

Addendum #1

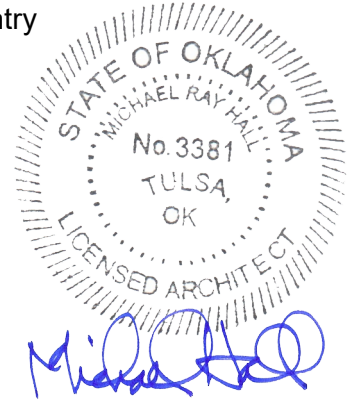
To: Trigon General Contractors
and Construction Managers,
Inc
Tulsa Public Schools

Date: November 7, 2022
Addendum Number: One
Architect's Project #: 20210120.01

Project Name: TPS Memorial HS
New Facade Secure
Entry

From: GH2 ARCHITECTS, LLC
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Tulsa, Oklahoma 74103
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Professional Seal:



11.07.22

NOTICE.....

This Addendum supplements and amends the original Bidding Documents, shall be taken into account in preparing proposals, and shall become a part of the Construction Documents. The bidder shall indicate receipt of this addendum and all previously issued addenda on the Bid/Proposal Form.

PRIOR ADDENDA

NONE

Bid Date Change

1. New bid date: November 10, 2022, @ 2:30 p.m. in room 457 at ESC.

Changes / Clarifications To Specifications:

2. Section 000110 TABLE OF CONTENTS
 - 2.1 Remove and Replace Section:
 - A. Remove Section 084313 Aluminum-Framed Storefront
 - 2.2 Narrative Only – Not re-issued
3. Section 087100 DOOR HARDWARE
 - 3.1 Added spec section

Changes / Clarifications To Drawings:

4. Sheet G001 Project Information
 - A. Add Partition Types

- 4.2 Re-issued as Addendum #1
- 5. Sheet C05 Grading Plan
 - A. Add Top of Wall Elevations
- 5.2 Re-issued as Addendum #1
- 6. Sheet A101 Floor Plan
 - A. Added fur-out wall in Secure Vestibule (101)
 - B. Added wall finish
- 6.2 Re-issued as Addendum #1
- 7. Sheet A103 Door Schedule and Details
 - A. Change window frames to be Hollow Metal
 - B. Added GL-1 at all vestibules glazing
 - C. Revised door schedule
 - D. Added notes and dimensions to wall section
- 7.2 Re-issued as Addendum #1
- 8. Sheet A202 Canopy and Misc. Details
 - A. Detail C added Hat Channel note
- 8.2 Re-issued as Addendum #1
- 9. Sheet E001 Electrical General Notes and Schedules
 - A. Add "S" Fixture
- 9.2 Re-issued as Addendum #1
- 10. Sheet ME101 First Floor Mechanical and Electrical Plan – New
 - A. Add "S" Fixture
 - B. Add detail 3
- 10.2 Re-issued as Addendum #1
- 11. Sheet ME102 Site Lighting Photometrics Plan
 - A. Add Sheet
- 11.2 Re-issued as Addendum #1
- 12. **Question:** Frames A, B, and C to all be Hollow Metal (A/A103)

Answer: See attached sheet A103 for revised details
- 13. **Question:** All Glazing within Secure Vestibule (101) to be GL-1

Answer: See attached sheet A103 for revised details
- 14. **Question:** Provide door hardware schedule

Answer: See attached section 087100 DOOR HARDWARE
- 15. **Question:** Need fixture schedule data on new light poles

Answer: See attached E001

16. **Question:** Need footing/base design for new light poles

Answer: See attached sheet ME101

17. **Question:** Detail D, Sheet C08...Can Detectable Warnings Surface Tactiles be utilized in lieu of perpendicular tool joints?

Answer: Yes (Narrative only)

18. **Question:** Substitution Request for GAF 60mil TPO

Answer: Acceptable

19. **Question:** Substitution Request for Site Furniture

A. Site Amenities Trash Receptacle

Answer: Submitted product does not meet minimum warranty requirement of specified trash receptacle.

20. **Question:** Substitution Request for Site Furniture

A. Site Amenities Bench

Answer: Submitted product does not meet warranty requirements of specified bench.

21. **Question:** Substitution Request for Site Furniture

A. Dero Downtown Bike Rack

Answer: Submitted product does not meet minimum warranty requirement of specified bike rack.

22. **Question:** Drawings C04 & L201 show decorative bollards. Please provide detail for decorative bollard foundations.

Answer: Install Bollards in accordance with manufacturer's installation instructions.

23. **Question:** Drawings C04 & L201 call out new light/light pole fixtures and refer us to the Electrical Plans. We have found any site lighting or details for light pole bases on the Electrical Plans. Please clarify.

Answer: See attached sheet ME101

24. **Question:** RE: C04, C05, L201, L502, & A201: Please clarify the elevation for the top of the planter concrete walls.

Answer: See attached sheet C05

LIST OF ATTACHMENTS

Specifications:

Section 087100 DOOR HARDWARE

Drawings:

G001 Project Information

C05 Grading Plan

A101 Floor Plan

A103 Door Schedule and Details

A202 Canopy and Misc. Details

E001 Electrical General Notes and Schedules

ME101 First Floor Mechanical and Electrical Plan-New

ME102 Site Lighting Photometrics Plan

END OF ADDENDUM

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Automatic operators.
 - 4. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames".
 - 2. Division 08 Section "Flush Wood Doors".
 - 3. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
 - 8. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access

control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

- a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- 1.4 QUALITY ASSURANCE
- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
 - B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
 - C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
 - D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during

the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

- a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
- 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
- 5. Manufacturers:
 - a. McKinney (MK) - TA/T4A Series, 5 knuckle.
 - b. dormakaba Best (ST) - F/FBB Series, 5 knuckle.
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
 - 1. Manufacturers:
 - a. Bommer Industries (BO).
 - b. Pemko (PE).

2.3 POWER TRANSFER DEVICES

- A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - 1. Manufacturers:
 - a. Securitron (SU) - EL-CEPT Series.
 - b. Von Duprin (VD) - EPT-10 Series.
- B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

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1. Provide one each of the following tools as part of the base bid contract:
 - a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
 - b. McKinney (MK) - Connector Hand Tool: QC-R003.
2. Manufacturers:
 - a. McKinney (MK) - QC-C Series.

2.4 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 5. Manufacturers:
 - a. Rockwood (RO).
 - b. Trimco (TC).

2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU).
 - b. No Substitution – Facility Standard.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
 1. Threaded mortise cylinders with rings and cams to suit hardware application.
 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 4. Tubular deadlocks and other auxiliary locks.

