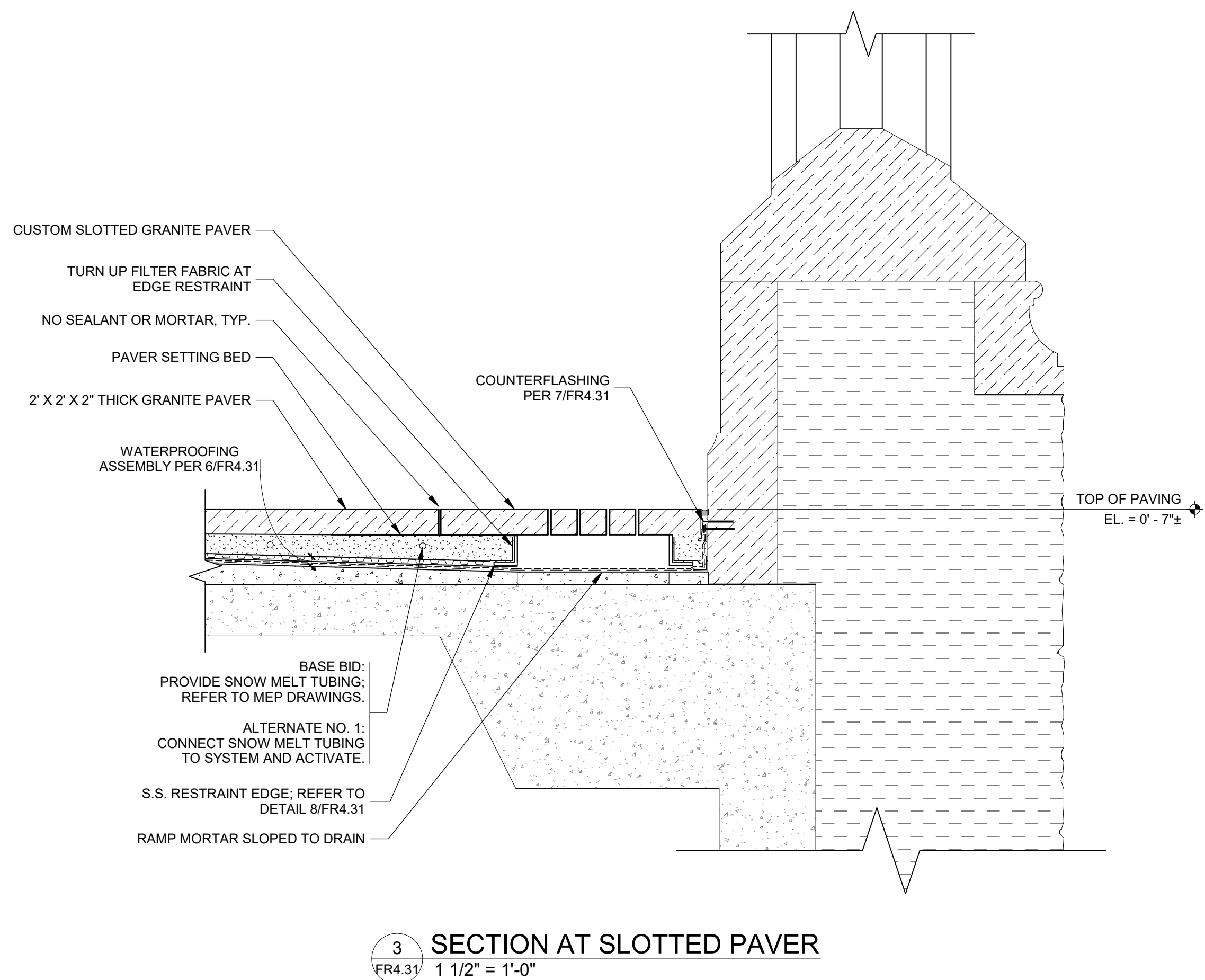
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Consulting Engineers PC**



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CLOISTER PAVING NOTES

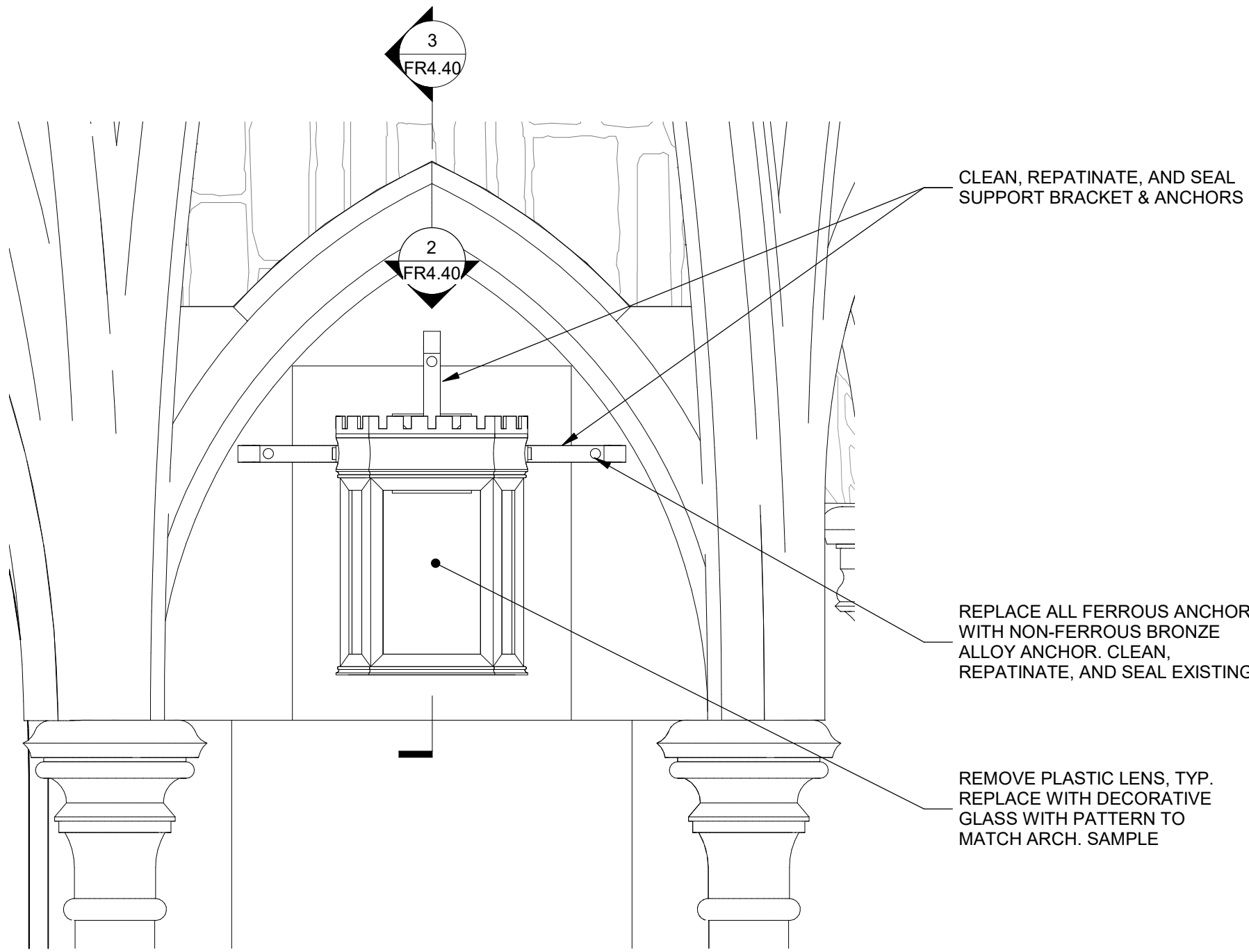
1. EXISTING PAVING SECTION IS UNDERSTOOD TO BE ~ 7" OF PAVING MATERIALS ATOP A 7" STRUCTURAL DECK, AS FOLLOWS:
- 1" THICK PAVERS, TYPICAL
 - 1" THICK POLYMER MODIFIED ASPHALT, WITH INSCRIBED PAVERS ASSUMED TO BE 5 - 6" THICK
 - 4" - 5" OF SAND SETTING BED WITH NOMINAL CEMENT BINDER
 - 1/8" - 1/4" THICK REINFORCED COLD TAR PITCH WATERPROOFING LAYER
 - 6-1/2" TO 7" THICK CONCRETE STRUCTURAL DECK, GENERALLY UNLOADED.
2. NEW PAVING SECTION IS PLANNED TO MATCH EXISTING TOP OF PAVERS, AS FOLLOWS:
- AT HIGH POINTS IN PER.01(A)
 - 1" THICK PAVERS, TYPICAL
 - 1-1/2" THICK SETTING BED WITH SNOW MELT SYSTEM TUBING WITHIN
 - 1" THICK WATERPROOFING/DRAINAGE ASSEMBLY
 - CONCRETE TOPPING (MATCH EXISTING CONCRETE STRUCTURAL DECK)
 - CONCRETE STRUCTURAL DECK THICKNESS AND LAYOUT PER PER.01 AND DETAILS.

(AT INSCRIBED PAVERS IN FR1.01A)

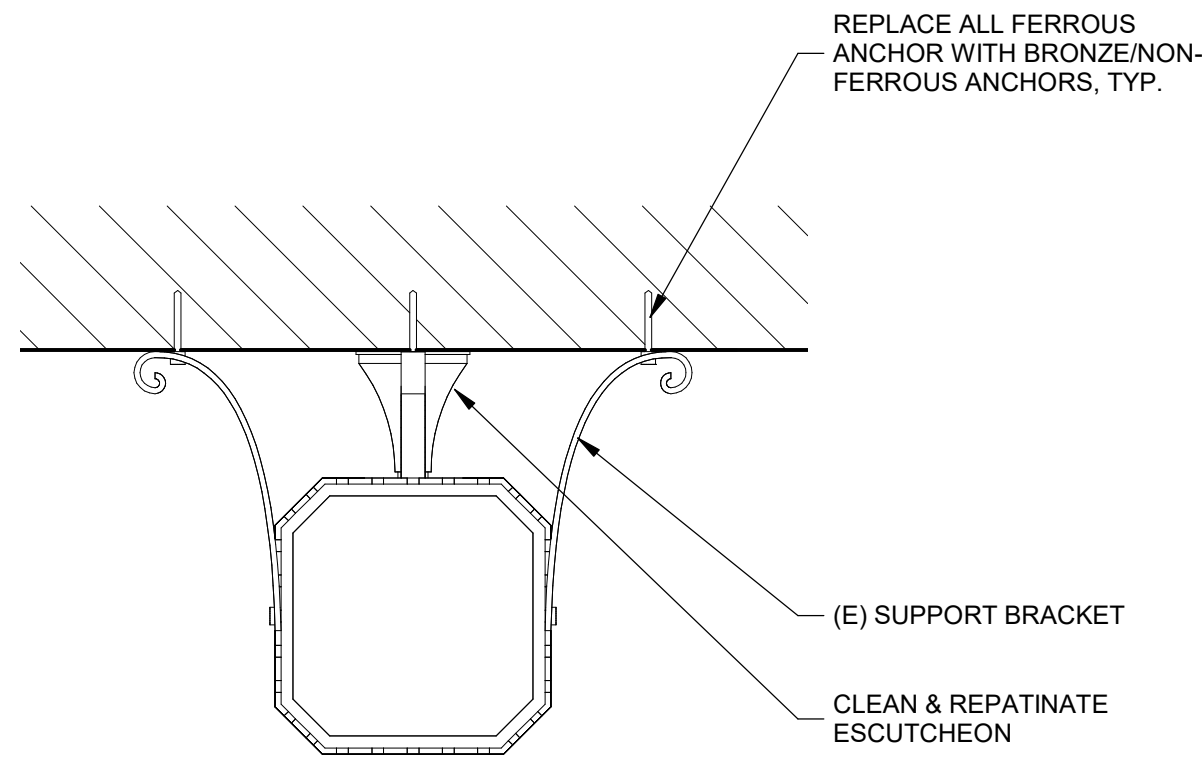
- 4-5" THICK PAVERS, TYPICALLY
- 1" THICK SETTING BED WITH NO SNOW MELT SYSTEM TUBING
- NO WATERPROOFING/DRAINAGE ASSEMBLY-- WATERPROOFING TERMINATES AT PERIMETER OF INSCRIBED STONES
- 0.75" FLAT CONCRETE TOPPING (OR NONE TO MAINTAIN TOP OF PAVING ELEVATION)
- CONCRETE STRUCTURAL DECK THICKNESS AND LAYOUT PER FR.01 AND DETAILS.

(ADJACENT TO DRAINS IN FR1.01A)

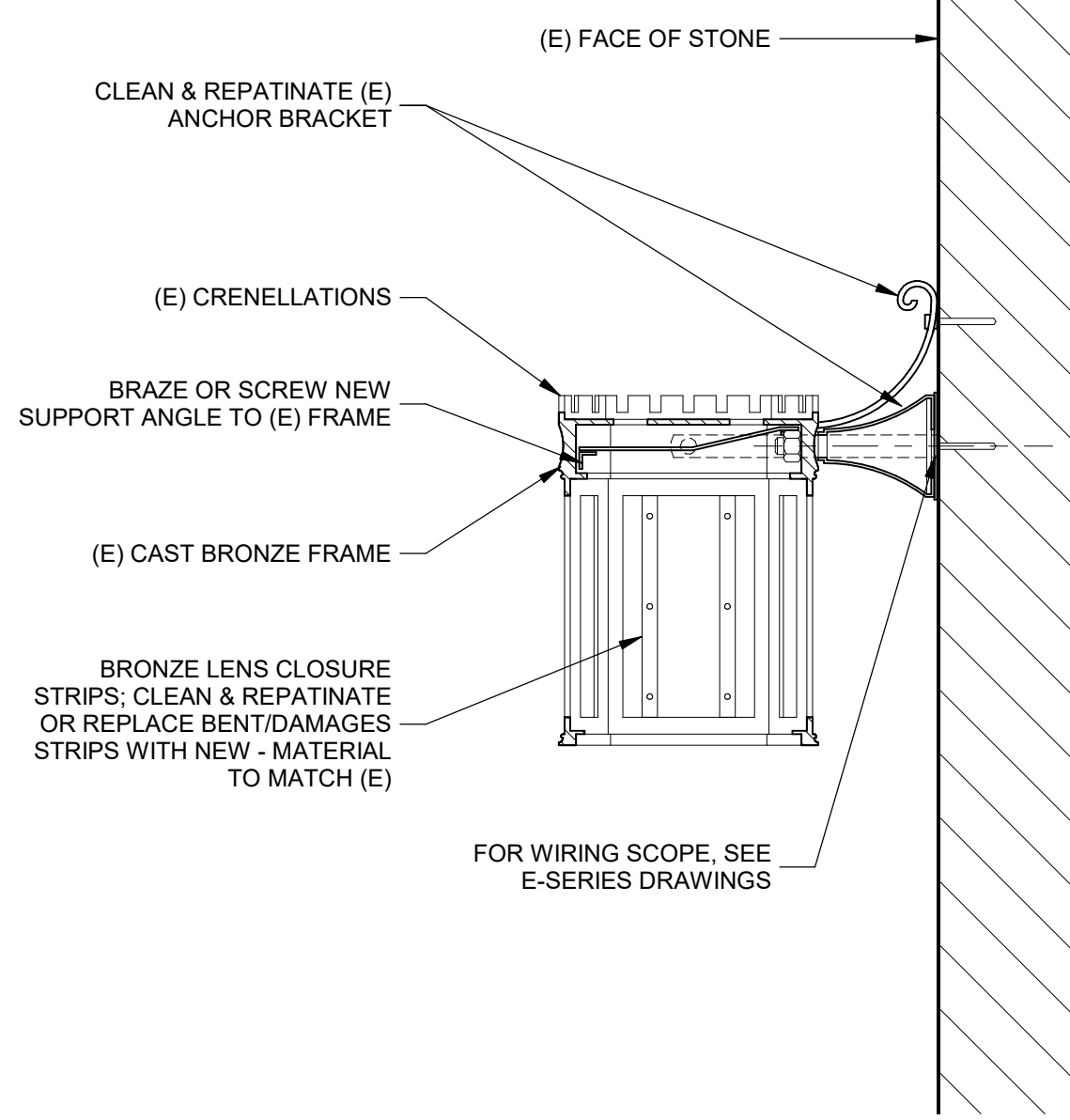
- 2" THICK PAVERS, TYPICALLY
- 2-3" THICK SETTING BED WITH SNOW MELT SYSTEM TUBING WITHIN
- 1" THICK WATERPROOFING/DRAINAGE ASSEMBLY
- 1" (OR LESS) CONCRETE TOPPING, TRANSITIONING TO RAMP MORTAR WITHIN SLOTTED EDGE RESTRAINT
- CONCRETE STRUCTURAL DECK THICKNESS AND LAYOUT PER FR.1.01 AND DETAILS.



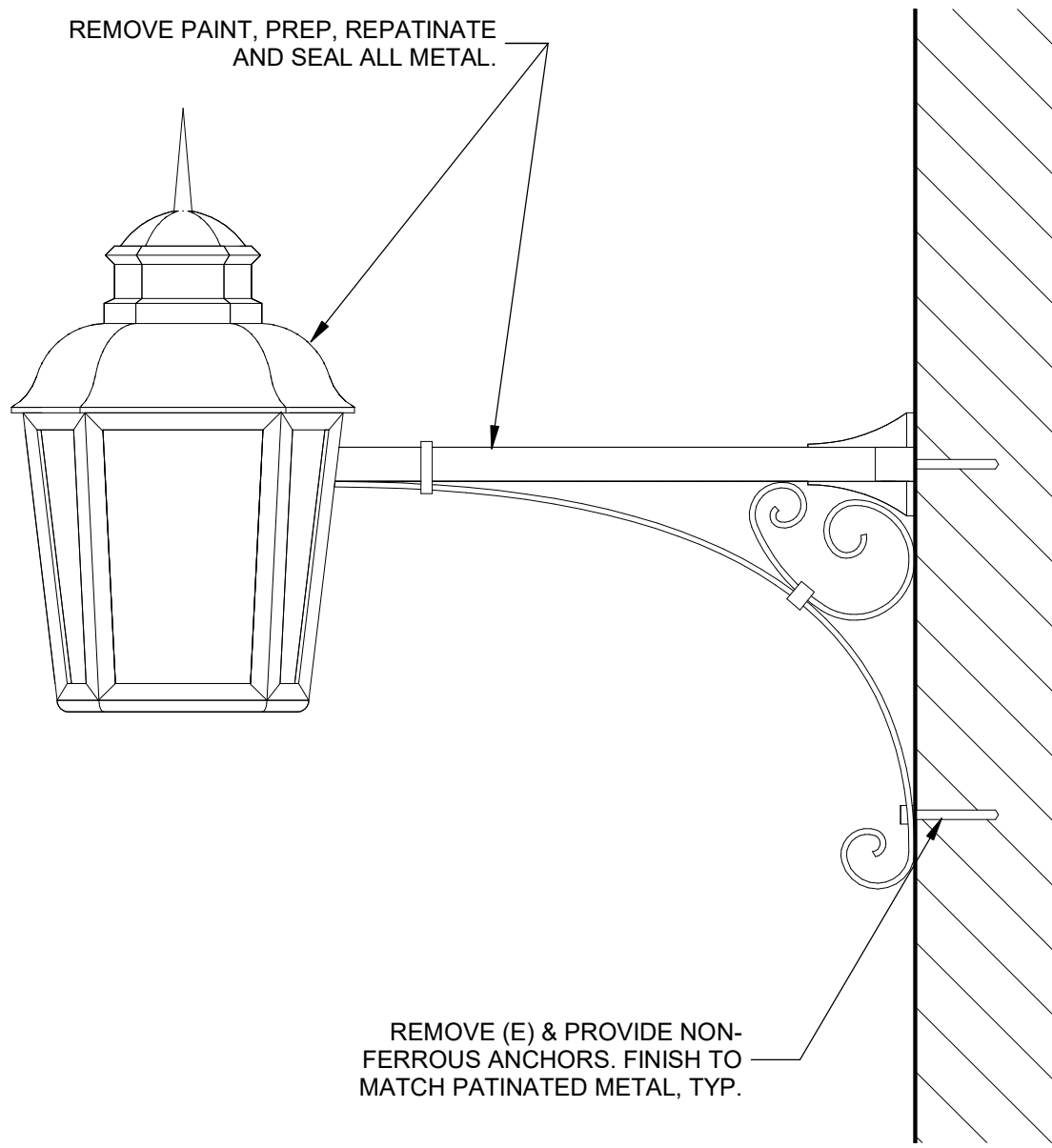
1 ELEVATION - CLOISTER LIGHT
FR4.40' N.T.S.



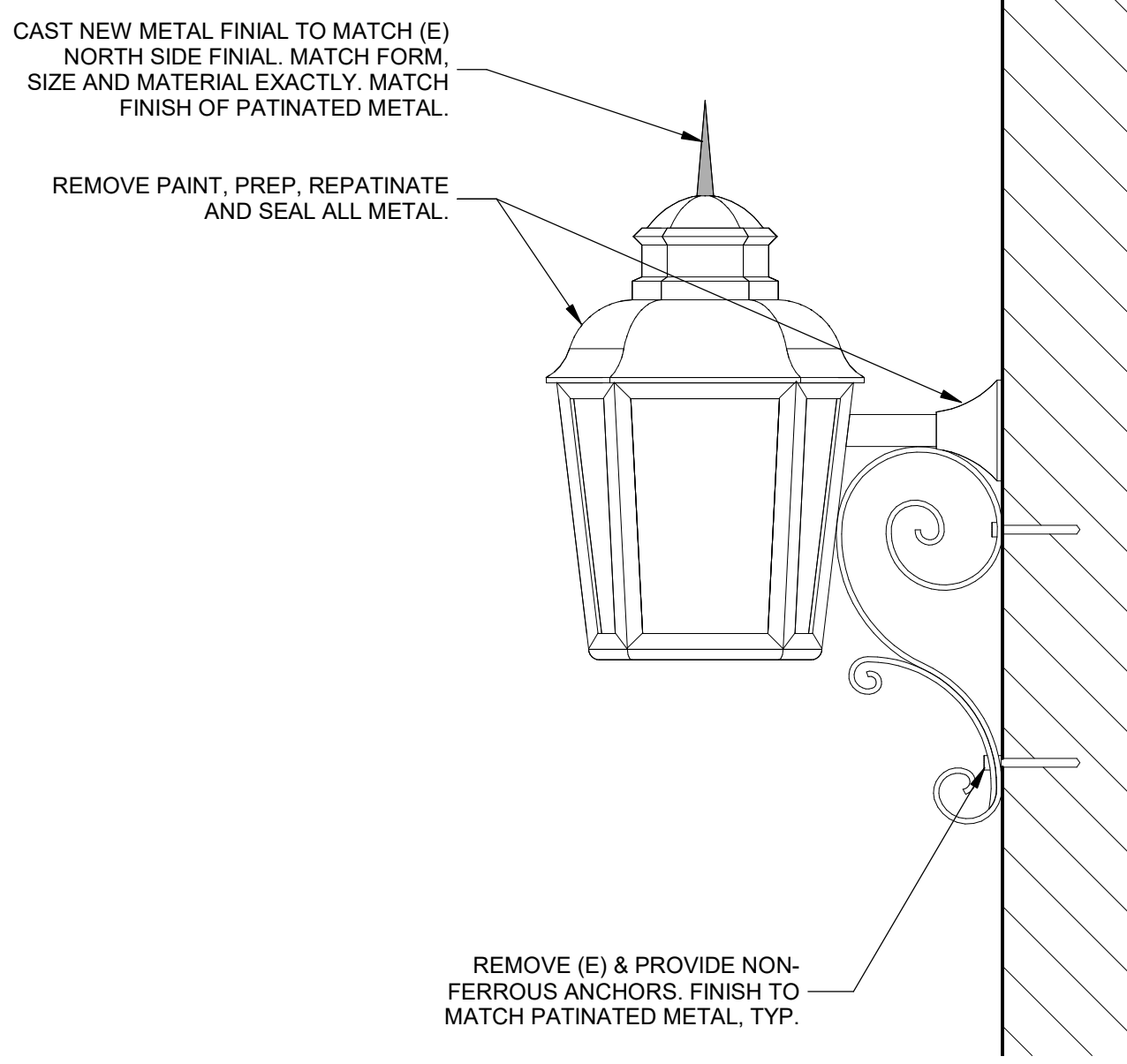
2 PLAN DETAIL - CLOISTER LIGHT
FR4.40' N.T.S.



3 DETAIL - CLOISTER LIGHT
FR4.40' N.T.S.



4 DETAIL - WEST ELEVATION LIGHT
FR4.40' N.T.S.



5 DETAIL - EAST ELEVATION LIGHT
FR4.40' N.T.S.

LIGHT RESTORATION NOTES

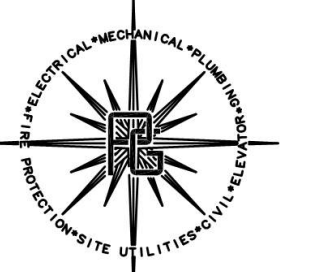
1. STRIP PAINT FROM ALL HISTORIC EXTERIOR METAL LIGHTS, TYP.
2. REMOVE ALL EXISTING GLASS/POLYCARBONATE LENSES, TYP.
3. INSTALL NEW GLASS: MANUFACTURER - MCGORRY GLASS BLN-1575
4. REMOVAL OF EXTERIOR AND INTERIOR LIGHTS TO BE PERFORMED BY CONSERVATOR IN ASSOCIATION WITH ELECTRICAL CONTRACTOR. ISOLATE/PROTECT LIVE CONNECTION. LEAVE IN SAFE CONDITION.
5. REPLACE ALL FERROUS OR MISSING ANCHORS WITH NON-FERROUS BRONZE ANCHORS.



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Seal:



Tracy D. Marcotte P.E. - Lic. No. 101792

No.	Date	Revisions
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Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

Author

Checked:

CC

Approved:

TDM

Drawing Title:

LIGHTING DETAILS

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

FR4.40



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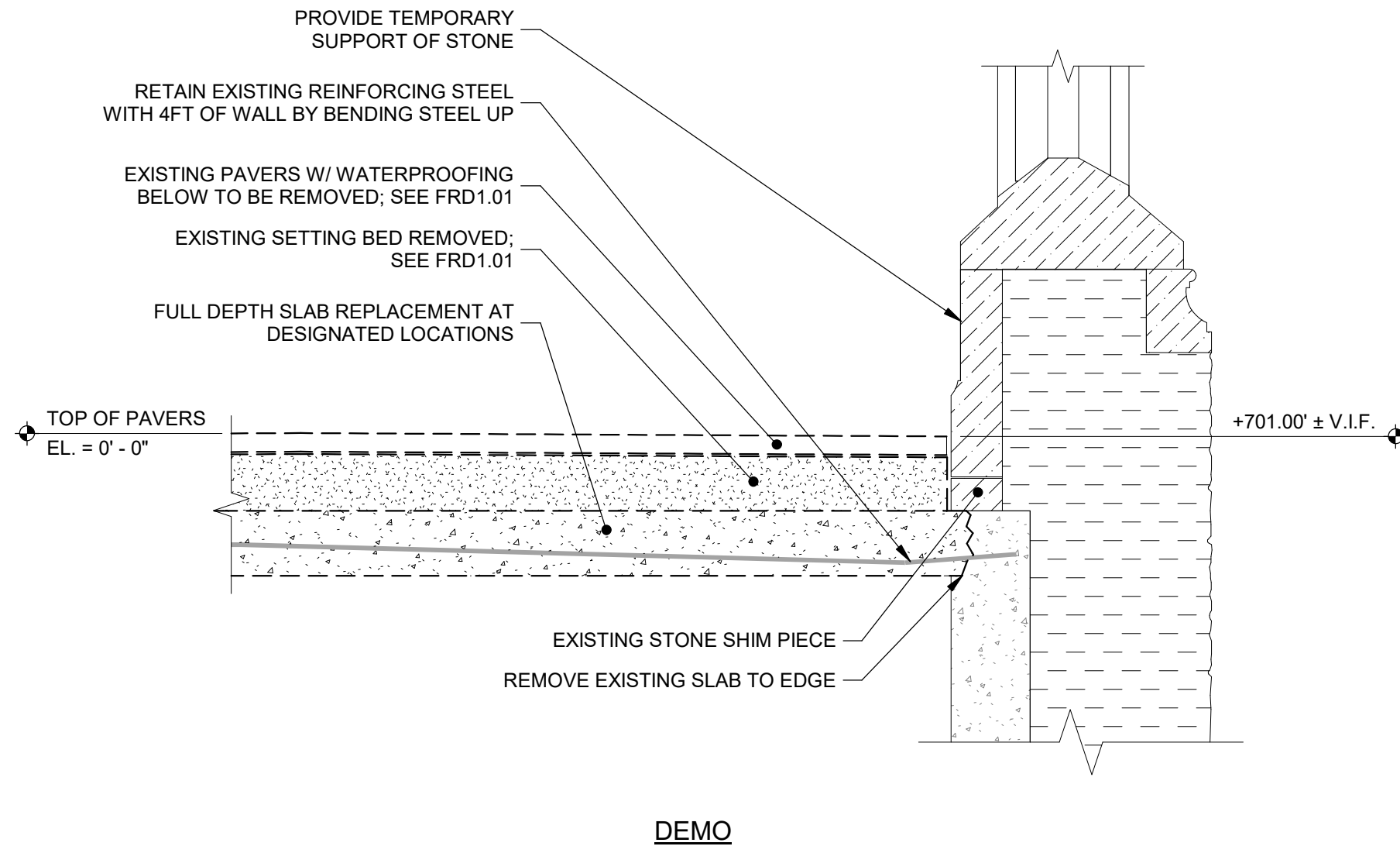
WEST WALL

1 NOT USED
FR4.50

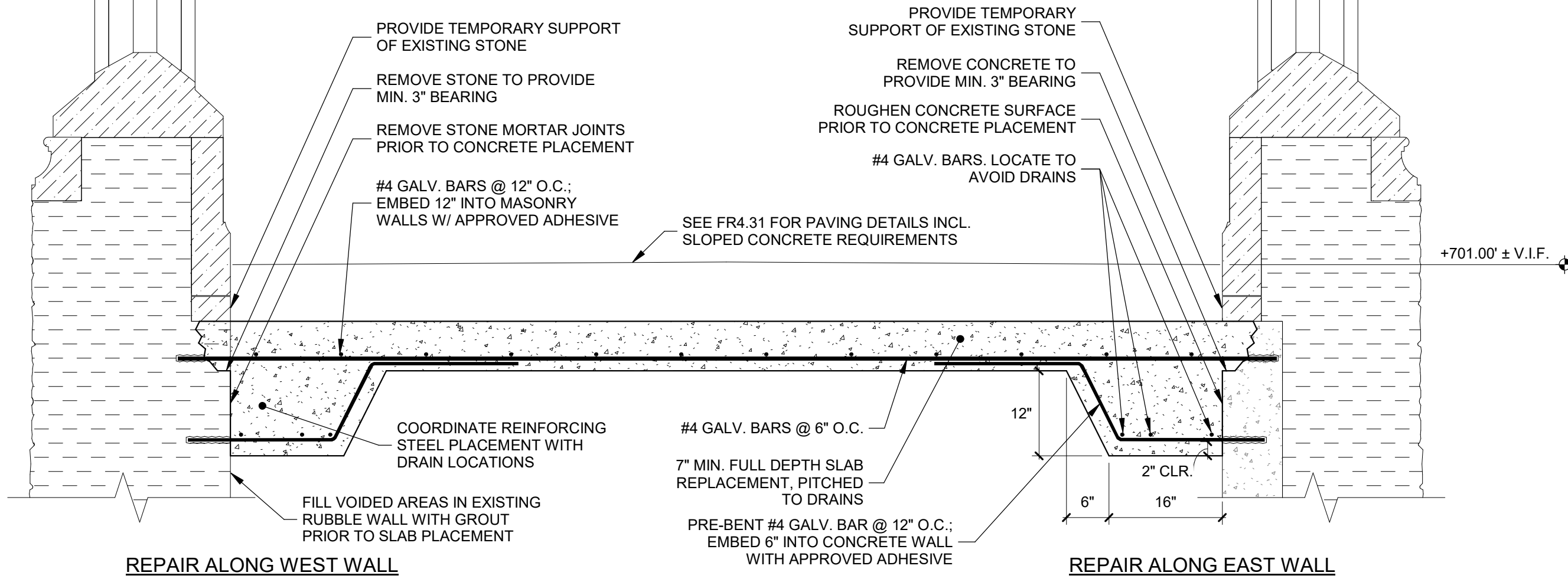
2 EXISTING CONDITIONS
FR4.50

CONCRETE REPAIR PROCEDURE (PARTIAL WIDTH AREAS)

- ENGINEER TO IDENTIFY APPROXIMATE EXTENTS OF REPAIR AREA. CONTRACTOR TO CONFIRM EXTENTS OF REPAIR AREA AND SOUND PERIMETER OF REPAIR AREA TO CONFIRM EXTENT OF DELAMINATION TO ENSURE COMPLETE REMOVAL OF UNSOUND CONCRETE.
- SAW CUT ALL EDGES OF REPAIR AREAS (1/2" DEEP)
- REMOVE LOOSE, DETERIORATED CONCRETE FOR FULL DEPTH OF THE REPAIR AREA.
- REMOVE LOOSE, DETERIORATED CONCRETE (CRACKED, DELAMINATED, SPALLED) TO 1" PAST DEPTH OF REBAR OR TO SOUND CONCRETE. DO NOT REMOVE MORE THAN 50% OF THE CROSS-SECTIONAL THICKNESS OF THE BEAM. IF SOUND CONCRETE IS NOT ENCOUNTERED WITHIN THE 50% LIMIT, CONTACT ENGINEER FOR ALTERNATE REPAIR SOLUTION.
- REMOVE ADDITIONAL CONCRETE TO EXPOSE MIN. 6" LENGTH OF UNCORRODED REBAR. IF MORE THAN 50% OF PERIMETER OF THE REBAR IS EXPOSED, REBAR IS TO BE COMPLETELY EXPOSED (84" MIN. ALL AROUND). ROUGHEN EXISTING CONCRETE TO A MIN. SURFACE PROFILE OF +/- 1/4" (ICRI CSP-5). MECHANICALLY CLEAN EXISTING REBAR TO REMOVE ALL TRACES OF CORROSION PRODUCTS (SSPC-SP3). PRESSURE WASH EXISTING CONCRETE (MIN. 3,000 PSI) TO REMOVE RESIDUAL DUST, DEBRIS, CRACKED CONCRETE, AND CONTAMINANTS THAT PREVENT PROPER BONDING.
- CONTACT ENGINEER IF CROSS-SECTIONAL AREA OF EXISTING REBAR HAS BEEN REDUCED BY MORE THAN 25% AND / OR EXISTING CONCRETE COVER IS LESS THAN 3/4". SUPPLEMENTAL REINFORCING STEEL TO BE ADDED WHEN EXISTING REBAR HAS SECTION LOSS GREATER THAN 25% AND AS DIRECTED BY ENGINEER. SUPPLEMENTAL REBAR TO BE #3 BARS. BARS TO BE EMBEDDED IN STRUCTURAL ADHESIVE OR SPLICED AS REQUIRED FOR DEVELOPMENT. MINIMUM SPLICE LENGTH TO BE 12 INCHES.
- WET THE CONCRETE SUBSTRATE WITH CLEAN WATER TO ACHIEVE A SATURATED SURFACE DRIED CONDITION.
- PLACE, FINISH, AND CURE CONCRETE REPAIR MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROVIDE SACRIFICIAL GALVANIC ANODES IN ALL REPAIR AREAS. SEE CONCRETE REPAIR SPECIFICATIONS FOR TYPE & SPACING.



DEMO



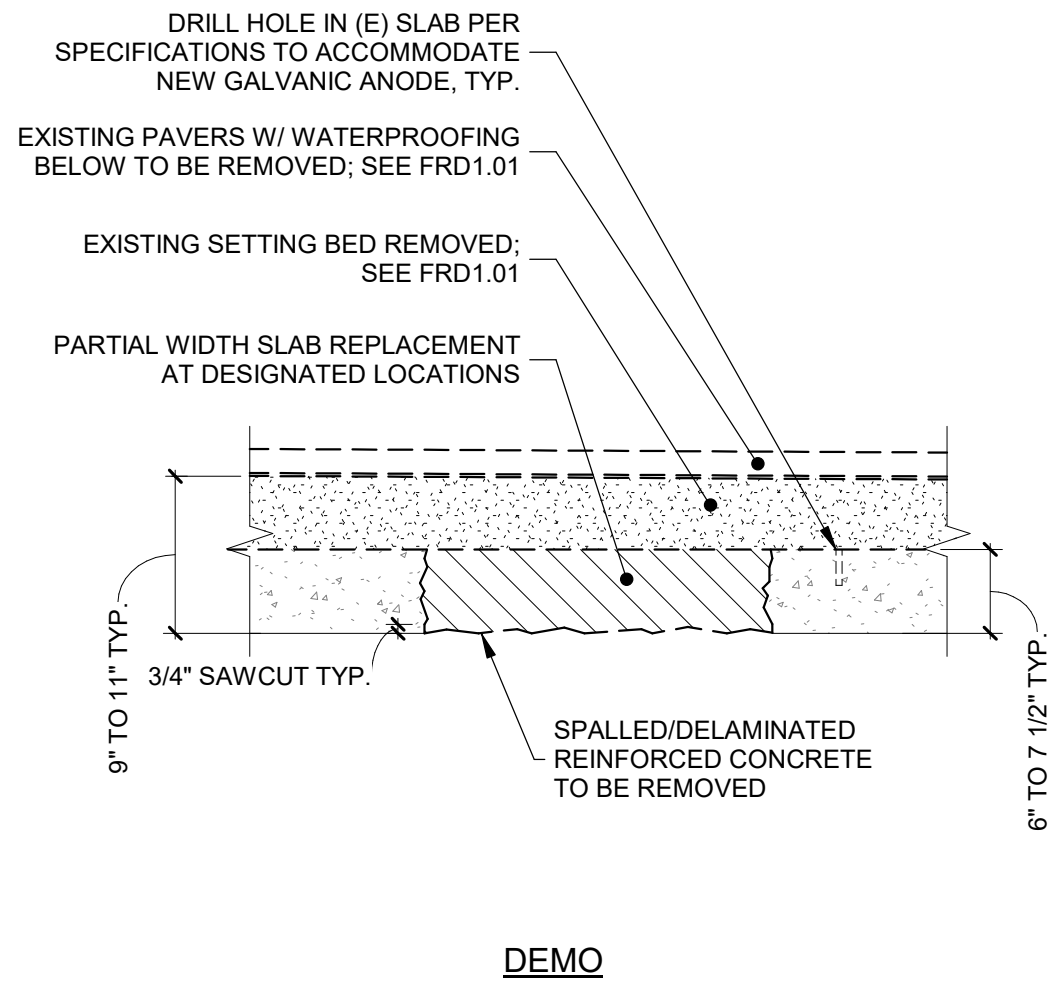
REPAIR ALONG WEST WALL

REPAIR ALONG EAST WALL

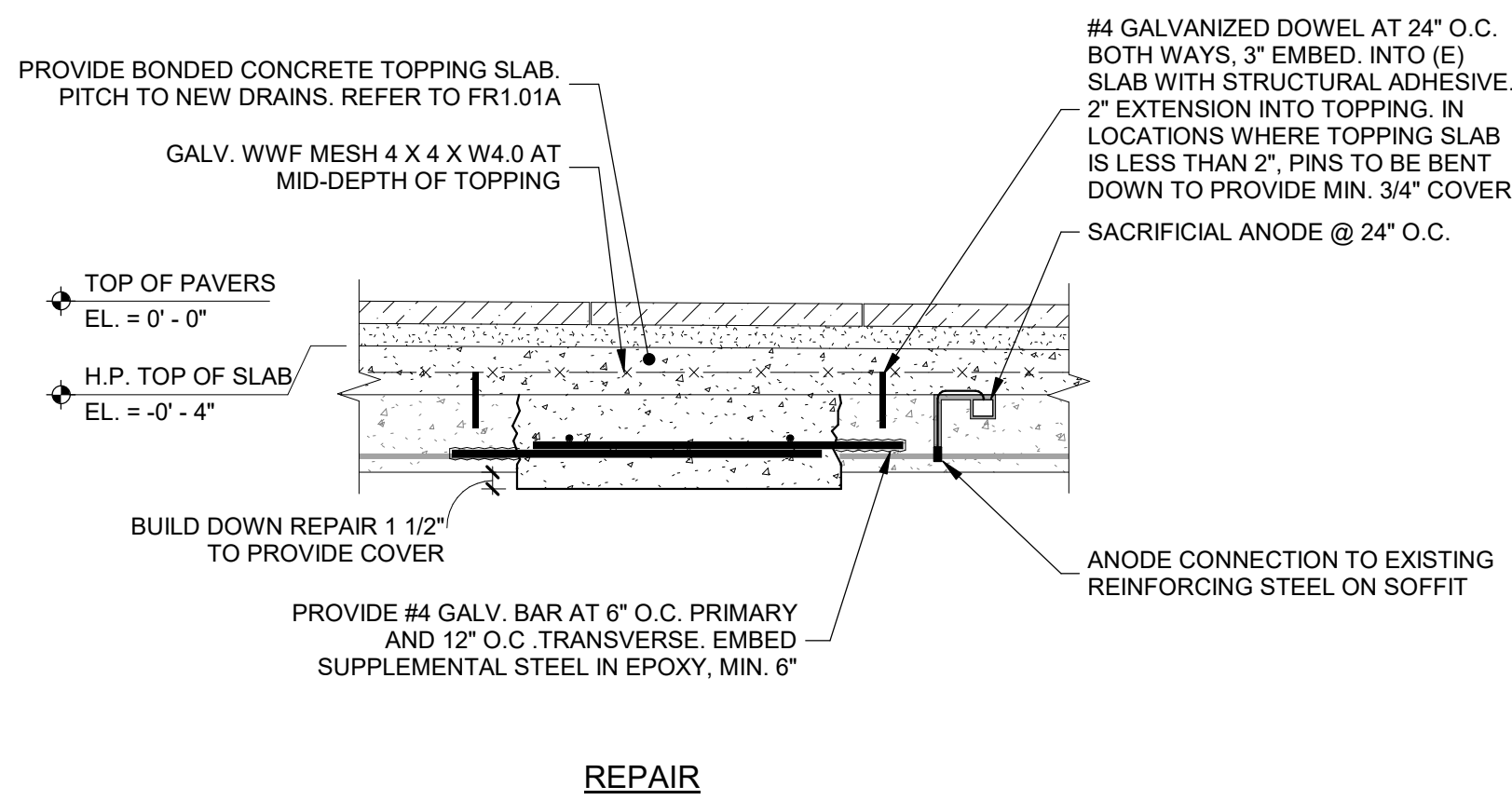
3 SLAB REMOVAL - FULL WIDTH
FR4.50 3/4" = 1'-0"

NOTES:

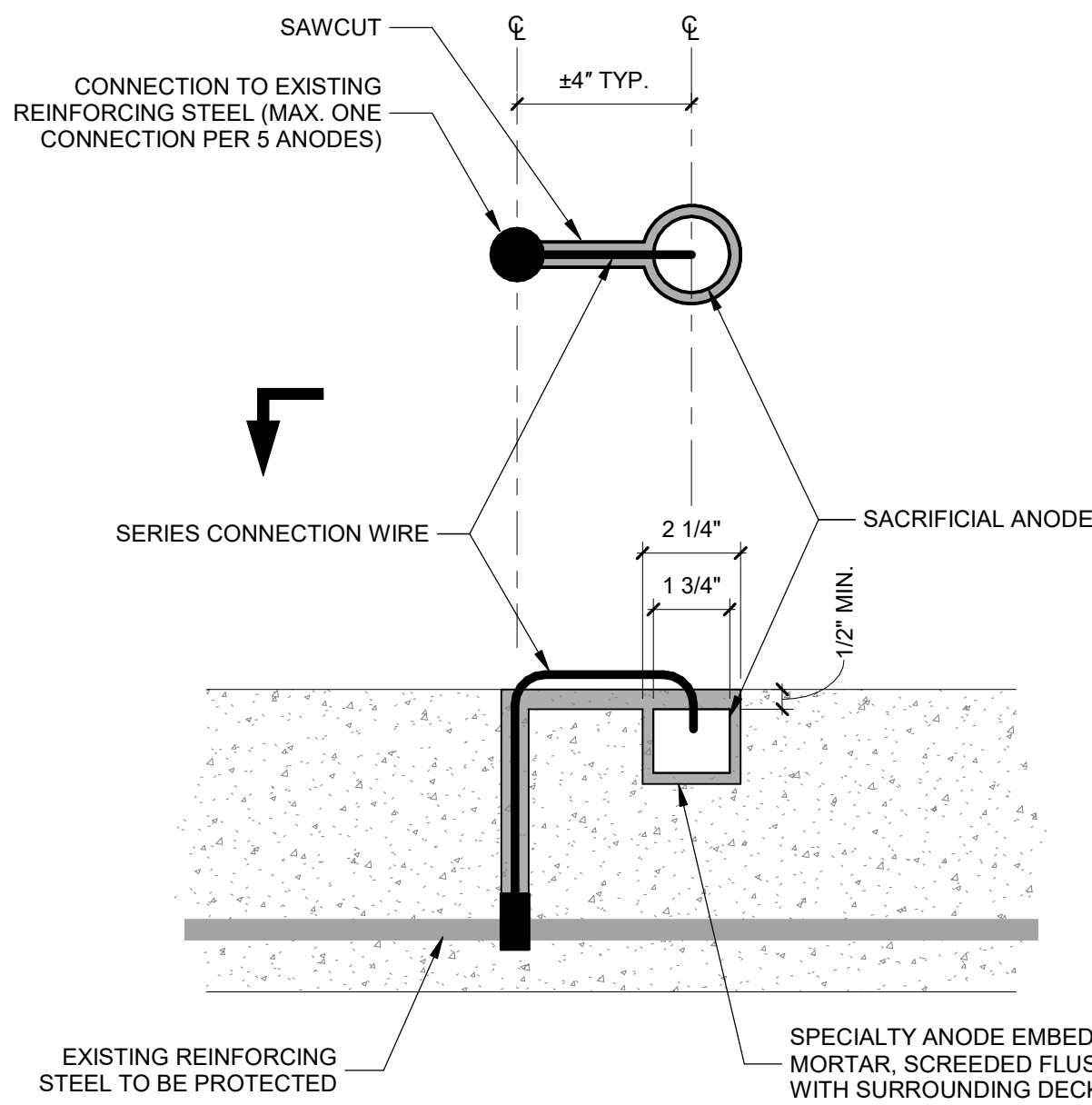
- AT LOCATIONS DESIGNATED BY ENGINEER EXISTING SLAB SECTION TO BE REMOVED FROM EAST TO WEST WALL.
- MAX. LENGTH OF SLAB SECTION TO BE REMOVED IS 12 FEET.
- MAINTAIN 12 FEET OF INTACT SLAB BETWEEN REMOVED SECTIONS.
- PROVIDE MECHANICAL SPLICES FOR REINFORCING STEEL JOINING ADJACENT FULL-DEPTH REPAIR AREAS.
- DOWEL NEW SHRINKAGE AND TEMPERATURE STEEL 8" INTO CONCRETE SLAB TO REMAIN.



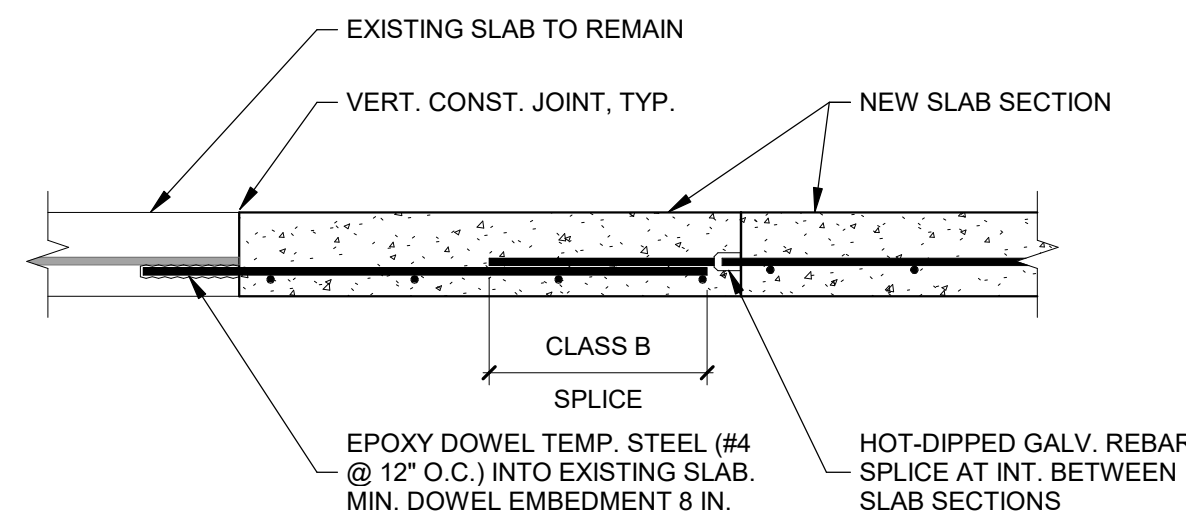
DEMO



REPAIR



5 ANODE CONNECTION
FR4.50



6 REINFORCING STEEL SPLICE DETAIL
FR4.50 3/4" = 1'-0"

No. Date Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

TDM

Drawing Title:

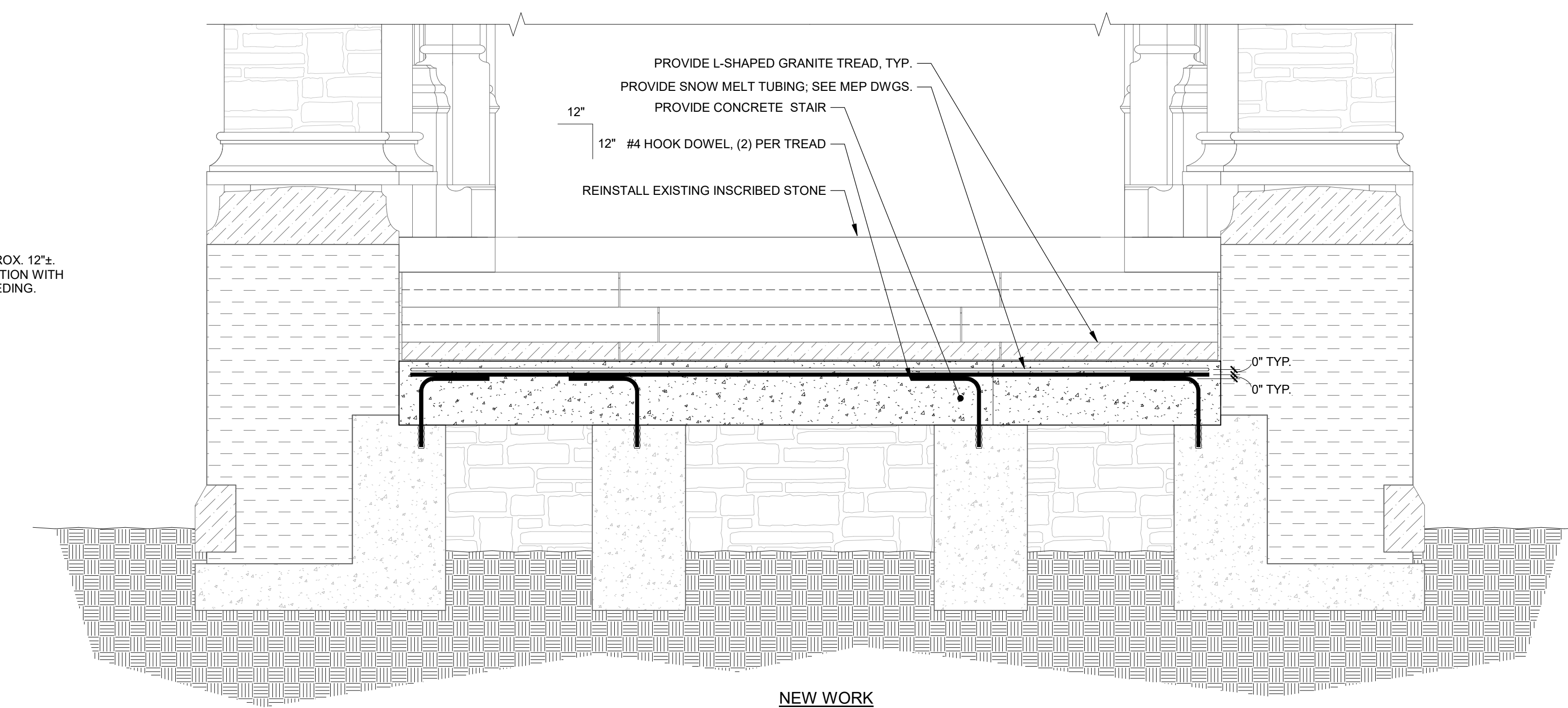
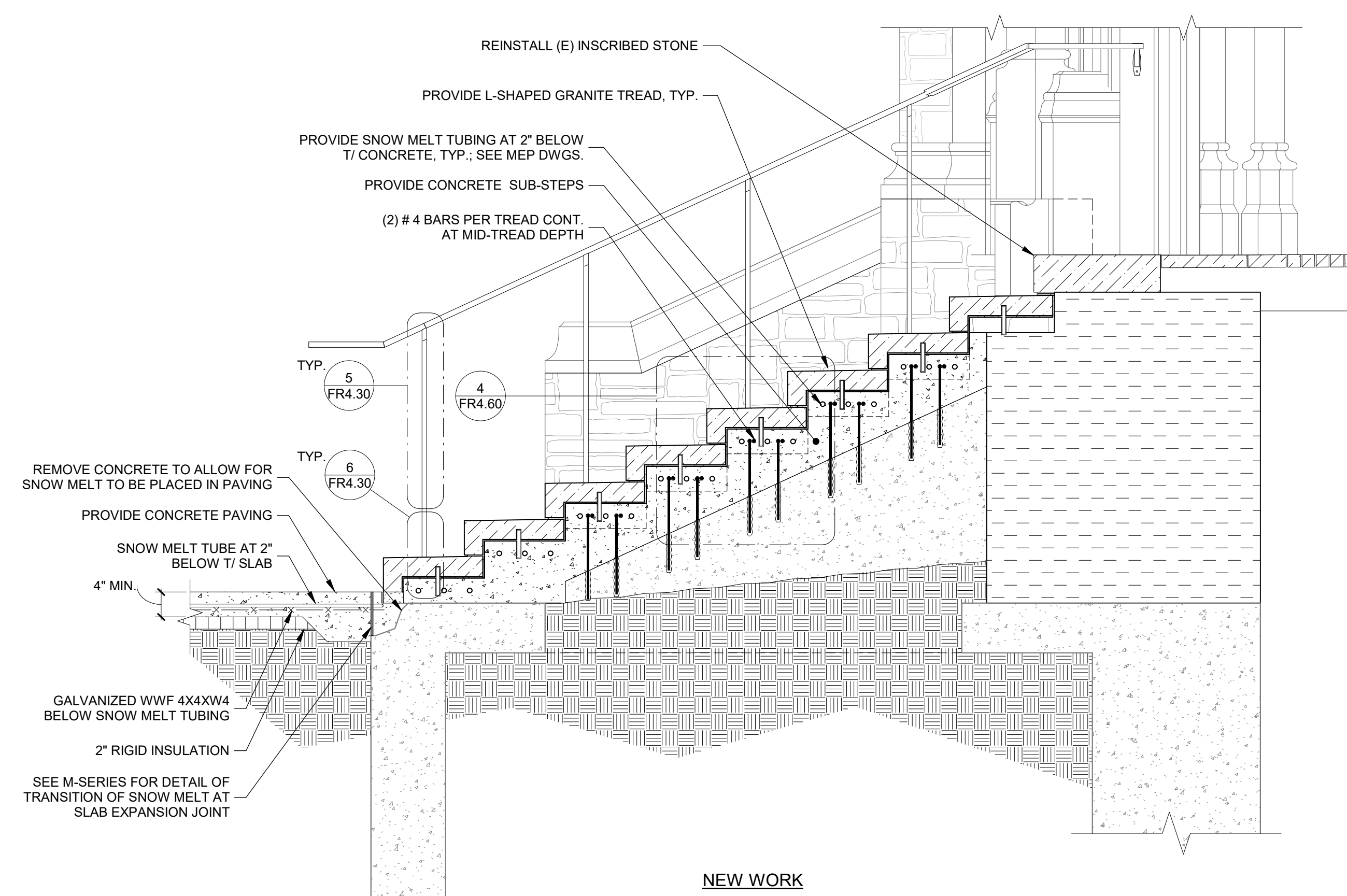
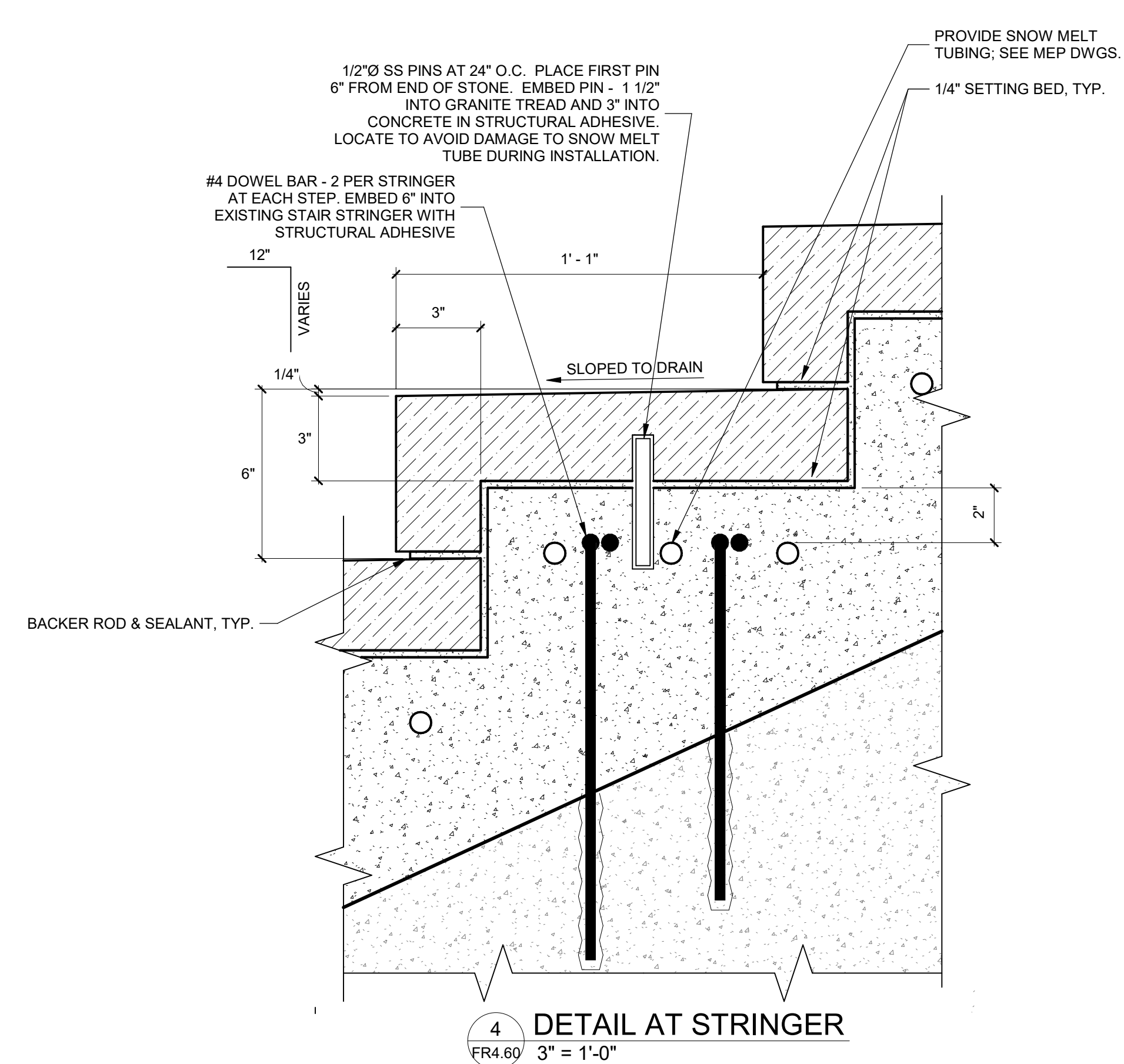
**STRUCTURAL
DETAILS**

Job Number: E2019010A

Date: 02/15/23 Scale: As indicated

Drawing Number:

FR4.50



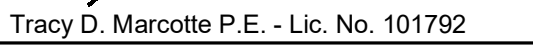
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Consultant:

**Peterson Guadagnolo
Consulting Engineers PC**



Seal:



No.	Date	Revisions
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Project Name:	
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Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DCS

Checked:

CC

Approved:

Drawing Title:	

SNOW MELT ALTERNATE PLAN & DETAILS

Job Number: E2019010A

Date: 02/15/23	Scale: As indicated
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Drawing Number:

FR4.60



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NOTE: REFER TO M-SERIES DRAWINGS FOR EXPANSION JOINT, TRENCH DRAIN, SNOW MELT, AND OTHER SCOPE NOT SHOWN FOR CLARITY.