5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 6. Keyway: Match Facility Restricted Keyway.
- C. Large Format Interchangeable Cores: Provide removable cores (LFIC) as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:
1. Change Keys per Cylinder: Two (2)
 2. Master Keys (per Master Key Level/Group): Five (5).
 3. Construction Keys (where required): Ten (10).
 4. Construction Control Keys (where required): Two (2).
 5. Permanent Control Keys (where required): Two (2).
- F. Construction Keying: Provide temporary keyed construction cores.
- G. Key Registration List (Bitting List):
1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 2. Provide transcript list in writing or electronic file as directed by the Owner.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
1. Heavy duty mortise locks shall have a ten-year warranty.
 2. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ML2000 Series.
 - b. No Substitution – Facility Standard.

2.7 ELECTROMECHANICAL LOCKING DEVICES

- A. Electromechanical Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed, subject to same compliance standards and requirements as mechanical mortise locksets, electrified locksets to be of type and design as specified below and in the hardware sets.
 - 1. Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control, latchbolt and lock/unlock status monitoring, deadbolt monitoring, and request-to-exit signaling. Support end-of-line resistors contained within the lock case. Unless otherwise indicated, provide electrified locksets standard as fail secure.
 - 2. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
 - 3. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ML20900 Series.
 - b. No Substitution – Facility Standard.

2.8 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 - 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 - 4. Dustproof Strikes: BHMA A156.16.

2.9 ELECTRIC STRIKES

- A. Standard Electric Strikes: Electric strikes conforming to ANSI/BHMA A156.31, Grade 1, for use on non-rated or fire rated openings. Strikes shall be of stainless steel construction tested to a minimum of 1500 pounds of static strength and 70 foot-pounds of dynamic strength with a

minimum endurance of 1 million operating cycles. Provide strikes with 12 or 24 VDC capability, fail-secure unless otherwise specified. Where specified provide latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Manufacturers:

- a. HES (HS) - 1006 Series.
- b. Von Duprin (VD) - 6200/6400 Series.

- B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.10 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

- 1. Exit devices shall have a five-year warranty.
- 2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
- 3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
- 4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
- 5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
- 6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
- 7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Manufacturers:
 - a. Von Duprin (VD) - 35A/98 Series.
 - b. No Substitution – Facility Standard.

2.11 ELECTROMECHANICAL EXIT DEVICES

- A. Electromechanical Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices subject to same compliance standards and requirements as mechanical exit devices. Electrified exit devices to be of type and design as specified below and in the hardware sets.
1. Energy Efficient Design: Provide devices which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
 2. Where conventional power supplies are not sufficient, include any specific controllers required to provide the proper inrush current.
 3. Motorized Electric Latch Retraction: Devices with an electric latch retraction feature must use motors which have a maximum current draw of 600mA. Solenoid driven latch retraction is not acceptable.
 4. Manufacturers:
 - a. Von Duprin (VD) - 35A/98 Series.
 - b. No Substitution – Facility Standard.

2.12 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.
1. Manufacturers:
 - a. LCN Closers (LC) - 4040XP Series.
 - b. No Substitution – Facility Standard.

2.13 ELECTROHYDRAULIC DOOR OPERATORS

- A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.
1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.
- B. Standard: Conforming to ANSI/BHMA A156.19.
- C. Performance Requirements:

1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
 2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.
- D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.
- E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.
- F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.
- G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.
- H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.
- I. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. LCN Closers (LC) - 4640 Series.
 2. No Substitution – Facility Standard.

2.14 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.

4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
 - a. Rockwood (RO).
 - b. Trimco (TC).

2.15 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Manufacturers:
 - a. Rockwood (RO).
 - b. Trimco (TC).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
 1. Manufacturers:
 - a. Norton Rixson (RF).
 - b. Sargent Manufacturing (SA).

2.16 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. National Guard Products (NG).
 - 2. Pemko (PE).

2.17 ELECTRONIC ACCESSORIES

- A. Push-Button Switches: Industrial grade momentary or alternate contact, back-lighted push buttons with stainless-steel switch enclosures. 12/24 VDC bi-color illumination suitable for either flush or surface mounting.
 - 1. Manufacturers:
 - a. Alarm Controls (AK) - TS Series.
- B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
 - 1. Manufacturers:
 - a. Sargent Manufacturing (SA) - 3280 Series.
 - b. Securitron (SU) - DPS Series.
- C. Switching Power Supplies: Provide power supplies with either single or dual voltage configurations at 12 or 24VDC. Power supplies shall have battery backup function with an integrated battery charging circuit and shall provide capability for power distribution, direct

lock control and Fire Alarm Interface (FAI) through add on modules. Power supplies shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs.

1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
2. Manufacturers:
 - a. Securitron (SU) - AQD Series.
 - b. Altronix (AS) - Maximal 3.

2.18 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.19 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 1. Quantities listed are for each pair of doors, or for each single door.
 2. The supplier is responsible for handing and sizing all products.
 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

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4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. VD - Von Duprin
5. RU - Corbin Russwin
6. HS - HES
7. RF - Rixson
8. SA - SARGENT
9. LC - LCN Closers
10. OT - Other
11. AK - Alarm Controls
12. SU - Securitron

Hardware Sets

Set: 1.0

Doors: 101A

2 Continuous Hinge	KDFM83-HD1 x Height Required		PE
1 Mullion	KR4954	695	VD
1 Nightlatch	33A-NL-OP 388(Std)	613	VD
1 Exit Only	33A-EO	613	VD
2 Permanent Core	CR8000	606	RU
2 LFIC Cylinder w/ Temp Core	x Type Required x CT6R	613	RU
2 Door Pull	BF158 Mtg-Type 1XHD	US10B	RO
2 Surface Closer	4040XP SCUSH TBSRT	690	LC
2 Drop Plate	4040XP-18PA	690	LC
2 Shoe Support	4040XP-30	690	LC
2 Blade Stop Spacer	4040XP-61	690	LC
1 Threshold	171D		PE
1 Mullion Gasketing	5110BL		PE
1 Gasketing	Provided by Alum. Door Supplier		OT
2 Sweep	315CN TKSP		PE

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Notes: Door normally closed, latched and secured.

Entry by pulls when doors manually dogged open by hex key in exit device rail or key override.
Free egress at all times.

Set: 2.0

Doors: 101B

1 Continuous Hinge	KDFM83-HD1 x Height Required		PE
1 Continuous Hinge	KDFM83-HD1 PT x Height Required		PE
1 Mullion	KR4954	695	VD
1 Exit Only	33A-EO	613	VD
1 Nightlatch w/ Latch Retraction & REX	QEL RX 33A-NL-OP 388(Std)	613	VD
2 Permanent Core	CR8000	606	RU
2 LFIC Cylinder w/ Temp Core	x Type Required x CT6R	613	RU
2 Door Pull	BF158 Mtg-Type 1XHD	US10B	RO
1 Surface Closer	4040XP SCUSH TBSRT	690	LC
1 Drop Plate	4040XP-18PA	690	LC
1 Shoe Support	4040XP-30	690	LC
1 Blade Stop Spacer	4040XP-61	690	LC
1 Door Operator	4642 REG	690	LC
1 Threshold	171D		PE
1 Gasketing	Provided by Alum. Door Supplier		OT
2 Sweep	315CN TKSP		PE
2 Position Switch	DPS-M / W		SU
1 Card Reader	Provided by Security Contractor		OT
2 Actuator	8310-852T		LC
1 Bollard Post	8310-866	695	LC
1 Power Supply	AQD1		SU
1 Electric Power Transfer	EPT10	695	VD

Notes: Door normally closed, latched and secure.