No.	Date	Revisions
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Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

Author

Checked:	
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CC

Approved:

Drawing Title:

SNOW MELT ALTERNATE PLAN & DETAILS

Job Number: E2019010A

Date: 02/15/23	Scale: As indicated
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Drawing Number:

FR4.61

KEY TO SYMBOLS & DEVICE SPECIFICATIONS

GENERAL

EXISTING WORK TO REMAIN (FAINT LINE)

CONTRACT WORK (BOLD CONTINUOUS LINE)

EXISTING WORK TO BE REMOVED (DASHED LINE)

CONNECT TO POINT

DISCONNECT FROM POINT

JUNCTION BOX

POWER

20A, 120V DUPLEX RECEPTACLE

DUPLEX GFCI 20A, 120V RECEPTACLE

QUAD 20A, 120V RECEPTACLE

EQUIPMENT ITEM (SEE EQUIPMENT CIRCUITING AND CONTROL SCHEDULE)

DISCONNECT SWITCH

THERMOSTAT

MANUAL MOTOR STARTER

MOTOR - NUMBER INDICATES HORSEPOWER

PANELBOARD, FLUSH MOUNTED

PANELBOARD, SURFACE MOUNTED

HOMERUN TO PANEL LP1, CIRCUIT #3, 2 #12'S IN 3/4" COT. FED FROM 20A-1P BKR. IS INTENDED UNLESS NOTED OTHERWISE. RUN GREENWIRE GROUND FOR ALL CIRCUITS. ONE GROUND PER RACEWAY SIZED FOR LARGEST CIRCUIT IS ACCEPTABLE.

SPECIAL RECEPTACLE - REFER TO DRAWING FOR SPECIFIC TYPES

ADA PUSH BUTTON DOOR OPERATOR

LIGHTING

LIGHTING FIXTURES - UPPERCASE LETTER DENOTES TYPE (SEE FIXTURE SCHEDULE)

EXIT SIGN, LIGHTED - PROVIDE FACES & ARROWS AS REQUIRED BY PLANS. CEILING MOUNTED, UNLESS NOTED OTHERWISE.

LIGHT SWITCH

LIGHT SWITCH - 3 WAY

CEILING MOUNTED DUAL TECHNOLOGY ANALOG OCCUPANCY SENSOR, WATSTOPPER #07-305 W/ 82-150 POWER PACK

WALL MOUNTED DUAL TECHNOLOGY ANALOG OCCUPANCY SENSOR, WATSTOPPER #05W-100

TELECOM

WIRELESS ACCESS POINT

DISTRIBUTED ANTENNA SYSTEM

ETHERNET PORT, # DENOTES NUMBER OF PORTS

TELEPHONE OUTLET

CONTROLS

TEMPERATURE TRANSMITTER, BY IAC

RELAY IN A BOX, BY IAC

SINGLE-INPUT CONTROL MODULE, BY IAC

FIRE ALARM

FIRE ALARM HORN-STROBE, CANDELA SETTING SPECIFIED

CONVENTIONAL FUME DETECTOR

ABBREVIATIONS

BKR BREAKER

CCT CIRCUIT

DMV DIVISION

EC ELECTRICAL CONTRACTOR

EL EMERGENCY LIGHT

EM EMERGENCY LIGHTING CIRCUIT

EMT ELECTRICAL METALLIC TUBING

G/GFI/GFCI GROUND FAULT CIRCUIT INTERRUPTER

LTO LIGHTING

MC MECHANICAL CONTRACTOR

NL NIGHT LIGHT

RGSG (CONTINUOUS ON, CONNECTED TO EMER/BACKUP POWER)

RPD RIGID GALVANIZED STEEL CONDUIT

WP WEATHERPROOF

UNO UNLESS NOTED OTHERWISE

PANEL "LB-1"		208/120V, 3ø/4W, UNKNOWN AMPS							
Volts/Amps	Model/Cat#	UNKNOWN							
SERVES		BKR AMPS	# OF POLES	POLE SPACE #	POLE SPACE #	BKR AMPS	# OF POLES	SERVES	
U.H. 2, 3, 4		20	1	1	2	1	15	OUTSIDE LT. WEST TIMECLOCK	
U.H. 1, 5, 6		20	1	3	4	1	15	TILE RECP. STORE ROOM	
TIMEDLOCKS FEED		15	1	5	6	1	20	SPARE (OFF) RECEPT. TUNNEL MAIN	
PANEL 1 & 2, RECCS, 1ST FL. HALL		15	1	7	8	1	15	MECH. RM, LTS. T-FORMER VAULT LTS.	
LTS. 101-103-105-107		20	1	9	10	1	15	MECH. RM.	
SPARE		20	1	11	12	1	20	RECEP. RM. 1	
CORRIDOR LTS.		15	1	13	14	1	20	RECEP. RM. 3-5	
LTS.		15	1	15	16	1	20	SPARE (OFF) RECEPT. SUB-TUNNEL RECEPT.	
RECP.		20	1	17	18	1	20	SPARE (OFF) TUNNEL SUB RECEPT. & SPARE	
(SPACE)				19	20			(SPACE)	

EXISTING TO REMAIN "LB-1"

NOT TO SCALE

LYON HALL BASEMENT PANEL 1 CORR. OUTSIDE G07

PANEL EM-1		208/120V, 3ø/4W, 100A MLO							
Volts/Amps	Model/Cat#	SQUARE-D, MODEL# UNKNOWN							
SERVES		BKR AMPS	# OF POLES	POLE SPACE #	POLE SPACE #	BKR AMPS	# OF POLES	SERVES	
MCFADDEN E.M. PANEL FEEDER		30	3	1	2	3	20	MCFADDEN HALL F.A. PANEL FEEDER	
LYON HALL F.A. PANEL		20	1	7	8	1	20	EX. LTS. & CORR. LTS. BASE. & 1ST	
STAIRWAY LTS. & EX. LTS 6-7-8		20	1	9	10	1	20	EX. LTS. & CORR. LTS. 2ND & 3RD	
ENGINE HEATER		20	1	11	12	1	20	EX. LTS. & CORR. LTS. 4TH & 5TH	
BLUE LIGHT PX 68		15	1	13	14				
WAR MEMORIAL CLOISTER LIGHTS		20	1	15	16	3	30	LYON HALL PANEL EM-2 FEEDER	
EM LIGHTS/EXIT TUNNEL		20	1	17	18				
(SPACE)				19	20			(SPACE)	

EXISTING TO REMAIN PANEL EM-1

NOT TO SCALE

LYON HALL G00UA GENERATOR ROOM

ELECTRICAL GENERAL NOTES

- ALL WORK SHALL CONFORM TO CORNELL UNIVERSITY STANDARDS OF QUALITY, MATERIAL AND WORKMANSHIP, AS DETAILED ON THE DRAWINGS AND IN THE SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO THE EXISTING BUILDING CODE OF NEW YORK STATE 2020, THE FIRE CODE OF NEW YORK STATE 2020 AND THE NATIONAL ELECTRICAL CODE.
- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (OSHA) AS AMENDED AND THE REQUIREMENTS OF THE NEW YORK STATE DEPARTMENT OF LABOR.
- THE PROJECT OCCURS WITHIN THE CITY OF ITHACA. CONTRACTOR SHALL HAVE A VALID CITY OF ITHACA ELECTRICAL LICENSE AND SHALL PROVIDE A CITY OF ITHACA ELECTRICAL PERMIT. PROVIDE ELECTRICAL INSPECTION AND CERTIFICATE BY AGENCY APPROVED BY CORNELL UNIVERSITY AND THE CITY OF ITHACA. THE CONTRACTOR SHALL PAY ALL FEES.
- CONFORM TO UTILITY COMPANY RULES & REGULATIONS.
- PROVIDE DETAILED SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT PROVIDED UNDER THIS PROJECT.
- PROVIDE OPERATION AND MAINTENANCE INFORMATION FOR ALL MATERIALS, EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS PROJECT. SEE SPECIFICATIONS.
- PROVIDE SIGNED, DATED, CONTRACTOR AS-BUILT DRAWINGS FOR ALL WORK PROVIDED UNDER THIS PROJECT. MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS DENOTING ANY FIELD CHANGES WHICH ARE MADE AS THE WORK OF THE PROJECT PROGRESSES. KEEP THESE UPDATED. ENGINEER SHALL BE PERMITTED TO BORROW, PHOTOCOPY AND RETURN THESE DRAWINGS AT INTERVALS THROUGHOUT THE PROJECT.
- COORDINATE LOCATIONS OF ELECTRICAL, TELECOM, AND FIRE ALARM DEVICES AND ELEMENTS WITH ARCHITECTURAL DRAWINGS AND THE MECHANICAL, SPRINKLER, AND PLUMBING WORK. SEE ARCHITECTURAL DRAWINGS FOR SPECIFIC LOCATION OF DEVICES. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FIXTURES AND DEVICES. BRING ANY QUESTIONS OR DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO ROUGH-IN.
- ITEMS IDENTIFIED FOR "SALVAGE" SHALL BE REMOVED AND PROTECTED BY THE CONTRACTOR, AND TURNED OVER TO THE OWNER.
- NEW AND REUSED IT CABLEING SHALL BE TERMINATED, TESTED, AND LABELED BY A PAIDOUT-CERTIFIED CONTRACTOR.
- COORDINATE ALL TELECOM-RELATED WORK WITH CORNELL CIT.

ELECTRICAL METHODS NOTES

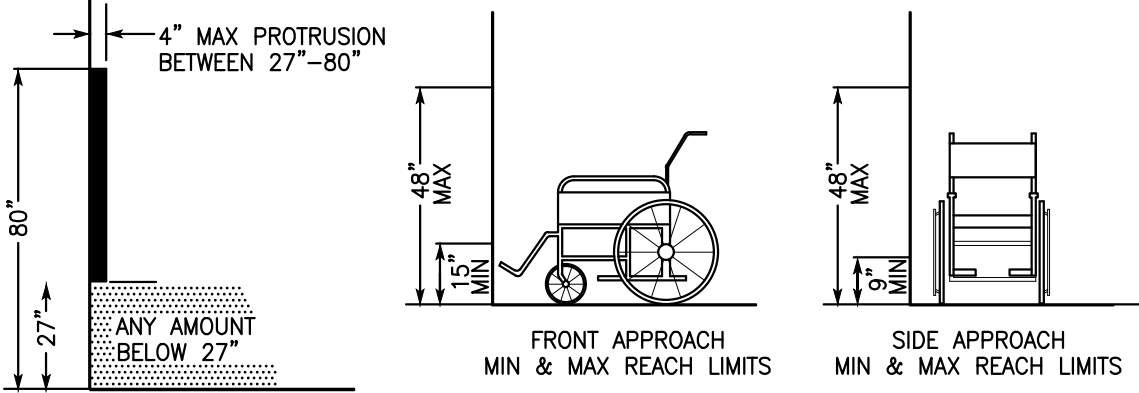
- EXISTING CIRCUITING SHOWN ON THESE DRAWINGS HAS BEEN DEVELOPED FROM RECORD DRAWINGS WHICH HAVE BEEN PARTIALLY FIELD VERIFIED. CONTRACTOR SHALL VERIFY CIRCUITING FOR ALL AFFECTED AREAS DURING CONSTRUCTION AND SHALL AMEND THIS DRAWING FOR RECORD AS NECESSARY.
- ALL CONDUCTORS SHALL BE STRANDED COPPER. ALL INSULATED POWER CONDUCTORS SHALL BE TYPE THHN-THWN. ALL FIRE ALARM CONDUCTORS SHALL BE STRANDED, STRANDED CONDUCTORS SHALL BE FIRMLY HELD UNDER DEVICE CAPTIVE CLAMP CONNECTORS PROVIDED BY THE MANUFACTURER.
- FOR CIRCUITS INDICATED TO BE REMOVED, CONTRACTOR SHALL REMOVE ALL CONDUIT, BX, BOXES, AND CONDUCTORS IN ACCESSIBLE CHASE, CEILING SPACES, AND WHERE EXPOSED. DO NOT ABANDON ANY SUCH CIRCUITS IN PLACE UNLESS BURIED IN WALLS AND INACCESSIBLE. DISCONNECT SUCH CIRCUITS AT BOTH ENDS AND PULL OUT ALL CONDUCTORS. CLOSE UP ALL SPARE UNCOVERED BOXES. PLUG ALL OPEN KNOCKOUTS.
- MAINTAIN CONTINUITY OF ALL EXISTING TO REMAIN ELECTRIC CIRCUITS. RE-CIRCUIT AS REQUIRED.
- PROVIDE CIRCUIT NAMEPLATES FOR ALL NEW OR RELOCATED CIRCUITS. PROVIDE ENGRAVED NAMEPLATES FOR PANELS, TRANSFORMERS, DISCONNECT SWITCHES, MOTOR STARTERS AND CONTROL PANELS. PROVIDE TYPEWRITTEN PANEL DIRECTORY IN PANEL. PROVIDE DUPLICATE TYPEWRITTEN DIRECTORY ON AS-BUILT DRAWINGS.
- LOCATE SWITCH AND RECEPTACLE BACKBOXES, EXISTING AND NEW, TO ALLOW CLEARANCE FOR FULL COVER PLATES. CUT COVER PLATES WILL NOT BE ACCEPTED.

SPECIAL FASTENERS NOTES

- ALL FASTENERS & HANGER MATERIALS SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL, FRP OR SIMILAR NON FERRUS MATERIAL.
- DO NOT DRILL OR OTHERWISE PENETRATE THE EXISTING TUNNEL SLAB WITHOUT WRITTEN PERMISSION OF ARCHITECT.
- NEW CONCRETE CEILING/SLAB SHALL NOT BE DRILLED TO SUPPORT ELECTRICAL INFRASTRUCTURE WITHOUT WRITTEN PERMISSION OF ARCHITECT.
- PROVIDE CONCRETE INSERTS TO SUPPORT TRAPEZE HANGERS FOR EXISTING TO REMAIN CONDUITS. COORDINATE LOCATION OF INSERTS AND TRAPEZE HANGERS WITH GENERAL CONTRACTOR.

ELECTRICAL DRAWING LIST:

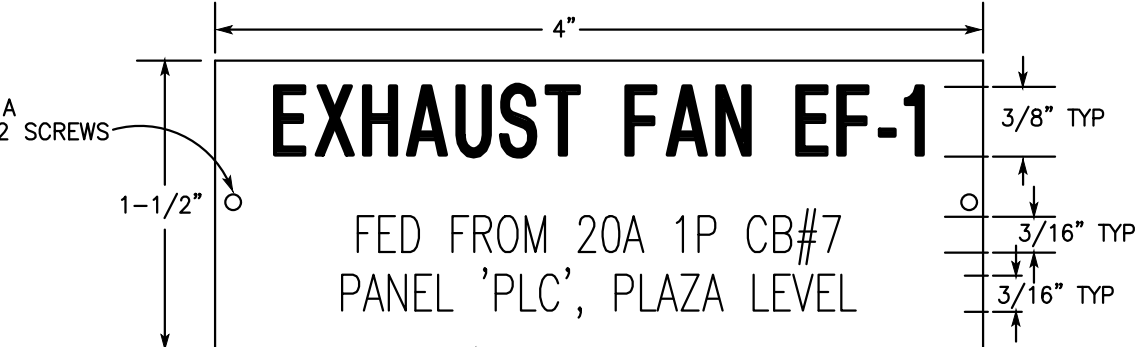
- E001: PH.2 ELECTRICAL SYMBOLS, DETAILS, AND NOTES
- E101: PH.2 BASEMENT TUNNEL ELECTRICAL REMOVAL PLANS
- E200: PH.2 BASEMENT TUNNEL ELECTRICAL PLANS
- E201: PH.2 BASEMENT TUNNEL FIRE ALARM & SECTION, LYON B & 1ST PLANS, FLAGPOLE LIGHTING PLAN.
- E202: PH.2 CLOISTER LIGHTING REFURBISHMENT



ADA REQUIREMENTS

NOT TO SCALE

E001



NAMEPLATE DIMS AND TEXT SIZES TYPICAL FOR NAMEPLATES. PROVIDE NAMEPLATES FOR ALL DISCONNECTS, PANELS, VFD'S, MOTOR STARTERS, AND CONTROL SWITCHES. PROVIDE SHOP DRAWING. FASTEN WITH RIVETS OR TAMPER PROOF SCREWS

6 E001

TYPICAL NAMEPLATE DETAIL

NOT TO SCALE

EQUIPMENT CIRCUITING & CONTROL SCHEDULE

8 E001

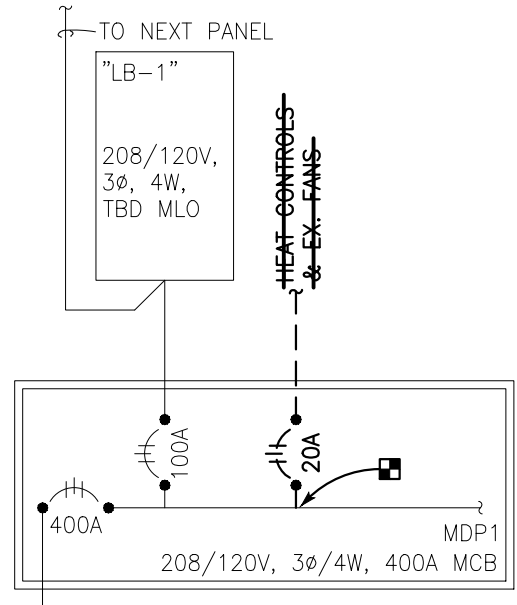
ITEM #	EQUIPMENT	QUANTITY	LOAD DATA					SUPPLY DATA				CONTROLS & LOCATION							REMARKS	
			AMPS	HP	KW	VOLTS	PHASE	PANEL	BKR/ POLES	WIRE		CONDUIT SIZE	TOGGLE SWITCH AT FINAL CONN BY EC	RIB RELAY START-STOP CONTROL	COMBINATION FUSED DISCONNECT & MAGNETIC CIRCUIT BREAKER WITH/IN SWITCH & CONTROL TRANSFORMER BY EC	UNIT CONNECTION	UNIT STARTUP	HOURGLASS FLEX AT FINAL CONN BY EC		
										CCT	GND									
①	SNOWMELT GLYCOL PUMP HWGP-1A	1	4.6	1	-	208	3	LP-T	15A/3P	3#12	1#12	3/4" RGS	-	-	AT UNIT	E.C	M.C	-	①	
②	SNOWMELT GLYCOL PUMP HWGP-1B	1	4.6	1	-	208	3						-	-	AT UNIT	E.C	M.C	-	②	
③	CONDENSATE CIRC. PUMP CP-1	1	4.4	0.12	-	115	1	LP-T	15A/1P	2#12	1#12	3/4" RGS	AT UNIT	DIV. 25	-	E.C	M.C	AT UNIT	③	
④	F-1 VENTILATION FAN	1	2.5	-	.289	120	1	LP-T	15A/1P	2#12	1#12	3/4" EMT	-	-	-	E.C	M.C	AT UNIT	④	CIRCUIT DAMPER AND LOUVER CONTROLS WITH ASSOCIATED FAN
⑤	F-2 SUPPLY FAN	1	2.5	-	.289	120	1	LP-T	15A/1P	2#12	1#12	3/4" EMT	-	-	-	E.C	M.C	AT UNIT	⑤	CIRCUIT LOUVER CONTROLS WITH ASSOCIATED FAN

PANEL LP-T		208/120V, 3ø/4W, 100A MLO							
Volts/Amps	Model/Cat#	UNKNOWN							
SERVES		BKR AMPS	# OF POLES	POLE SPACE #	POLE SPACE #	BKR AMPS	# OF POLES	SERVES	
HEAT CONTROLS & EX. FANS		20	3	1	2	1	20	TUNNEL LIGHTS	
				3	4	1	20	TUNNEL RECEIPTS	
				5	6	1	15	TUNNEL FAN #1 W/DAMPER & LOUVER CONTROL	
				7	8	1	15	TUNNEL FAN #2 W/LOUVER CONTROL	
SNOWMELT SYSTEM HWGP-1A & HWGP-1B		15	3	9	10	1	20	CONDENSATE CIRC. PUMP CP-1	
SPARE (OFF)		20	1	13	14	1	20	TUNNEL SLUMP PUMP & STEAM TUNNEL LIGHTS	
SPARE (OFF)		20	1	15	16	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	17	18	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	19	20	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	21	22	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	23	24	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	25	26	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	27	28	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	29	30	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	31	32	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	33	34	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	35	36	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	37	38	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	39	40	1	20	SPARE (OFF)	
SPARE (OFF)		20	1	41	42	1	20	SPARE (OFF)	

PROPOSED PANEL 'LP-T'

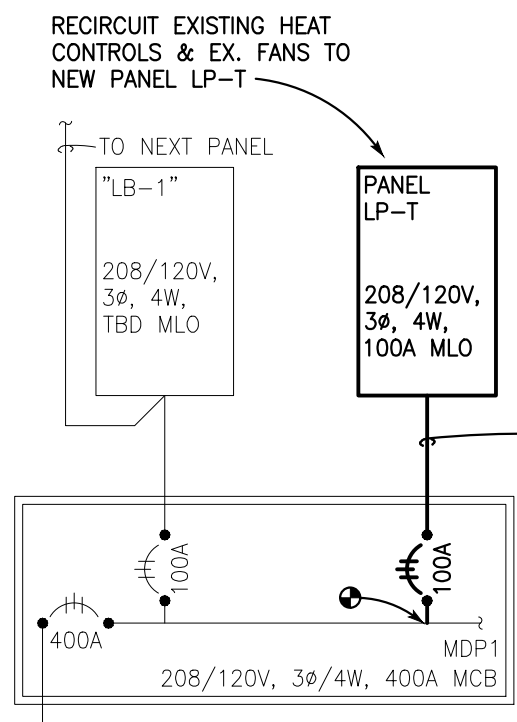
NOT TO SCALE

LYON HALL G00UC MECH ROOM



PARTIAL DEMO POWER ONE-LINE

NOT TO SCALE



PARTIAL NEW WORK POWER ONE-LINE

NOT TO SCALE



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Seal:



No. Date Revisions

Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

NTC

Checked:

PAP

Approved:

PAP

Drawing Title:

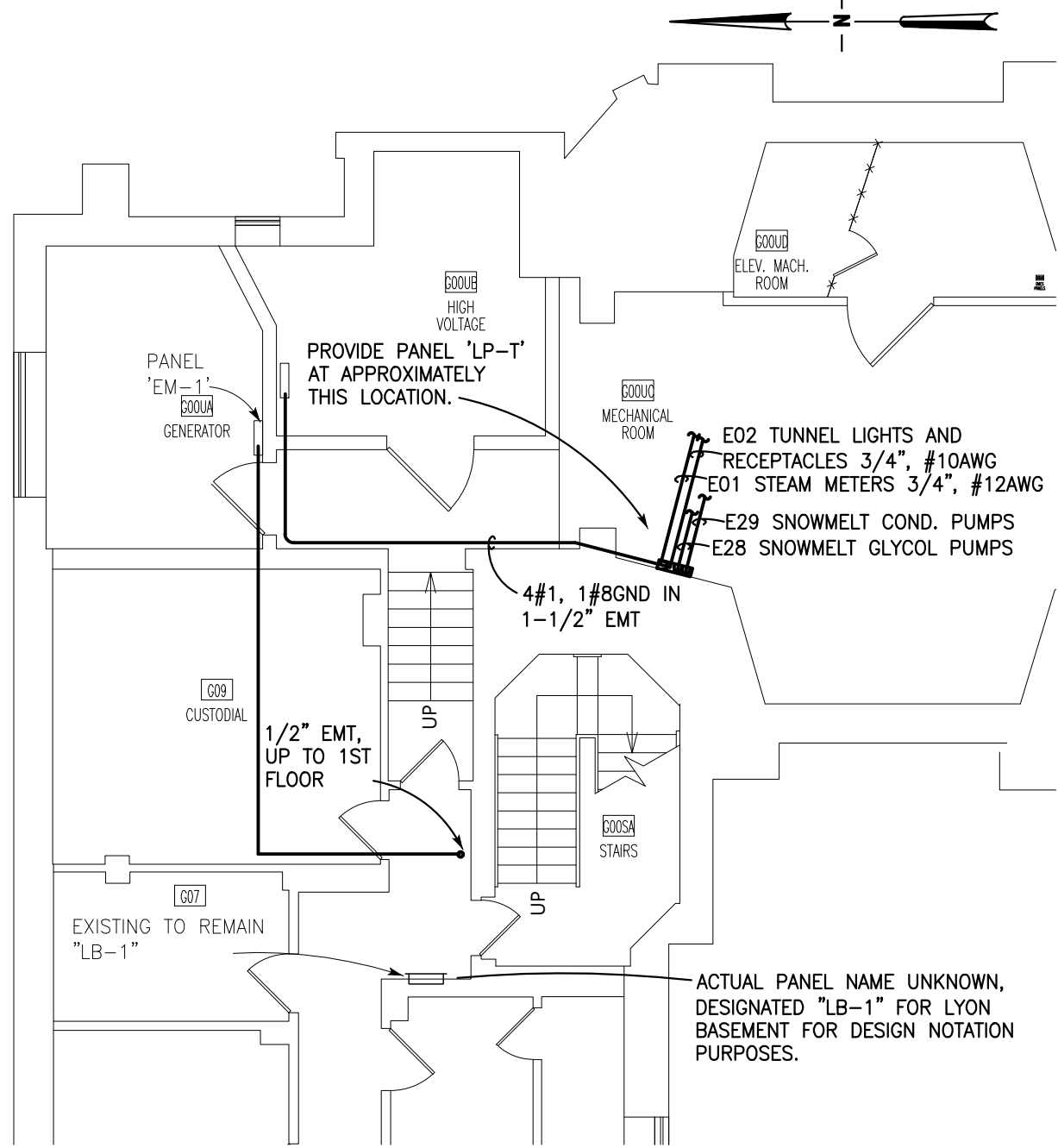
PH. 2 ELECTRICAL
SYMBOLS, NOTES,
AND DETAILS

Job Number: E2019010A

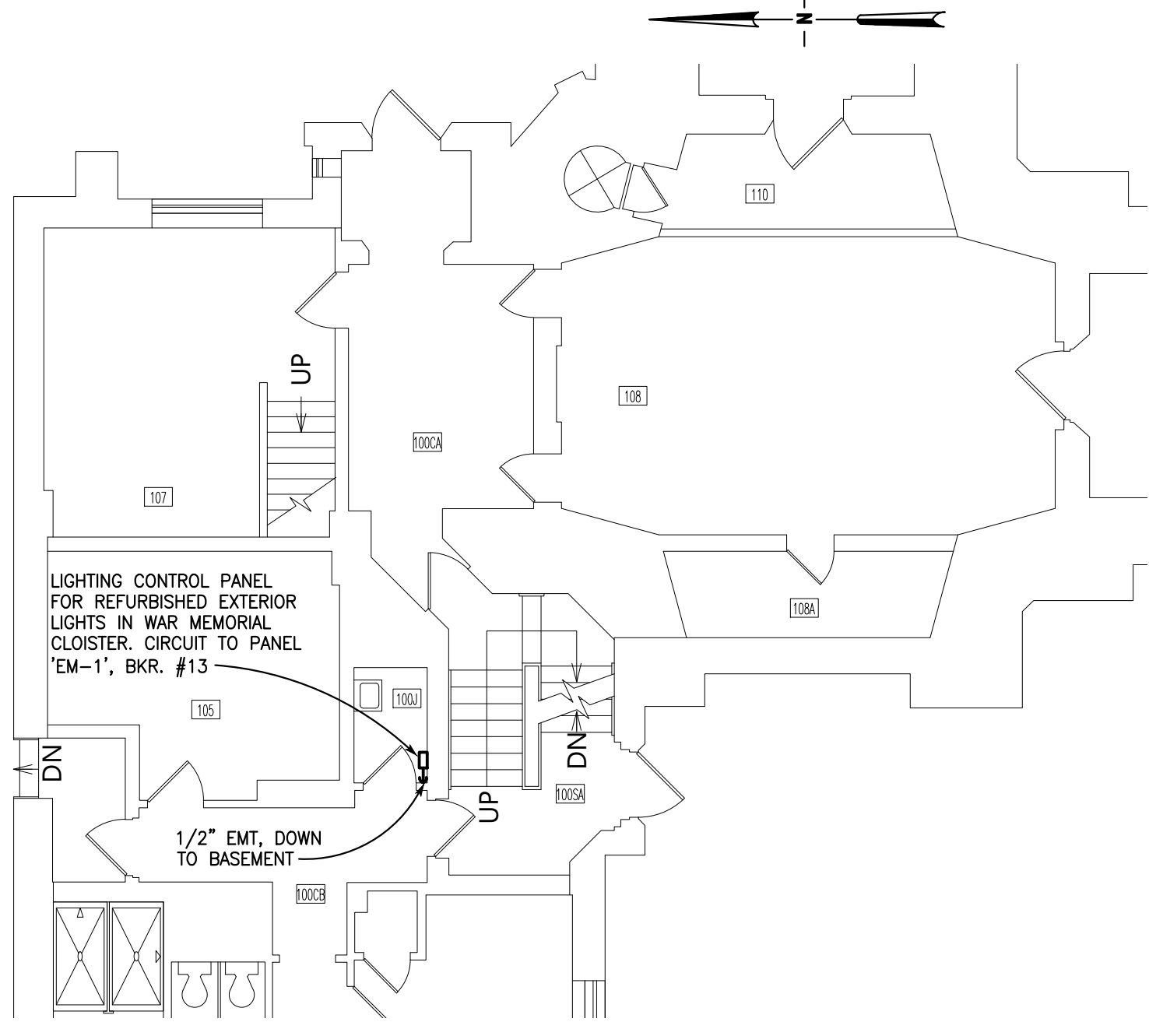
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Drawing Number:

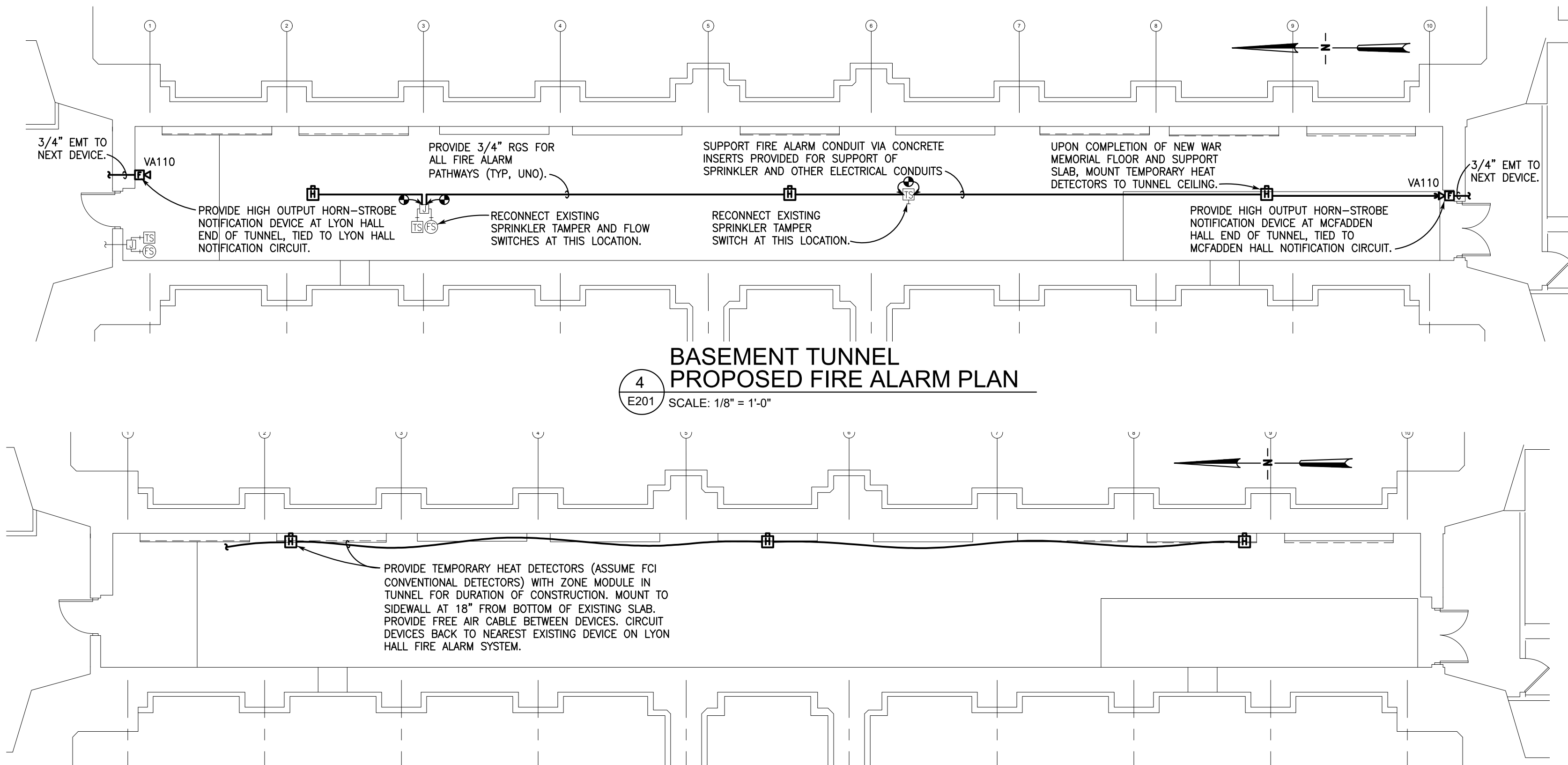
E001



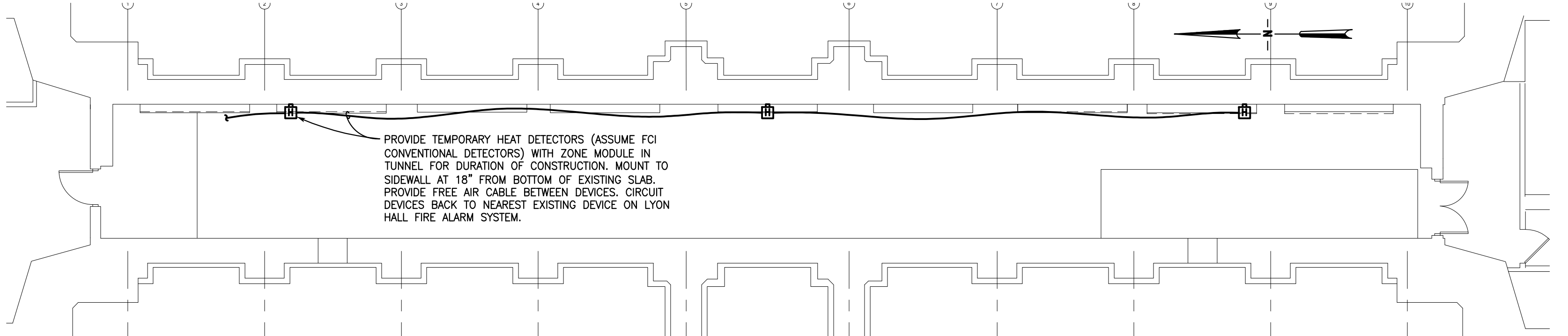
1 LYON HALL BASEMENT ELECTRICAL PLAN
E201 SCALE: 1/8" = 1'-0"



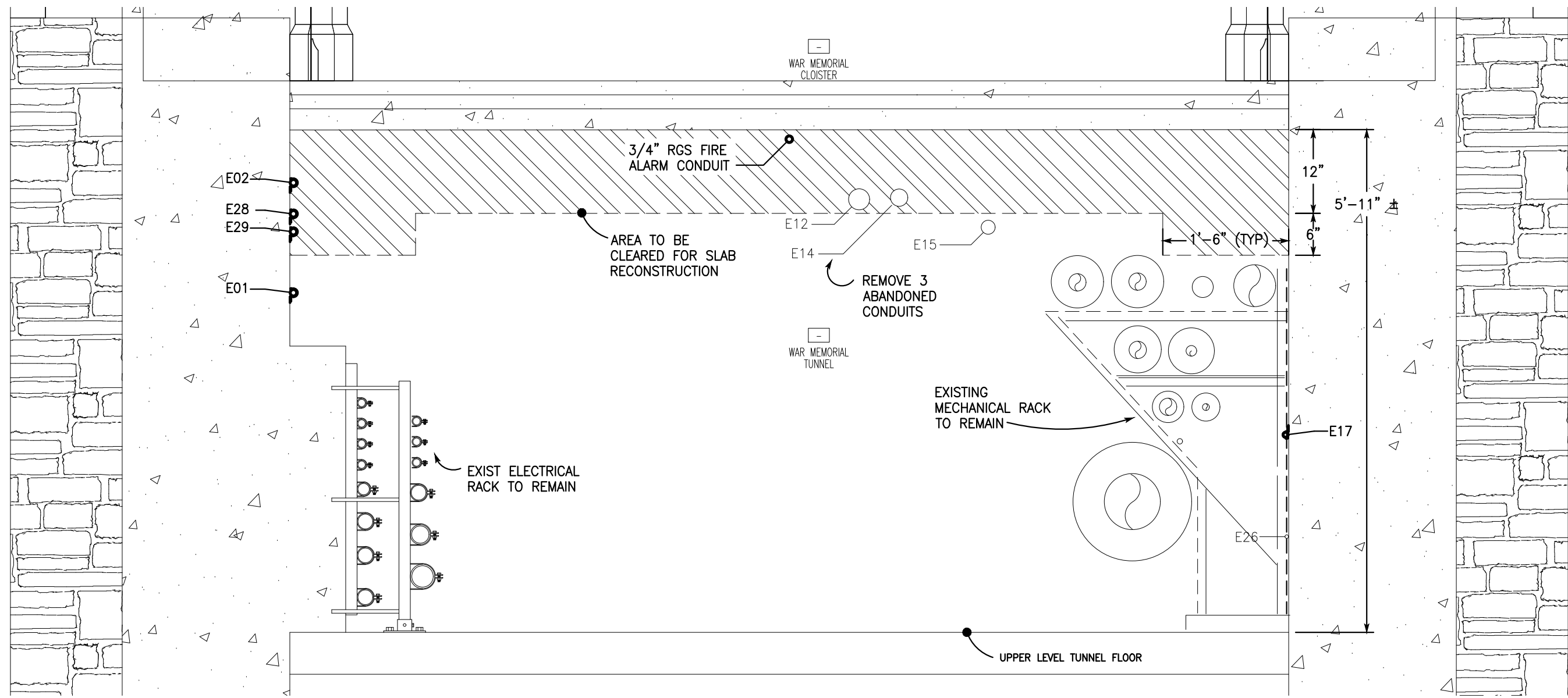
2 LYON HALL BASEMENT ELECTRICAL PLAN
E201 SCALE: 1/8" = 1'-0"



4 BASEMENT TUNNEL
PROPOSED FIRE ALARM PLAN
E201 SCALE: 1/8" = 1'-0"



5 BASEMENT TUNNEL
TEMPORARY FIRE ALARM PLAN
E201 SCALE: 1/8" = 1'-0"



3 BASEMENT TUNNEL NORTH
SECTION VIEW, FACING SOUTH
E201 SCALE: 3/4" = 1'-0"



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Drawing Title:

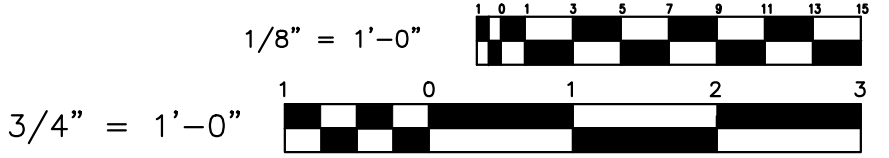
PH. 2 BASEMENT
TUNNEL ELECTRICAL
PLANS, ENLARGED
PLANS, AND
SECTIONS

Job Number: E2019010A

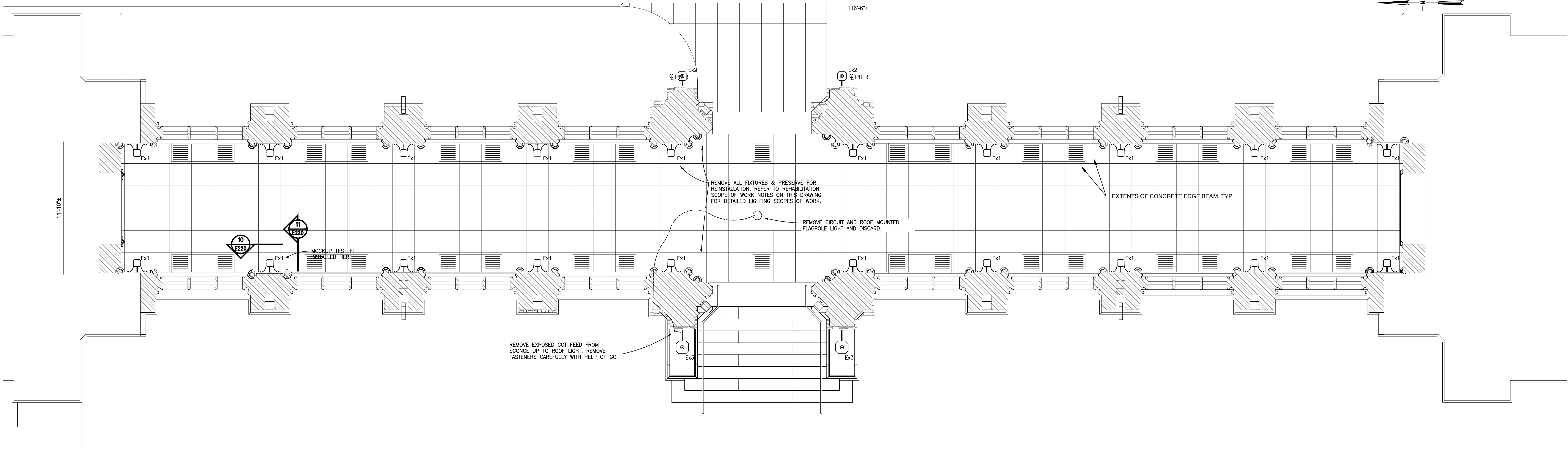
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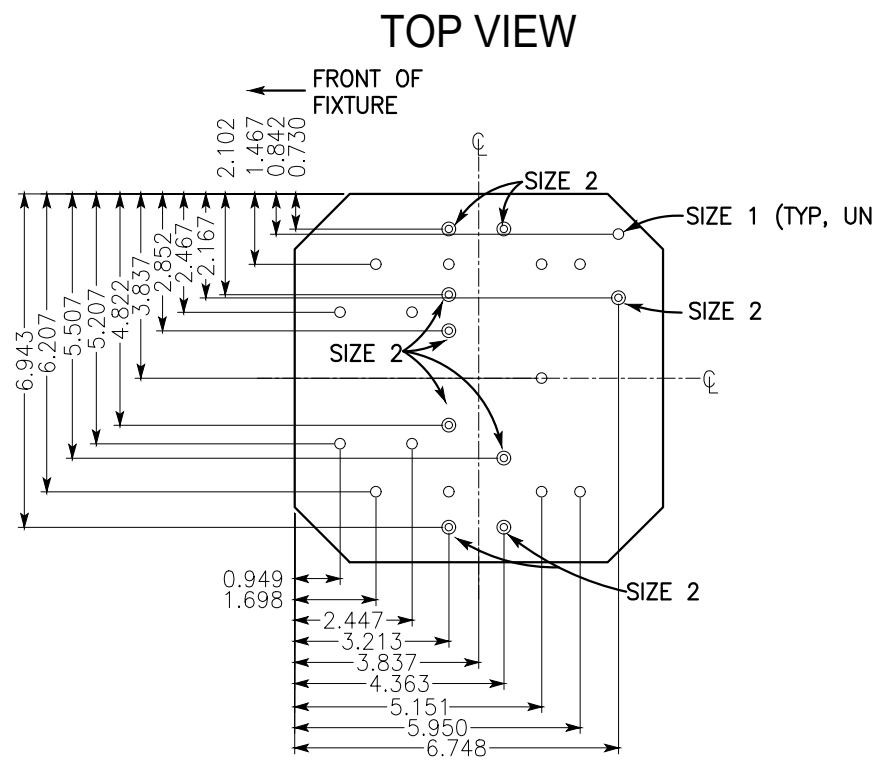
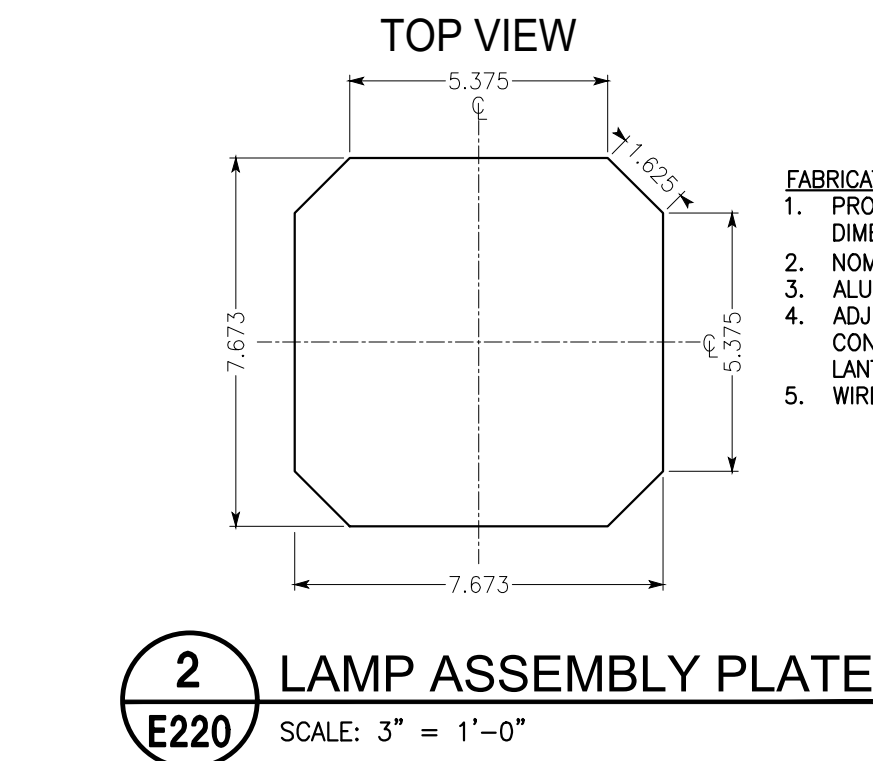
E201



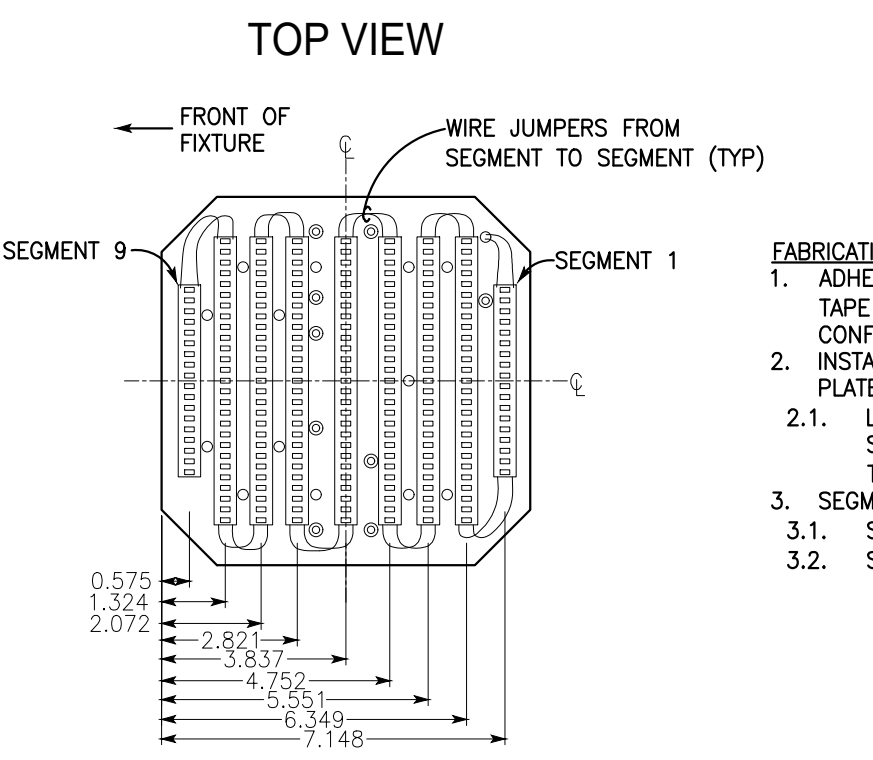
N:\083801\CurrentDrawings\PHASE 2\E220.dwg, 2/12/2023 10:31:03 AM, DWG TO PDF-no layers.pc3



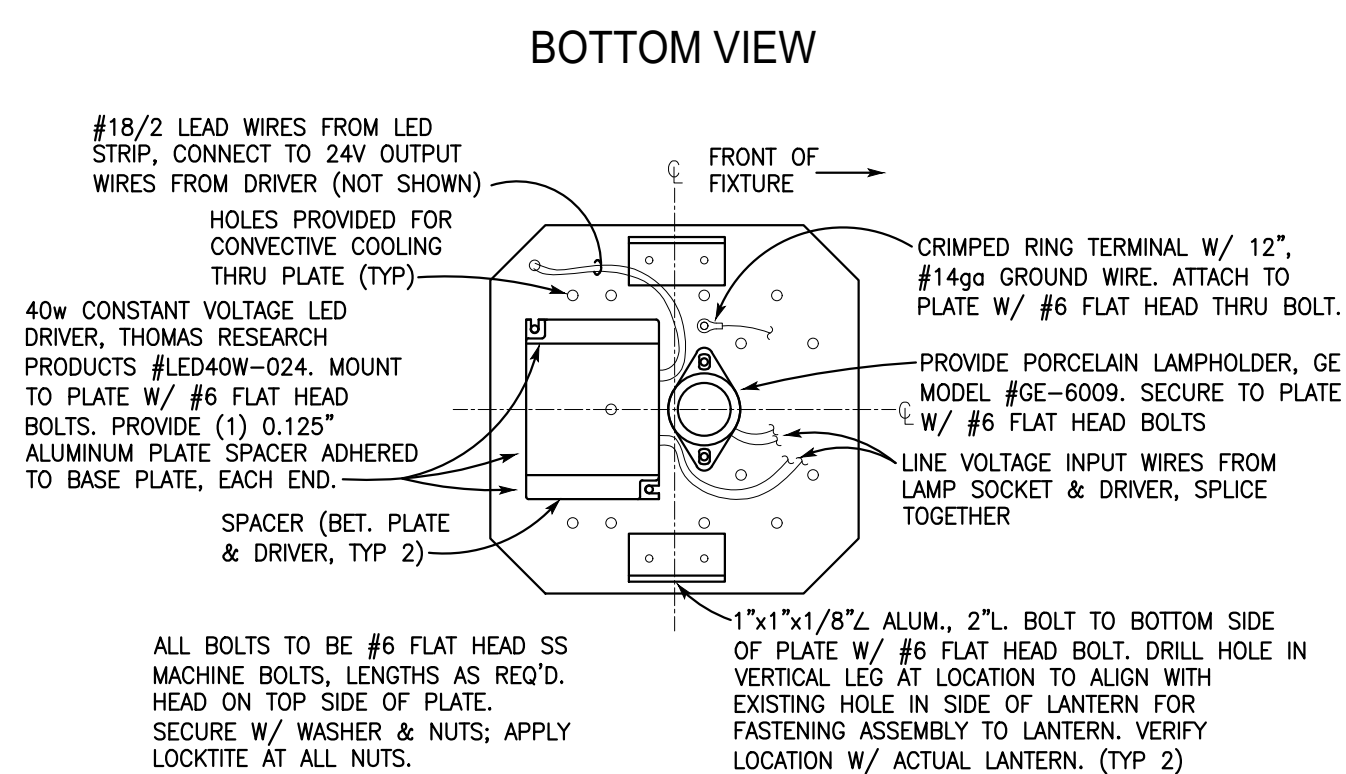
1
E220 WAR MEMORIAL CLOISTER LIGHTING PLAN
SCALE: 1/4" = 1'-0"



3
E220 LAMP ASSEMBLY PLATE PREP
SCALE: 3" = 1'-0"



4
E220 LAMP ASSEMBLY TAPE INSTALLATION
SCALE: 3" = 1'-0"

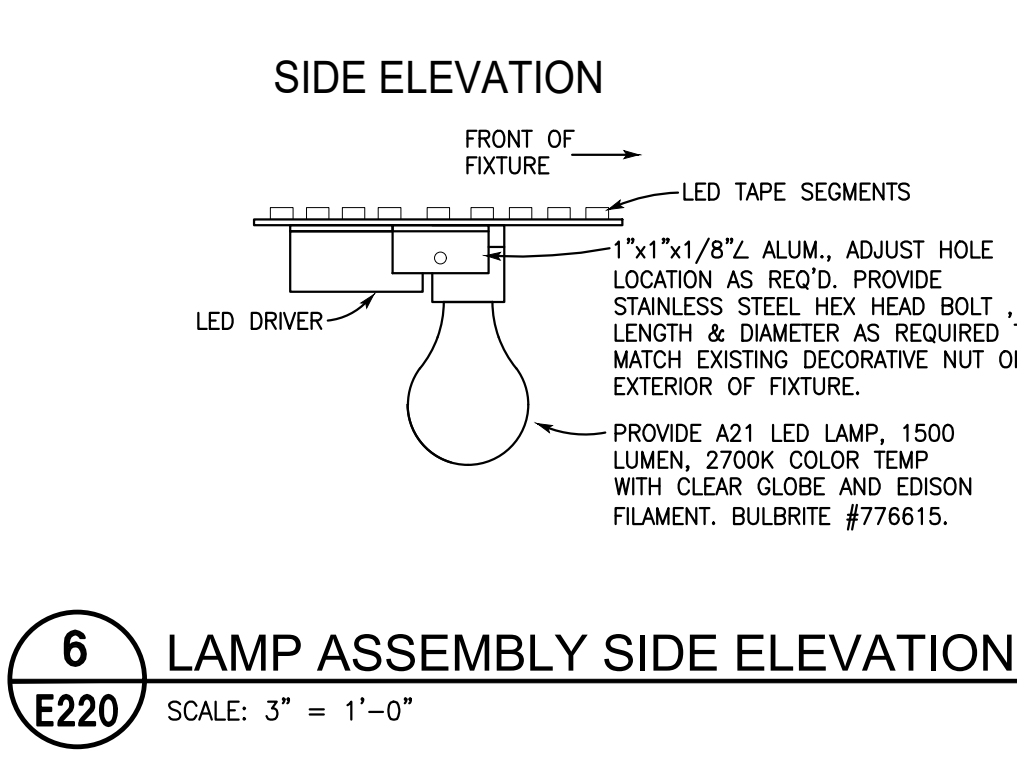


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E220 LAMP ASSEMBLY TAPE INSTALLATION
SCALE: 3" = 1'-0"

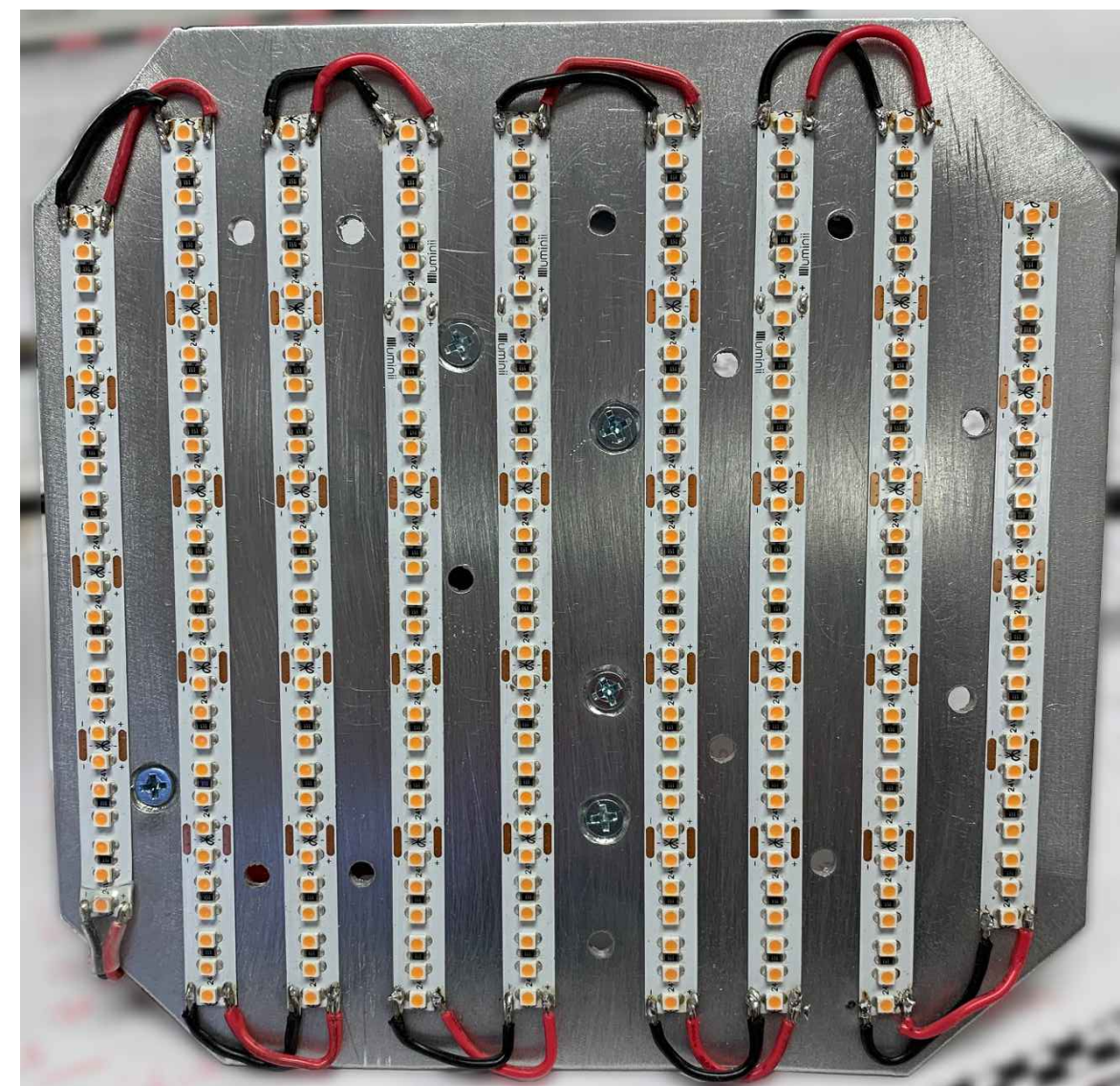
CLOISTER LIGHTING REHABILITATION - SCOPE OF WORK

- TYPE: EX1 FIXTURES (INSIDE CLOISTER):**
- REMOVE ALL (20) LANTERNS FROM INSIDE OF CLOISTER AND CAREFULLY PROTECT. THE GLAZING, PORCELAIN SOCKET LAMPHOLDER, AND LED LAMP ARE TO BE REMOVED DISCARDED.
 - EACH FIXTURE IS TO UNDERGO A THOROUGH REHABILITATION; REFER TO ARCHITECTURAL DRAWINGS & SPECS FOR THIS WORK. THIS WORK TO BE PERFORMED BY A HISTORICAL PRESERVATION SPECIALIST. TURN FIXTURES OVER TO THIS SPECIALIST. THEIR SCOPE OF WORK GENERALLY INCLUDES THE FOLLOWING:
 - THOROUGH CLEANING OF ALL METALLIC PARTS
 - REMOVAL OF PETINA AND CORROSION
 - REPLACEMENT OF ALL GLAZING IN THE LANTERNS & SECURING TO THE FIXTURE.
 - REMOVE & REPLACE ALL BRANCH CIRCUIT CONDUCTORS FROM CIRCUITRY FEEDING THESE LIGHTS. NOTE: POSSIBLE ASBESTOS-CONTAINING INSULATION MATERIAL. REVIEW W/ OWNER PRIOR TO PROCEEDING. IF WIRE IS AN ASBESTOS-INSULATED CONDUCTOR, OWNER TO REMOVE THESE CONDUCTORS.
 - PROVIDE FORTY (41) DROP-IN LED LAMPING REPLACEMENT AS DETAILED ON THIS SHEET AND PER APPROVED ENGINEER'S MOCKUP. THIS LAMP ASSEMBLY SHALL BE FABRICATED BY A UL-LISTED LIGHTING FABRICATION SHOP.
 - PROVIDE THE FIRST UNIT, COMPLETE & ASSEMBLED AS A MOCKUP FOR REVIEW. PRIOR TO CONSTRUCTION OF REMAINING 40 FIXTURES. NOTE QUANTITY INDICATED ABOVE: 41 UNITS. 20 SHALL BE INSTALLED WITH THIS PROJECT, AND 20 SHALL BE PRESERVED FOR ATTIC STOCK FOR FUTURE REPLACEMENT AS THE LED TAPE LIGHT OUTPUT DECREASES (ANTICIPATE FIRST REPLACEMENT IN 12-15 YEARS). ONE SHALL BE FOR AN INITIAL MOCKUP FOR ENGINEER'S REVIEW. CAREFULLY INDIVIDUALLY PACKAGE ALL SPARES & WRAP IN PLASTIC. PROVIDE LARGE (3/4\"/>
- TYPE: EX2 & EX3 FIXTURES (OUTSIDE AT EAST & WEST ENTRIES):**
- REMOVE ALL (4) LANTERNS AND CAREFULLY PROTECT. THE GLAZING, AND LED LAMP ARE TO BE REMOVED DISCARDED.
 - EACH FIXTURE IS TO UNDERGO A THOROUGH REHABILITATION; REFER TO ARCHITECTURAL DRAWINGS & SPECS FOR THIS WORK. THIS WORK TO BE PERFORMED BY A HISTORICAL PRESERVATION SPECIALIST. TURN FIXTURES OVER TO THIS SPECIALIST. THEIR SCOPE OF WORK GENERALLY INCLUDES THE FOLLOWING:
 - THOROUGH CLEANING OF ALL METALLIC PARTS
 - REMOVAL OF PETINA AND CORROSION
 - REPLACEMENT OF ALL GLAZING IN THE LANTERNS & SECURING TO THE FIXTURE.
 - REMOVE & REPLACE ALL BRANCH CIRCUIT CONDUCTORS FROM CIRCUITRY FEEDING THESE LIGHTS.
 - REPLACE LIGHT BULB (LAMP) WITH NEW A21 LED LAMP, SAME MODEL USED IN THE INTERIOR LANTERNS: BULBRITE #776615.
 - RE-ATTACH FIXTURES TO WALL & CONNECT TO BRANCH CIRCUIT.

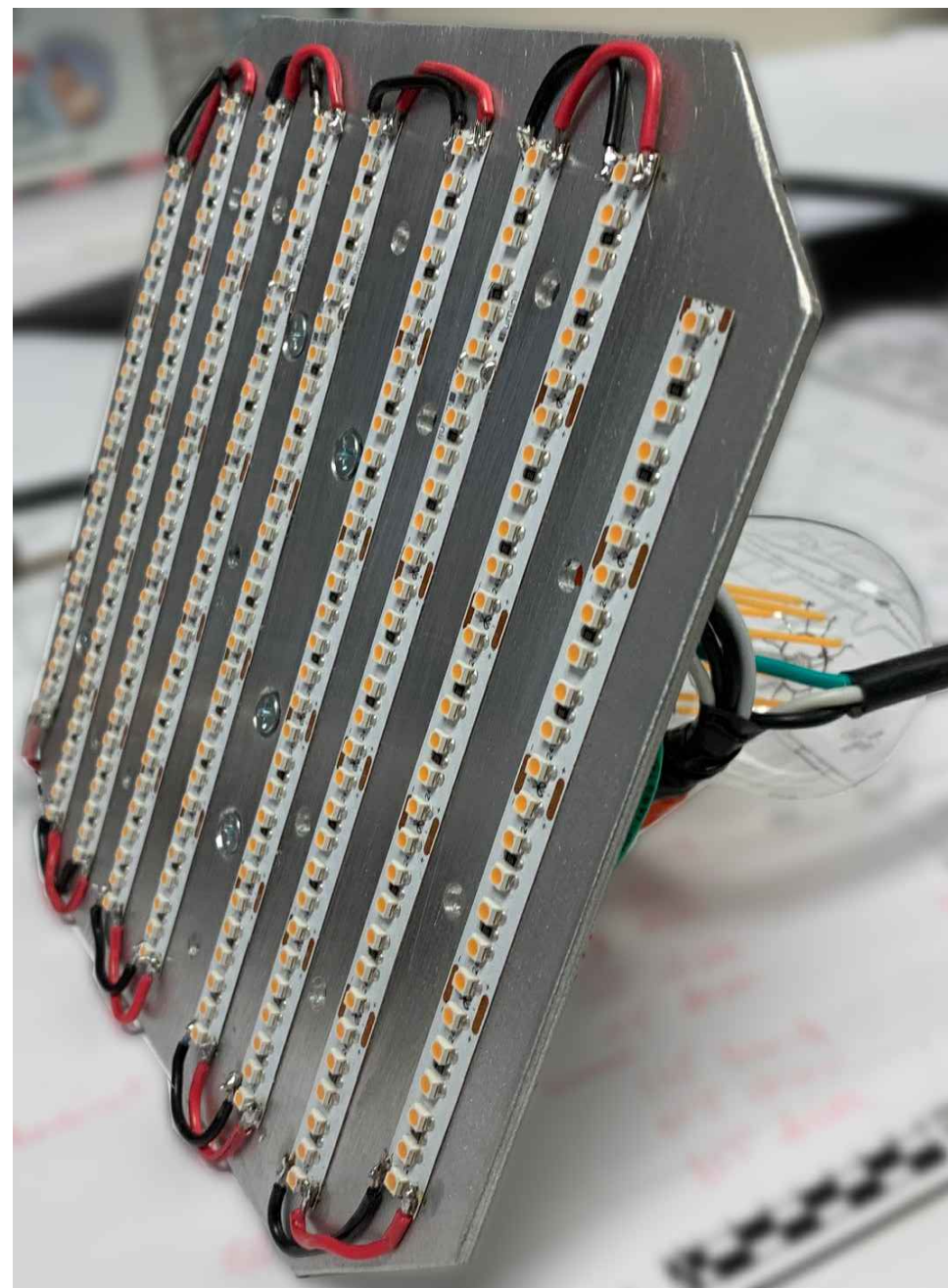
- EMERGENCY POWER:**
- PROVIDE NEW BRANCH CIRCUIT FROM TIMECLOCK TO EMERGENCY PANEL EM-1. SEE DRAWING E221.



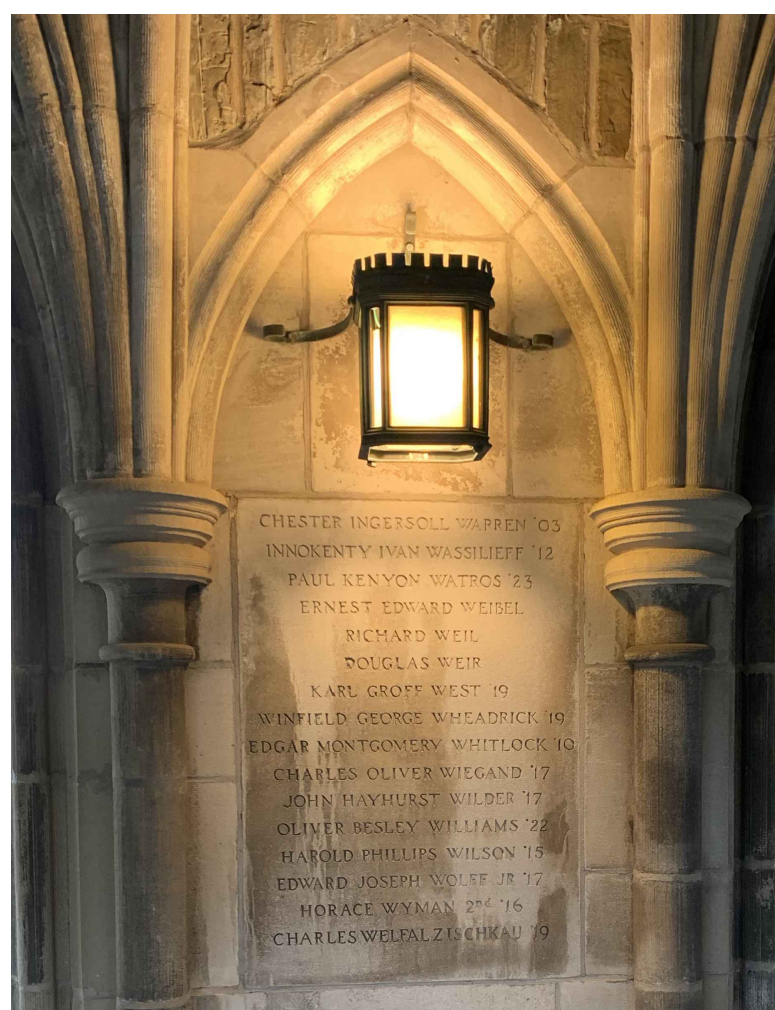
6
E220 LAMP ASSEMBLY SIDE ELEVATION
SCALE: 3" = 1'-0"



7
E220 LAMP ASSEMBLY MOCKUP: TOP VIEW
NOT TO SCALE



8
E220 LAMP ASSEMBLY MOCKUP: SIDE VIEW
NOT TO SCALE



10
E220 MOCKUP TEST FIT: FRONT VIEW
NOT TO SCALE



11
E220 MOCKUP TEST FIT: TOP/SIDE VIEW
NOT TO SCALE



9
E220 LAMP ASSEMBLY MOCKUP: BOTTOM VIEW
NOT TO SCALE

NOTES ABOUT MOCKUP:

- MOCKUP WAS CONSTRUCTED WITH A DRY/DAMP LOCATION VERSION OF THE LED TAPE TO FACILITATE ADJUSTMENTS IN MOCKUP FABRICATION. ACTUAL LAMP ASSEMBLY FIXTURES TO UTILIZE THE WET LOCATION VERSION OF THIS TAPE AS SPECIFIED.
- THE ACTUAL LIGHT BULB PICTURED HERE WAS NOT THE MODEL SELECTED FOR THE FINAL INSTALLATION; PROVIDE BULBRITE MODEL INDICATED.
- ALL SOLDERING WORK TO BE COMPLETED BY THE FACTORY (BY AN EXPERIENCED FABRICATOR), AND NOT BENCH ASSEMBLED BY THE ENGINEER, AS DEPICTED HERE.



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Seal:



No.	Date	Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

DDH

Checked:

DDH

Approved:

PAP

Drawing Title:

**PH. 2 CLOISTER
LIGHTING
REFURBISHMENT**

Job Number: E2019010A

Date: 02/15/23 Scale: AS SHOWN

Drawing Number:

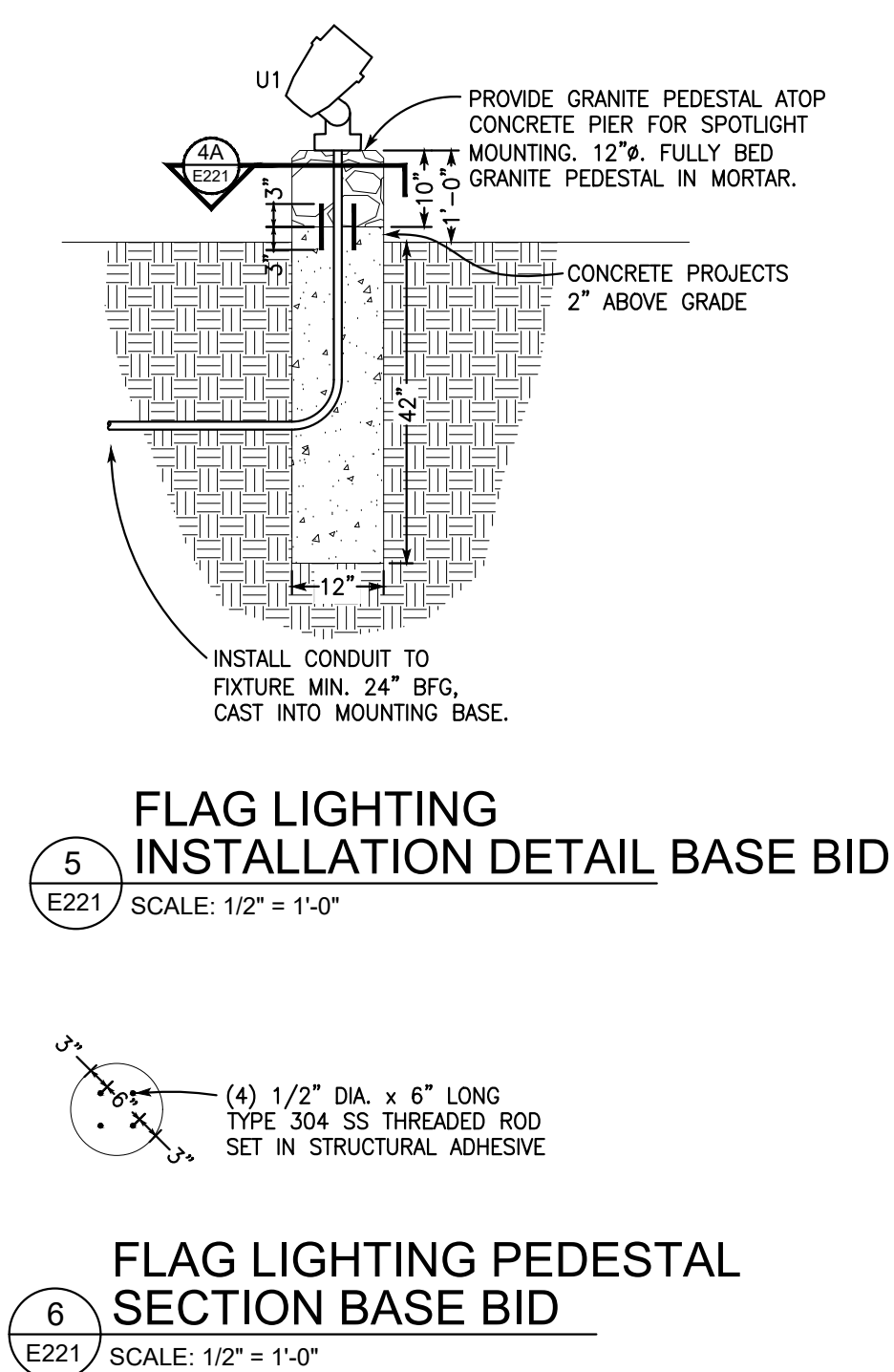
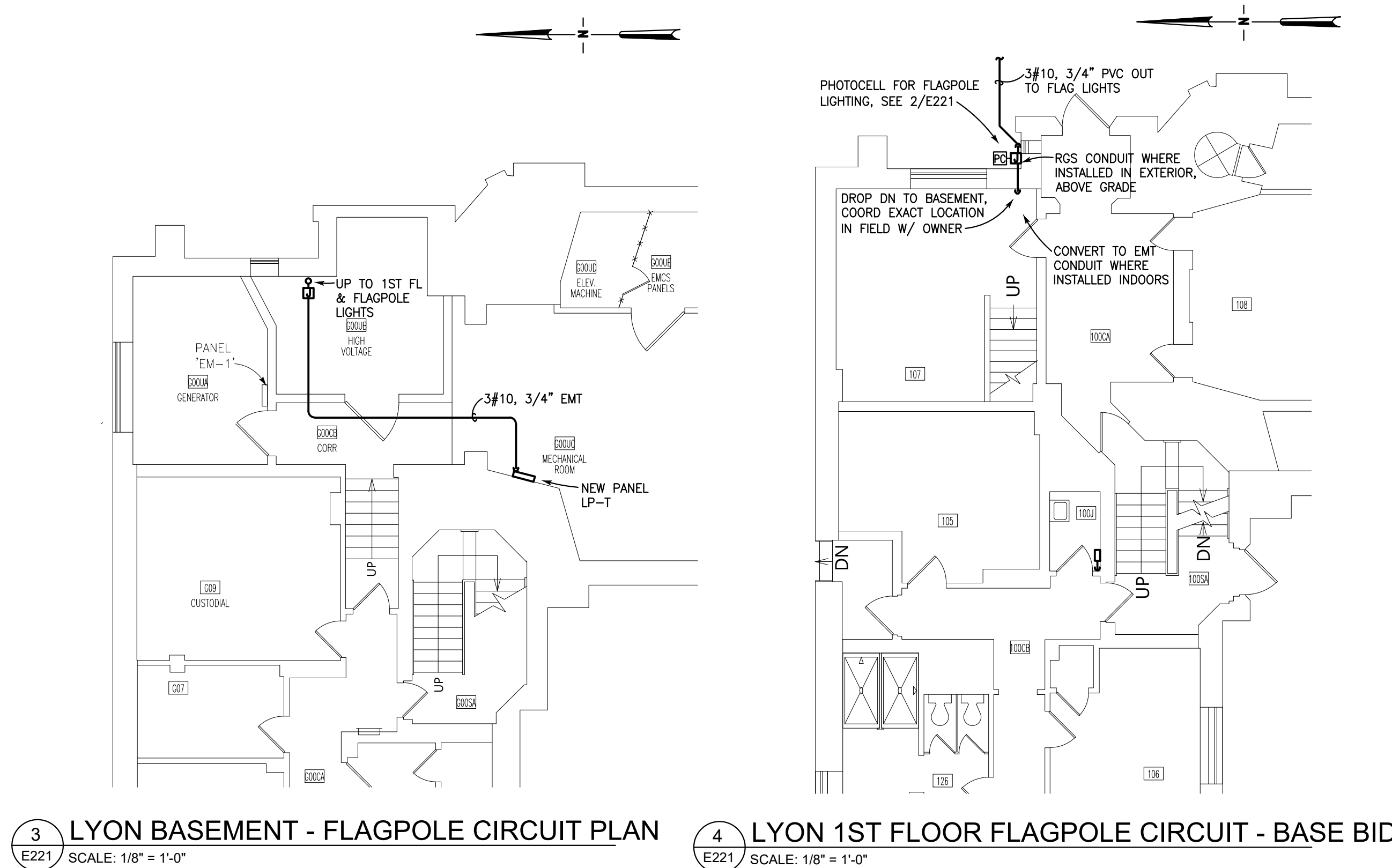
E220



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No.	Date	Revisions
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100% CONSTRUCTION DOCUMENTS

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DDH

Checked:
PAP

Approved:
PAP

Drawing Title:

Drawing Title:

FLAGPOLE LIGHTING
PLANS - BASE BID
AND ALTERNATE 4

Job Number: E2019010A

Date: 02/15/23	Scale: AS SHOWN
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Drawing Number:

$$1^{\circ} = 20' - 0''$$
$$1/8'' = 1'-0''$$
$$1/2'' = 1'-0''$$

E221

FIRE PROTECTION SYMBOLS LIST		
SYMBOL	ABBREV	DESCRIPTION
---		NEW WORK (BOLD)
---		EXISTING PIPING TO REMAIN (FAINT)
---		PIPING REMOVALS (BOLD & DASHED)
		TEST & DRAIN MODULE
		CHECK VALVE
	SSP	PENDENT SPRINKLER HEAD W/ CAGE
	SSU	UPRIGHT SPRINKLER HEAD
	SSP/C	CONCEALED PENDENT SPRINKLER HEAD
	HSW/C	CONCEALED HORIZONTAL SIDEWALL SPRINKLER HEAD
	HSW/E	EXPOSED HORIZONTAL SIDEWALL SPRINKLER HEAD
		PIPE RISE
		PIPE DROP
		BRANCH OFF TOP
		BRANCH OFF BOTTOM
		UNION
		CAP
		OS&Y VALVE
	ACV	ALARM CHECK VALVE
		BUTTERFLY VALVE
	UC	UNDERSIDE OF CEILING DECK
	VC	VIC (GROOVE) COUPLING
		DISCONNECT POINT
		CONNECTION POINT
	M.T.	MECHANICAL TEE
	CONC.	CONCEALED
	TEMP.	TEMPORARY
	SPR.	SPRINKLER
	EXIST.	EXISTING
		CENTERLINE
	DN	DOWN
	UNO	UNLESS NOTED OTHERWISE
	QRES	QUICK RESPONSE SPRINKLER
	AFF	ABOVE FINISHED FLOOR
	AP	ACCESS PANEL
	PERM.	PERMANENT

SPRINKLER HEAD LEGEND						
SPRINKLERS PROVIDED AT LYON-MCFADDIN TUNNEL (WAR MEMORIAL BASEMENT)						
(PROVIDE QUICK RESPONSE SPRINKLERS FOR CONTRACT WORK)						
BUILDING AREA	SPRINKLER TYPE	CONCEALED HORIZ'L SW	PENDENT W/CAGE	UPRIGHT SPRINKLER	EXPOSED HORIZ'L SW	TOTAL
	SYMBOL					
BASEMENT		-	13	-	-	-
ADDITIONAL HEAD ALLOWANCE (SPRINKLER NOTE 4)						1
SPARE HEADS & PLATES		-	-	-	-	-
TOTAL		-	13	-	-	14

LYON-MCFADDIN TUNNEL:
1. QUANTITIES REQUIRED ARE AS SHOWN IN THE LEGEND.

SPRINKLER ESCUTCHEON COLOR KEY
1. SPRINKLERS IN EXPOSED CONSTRUCTION CEILING AREAS SHALL BE THE STANDARD BRONZE FINISH UNLESS OTHERWISE NOTED.
2. SPRINKLER QUANTITIES SHOWN IN THE SPRINKLER HEAD LEGEND ARE FOR THE CONTRACTORS REFERENCE ONLY. REFER TO THE CONTRACT DRAWINGS FOR ACTUAL QUANTITIES.

CORNELL UNIVERSITY — LYON-MCFADDIN TUNNEL (WAR MEMORIAL BASEMENT)

CODE REQUIREMENTS - SPRINKLER SYSTEMS

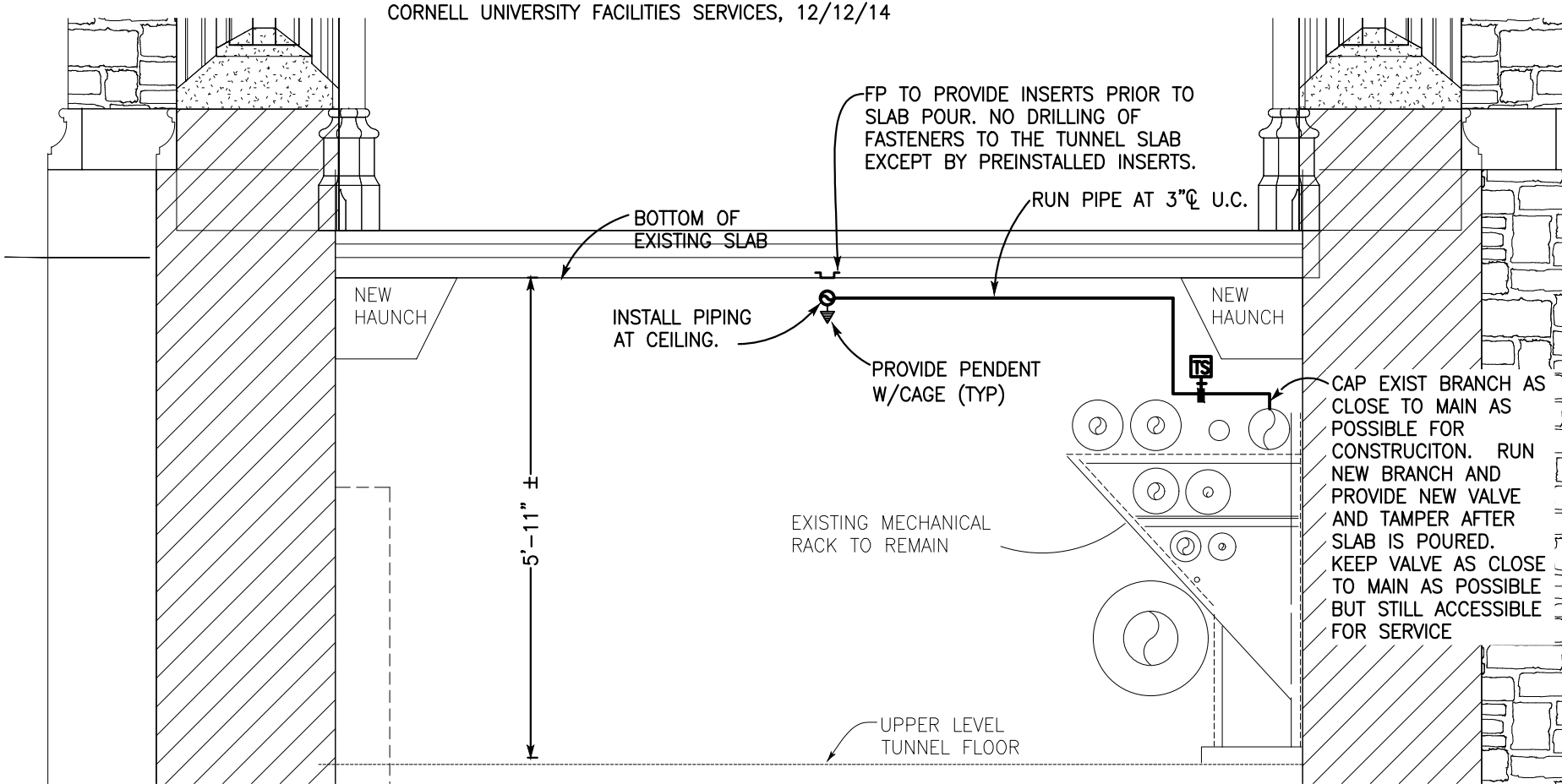
APPLICABLE CODE:	ALTERATION LEVEL 1
PROJECT TYPE:	REPAIR OF HISTORIC STRUCTURE — OPTIONAL ADDITION OF SNOW MELT SYSTEM
SCOPE OF WORK:	REMOVAL & REINSTALL OF TUNNEL SPRINKLERS, TO ENABLE CLOISTER SLAB REPAIR/REPLACEMENT AT WAR MEMORIAL.
OCCUPANCY CLASS:	RESIDENTIAL GROUP R2
USE CLASSIFICATION:	DORMITORY (RESIDENCE HALL)
CONSTRUCTION CLASSIFICATION:	II-B LYON & MCFADDIN HALLS ARE CONSTRUCTED OF MASONRY EXTERIOR WALLS; STEEL I-BEAMS & TERRA COTTA FLOOR FRAMING WITH A 3" CONCRETE DECK. THE WAR MEMORIAL BASEMENT IS POURED CONCRETE & STONE CONSTRUCTION
IEBC SECTION 703 - FIRE AND LIFE SAFETY PROTECTION	"ALTERATIONS SHALL BE DONE IN A MANNER THAT MAINTAINS THE LEVEL OF FIRE PROTECTION PROVIDED."
EXISTING SYSTEMS:	A. WET PIPE, PIPE SCHEDULE SPRINKLER SYSTEM PROTECTS PROJECT AREA.
PROJECT SCOPE:	PROVIDE REMOVALS AND REWORK OF EXISTING SPRINKLER HEADS AND PIPING TO ENABLE SLAB REMOVAL AND REPLACEMENT.
SPRINKLER SYSTEM --- (EXISTING PIPE SCHEDULE WET PIPE SYSTEM) BASIS OF DESIGN	RESIDENCE HALL MECHANICAL, ELECTRIC & STORAGE ROOMS: OCCUPANCY CLASSIFICATION: ORDINARY HAZARD GROUP 1 COVERAGE PER SPRINKLER: 130 SQ.FT. MAX. * SPR. SPRINKLER: 100 SQ.FT. MAX. * PER SIDEWALL SPRINKLER: HOSE ALLOWANCE: 250 GPM FOR LIGHT & ORDINARY HAZARD OCCUPANCY
*EXCEPT FOR LISTED EXTENDED COVERAGE SPRINKLERS	
FIRE SERVICE MAIN DATA:	AN EXISTING 6" FIRE SERVICE MAIN, CONNECTED TO THE CAMPUS UNDERGROUND WATER MAIN, SUPPLIES THE SPRINKLER SYSTEM IN LYONS, MCFADDIN, AND THE TUNNEL.