Entry by pulls when doors electrically / manually dogged open, valid card read or key override.

Entry by actuator as programmed by access control system.

Free egress at all times.

Set: 3.0

Doors: 101C

2 Continuous Hinge	KDFM83-HD1 PT x Height Required		PE
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1 Mullion	KR4954	695	VD
1 Nightlatch w/ Latch Retraction & REX	QEL RX 33A-NL-OP 388(Std)	613	VD
1 Exit Only w/ Latch Retraction & REX	QEL RX 33A-EO	613	VD
2 Permanent Core	CR8000	606	RU
2 LFIC Cylinder w/ Temp Core	x Type Required x CT6D	613	RU
2 Door Pull	BF158 Mtg-Type 1XHD	US10B	RO
2 Surface Closer	4040XP SCUSH TBSRT	690	LC
2 Drop Plate	4040XP-18PA	690	LC
2 Shoe Support	4040XP-30	690	LC
2 Blade Stop Spacer	4040XP-61	690	LC
2 Position Switch	DPS-M / W		SU
1 Power Supply	AQD2		SU
2 Electric Power Transfer	EPT10	695	VD

Notes: Door normally closed, latched and secured.

Entry by pulls when doors electrically dogged open by access control system or key override.

Free egress at all times.

Set: 4.0

Doors: 101D

2 Continuous Hinge	KDFM83-HD1 PT x Height Required		PE
1 Mullion	KR4954	695	VD
1 Nightlatch w/ Latch Retraction & REX	QEL RX 33A-NL-OP 388(Std)	613	VD
1 Exit Only w/ Latch Retraction & REX	QEL RX 33A-EO	613	VD
2 Permanent Core	CR8000	606	RU
2 LFIC Cylinder w/ Temp Core	x Type Required x CT6D	613	RU
2 Door Pull	BF158 Mtg-Type 1XHD	US10B	RO
1 Surface Closer	4040XP SCUSH TBSRT	690	LC
1 Drop Plate	4040XP-18PA	690	LC
1 Shoe Support	4040XP-30	690	LC
1 Blade Stop Spacer	4040XP-61	690	LC
1 Door Operator	4642 REG	690	LC
2 Position Switch	DPS-M / W		SU
1 Card Reader	Provided by Security Contractor		OT
2 Actuator	8310-852T		LC
1 Power Supply	AQD2		SU

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2 Electric Power Transfer EPT10 695 VD

Notes: Door normally closed, latched and secured.

Entry by pulls when doors electrically dogged open by access control system, valid card read or key override.

Entry by actuator as programmed by access control system.

Free egress at all times.

Set: 5.0

Doors: 102C

3 Hinge, Full Mortise, Hvy Wt	T4A3786 4-1/2" x 4-1/2"	US26D	MK
1 Fail Secure Lock	ML20906-SEC LWM M92 CT6D	626	RU
1 Permanent Core	CR8000	626	RU
1 Surface Closer	4040XP EDA	689	LC
1 Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO
1 Wall Stop	406	US32D	RO
1 ElectroLynx Harness	QC-C1500P (Frame - EPT to Power/Controller)		MK
1 ElectroLynx Harness	QC-CxxxP (Door - EPT to Elec. Lock)		MK
1 Position Switch	DPS-M / W		SU
1 Card Reader	Provided by Security Contractor		OT
1 Power Supply	AQD1		SU
1 Electric Power Transfer	EL-CEPT	630	SU

Notes: Door normally closed, latched and secured.

Entry by valid card read or key override.

Free egress at all times.

Set: 6.0

Doors: 102B

1 Continuous Hinge	KDFM83-HD1 PT x Height Required		PE
1 Fail Secure Lock	ML20906-SEC LWM M92 CT6D	613	RU
1 Permanent Core	CR8000	606	RU
1 Conc Overhead Stop	6-x36	613E	RF
1 Surface Closer	4040XP REG	690	LC
1 ElectroLynx Harness	QC-C1500P (Frame - EPT to Power/Controller)		MK
1 ElectroLynx Harness	QC-CxxxP (Door - EPT to Elec. Lock)		MK

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1 Remote Door Release	TS-18		AK
1 Position Switch	DPS-M / W		SU
1 Card Reader	Provided by Security Contractor		OT
1 Power Supply	AQD1		SU
1 Electric Power Transfer	EL-CEPT	613E	SU

Notes: Door normally closed, latched and secured.
Entry by valid card read, remote push button or key override.
Free egress at all times.

Set: 7.0

Doors: 102A

1 Continuous Hinge	KDFM83-HD1 x Height Required		PE
1 Storeroom Lock	ML2057 LWM CT6D	613	RU
1 Permanent Core	CR8000	606	RU
1 Electric Strike	1006CLB	613	HS
1 Door Operator	4642 REG	690	LC
1 ElectroLynx Harness	QC-C1500P (Frame - EPT to Power/Controller)		MK
1 Remote Door Release	TS-18		AK
1 Position Switch	DPS-M / W		SU
1 Card Reader	Provided by Security Contractor		OT
2 Actuator	8310-852T		LC
1 Power Supply	AQD1		SU

Notes: Door normally closed, latched and secured.
Entry by valid card read, remote push button or key override.
Entry by actuator as programmed by access control system.
Free egress at all times.

Set: 8.0

Doors: 105

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Classroom Lock	ML2055 LWM CT6D	626	RU
1 Permanent Core	CR8000	626	RU
1 Wall Stop	406	US32D	RO
3 Silencer	608-RKW		RO

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Mark	Hardware
101A	1.0
101B	2.0

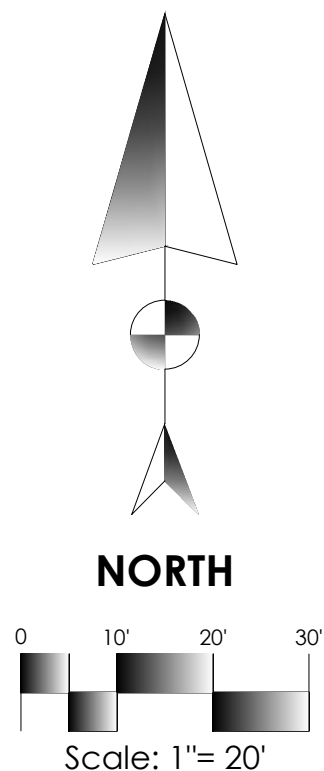
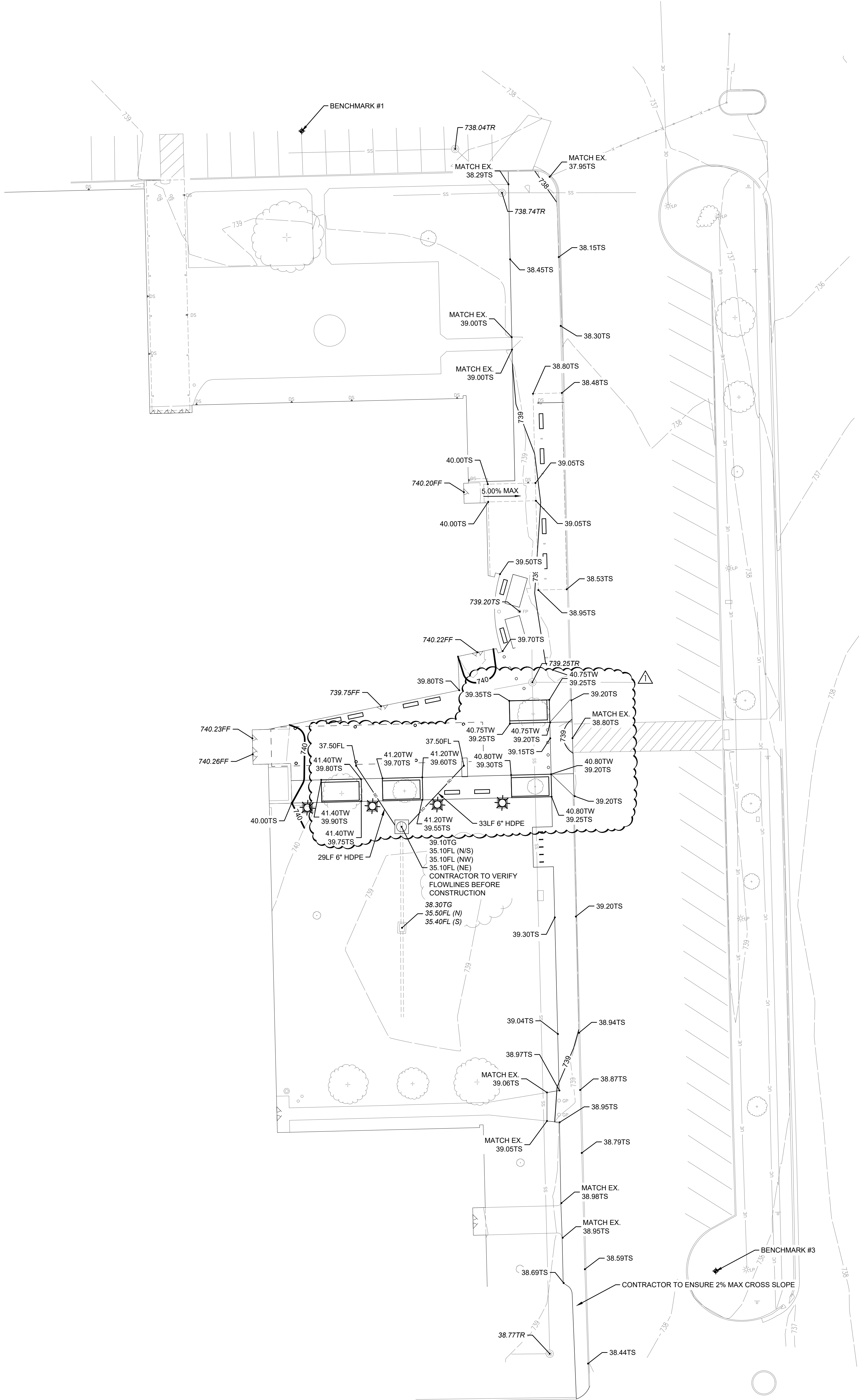
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101D	4.0
102A	7.0

102B	6.0
102C	5.0
105	8.0

END OF SECTION 087100

Grading Notes

1. ALL GRADING SHALL MEET OR EXCEED THE CITY CONSTRUCTION STANDARDS AND MUNICIPAL POLICY.
2. THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS BEFORE EXCAVATING.
3. TOPSOIL SHALL BE STRIPPED TO A DEPTH WHERE SOIL IS FREE OF ROOTS AND VEGETATION.
4. SUBGRADE STABILIZATION SHALL BE AT THE DIRECTION OF THE ENGINEER, OR AS SPECIFIED IN SUBSURFACE GEOTECHNICAL REPORT.
5. CIVIL ENGINEER WILL NOT INTERPRET SOILS REPORTS OR ACCEPT RESPONSIBILITY FOR ALTERNATIVE METHODS PROPOSED BY THE CONTRACTOR.
6. UNDERCUTTING OF SOFT SPOTS AND PLACEMENT OF EARTHWORK IS GOVERNED FIRST BY THE GEOTECHNICAL REPORT. OBSERVATION AND TESTING SHALL BE PERFORMED BY THE GEOTECHNICAL ENGINEER TO VERIFY THAT THE SOFT SPOTS ARE PROPERLY OVEREXCAVATED AND REPLACED OR STABILIZED.
7. CONTRACTOR SHALL PROVIDE WATER AS REQUIRED TO OBTAIN SPECIFIED COMPACTION PER GEOTECHNICAL REPORT AND SPECIFICATIONS.
8. STRIPPING, PROOFROLLING, SUBGRADE SCARIFICATION AND COMPACTION, AND FILL CONSTRUCTION IN THE BUILDING AND PAVING AREAS SHALL BE PERFORMED ACCORDING TO THE SUBSURFACE GEOTECHNICAL REPORT. EMBANKMENT BENEATH BUILDING PADS OR FOR PAVING SUBGRADE SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT, UNLESS OTHERWISE SPECIFIED THEREIN.
9. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE TO IMPORT OR EXPORT MATERIAL AS NECESSARY TO ACHIEVE THE GRADES SHOWN ON THE CIVIL ENGINEER'S DOCUMENTS.
10. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL IN-PLACE FINAL TRIM AREAS TO CONDITION PRIOR TO PLACING TOPSOIL. TOPSOIL SHALL BE PLACED AND ACCEPTED PRIOR TO THE PLACEMENT OF SOD.
11. THE SIDEWALK CONTRACTOR IS RESPONSIBLE FOR ALL REMAINING FINAL TRIM.
12. FINAL GRADES OF ABOVE SURFACE UTILITIES NOT IN PAVED AREAS, INCLUDING BUT NOT LIMITED TO STORM SEWER MANHOLE LIDS, WATER METER LIDS AND SEWER CLEANOUTS, ARE TO BE ADJUSTED BY THE UTILITY CONTRACTOR TO CONFORM TO LANDSCAPING SOD INSTALLATION.
13. TRANSFORMER PADS AND PEDESTALS ARE TO BE LEVEL AND PLUMB.
14. CARE SHALL BE TAKEN TO ADJUST GAS METERS AND MANIFOLDS TO MATCH NEW GRADES.
15. GENERAL CONTRACTOR SHALL MONITOR INSTALLATION OF SERVICE PEDESTALS, SHALL ACCEPT THE CONDITION OF THE WORK BY OTHERS, AND SHALL BE RESPONSIBLE TO EMPLOY CONTRACTORS AS NECESSARY TO CORRECT POOR WORKMANSHIP.
16. PAVING CONTRACTOR IS RESPONSIBLE TO REVIEW ALL FIELD ESTABLISHED GRADES PRIOR TO PLACEMENT OF MATERIALS SO AS TO PROVIDE POSITIVE DRAINAGE IN ALL CASES.
17. CORRECTIVE MEASURES DIRECTED BY THE ENGINEER MAY INCLUDE COMPLETE REMOVAL AND REPLACEMENT AT NO COST TO OWNER IN CASES OF POOR WORKMANSHIP OR UNSATISFACTORY IN-PLACE CONDITIONS.
18. CONTRACTOR SHALL COORDINATE AND PROVIDE ALL STAKING NECESSARY TO INSTALL CONDUITS SUFFICIENT FOR UTILITY AND IRRIGATION SERVICES WHETHER OR NOT SHOWN ON THE CIVIL ENGINEER'S PLANS.
19. CONTRACTOR SHALL BE OBLIGATED TO KEEP DUST AT A MINIMUM AS REQUIRED BY CITY ENGINEER.
20. CONTRACTOR AND ALL RELATED CONSTRUCTION ACTIVITIES WILL BE REQUIRED TO MAINTAIN NORMAL WORKING HOURS IF SIGNIFICANT PUBLIC REQUEST ARE MADE TO THE CITY TO THIS REGARD.
21. SITE GRADING IS EXPECTED TO BE PERFORMED IN A MANNER CONSISTENT WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) PREVIOUSLY SUBMITTED FOR THIS PROJECT.