GENERAL NOTES:

- ALL WORK SHALL CONFORM TO CORNELL UNIVERSITY STANDARDS OF QUALITY, MATERIAL AND WORKMANSHIP, AS DETAILED ON THE DRAWINGS AND IN THE SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO THE EXISTING BUILDING CODE OF NEW YORK STATE 2020 AND THE FIRE CODE OF NEW YORK STATE 2020, CONFORM TO NFPA 13, NFPA 25 AND CURRENT FM GLOBAL'S DATA SHEETS.
- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (OSHA) AS AMENDED AND THE REQUIREMENTS OF THE NEW YORK STATE DEPARTMENT OF LABOR.
- THE PROJECT OCCURS WITHIN THE CITY OF ITHACA. THE FIRE PROTECTION CONTRACTOR SHALL BE RECOGNIZED BY THE CITY AS A LEGITIMATE FIRE PROTECTION CONTRACTOR, AND SHALL PROVIDE A CITY OF ITHACA FIRE PROTECTION PERMIT, INSPECTION AND CERTIFICATE OF COMPLETION. THE CONTRACTOR SHALL PAY ALL FEES.
- PROVIDE DETAILED SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT PROVIDED UNDER THIS PROJECT.
- PROVIDE OPERATION AND MAINTENANCE INFORMATION FOR ALL MATERIALS, EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS PROJECT. SEE SPECIFICATIONS.
- PROVIDE SIGNED, DATED, CONTRACTOR AS-BUILT DRAWINGS FOR ALL WORK PROVIDED UNDER THIS PROJECT. MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS DENOTING ANY FIELD CHANGES WHICH ARE MADE AS THE WORK OF THE PROJECT PROGRESSES. KEEP THESE UPDATED. ENGINEER SHALL BE PERMITTED TO BORROW, PHOTOGRAPHY AND RETURN THESE DRAWINGS AT INTERVALS THROUGHOUT THE PROJECT.
- COORDINATE LOCATIONS OF FIRE PROTECTION DEVICES AND ELEMENTS WITH ARCHITECTURAL DRAWINGS AND THE ELECTRICAL, HVAC AND PLUMBING WORK. SEE ARCHITECTURAL DRAWINGS FOR SPECIFIC LOCATION OF DEVICES. KEEP HEAD SPACING AS SHOWN ON FIRE PROTECTION DRAWINGS. REPORT CONFLICTS TO ENGINEER PRIOR TO ROUGH IN.
- ITEMS IDENTIFIED FOR "SAVAGE" SHALL BE REMOVED AND PROTECTED BY THE CONTRACTOR, AND TURNED OVER TO THE OWNER.
- THE FP CONTRACTOR SHALL TEMPORARILY CAP AND PLUG MAINS AND RESTORE FIRE PROTECTION TO THE BALANCE OF THE BUILDING AT THE CONCLUSION OF EACH DAY.

REFERENCE DRAWINGS:

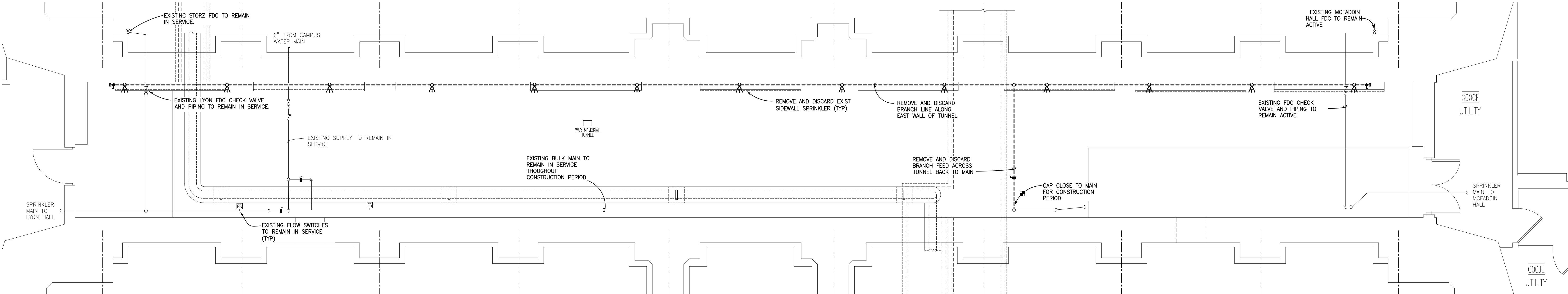
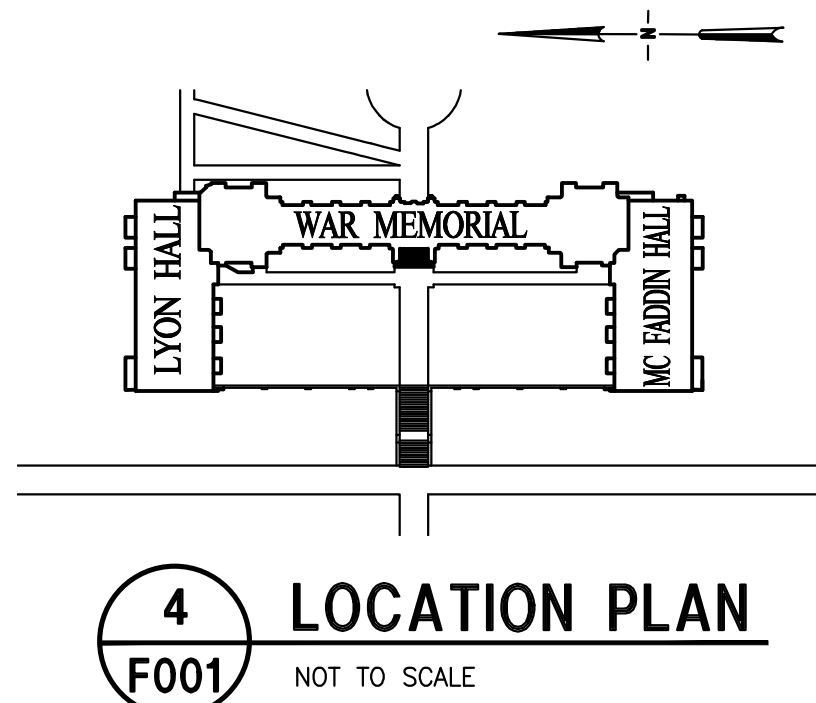
- WAR MEMORIAL TUNNEL PRESS-FIT SPRINKLER PIPING REPLACEMENT AND RELOCATION, CORNELL UNIVERSITY — ITHACA, NY, CORNELL UNIVERSITY FACILITIES SERVICES, 12/12/14



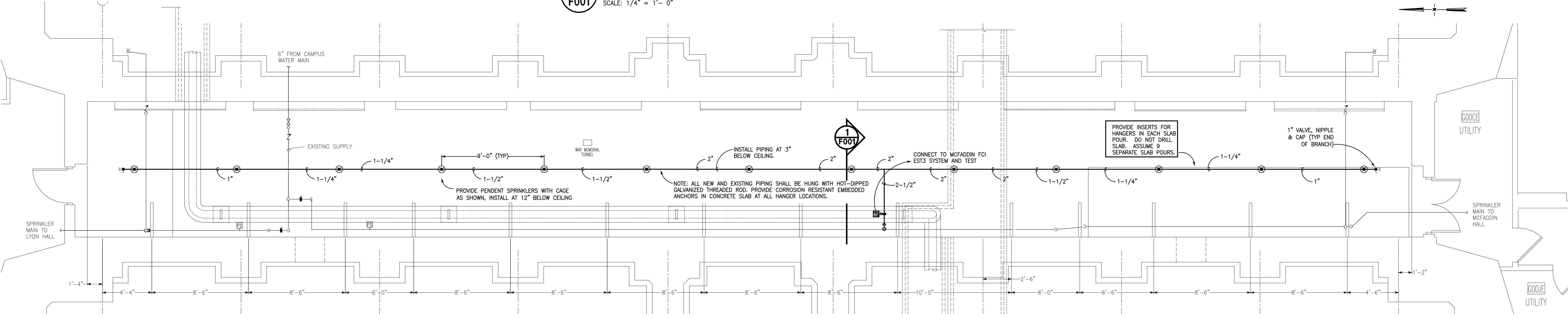
1 PARTIAL SECTION AT NEW SLAB
SCALE: 1/2" = 1'-0"

SPRINKLER NOTES:

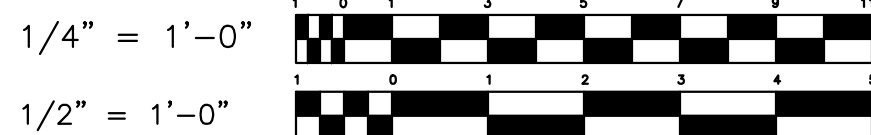
- THE F.P. CONTRACTOR SHALL PROVIDE PIPE SIZES AS SHOWN ON THE CONTRACT DRAWINGS AS A MINIMUM.
- ALL CUTTING AND PATCHING SHOWN ON THE DRAWINGS OF THE VARIOUS TRADES ARE THE RESPONSIBILITY OF THE TRADE INVOLVED. SEE SPECIFICATIONS.
- ALL EQUIPMENT AND MATERIALS UTILIZED BY THE FP CONTRACTOR SHALL REMAIN ON FLOORS PROTECTED BY POLY AND PLYWOOD. IF EQUIPMENT IS REQUIRED TO BE USED IN AREAS WHERE FLOOR PROTECTION HAS NOT BEEN PROVIDED, FP CONTRACTOR SHALL PROVIDE PLYWOOD AND POLY TO PROTECT FLOORS.
- PROVIDE AN ALLOWANCE FOR PROVIDING AND INSTALLING ONE (1) ADDITIONAL SPRINKLER HEAD IN ADDITION TO HEADS SHOWN, AT LOCATION DICTATED BY THE ENGINEER.
- THE F.P. CONTRACTOR SHALL PROVIDE A HYDROSTATIC TEST AT 200 PSI FOR A 2 HOUR DURATION ON THE WET PIPE SYSTEM PIPING, AS OUTLINED IN NFPA 13, 2013 EDITION, FOR THE PROJECT AREA, FOLLOWING ROUGH-IN OF THE CONTRACT PROVIDED PIPING. NO LEAKS OR DROP IN PRESSURE WILL BE ACCEPTABLE. THIS TEST SHALL BE SCHEDULED WITH CORNELL EH&S AND IS WITNESSED BY CORNELL EH&S, ITHACA FIRE DEPARTMENT AND THE ENGINEER. PROVIDE A MINIMUM 48 HOUR NOTICE TO ALL PARTIES OF THE TEST SCHEDULE. DO NOT COVER NEW PIPING WITH CEILING OR WALLS UNTIL AFTER HYDROSTATIC TEST IS COMPLETE. ALL JOINTS AND PIPING SHALL BE EXPOSED FOR INSPECTION.
- AT THE COMPLETION OF ROUGH-IN, ALL PIPING PROVIDED UNDER THIS PROJECT SHALL BE FLUSHED IN ACCORDANCE WITH NFPA 25. PROVIDE SUFFICIENT ADAPTERS, PROPER SIZE HOSE AND PUMPPOWER TO PERFORM THE FLUSHING OPERATION AS EFFICIENTLY AS POSSIBLE. FLUSHING SHALL BE SCHEDULED THROUGH CORNELL EH&S AND SHALL BE WITNESSED BY THE ENGINEER, CORNELL EH&S AND THE ITHACA FIRE DEPARTMENT.
- FIRE PROTECTION: GENERAL REQUIREMENTS FOR DURATION OF THE PROJECT.
 - ALL SPRINKLERS IN NON-RENOVATED SPACES SHALL BE KEPT IN SERVICE DURING CONSTRUCTION. IN SPACES THAT ARE TO BE RENOVATED, SPRINKLER PROTECTION SHALL REMAIN ACTIVE UNTIL REMOVALS ARE REQUIRED BY THE CONSTRUCTION SCHEDULE. ALL REMOVALS SHALL BE COORDINATED WITH THE G.C. & OWNERS PROJECT MANAGER. REMOVAL OF FIRE PROTECTION PIPING SHALL NOT BE COMMENCED UNTIL TEMPORARY HEAT DETECTION IS INSTALLED AND APPROVED BY CORNELL EH&S.
 - ALL ACTIVE SPRINKLERS SHALL BE PLACED BACK IN SERVICE BY THE END OF EACH WORK DAY. AT NO TIME ARE ANY FIRE PROTECTION SYSTEMS TO BE SHUT DOWN AND LEFT OUT OF SERVICE DURING NON-WORK HOURS OVER THE DURATION OF THE CONSTRUCTION PROJECT.
- REMOVE CONSTRUCTION DEBRIS FROM THE WORK AREAS DAILY.
- ALL PENDENT SPRINKLERS SHALL BE INSTALLED ON RETURN BENDS.
- PIPES, FITTINGS, HANGERS, VALVES, SPRINKLERS, AND ALL OTHER FIRE PROTECTION EQUIPMENT SHALL BE FM APPROVED. SUBMIT COPIES OF MANUFACTURER'S TECHNICAL DATA SHEET FOR ALL FIRE PROTECTION EQUIPMENT BEING UTILIZED IN THE PROJECT.
- ALL SPRINKLER PROTECTION SHALL BE INSTALLED AS PER FM DATA SHEET 2-0. INSTALLATION GUIDELINES FOR AUTOMATIC SPRINKLERS. FINAL ACCEPTANCE OF THE AUTOMATIC SPRINKLER SYSTEMS WILL BE BY FIELD EXAMINATION AND SATISFACTORY COMPLETION OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE.



2 BASEMENT TUNNEL PLAN - REMOVALS
SCALE: 1/4" = 1'-0"



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



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Seal:



No. Date Revisions
Project Name:

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

MAP

Checked:

PSR

Approved:

PAP

Drawing Title:

PH. 2 FIRE
PROTECTION
TUNNEL SPRINKLER
RENEWAL

Job Number: E2019010A

Date: 02/15/23 Scale: AS SHOWN

Drawing Number:

F001

SYMBOL LIST - MECHANICAL	
	EXISTING WORK TO REMAIN (FAINT LINE)
	NEW WORK (BOLD CONTINUOUS LINE)
	EXISTING WORK TO BE REMOVED (DASHED LINE)
	TEMPERATURE SENSOR
	BOTTOM CONNECTION
	TOP CONNECTION
	ELBOW DOWN
	ELBOW UP
	ECCENTRIC REDUCER
	CAP OR PLUG
	STRAINER W/ BLOWDOWN VALVE & CAP
	TRIPLE DUTY VALVE
	BALL VALVE - NEW
	BALL VALVE - EXISTING OR REMOVAL
	BUTTERFLY VALVE
	CHECK VALVE
	OPERATED VALVE
	THREE WAY VALVE
	FLOW MEASURING BALANCE VALVE - NEW
	FLOW MEASURING BALANCE VALVE - EXISTING OR REMOVAL
	SAFETY RELIEF VALVE
	THERMOMETER
	CIRCULATING PUMP
	FLOOR OR WALL PENETRATIONS
	AIR VENT
	CONNECT TO EXIST POINT (NEW WORK PLANS)
	REMOVAL TO POINT (REMOVAL PLANS)
	UNION
	GATE VALVE
	PRESSURE GAUGE
	DIRECTION OF FLOW
	SUPPLY DUCT
	RETURN / EXHAUST DUCT
	VOLUME DAMPER, PROVIDE LOCKING QUADRANT ARM
	FIRE DAMPER
	AIR FLOW
	DIFFUSER TYPE CFM
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	ABOVE FINISH FLOOR
BD	BOTTOM OF DUCT
UH	UNIT HEATER
CFM	CUBIC FEET PER MINUTE
EC	EXPANSION COMPENSATOR
GPM	GALLONS PER MINUTE
RHWR	REHEAT HOT WATER RETURN
RHWS	REHEAT HOT WATER SUPPLY
HX	HEAT EXCHANGER
RHR	HOT WATER RETURN
RHS	HOT WATER SUPPLY
NTS	NOT TO SCALE
OA	OUTDOOR AIR
RA	RETURN AIR
EA	EXHAUST AIR
SA	SUPPLY AIR
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CFSD	COMBINATION FIRE/ SMOKE DAMPER
UTR	UP THROUGH ROOF
ELUS	CENTERLINE UNDER SLAB

GENERAL NOTES

- ALL WORK SHALL CONFORM TO CORNELL UNIVERSITY STANDARDS OF QUALITY, MATERIALS AND WORKMANSHIP, AS DEFINED IN THE PLANS AND SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO ALL APPLICABLE RULES, REGULATIONS, CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO THE BUILDING CODE OF NEW YORK STATE, ENERGY CODE OF NEW YORK STATE, NFPA, OSHA, FEDERAL, STATE, COUNTY, AND CITY ORDINANCES, CODES, LAWS AND REGULATIONS.
- RECORD DRAWINGS: MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS DENOTING ANY FIELD CHANGES WHICH ARE MADE AS THE WORK PROGRESSES. PROVIDE THIS DRAWING SET TO THE ENGINEER AT THE COMPLETION OF THE PROJECT FOR REPRODUCTION.
- BUILDING PERMIT: CONTRACTOR SHALL OBTAIN A BUILDING PERMIT BEFORE COMMENCING WORK. CONTRACTOR SHALL PAY ALL PERMIT EXPENSES.
- NO ASBESTOS ABATEMENT IS ANTICIPATED FOR THIS PROJECT.
- CONTRACTORS SHALL OBSERVE EXCEPTIONAL CARE IN PROTECTING THE EXISTING BUILDING, ITS FINISHES & FABRIC FROM HARM OR DAMAGE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A HOT WORK PERMIT FROM THE ITHACA FIRE DEPARTMENT (FID) WHENEVER THE WORK OF WELDING OR OTHER HOT WORK IS NEEDED.
- OBTAIN A LOCAL FIRE DETECTION SYSTEM SHUTDOWN FOR ANY HOT WORK OR WHENEVER THE WORK WILL CREATE SMOKE AND/OR DUST PROPAGATION.
- ITEMS IDENTIFIED FOR "SALVAGE" SHALL BE REMOVED AND IMMEDIATELY PROTECTED BY THE CONTRACTOR, AND EITHER REUSED IN THE WORK AS SHOWN OR RETURNED TO THE ATTIC "SPARES" AREA AS DIRECTED BY THE OWNER.
- ALL PIPING SHALL BE TESTED PRIOR TO APPLYING ANY INSULATION AND BEFORE PLACING PIPING IN SERVICE. SEQUENCE THE WORK IN ORDER TO ALLOW TESTING OF COMPLETED WORK.
- SCHEDULE ALL SHUTDOWNS AND OUTAGES IN ADVANCE WITH OWNER AND BUILDING STAFF.
- MC IS RESPONSIBLE FOR PROVIDING GLYCOL AND FILLING AND BLEEDING THE NEWLY INSTALLED GLYCOL SYSTEM, INCLUDING BOTH THE INTERIOR PIPING SYSTEM AND EQUIPMENT AND THE CONNECTED OUTDOOR SYSTEM.

BASE BID

- BASE BID IS TO PROVIDE SNOWMELT SYSTEM TUBING ONLY, INSTALLED AND TESTED, FOR CLOISTER AREA, THROUGH TO MECHANICAL TUNNEL.

ALTERNATE - 1 - SNOW MELT

- PROVIDE PRICING AS ALTERNATE 1 TO PROVIDE NEW SNOW-MELT SYSTEM, INCLUDING ASSOCIATED MECHANICAL EQUIPMENT, EXTENDING THROUGH CLOISTER PAVING ASSEMBLY, NEW CONCRETE PAVING AT EAST AND WEST APPROACHES TO WAR MEMORIAL, AND NEW CONCRETE AND STONE ASSEMBLY AT WEST STAIR, AS DESCRIBED IN SECTION 01 23 00 "ALTERNATES" AND INDICATED ON DRAWING FRD1.01 AND FR1.018 AND AS SPECIFIED IN SECTION 033000 "CONCRETE", 324100 "UNIT PAVING", AND SECTION 3361100 "EXTERIOR SNOW MELTING SYSTEMS."

ALTERNATE - 3 - DELETE INTERIOR ROOF DRAINS

- PROVIDE PRICING TO DELETE THE BASE BID INTERNAL RAIN WATER CONDUCTORS FROM THE UPPER ROOF, AND PROVIDE EXTERNAL RAIN CONDUCTORS. WORK OF PROVIDING DECK DRAINS FOR CLOISTER REMAINS IN THE PROJECT EVEN IF ALTERNATE 3 IS TAKEN. SEE DESCRIPTION OF ALTERNATE IN SECTION 01 23 00 "ALTERNATES".

PIPING SCHEDULE					
SERVICE	LOCATION	PIPING	FITTINGS	JOINTS	NOTES
DOMESTIC WATER	ALL	TYPE 'L' COPPER	WROUGHT COPPER, NO LEAD	95/5 NO-LEAD SOLDER	PROVIDE RISER CLAMPS AT EACH FLOOR PENETRATION
SANITARY	ABOVE GROUND	SERVICE WEIGHT NO-HUB CAST IRON	NO HUB FITTINGS	CHARLOTTE HEAVY DUTY 4 BAND S/S CLAMP W/NEOPRENE GASKET 80 IN LB TYPE	
	BELOW GROUND	SERVICE WEIGHT CAST IRON	HUB & SPIGOT	PUSH ON GASKETS	
VENT PIPING	ABOVE GROUND	SERVICE WEIGHT NO-HUB CAST IRON	NO HUB FITTINGS	CHARLOTTE HEAVY DUTY 4 BAND S/S CLAMP W/NEOPRENE GASKET 80 IN LB TYPE	
STORM	ABOVE GROUND	COPPER, SCHEDULE 40 PVC OR SERVICE WEIGHT NO-HUB CAST IRON	COPPER, SOLVENT WELD, OR CAST IRON NO HUB FITTINGS AS SHOWN	CHARLOTTE HEAVY DUTY 4 BAND S/S CLAMP W/NEOPRENE GASKET 80 IN LB TYPE AS SHOWN	
	BELOW GROUND (OUTDOORS)	PVC SDR 35 BELL & SPIGOT CONFORMING TO ASTM D3034 WITH STIFFNESS VALUE OF 46	COMPATIBLE WITH PIPE, PUSH-ON TYPE	GASKETS CONFORMING TO ASTM F477	
HYDRONIC HEATING WATER 3" AND SMALLER	ALL	TYPE "L" SEAMLESS COPPER TUBING	WROUGHT COPPER, PRESSURE FITTING	SWEAT SOLDER & THREADED	
HYDRONIC HEATING WATER 4" AND LARGER	ALL	SCHEDULE 40 SEAMLESS BLACK STEEL	SCHEDULE 40 SEAMLESS BUTT WELDED	WELDED	
STEAM, PRESSURE > 15 PSIG	ALL	SCHEDULE 40 SEAMLESS BLACK STEEL	SCHEDULE 40 SEAMLESS BUTT WELDED	WELDED	
STEAM CONDENSATE	ALL	SCHEDULE 80 A53 GRADE B BLACK STEEL	2-1/2" AND SMALLER, THREADED, 3" AND LARGER BUTT OR SOCKET WELDED	2-1/2" AND SMALLER, THREADED (OR WELDED), 3" AND LARGER BUTT OR SOCKET WELDED	

INSULATION SCHEDULE (MEET OR EXCEED 2018 IECC)									
TYPE	PIPE INSULATION TYPE	FITTING INSULATION TYPE	PIPE DIAMETER (INCHES)						REMARKS
			SINGLE UNIT RUNOUTS	≤ 1"	1"-<1 1/2"	1 1/2"-<4"	4"-<8"	>8"	
				THICKNESS (INCHES)					
COLD WATER PIPING	FIBERGLASS -- WITH ALL SERVICE JACKET IN CONCEALED AREAS AND WHITE PVC JACKET WHERE EXPOSED	ZESTON	1/2"	1"	1"	1"	1"	1"	PROVIDE METAL JACKETING ON ALL INSULATED PIPING IN TUNNEL. COMPLY WITH OPERATING INSTRUCTIONS ON TUNNEL DRAWING WHERE NOTED
HOT WATER & HOT WATER CIRCULATING PIPING	FIBERGLASS -- WITH ALL SERVICE JACKET IN CONCEALED AREAS AND WHITE PVC JACKET WHERE EXPOSED	ZESTON	1/2"	1"	1"	2"	2"	2"	
HEATING HOT WATER PIPING HWS/R	FIBERGLASS WITH ALL SERVICE JACKET	ZESTON	1"	1-1/2"	1-1/2"	2"	2"	2"	
STEAM PIPING	FIBERGLASS WITH ALL SERVICE JACKET	FIBERGLASS & CEMENT, STENCIL "NON-ASBESTOS 2019"	4-1/2"	4-1/2"	5"	5"	5"	5"	
CONDENSATE PIPING	MINERAL FIBER WITH ALL SERVICE JACKET	ZESTON	1"	1-1/2"	1-1/2"	2"			
INTERIOR SNOWMELT HOT GLYCOL SUPPLY & RETURN PIPING	FIBERGLASS WITH ALL SERVICE JACKET	ZESTON	1"	1-1/2"	1-1/2"	2"			

FAN SCHEDULE													
DESIGNATION	SERVICE	TYPE	CFM	S.P.	FAN RPM	MOTOR				DRIVE	BASIS OF DESIGN	WEIGHT (LBS)	NOTES
						WATTS	FLA	HP	VOLT PH HERTZ				
F-1	TUNNEL VENTILATION	INLINE	610 570	0.2" 0.5"	3104	190	2.24	-	120 1 60	DIRECT	FANTECH FG-10XL	11.6	1,2,3,4
F-2	TUNNEL VENTILATION	INLINE	610 570	0.2" 0.5"	3104	190	2.24	-	120 1 60	DIRECT	FANTECH FG-10XL	11.6	1,2,3,4
NOTES: 1. PROVIDE LINE VOLTAGE THERMOSTAT OPEN ON TEMPERATURE FALL. SET AT 50°F. FAN SHALL INTERLOCK WITH THERMOSTAT. 2. PROVIDE VIBRATION ISOLATION HANGERS - RUBBER IN SHEAR. 3. PROVIDE FAN WITH ECM MOTOR. 4. PROVIDE START/STOP/STATUS OF FAN TO CAMPUS FCMS.													

CONTROL DAMPER SCHEDULE							
DESIGNATION	QTY	SERVES	SIZE	TYPE		DESIGN MAKE & MODEL	NOTES
D-1	2	OUTSIDE AIR INTAKE	30"W x 8"H	LOW LEAKAGE THERMALLY INSULATED ALUMINUM AIRFOIL DAMPER		TAMCO SERIES 9000	1
NOTES: 1. PROVIDE 115V AC BELIMO ACTUATOR, INTERLOCKED WITH ASSOCIATED FAN POWER.							

LOUVER SCHEDULE															
DESIGNATION	QTY	TYPE	SERVICE	CFM	APD	WIDTH	HEIGHT	DEPTH	FACE AREA (F ²)	FREE AREA (F ²)	FREE AREA (FPM)	MATERIAL	BASIS OF DESIGN	NOTES	
L-1	2	ADJUSTABLE	EXHAUST	750	0.08"	31"	12"	4"	2.58	34	0.88	851	ALUMINUM	RUSKIN ELMB11D	1,2,3
L-2	2	STATIONARY, DRAINABLE	INTAKE	750	0.10"	31"	16"	4"	3.44	33	1.14	655	ALUMINUM	RUSKIN ELF811DD	2,3
NOTES: 1. PROVIDE 115V AC BELIMO ACTUATOR, INTERLOCKED WITH FAN POWER. 2. CONTRACTOR SHALL VERIFY EXISTING LOUVER OPENING DIMENSIONS IN WALL AND MAXIMIZE LOUVER WIDTHS TO FILL. 3. PROVIDE BIRDSCREEN ON LOUVER.															

CLEANOUT SCHEDULE		
TYPE	DESCRIPTION	MAKE & MODEL
FCO	CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE SCORRIATED SECURED NICKEL BRONZE TOP	JAY R SMITH MODEL 4020 OR EQUAL BY ZURN
CO	EXTENSION TYPE CLEANOUT, DUCO CAST IRON, W/RAISED HEAD CLOSURE PLUG, SERVICE WEIGHT.	JAY R SMITH MODEL 4280

DECK DRAIN SCHEDULE			
TYPE	DESCRIPTION	MAKE & MODEL	NOTE
DD-1	CAST IRON ROUND MEDIUM-DUTY ANTI-TILTING GRATE WITH PERIMETER DRAINAGE SLOTS, SET IN ROUND, NON-FUNCTIONING MEMBRANE CLAMP RING AND MEDIUM SUMP WITH 4" WIDE DECK FLANGE AND BOTTOM OUTLET, INSIDE CAULK CONNECTION.	JOSAM MODEL 24020 OR JAY R. SMITH MODEL DX2565C	DECK DRAIN FOR CLOISTER DECK. REFER TO PLANS FOR PIPE CONNECTION SIZE.



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**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:
HSJ

Checked:
PAP

Approved:
PAP

Drawing Title:

**PH. 2 MECHANICAL
SYMBOLS, NOTES, &
SCHEDULES**

Job Number: E2019010A

Date: 02/15/23 Scale: AS SHOWN

Drawing Number:

M001



Consultant:

Seal

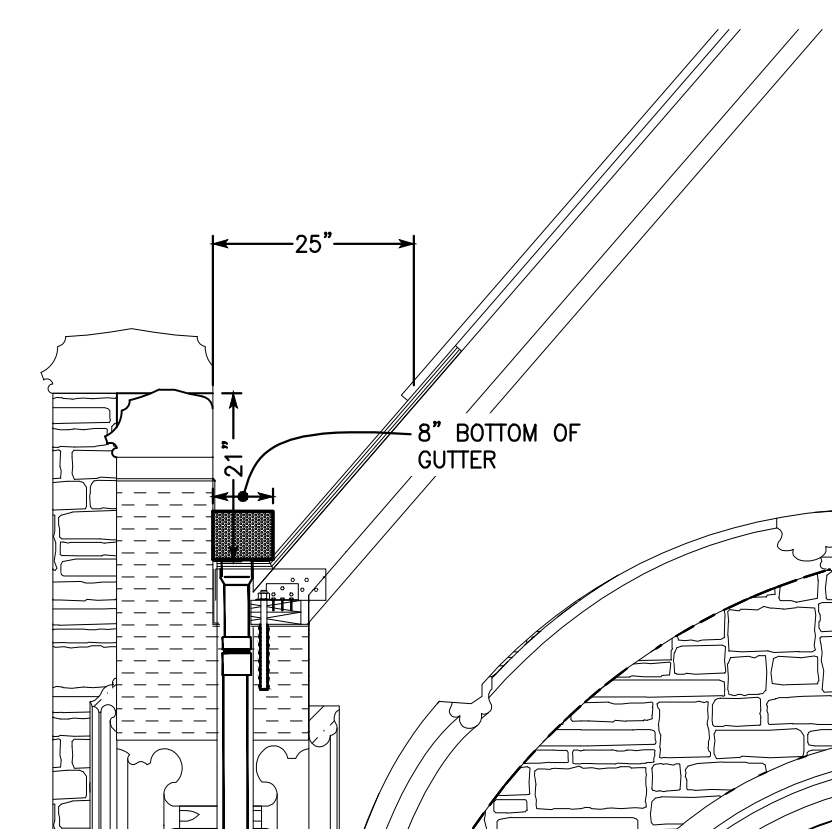


SCALE: 1/2" = 1'-0"

AREA CALCULATION:

1. ROOF IS DIVIDED INTO FOUR QUADRANTS EACH WITH A SINGLE ROOF DRAIN.
2. ONE QUADRANT RECEIVES DISCHARGE FROM CENTRAL ROOF OF AREA $18' \times 16' = 288$ SQ FT
3. EACH QUADRANT MEASURES $9' \times 48.5' = 436.5$ SQ FT (PLAN VIEW)
4. PER PLUMBING CODE OF NEW YORK STATE, MUST INCLUDE 1/2 OF FACE AREA OF ADJACENT HIGHER BUILDING EQUALS 9 FEET BY 68 FEET = 612 SQ FT X 50% EQUALS 306 SQ FT.
5. TOTAL AREA OF LARGEST QUADRANT: $288 + 436 + 306$ EQUALS 1,036 SQ FT.
6. STATE MAP DESIGN RAINFALL ITHACA NY 2.25 TO 2.5" PER HOUR.
7. LOCAL EXPERIENCE USE 3" PER HOUR INTENSITY FOR CALCULATIONS: INTENSITY IS GREATER THAN AVERAGE HOURLY RAINFALL RATE.
8. ALLOWABLE PIPE SIZING: PREVIOUS BUILDING CODE (USE FOR CAST IRON):
 - 8.1. 3" VERTICAL LEADER 2,930 SQ FT MAXIMUM
 - 8.2. 4" HORIZONTAL LEADER 1,036 SQ FT MAXIMUM AT 1/8" PITCH.
9. CURRENT BUILDING CODE (BASED ON PVC WHICH HAS HIGHER FLOW CAPABILITY)
 - 9.1. 3" VERTICAL LEADER 251 SQ FT 251 FT³ PER HOUR RAINFALL = $259 \text{ FT}^3 \text{ PER HOUR RAINFALL} \times 8.34 \text{ GAL/FT}^3 = 2,160 \text{ GAL/HOUR}$
 - 9.2. 2598 CUBIC FEET PER HOUR RAINFALL $\times 7.5 \text{ GAL/FT}^3 = 60 \text{ MIN/HR}$ EQUALS 32.4 GPM LOADING ON LEADER
 - 9.3. 2015/2018/2019 IFC, PLUMBING CODE OF NYS:
 - 9.3.1. 3" VERTICAL CAPACITY 87 GPM
 - 9.3.2. 3" HORIZONTAL CAPACITY 39 GPM AT 1/16" SLOPE, 55 GPM AT 1/8" SLOPE.
10. CONCLUSION: CAPACITY OF 3" CAST IRON IS ADEQUATE FOR INDIVIDUAL QUADRANTS AT 1/8" SLOPE MINIMUM, PVC IS ADEQUATE FOR INDIVIDUAL QUADRANTS AT 1/16" SLOPE MINIMUM.