Grading Legend

BW	BASE OF WALL FINISH GRADE
CTRN	CURB TRANSITION
EP	EDGE OF PAVING
EX	EXISTING GROUND
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOWLINE
G	GUTTER
TC	TOP OF CURB
TG	TOP OF GRATE
TP	TOP OF PAVING
TR	TOP OF RIM
TS	TOP OF SIDEWALK OR STEP
TW	TOP OF WALL FINISH GRADE

Legend

AC	ACRE
BL	BUILDING LINE
BM	BENCHMARK
CHBS	CHISELED BOX, SET
CL	CENTERLINE
CO	SEWER CLEAN-OUT
CONC	CONCRETE
CPP	CORRUGATED POLYPROPYLENE PIPE
CY	CUBIC YARD
EM	ELECTRIC METER
EPED	ELECTRIC PEDESTAL
ELEV	ELEVATION
ESMT	EASEMENT
EX	EXISTING
FI	FIRE HYDRANT
FL	FLOWLINE (INVERT)
FND	FOUND
FP	FIRE PROTECTION
G	GUTTER
GM	GAS METER
GR	GROUND
GR	GUY AND/OR
HP	HIGH PERFORMANCE POLYPROPYLENE PIPE
IP	IRON PIN
IPF	IRON PIN FOUND
IRS	IRON PIN SET
IRR	IRRIGATION
LF	LINEAR FEET
MAE	MUTUAL ACCESS EASEMENT
OHE	OVERHEAD ELECTRIC
OT	OVERHEAD TELEPHONE
PR	POWER POLE
PRD	POWER POLE WITH DIP
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
SD	STORM SEWER PIPE
SMH	STORM SEWER MANHOLE
SP	SQUARE FEET
SS	SANITARY SEWER PIPE
SSL	SANITARY SEWER SERVICE LINE
SSM	SANITARY SEWER MANHOLE
SY	SQUARE YARD
TC	TOP OF CURB
TG	TOP OF GRATE
TP	TOP OF PAVING
TPED	TELEPHONE PEDESTAL
TS	TOP OF SIDEWALK
TW	TOP OF WALL
TY	TYPICAL
UE	UTILITY EASEMENT
UG	UNDERGROUND ELECTRIC
UT	UNDERGROUND GAS
W	WATER LINE
WLE	WATER LINE EASEMENT
WM	WATER METER
WMH	WATER MANHOLE
WSL	WATER SERVICE LINE
WV	WATER VALVE
XFM	TRANSFORMER
Y	YARD



ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH CURRENT CITY OF TULSA STANDARDS AND SPECIFICATIONS (INCLUDING O.D.O.T. 2019 EDITION)

Benchmark #1

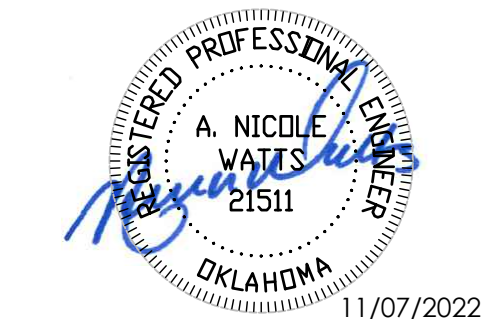
PAK NAIL
N=399600.066 E=2584827.896
ELEV=738.49'

Benchmark #2

1" IRON PIN
N=399607.142 E=2585077.365
ELEV=734.29'

Benchmark #3

1" IRON PIN
N=399153.243 E=2584993.504
ELEV=738.73'



wallace design collective, pc
structural/civil/landscape/survey
123 north martin luther king jr boulevard
tulsa, oklahoma 74103
918.584.8888 / 800.344.8858
oklahoma ca #1460 exp 6/30/23

MEMORIAL HIGH SCHOOL - TULSA PUBLIC SCHOOLS NEW FACADE/SECURE ENTRY

5840 S HUDSON AVE., TULSA, OK 74135

C05 GRADING PLAN

GH2 ARCHITECTS

GH2 PROJECT NUMBER: 20210120.01

ISSUE DATE: 10/20/2022

ISSUE: BID SET

OTHER ISSUE DATES: NO DESCRIPTION DATE

GRADING PLAN

SHEET NUMBER: C05

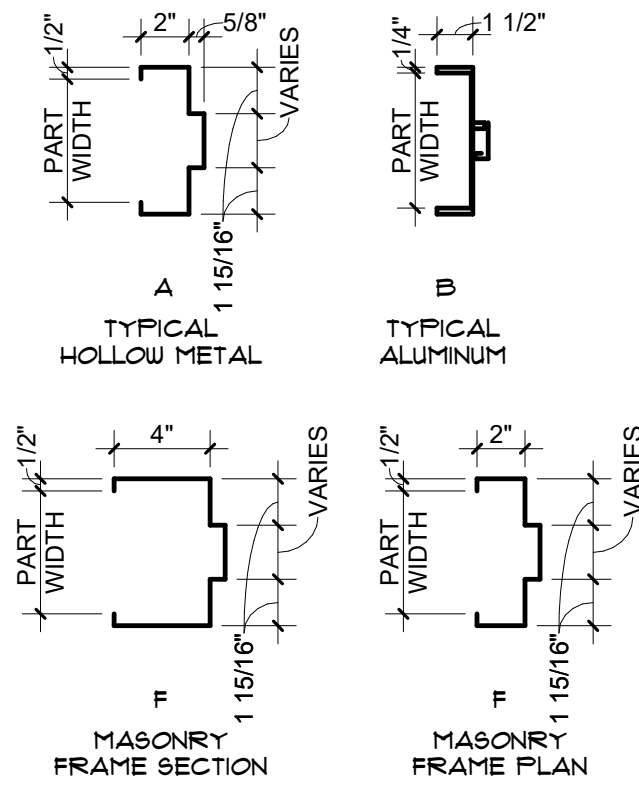
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DOOR SCHEDULE GENERAL NOTES	
1.	SEE SPECIFICATIONS FOR HARDWARE GROUPS.
2.	PAINT ALL HOLLOW METAL DOORS AND FRAMES, UNLESS NOTED OTHERWISE.
3.	COORDINATE ALL DETAILS WITH PARTITION TYPES, INTERIOR / EXTERIOR FINISHES AND CEILING CONDITIONS AS INDICATED ON FLOOR PLANS, CEILING PLANS, AND OTHER DRAWINGS.
4.	ALL DOORS, FRAMES AND HARDWARE SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS, AS INDICATED.
5.	PROVIDE CONTINUOUS SEALANT AT JOINTS BETWEEN DOOR / LITE FRAMES AND ADJACENT SURFACES EACH SIDE OF ALL HEADS / JAMBS / SILLS AND AROUND THE BASE OF ALL DOOR FRAMES.
6.	ALL EXTERIOR HOLLOW METAL DOORS AND FRAMES TO BE INSULATED WITH THERMAL BREAKS.

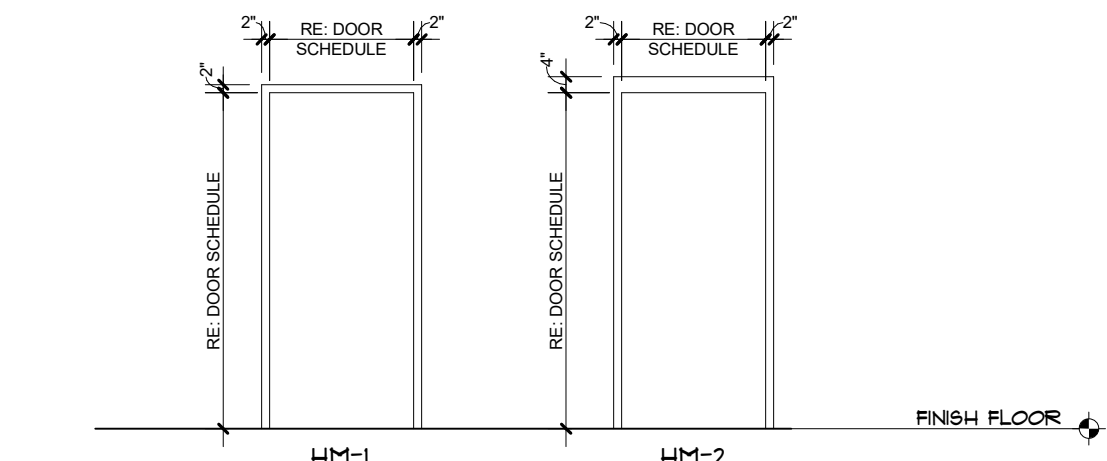
DOOR SCHEDULE ABBREVIATIONS			
AL	ALUMINUM	SC	SOLID CORE
HM	HOLLOW METAL	OH	OVERHEAD
PF	FIRE-FINISHED	FR	FAIR
ST	STEEL	WD	WOOD

DOOR NO.	ROOM	DOOR		FRAME		GLAZING TYPE	DETAILS			COMMENTS	
		WIDTH	HEIGHT	TYPE	MATERIAL		MATERIAL	FINISH	HEAD		JAMB
101A	SECURE VESTIBULE	6' - 0"	1' - 0"	B2	AL/GL	-	-	GL-2			
101B	SECURE VESTIBULE	6' - 0"	1' - 0"	B2	AL/GL	-	-	GL-2			
101C	SECURE VESTIBULE	6' - 0"	1' - 0"	B2	AL/GL	-	-	GL-2			
101D	SECURE VESTIBULE	6' - 0"	1' - 0"	B2	AL/GL	-	-	GL-2			
102A	RECEPTION	3' - 0"	1' - 0"	C5	WD/GLASS	HM-2	PT-2	GL-2	E/A&11	C/A&11	ACCESS CONTROL
102B	RECEPTION	3' - 0"	1' - 0"	C5	WD/GLASS	HM-2	PT-2	GL-2	E/A&11	C/A&11	ACCESS CONTROL
102C	WAITING ROOM	3' - 0"	1' - 0"	C5	WD/GLASS	HM-1	PT-2	GL-1	D/A&11	B/A&11	ACCESS CONTROL
105	PRINCIPAL'S OFFICE	3' - 0"	1' - 0"	C1	WD/GLASS	HM-1	PT-2	GL-1	D/A&11	B/A&11	