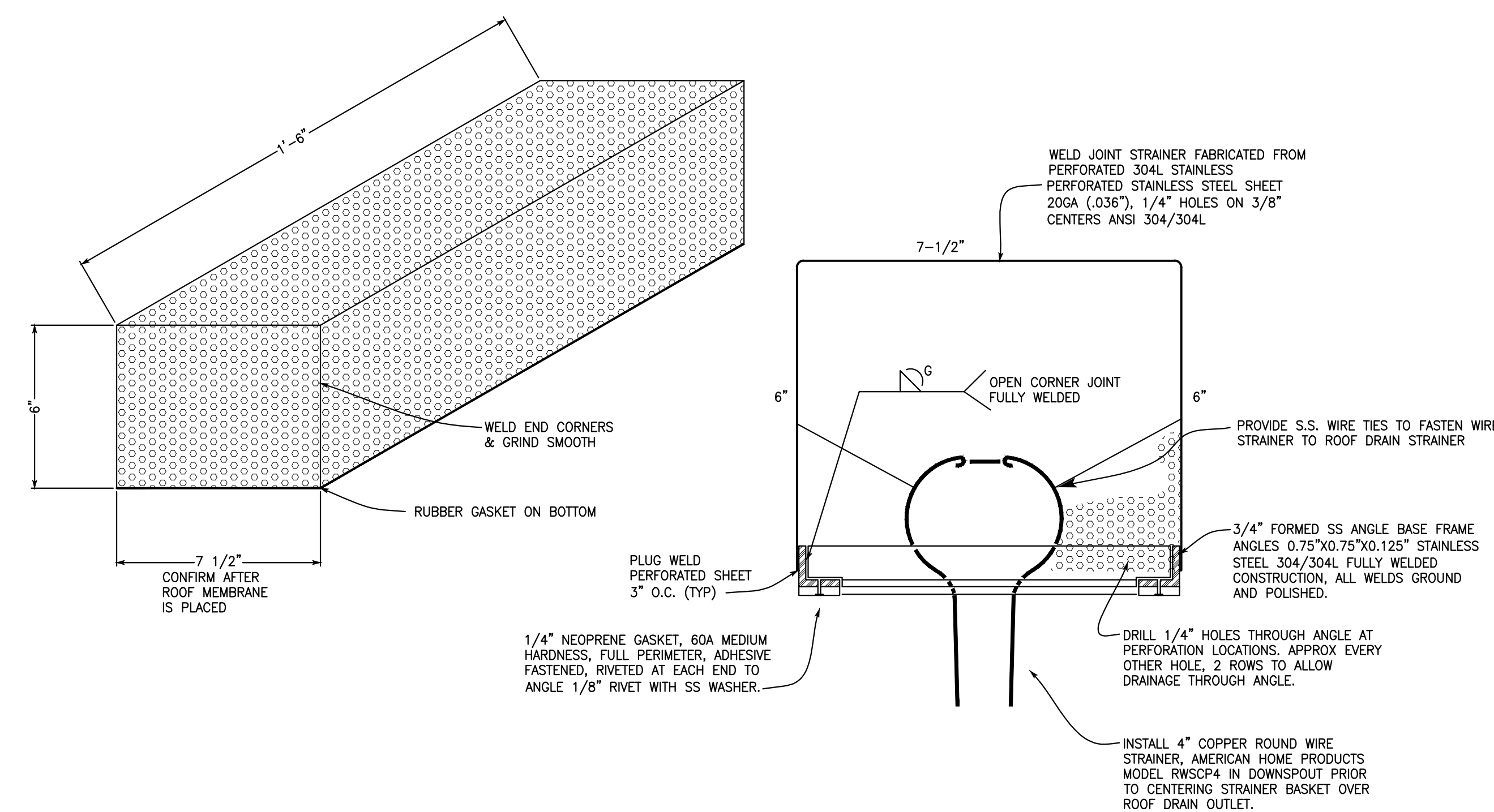
M102 NOT TO SCALE



IMPOUNDED WATER CALCULATION:

1. WATER VOLUME: $(21 \times 8) + \{21 \times (25 - 8)\} \times 12 / 1728 = 2.4 \text{ FT}^3/\text{FT OF ROOF}$
2. WATER WEIGHT: $2.4 \text{ FT}^3 \times 62.4 = 150\#$ LINIAL FOOT OF ROOF
3. ROOF SIZE: ROOF HALF SPAN = 8 FT
4. ROOF LOADING $150\# / 8 = 18.75\#/\text{SF}$
5. CONCLUSION-ROOF IS CAPABLE OF SUPPORTING A FULL GUTTER OF WATER TO SPILL POINT IF DRAIN WERE PLUGGED. FULL ROOF PARAPET ACTS AS SCUPPER FOR SECONDARY DRAINAGE.

M102 NOT TO SCALE



M102 NOT TO SCALE

(PROVIDE 4 PLUS 1 SPARE FOR BASE BID AND FOR ALTERNATE)

$$1/2'' = 1'-0''$$


No.	Date	Revisions
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Project Name:

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War Memorial
Phase 2 - Restoration

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PAP

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PAP

Drawing Title:	

PH. 2 ROOF DRAIN DETAILS AND DATA

Job Number: E2019010A

Date: 02/15/23	Scale: AS SHOWN
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Drawing Number:

M102

WAR MEMORIAL CLOISTER SNOWMELT SYSTEM

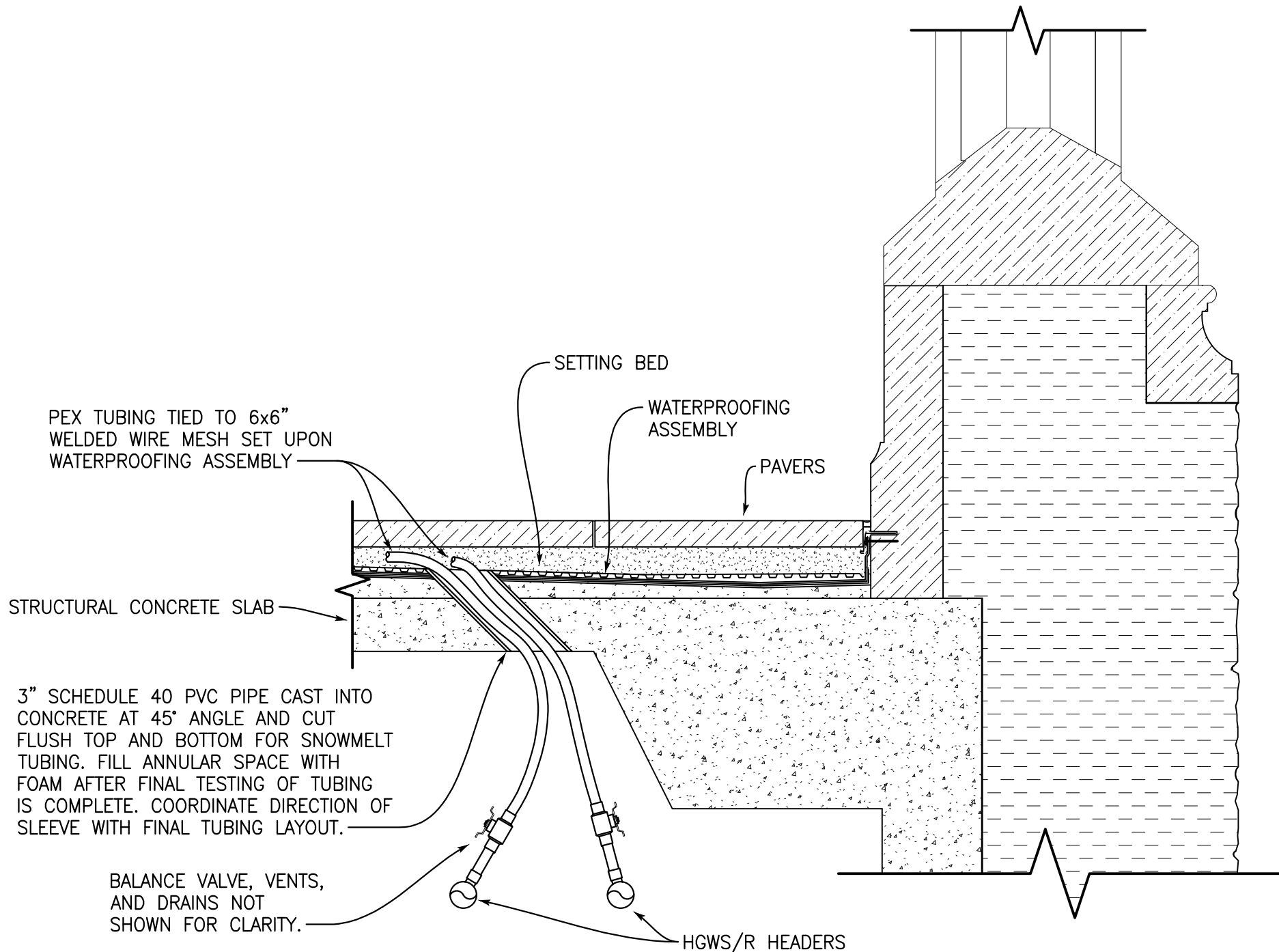
1. PROVIDE APPROXIMATELY 2,010 SF OF SNOWMELT SIDEWALK/BRICK PAVES AND STAIR AREA AS SHOWN ON SITE PLAN.

BASE BID:

1. 6 CIRCUITS — EACH CIRCUIT WILL BE ±250 FEET OF 3/4" PEX TUBING IN CLOISTER, EACH FED FROM HEADER INSIDE CLOISTER TUNNEL.
2. 3 TEMPERATURE SENSOR LOCATIONS IN CLOISTER.
3. 1 MOISTURE SENSOR LOCATION IN CLOISTER.
4. 10 LINEAR FEET OF 3/4" PVC CONDUIT FROM SENSORS TO INSIDE CLOISTER TUNNEL.

ALTERNATE 1

1. ADD THE MECHANICAL INFRASTRUCTURE, ELECTRIC, AND CONTROLS INSIDE TUNNEL TO HEAT THE SNOWMELT TUBING.
2. ADD SNOWMELT TO SIDEWALKS AND STAIRS.
3. PROVIDE 2 CIRCUITS — EACH CIRCUIT WILL BE ±150 FEET OF 3/4" PEX TUBING IN WEST STAIR, EACH FED FROM HEADER INSIDE CLOISTER TUNNEL.
4. PROVIDE 2 CIRCUITS — EACH CIRCUIT WILL BE ±250 FEET OF 3/4" PEX TUBING IN SIDEWALKS EAST AND WEST OF CLOISTER, EACH FED FROM HEADER INSIDE CLOISTER TUNNEL.
5. PROVIDE 1 ADDITIONAL TEMPERATURE SENSOR IN EAST SIDEWALK.
6. RELOCATE MOISTURE SENSOR AND 1 TEMPERATURE SENSOR FROM CLOISTER TO WEST SIDEWALK.
7. PROVIDE APPROXIMATELY 40 LINEAR FT OF 3/4" CONDUIT FROM SENSOR TO INSIDE CLOISTER TUNNEL.

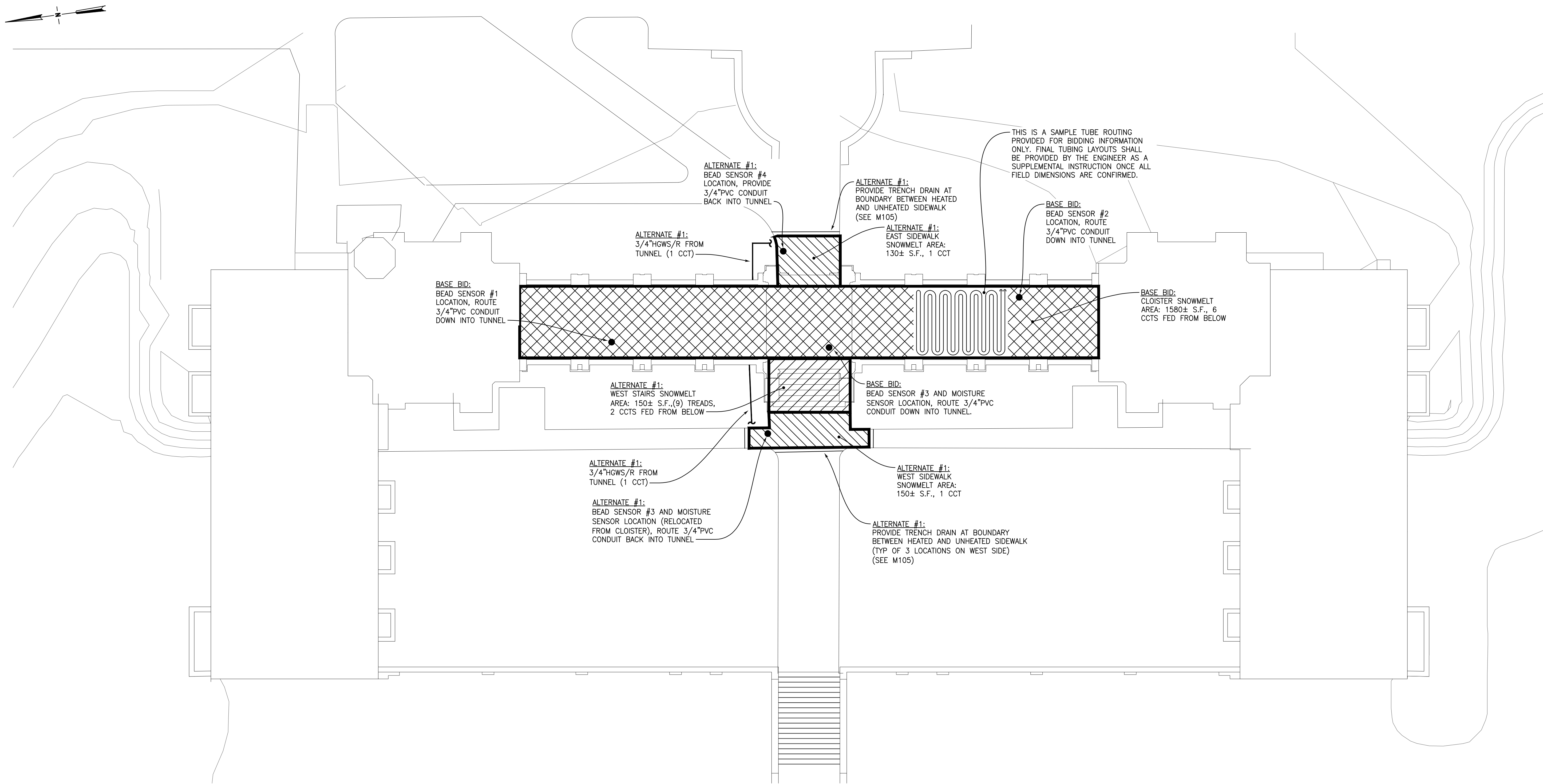


SNOWMELT TUBING SLEEVE DETAIL

2

NOT TO SCALE

M510



1
M510

SNOWMELT SITE PLAN

SCALE: 1" = 10'-0"

1" = 10'-0"



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Phase 2 - Restoration

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PH. 2 SNOWMELT
SITE PLAN

Job Number: E2019010A

Date: 02/15/23

Scale: AS SHOWN

Drawing Number:

M510

MECHANICAL SYMBOLS LIST	
SYMBOLS	DESCRIPTION
	EXISTING WORK TO REMAIN (THIN LINE)
	NEW WORK
	NEW WORK (UNDERGROUND)
	HIDDEN WORK (DASHED LINE)
	ACCESS PANEL BY GC
	TOP CONNECTION
	ELBOW DOWN
	ELBOW UP
	UNION CONNECTION
	CAP OR PLUG
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	CONNECT TO EXISTING
	REMOVE TO THIS POINT
	FLANGED UNION
	BOTTOM CONNECTION
	ECCENTRIC REDUCER
	STRAINER
	TRIPLE DUTY VALVE
	CHECK VALVE
	RPZ BACKFLOW PREVENTER
	OPERATED VALVE
	PRESSURE REGULATING VALVE
	SAFETY RELIEF VALVE
	THERMOMETER
	CIRCULATING PUMP
	AIR VENT (MANUAL)
	PRESSURE GAUGE
	TRAP
	CLEANOUT
	FLOOR DRAIN
	BALL JOINT
	STEAM METER

BLDG ABBREVIATION LIST	
DN	DOWN
EXIST	EXISTING
PH	PHASE
EFF	EFFICIENCY
HP	HORSE POWER
Ø	DIAMETER
RPM	REVOLUTIONS PER MINUTE
PSI	POUNDS PER SQUARE INCH
GPM	GALLONS PER MINUTE
AFF	ABOVE FINISH FLOOR
CL	CENTERLINE
MC	MECHANICAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
TDW	TEPID DOMESTIC WATER
V	VENT LINE
D	DRAIN LINE
SAN	SANITARY PIPING
ST	STORM PIPING
CA	COMPRESSED AIR
G	NATURAL GAS
COND	CONDENSATE
UPS (___PSIG)	LOW PRESSURE (___ PSIG) STEAM
LPR (___PSIG)	LOW PRESSURE (___ PSIG) CONDENSATE
HPS (___PSIG)	HIGH PRESSURE (___ PSIG) STEAM
HPR (___PSIG)	HIGH PRESSURE (___ PSIG) CONDENSATE
HGWS	HOT GLYCOL WATER SUPPLY
HGWR	HOT GLYCOL WATER RETURN

SNOWMELT NOTES:

- ALL WORK SHALL CONFORM TO CORNELL UNIVERSITY STANDARDS OF QUALITY, MATERIALS AND WORKMANSHIP, AS DEFINED IN THE PLANS AND SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO ALL APPLICABLE RULES, REGULATIONS, CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO THE BUILDING CODE OF NEW YORK STATE, UNIFORM FIRE PREVENTION AND BUILDING CODE, ENERGY CODE OF NEW YORK STATE, NFPA, OSHA, FEDERAL, STATE, COUNTY, AND CITY ORDINANCES, CODES, LAWS AND REGULATIONS.
- BUILDING PERMIT: CONTRACTOR SHALL OBTAIN A BUILDING PERMIT BEFORE COMMENCING WORK. CONTRACTOR SHALL PAY ALL PERMIT EXPENSES.
- PROVIDE SHOP DRAWINGS FOR EQUIPMENT LISTED IN THE SPECIFICATIONS AND SCHEDULES FOR REVIEW BY THE ENGINEER.
- A CERTIFIED WATER BALANCE IS INCLUDED IN THIS PROJECT. THE OWNER SHALL RETAIN AND PAY THE BALANCE CONTRACTOR DIRECTLY. THE HVAC CONTRACTOR SHALL COOPERATE WITH THE BALANCE CONTRACTOR.
- CONTRACTORS SHALL OBSERVE EXCEPTIONAL CARE IN PROTECTING THE EXISTING BUILDING, ITS FINISHES & FABRIC FROM HARM OR DAMAGE.
- RECORD DRAWINGS: MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS DENOTING ANY FIELD CHANGES WHICH ARE MADE AS THE WORK PROGRESSES. PROVIDE THIS DRAWING SET TO THE ENGINEER AT THE COMPLETION OF THE PROJECT FOR REPRODUCTION.
- NOTIFY CORNELL UNIVERSITY OFFICE BEFORE COMMENCING ANY WORK ON-SITE.
- ALL PIPING SHALL BE TESTED PRIOR TO APPLYING ANY INSULATION AND BEFORE PLACING PIPING IN SERVICE. SEQUENCE THE WORK IN ORDER TO ALLOW TESTING OF COMPLETED WORK. SEE SPECIFICATIONS FOR TEST REQUIREMENTS.
- SCHEDULE ALL SHUTDOWNS AND OUTAGES IN ADVANCE WITH CORNELL UNIVERSITY.
- NO WORK OF ASBESTOS ABATEMENT OR REMOVAL IS INCLUDED UNDER THIS CONTRACT. IF ANY ASBESTOS ABATEMENT IS REQUIRED, IT SHALL BE PERFORMED BY THE OWNER.
- MC IS RESPONSIBLE FOR FILLING AND BLEEDING THE NEWLY INSTALLED GLYCOL SYSTEM.

SYSTEM DESIGN BASIS

- DESIGN HEAT LOAD:
STAIRS: 300 BTU/SQ. FT.
SIDEWALK: 125 BTU/SQ. FT.
CLOISTER FLOOR: 125 BTU/SQ. FT.
- GLYCOL SUPPLY TEMPERATURE: 140°F
- GLYCOL RETURN TEMPERATURE: 120°F
- SNOWMELT LOOP FLOW RATE:
STAIRS: 3 GPM
SIDEWALK: 2.5 GPM
- SNOWMELT SYSTEM FLOW RATE: 26 GPM
- HEAT SOURCE: PRIMARY: STEAM CONDENSATE
- HEAT TRANSFER MEDIUM: PROPYLENE GLYCOL 35%

SNOWMELT CONVERTOR PACKAGE EQUIPMENT SCHEDULE (35% PROPYLENE GLYCOL)

TAG	ITEM	TYPE	CAPACITY	CHARACTERISTICS	CONNECTION	APPROX. WEIGHT (LBS)	DIMENSIONS	MFGR & MODEL	REMARKS
HQWP-1A HQWP-1B	HOT GLYCOL WATER PUMPS	INLINE CENTRIFUGAL PUMPS	26 GPM @ 49' TDH INCLUDES 35% GLYCOL CORRECTION	1 HP, 208 VOLTS, 3 PH INCLUDES 35% GLYCOL CORRECTION	1-1/2" SUCTION AND DISCHARGE	39.6± EA.	11-1/2" LONG X 11" WIDE X 15" HIGH	BELL & GOSSETT EDOORC XL 65-130	MECHANICAL SEALS SHALL BE COMPATIBLE WITH 35% PG SYSTEM
CP-1	CONDENSATE CIRC PUMP	INLINE CENTRIFUGAL PUMP	25 GPM @ 15' TDH	1/6 HP, 115 VOLTS, 1 PH	1-1/2" SUCTION AND DISCHARGE	14.5±	8-1/2" LONG X 4-1/2" WIDE X 9" HIGH	BELL & GOSSETT SERIES PL-50	SEALS SHALL BE COMPATIBLE WITH STEAM CONDENSATE
HX-1	CONDENSATE HEAT EXCHANGER	SHELL & U-TUBE HEAT EXCHANGER	SHELL: 165' EWT, 145' LWT, 26 GPM TUBE: 120' EWT, 140' LWT, 26 GPM	ASME 150 PSIG, 50.5 FT² MIN HEAT TRANSFER SURFACE AREA REQUIRED	3" FF FLANGE INLET AND OUTLET GLYCOL, 1-1/2" FNPT INLET AND OUTLET CONDENSATE	564± FLOODED	83" LONG X 9"ø	BELL & GOSSETT QWU-86-22	PROVIDE MARINE WATER BOX
ET-1	EXPANSION TANK	VERTICAL FLOOR STANDING BLADDER EXPANSION TANK	8 GALLON ASME 125 PSIG	2.4 GAL. ACCEPTANCE AT 12 PSIG INITIAL PRESSURE	1/2" WATER CONNECTION	EMPTY TANK 37 LBS FULL TANK 102 LBS	12"ø, 19-1/4" TALL	BELL & GOSSETT D-15V	
AS-1	AIR SEPARATOR	CENTRIFUGAL AIR SEPARATOR	60 GPM MAXIMUM	150 PSIG, 270°F	2" FLANGED INLET AND OUTLET	48	6.3"ø, 19" TALL, 15.2" OVERALL LENGTH	SPIROVENT VSR200	STRAINER NOT REQUIRED
---	RELIEF VALVE	ASME SAFETY RELIEF VALVE	1,160,000 (MAX) BTU/HR AT 50 PSIG	BRONZE BODY, MAX WORKING PRESSURE 125 PSIG, 250° F	3/4" INLET AND OUTLET	1.2	4-9/16" HIGH X 2-9/16"ø	BELL & GOSSETT MODEL 790-50	

NOTE: ARMSTRONG IS AN ACCEPTABLE SUBSTITUTE FOR BELL & GOSSETT.

PIPE IDENTIFICATION & PAINTING SCHEDULE

PIPING SYSTEM	ABBREVIATIONS	PIPING COLOR	LETTERING		SHERWIN WILLIAMS COLORS
			LABEL	COLOR	
HOT WATER GLYCOL	HWGS/HGWR	N/A	___"HWGS OR ___"HGWR	BLACK TEXT ON YELLOW LABEL	N/A
STEAM CONDENSATE	COND	N/A	___"COND	BLACK TEXT ON YELLOW LABEL	N/A

NOTE:
1. LABEL PIPE SIZES FOR ALL SYSTEMS.
2. PROVIDE FLOW ARROWS.
3. PIPING SHALL NOT BE PAINTED.

SNOWMELT PIPING SCHEDULE

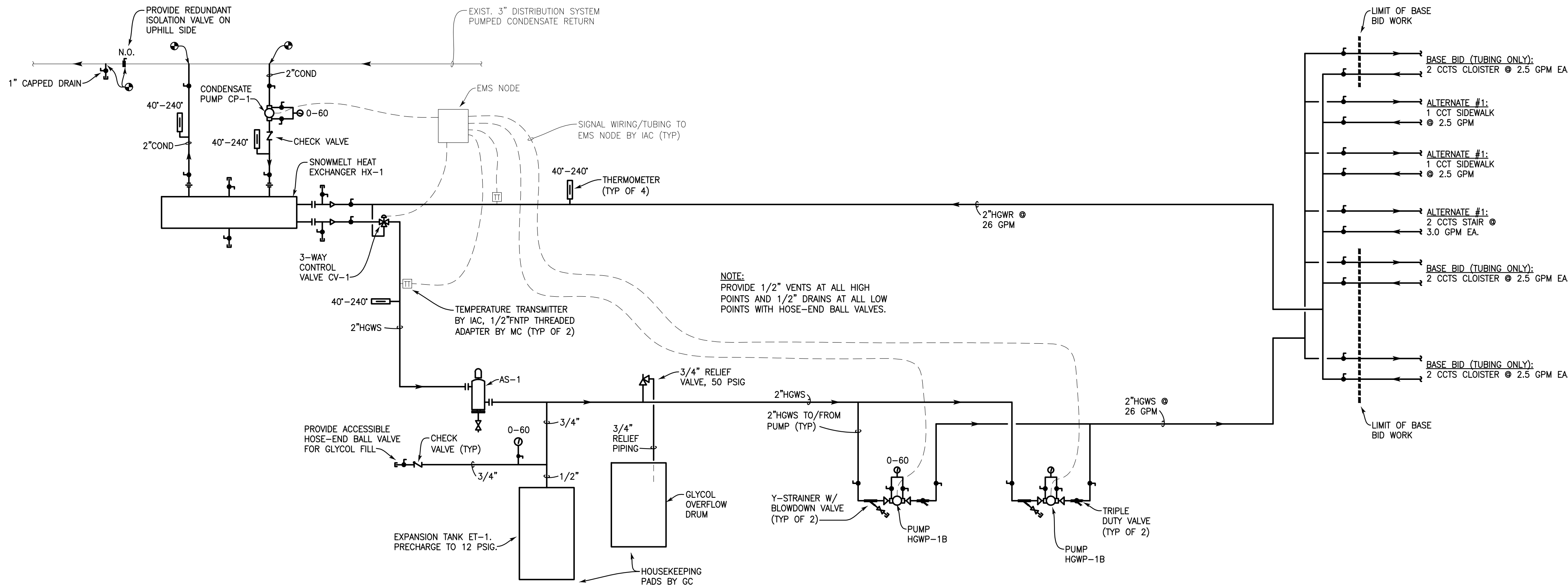
SYSTEM	PIPING	FITTINGS	JOINTS
INTERIOR SNOWMELT HOT GLYCOL SUPPLY & RETURN PIPING, 2" & SMALLER	TYPE "L" COPPER TUBING, SEAMLESS	WROUGHT COPPER, PRESSURE FITTINGS	95/5 NO LEAD SOLDER
INTERIOR SNOWMELT HOT GLYCOL SUPPLY & RETURN PIPING, 2-1/2" & LARGER	SCHEDULE 40 ERW, BLACK STEEL	BUTT WELDED, LONG RADIUS, SCHEDULE 40	WELDED
EXTERIOR, DIRECT BURY, SNOWMELT HWGS/R PIPING, 2" & SMALLER	FACTORY FABRICATED, PRE-INSULATED PIPING SYSTEM: PEX CARRIER PIPE WITH SEAMLESS POLYETHYLENE JACKETING & CLOSED CELL FOAM (MIN DENSITY 2#/CF)	COPPER, BRASS OR CARBON STEEL COMPRESSION TYPE	COMPRESSION
CONDENSATE PIPING	SEAMLESS, SCH. 80 A53 GRADE B STEEL	2-1/2" & LARGER - WELDED 2" & SMALLER - THREADED	WELDED & THREADED

SCHEDULE OF HANGER SPACING & ROD SIZE FOR HORIZONTAL RUNS OF STEEL & COPPER PIPE

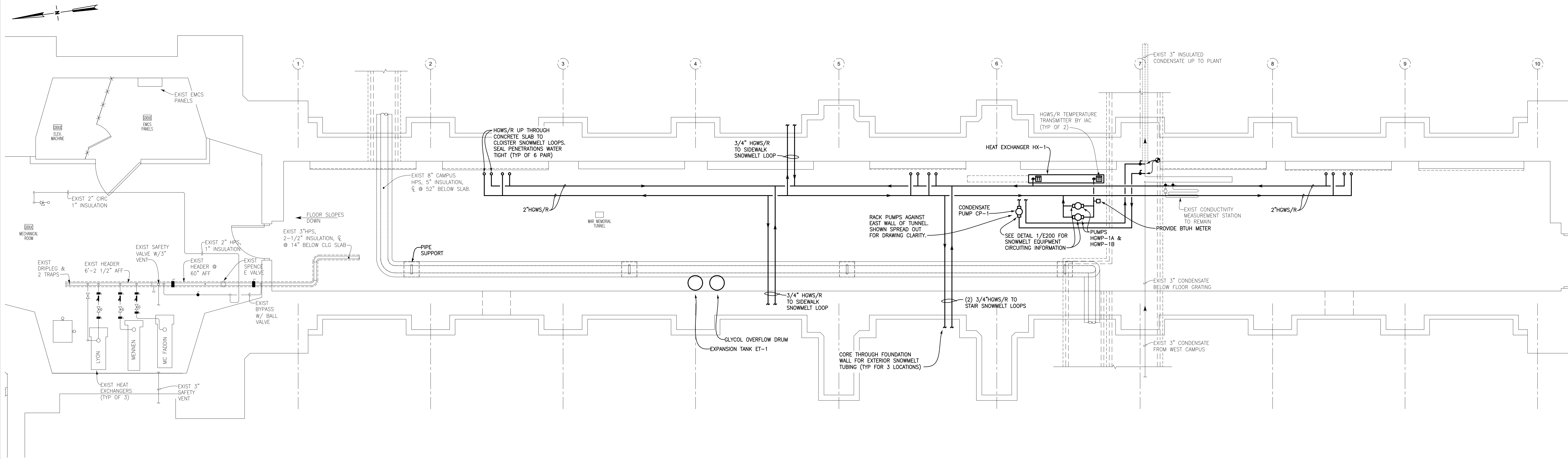
PIPE SIZE	MAXIMUM HANGER SPACING (FEET)			HANGER ROD SIZE
	STEEL PIPE - WATER	STEEL PIPE - STEAM	COPPER PIPE - WATER & AIR	
1/2" TO 1-1/2"	7'	8'	5'	3/8"
2" TO 3"	10'	10'	8'	1/2"

3-WAY MIXING CONTROL VALVE SCHEDULE

DESIGNATION	SERVICE	SIZE	TYPE	CV	MANUFACTURER & MODEL	ACCESSORIES & COMMENTS
CV-1	SNOWMELT SYSTEM	2"	CHARACTERIZED BALL VALVE	29	BELIMO B348-AFRB24-MFT-NC/FC	BRASS BODY, STAINLESS STEEL BALL AND STEM, 4-20mA INPUT, 24V ACTUATOR, NORMALLY CLOSED, FAIL CLOSED

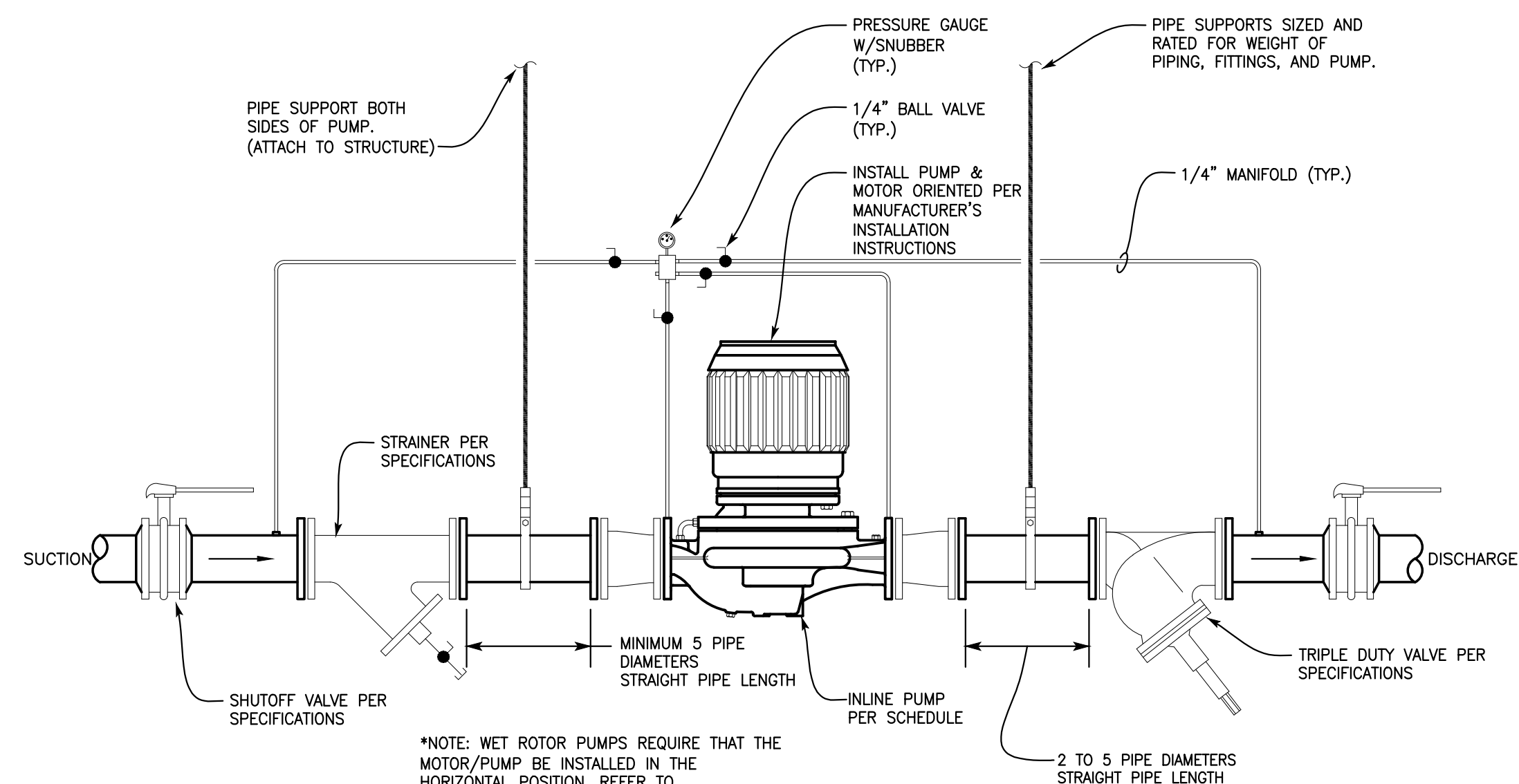


1 SNOWMELT SYSTEM SCHEMATIC
M511 NOT TO SCALE



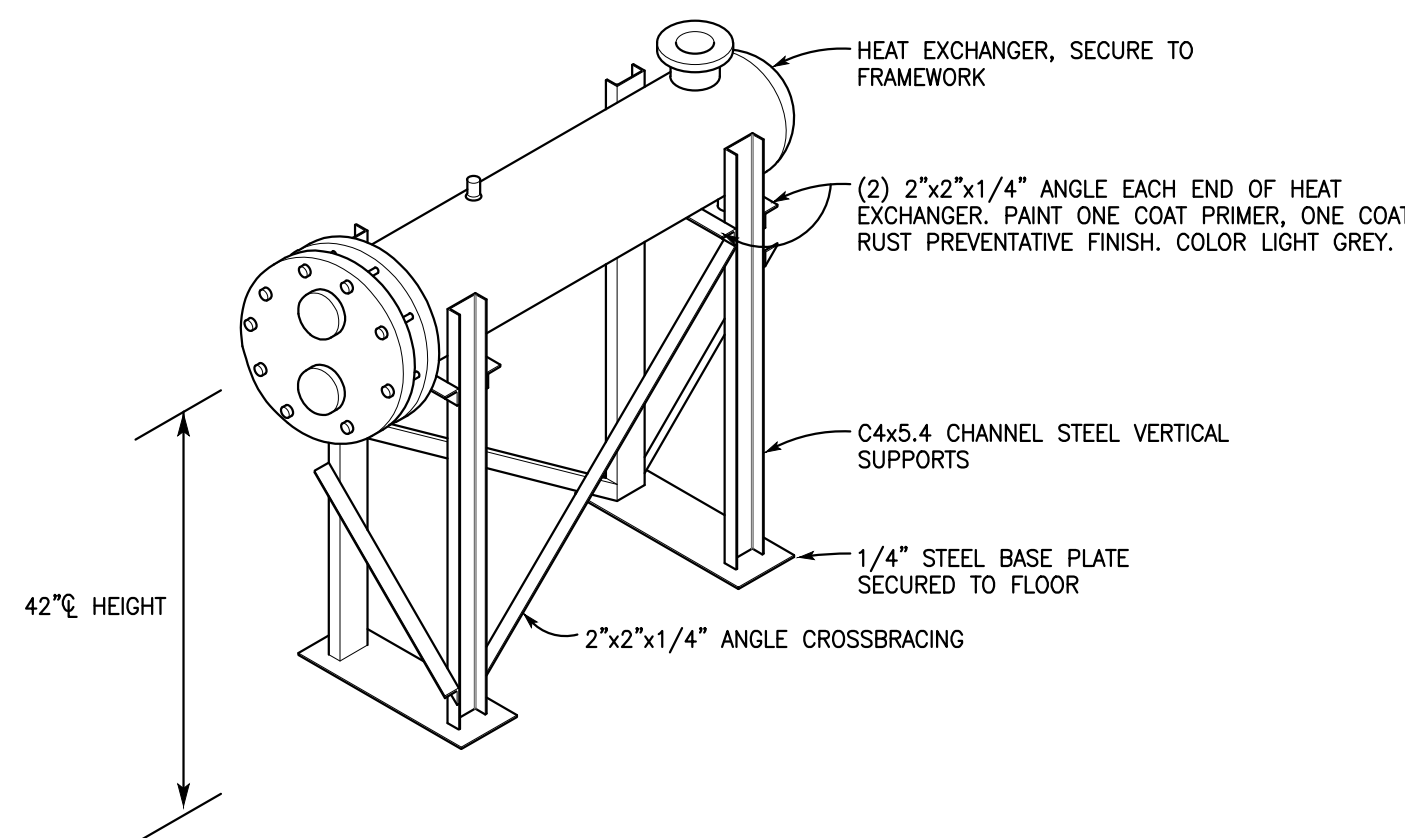
1 BASEMENT EQUIPMENT LAYOUT AND PIPING
M512 SCALE: 1/4" = 1'-0"

NOTE: NO DRILLING OF THE NEW CLOISTER SLAB SHALL BE PERMITTED. WHERE MC INTENDS TO SUPPORT PIPING OR EQUIPMENT FROM THE CEILING, CAST-IN ANCHORS MUST BE USED. COORDINATE WITH GC.

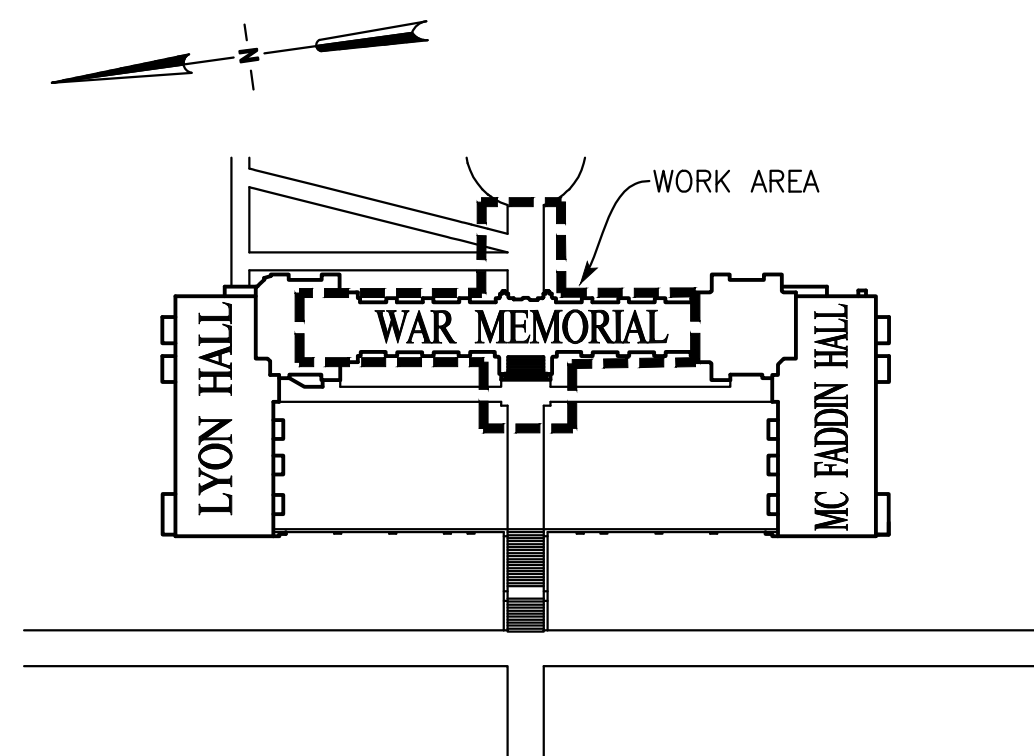


2 INLINE PUMP DETAIL
M512 NOT TO SCALE

NOTE: NO DRILLING OF THE NEW CLOISTER SLAB SHALL BE PERMITTED. WHERE MC INTENDS TO SUPPORT PIPING OR EQUIPMENT FROM THE CEILING, CAST-IN ANCHORS MUST BE USED. COORDINATE WITH GC.



3 HEAT EXCHANGER STAND DETAIL
M512 NOT TO SCALE



4 KEY PLAN
M512 NOT TO SCALE

1/4" = 1'-0"



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Seal:



No.	Date	Revisions

Project Name:

**Cornell University
War Memorial
Phase 2 - Restoration**

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

JPM

Checked:

JPM

Approved:

PAP

Drawing Title:

**PH. 2 SNOWMELT
HEAD-END PLANS
AND DETAILS**

Job Number: E2019010A

Date: 02/15/23 Scale: AS SHOWN

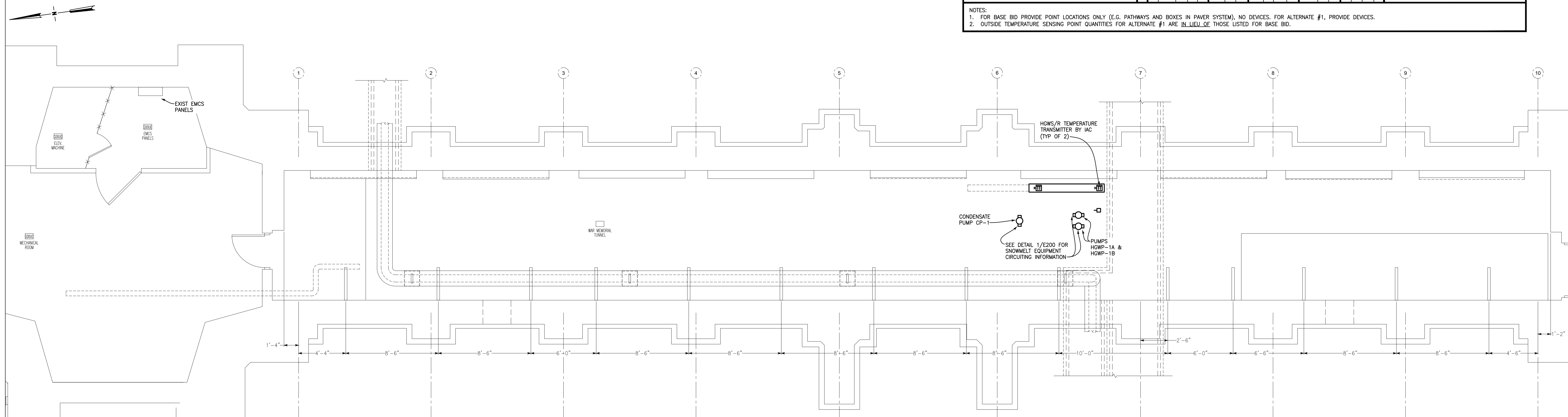
Drawing Number:

M512

1. ALL WORK SHOWN ON THE IAC DRAWINGS SHALL BE INDEPENDENT OF THE HVAC CONTRACT.
2. ALL WORK SHALL CONFORM TO ALL APPLICABLE RULES, REGULATIONS, CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO THE NYS UNIFORM FIRE PREVENTION AND BUILDING CODE, THE NATIONAL, ELECTRICAL CODE, THE NYS ENERGY CODE, OSHA FEDERAL, STATE, COUNTY, AND CITY ORDINANCES, CODES, LAWS AND REGULATIONS.
3. PROVIDE ELECTRICAL INSPECTION AND CERTIFICATE. PAY ALL FEES.
4. COORDINATE CONDUIT PATH WITH EXISTING PIPING, DUCTWORK AND ELECTRICAL WIRING. IAC MAY REUSE EXISTING CONCEALED CONDUIT PATHWAYS WHERE POSSIBLE UPON REVIEW AND APPROVAL BY ENGINEER/ARCHITECT.
5. ALL CONDUIT SHALL BE ELECTRICAL METAL TUBING (EMT), RIGID GALVANIZED STEEL (RIGID) OR RIGID POLYESTER. ALL CONCRETE PIGS, OR ALUMINUM CONDUITS, WHERE SHOWN. ALL BOXES SHALL BE METAL CONDUIT SIZE SHALL BE 3/4" MINIMUM EXCEPT WHERE SPECIFICALLY SHOWN 1/2" FOR SPECIAL CIRCUITS. NO PC/MATED. EXISTING BELOW GRADE AND BELOW/IN SLAB CONDUIT SHALL BE SCHEDULE 40 PVC, MINIMUM SIZE 3/4".
6. SEE PLAN 2/E510 FOR APPROXIMATE LOCATION OF EQUIPMENT AND DEVICES.
7. RECORD DRAWINGS: MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS DENOTING ANY CHANGES WHICH MAY BE MADE TO THE CONCRETE PIGS, OR WIRE CONDUCTIONS INSTALLED UNDER THIS PROJECT WITH SUITABLE WIRE NUMBERS AND RECORD THE CONDUCTOR WIRE NUMBER AND COLOR ON THE AS-BUILT DRAWING. PROVIDE THIS SET OF THE SET OF THE DRAWINGS TO THE ARCHITECT.

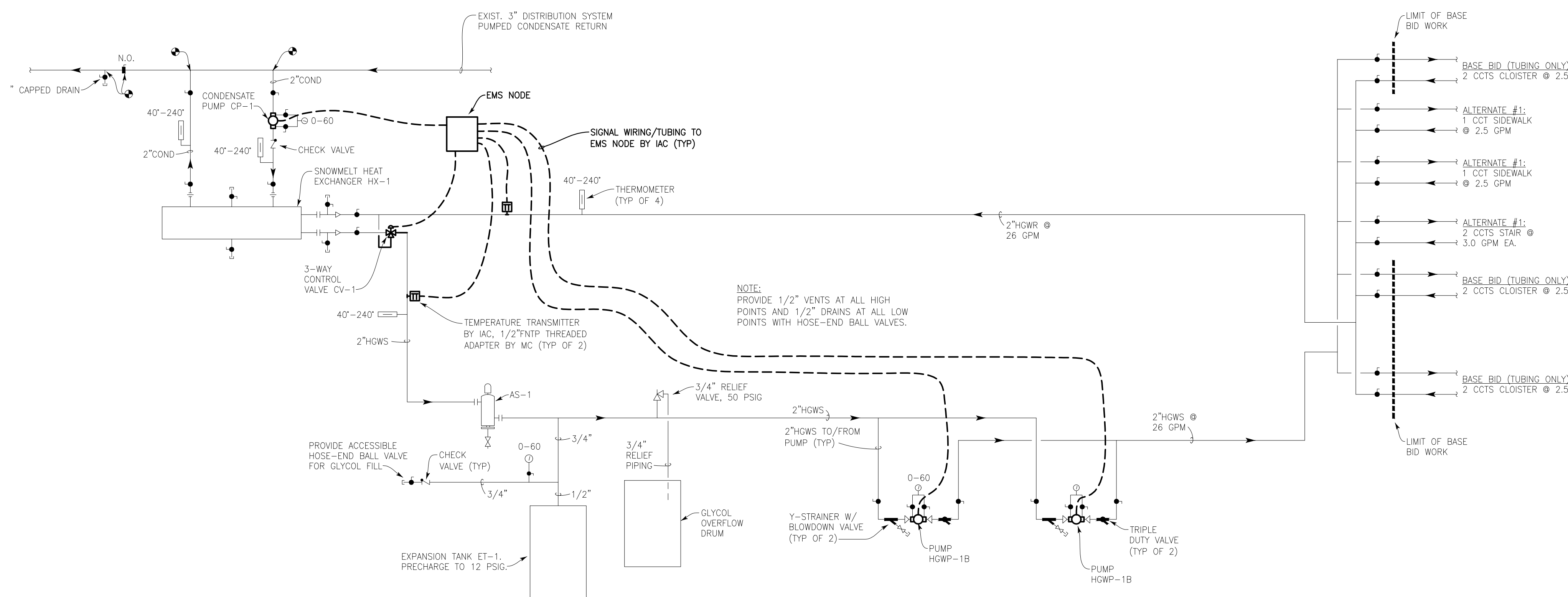
1. FOR SPECIFIC SNOWMELT SYSTEM SEQUENCE OF OPERATION DETAILS, SEE SPECIFICATION SECTION 23 83 20, "SNOWMELT SYSTEMS STANDARDS."
2. THE CORNELL UNIVERSITY WARM MEMORIAL CLOISTER STAIR AND SIDEWALK SNOWMELTING SYSTEM IS CONSTRUCTED USING PEX PLASTIC PIPING ENCASED IN THE STAIRS AND SIDEWALKS.
3. THE CAMPUS CONDENSATE SYSTEM SHALL BE THE PRIMARY HEAT SOURCE FOR THE SNOWMELTING SYSTEM. HEAT FROM CONDENSATE SHALL BE TRANSFERRED TO THE 50% HOT GLYCOL, WATER (HGW) SOLUTION VIA A SHARED HEAT EXCHANGER. A CONDENSATE PUMP IS USED TO PROVIDE HOT CONDENSATE TO THE HEAT EXCHANGER.
4. THE CONTROL SYSTEM SHALL RUN THE CONDENSATE TO HOW HEAT EXCHANGER LOOP PUMP CONTINUOUSLY WHEN THE SNOWMELT SYSTEM IS ACTIVE. THE CONTROL SYSTEM WILL MODULATE THE THREE-WAY HOW MIXING VALVE AS NEEDED TO MAINTAIN THE HOW TEMPERATURE AT SETPOINT TO ACHIEVE SNOWMELTING.
5. BEAD TEMPERATURE SENSORS AND MOISTURE SENSORS ARE INSTALLED THROUGH THE WARM MEMORIAL SNOWMELT SYSTEM AND TIED BACK TO THE CAMPUS EMS SYSTEM. SEE SITE PLANS FOR SENSOR LOCATIONS AND WIRING.
6. TWO HOW PUMPS ARE INSTALLED TO CIRCULATE THE HOW THROUGH THE SNOWMELT SYSTEM IN A LEAD-LAG ARRANGEMENT. EACH PUMP IS SIZED FOR FULL LOAD, ONLY ONE PUMP SHALL RUN AT A TIME. THE PUMPS SHALL ROTATE INTO SERVICE PER THE SEQUENCE SPECIFICATIONS, WITH THE LAG PUMP REMAINING ON STANDBY IN THE EVENT THAT THE LEAD PUMP FAILS.
7. SETPOINTS AND ALARM POINTS LISTED IN THE SPECIFICATIONS ARE FOR INITIAL STARTUP. EMS OPERATORS SHALL ADJUST SETPOINTS TO ACHIEVE DESIRED RESULTS DEPENDING UPON ACTUAL SYSTEM RESPONSE TIMES AND BUILDING CHARACTERISTICS.

TEMPERATURE AND SAFETIES POINTS																						
(NEW POINTS ADDED TO THE EXISTING SYSTEM)																						
POINT DESCRIPTION	VISUAL POINT	POINTS												PROGRAMS								
		ANALOG						DIGITAL						SAFETIES HARD WIRED								
		INPUT			OUTPUT			INPUT			OUTPUT											
		TEMPERATURE SENSING	SPEED SENSING	CURRENT SENSING ANALOG	DIFFERENTIAL PRESSURE SENSING	VALVE POSITIONING – 4–20mA	DAMPERS POSITIONING – ELECTRIC	VSD SPEED	RUN STATUS	BISS IN MANUAL	DRY CONTACT INPUT	DAMPERS OPEN/CLOSED	START/STOP CONTROL							ENABLE/DISABLE	2 POSITION VALVE OR DAMPER	SHUT SMOKE
CONDENSATE TO HGW HEAT EXCHANGER (ALTERNATE #1)																						
HOW PUMPS									X2				X2									
CONDENSATE PUMP									X				X									
HOW RETURN/SUPPLY TEMPERATURE			X2																			
3-WAY CONTROL VALVE					X																	
OUTSIDE TEMPERATURE SENSING (BASE BID)																						
BEAD TEMPERATURE SENSORS			X3																			
MOISTURE SENSORS										X1												
OUTSIDE TEMPERATURE SENSING (ALTERNATE #1)																						
BEAD TEMPERATURE SENSORS			X4																			
MOISTURE SENSORS										X1												
NOTES:																						
1. FOR BASE BID PROVIDE POINT LOCATIONS ONLY (E.G. PATHWAYS AND BOXES IN PAYER SYSTEM), NO DEVICES. FOR ALTERNATE #1, PROVIDE DEVICES.																						
2. OUTSIDE TEMPERATURE SENSING POINT QUANTITIES FOR ALTERNATE #1 ARE IN LIEU OF THOSE LISTED FOR BASE BID.																						



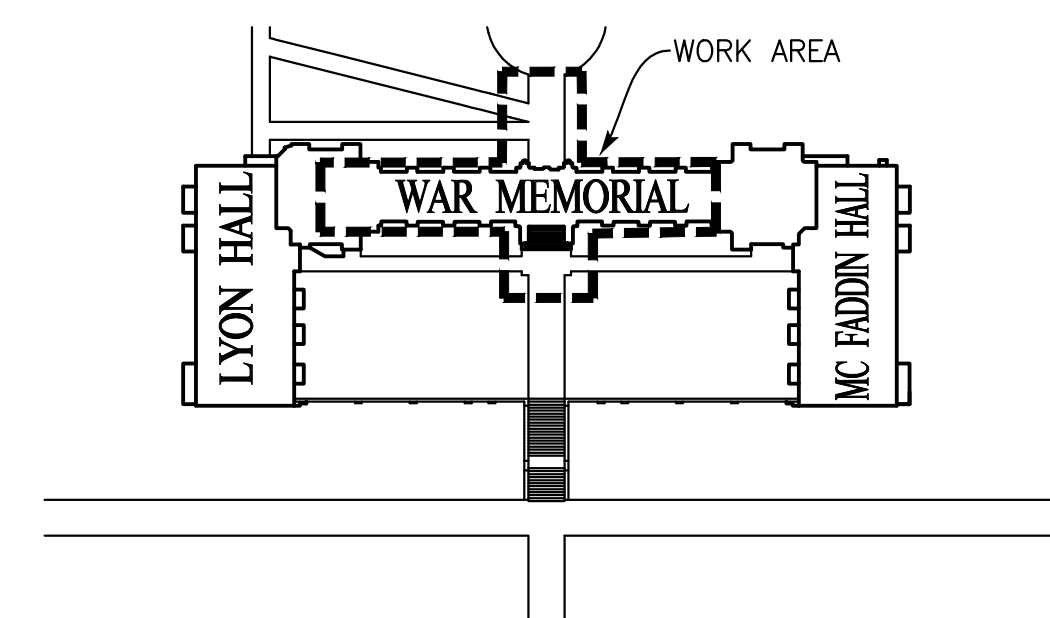
1 IAC DEVICE LOCATION PLAN

M513 SCALE: 1/4" = 1'-0"



2 SNOWMELT SYSTEM SCHEMATIC - IAC SCOPE

M513 NOT TO SCALE



3 **KEY PLAN**
M513 NOT TO SCALE

$1/4'' = 1'-0''$

Seal:



No.	Date	Revisions
Project Name:		

Cornell University
War Memorial
Phase 2 - Restoration

Drawing Set:

100% CONSTRUCTION DOCUMENTS

Drawn:

JPM

Checke	
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JPM

	Approv
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PAP

Drawing Title:

PH. 2 SNOWMELT INTEGRATED AUTOMATION PLANS AND DETAILS

Job Number: E2019010A

Date: 02/15/23	Scale: AS SHOWN
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Drawing Number:

M513