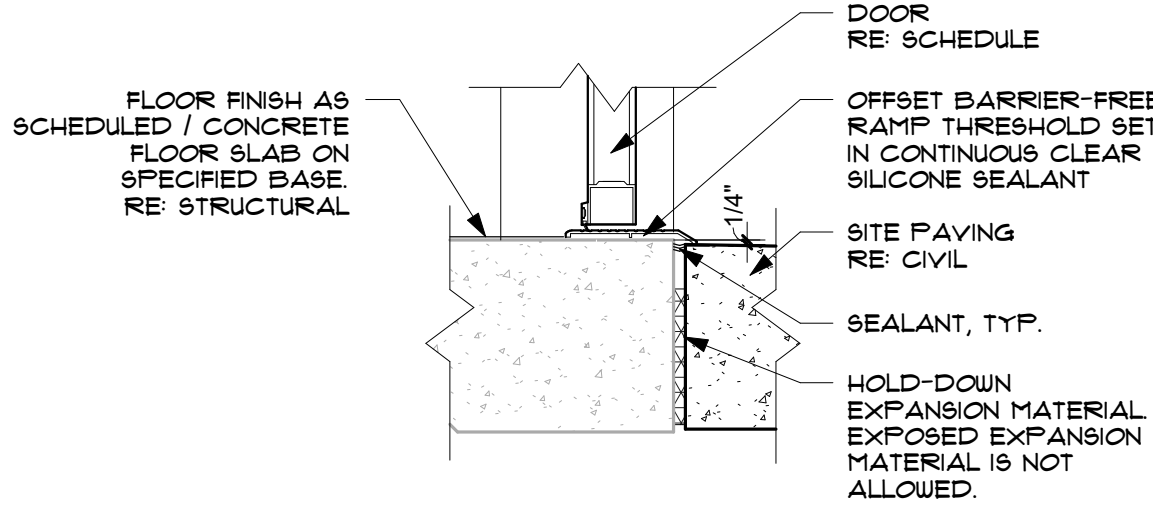
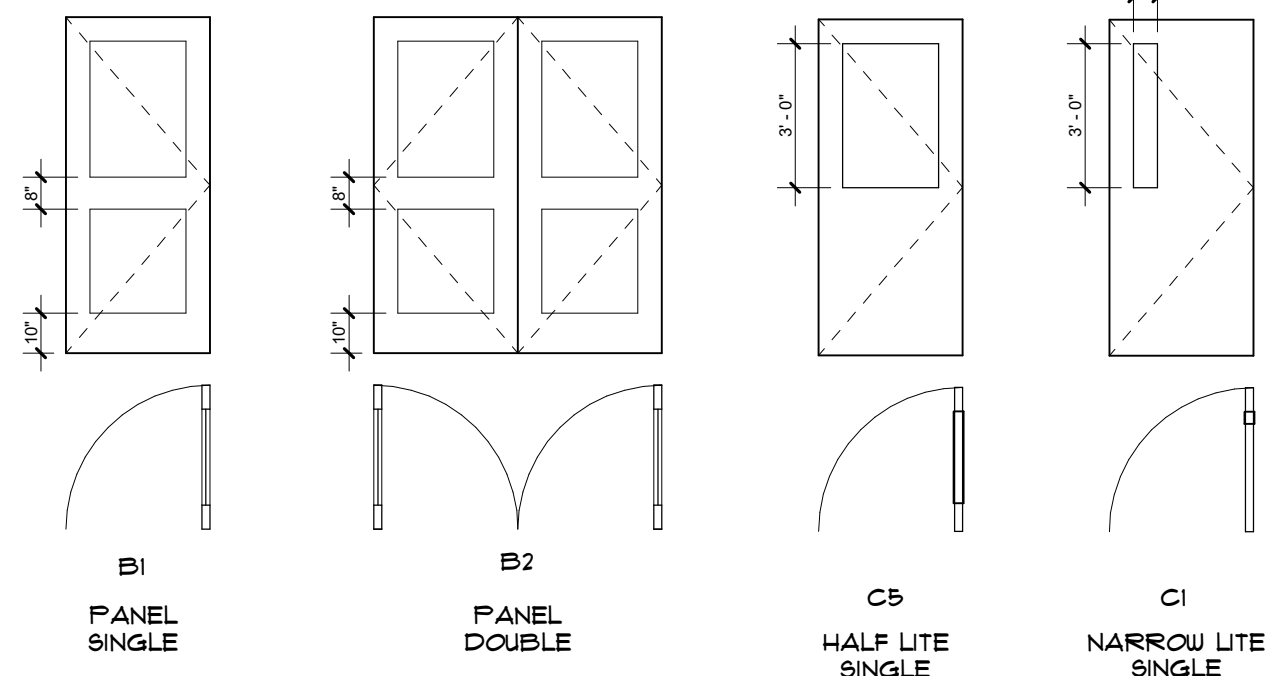
X DOOR GLAZING TO BE TEMPERED.



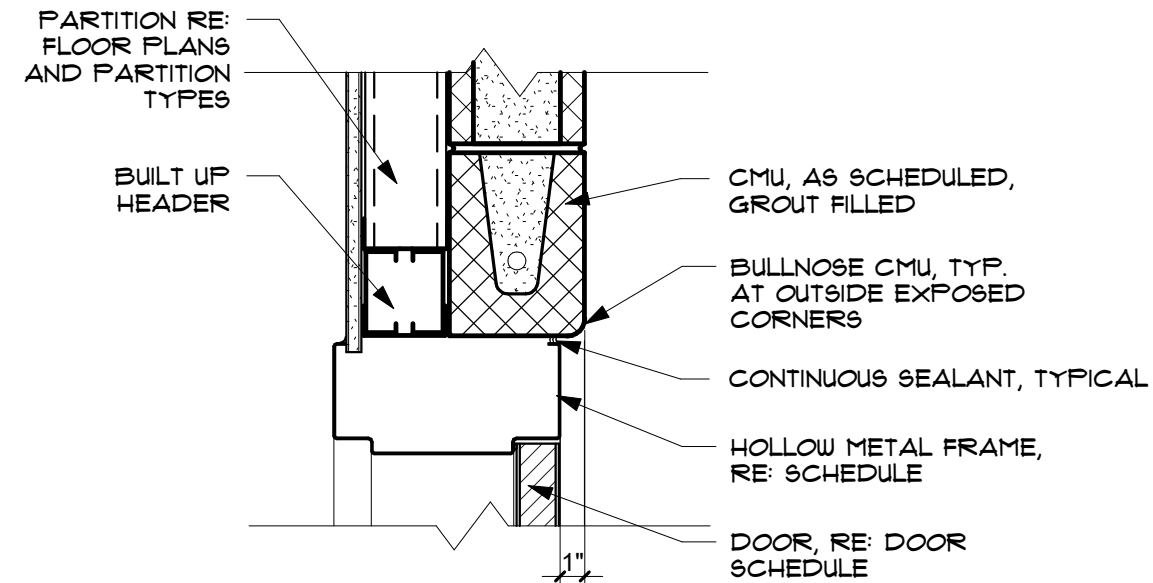
FRAME PROFILES
1 1/2" = 1'-0"



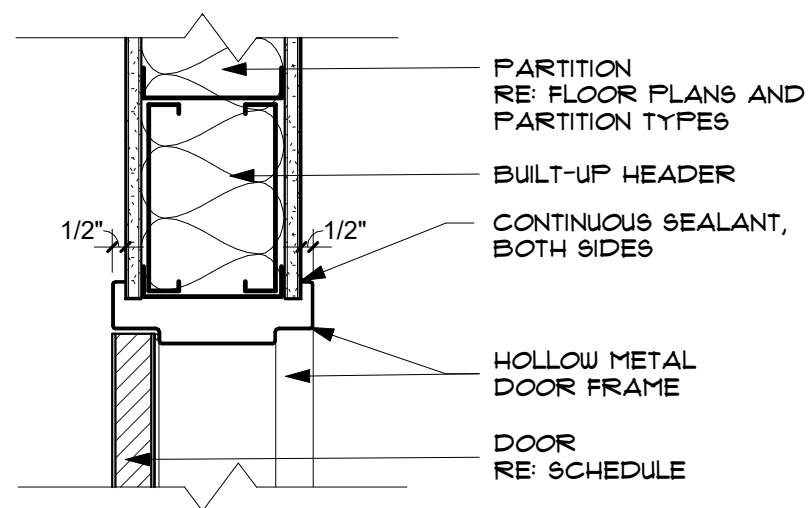
FRAME TYPES
NTS



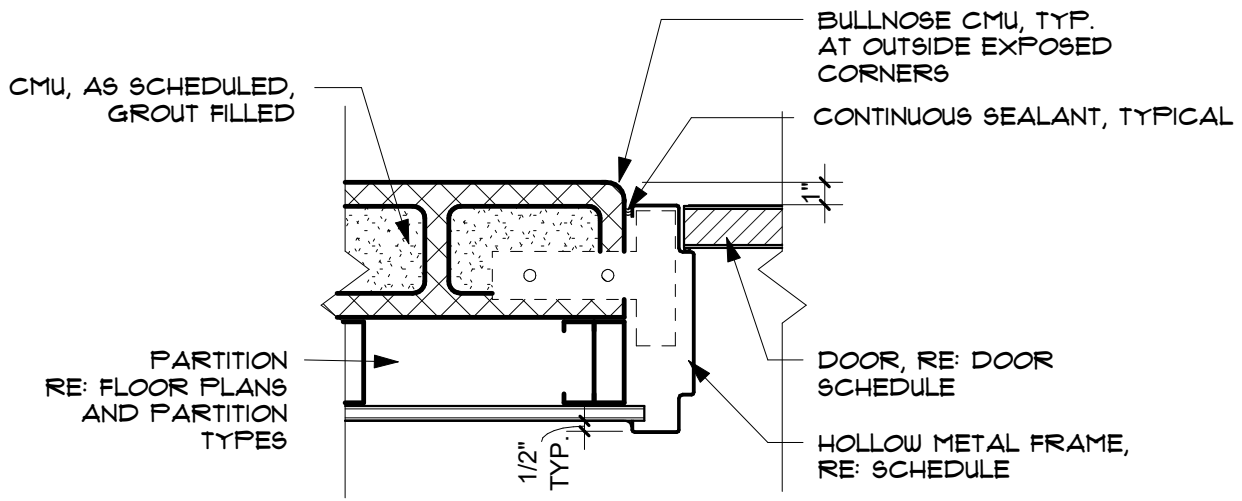
EXT. THRESHOLD DETAIL
1 1/2" = 1'-0"



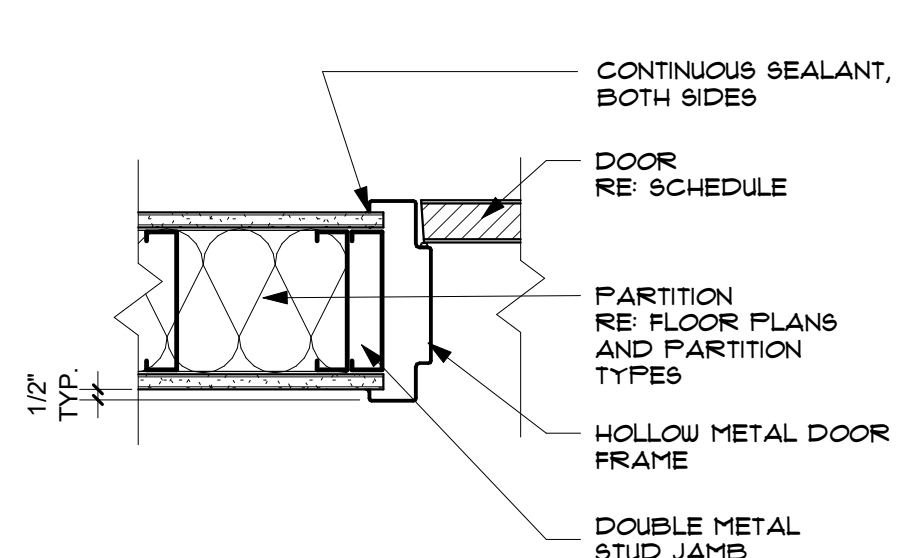
INT. HM HEAD DETAIL AT CMU
1 1/2" = 1'-0"



INT. HM HEAD DETAIL
1 1/2" = 1'-0"

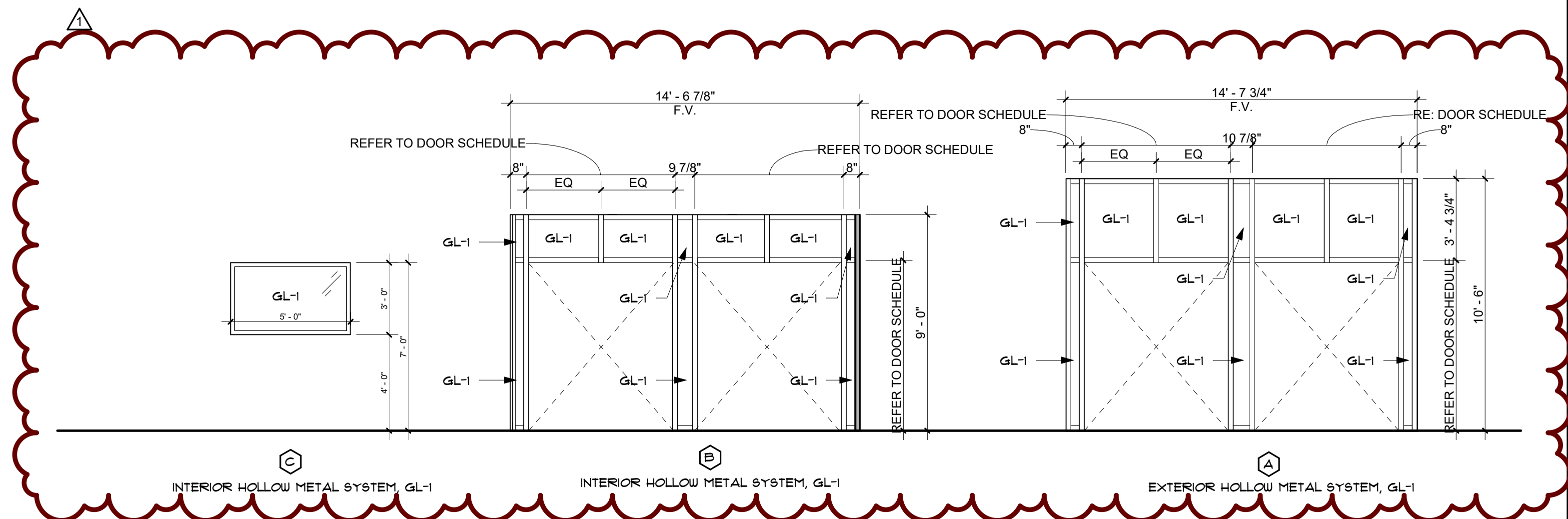


INT. HM JAMB DETAIL AT CMU
1 1/2" = 1'-0"

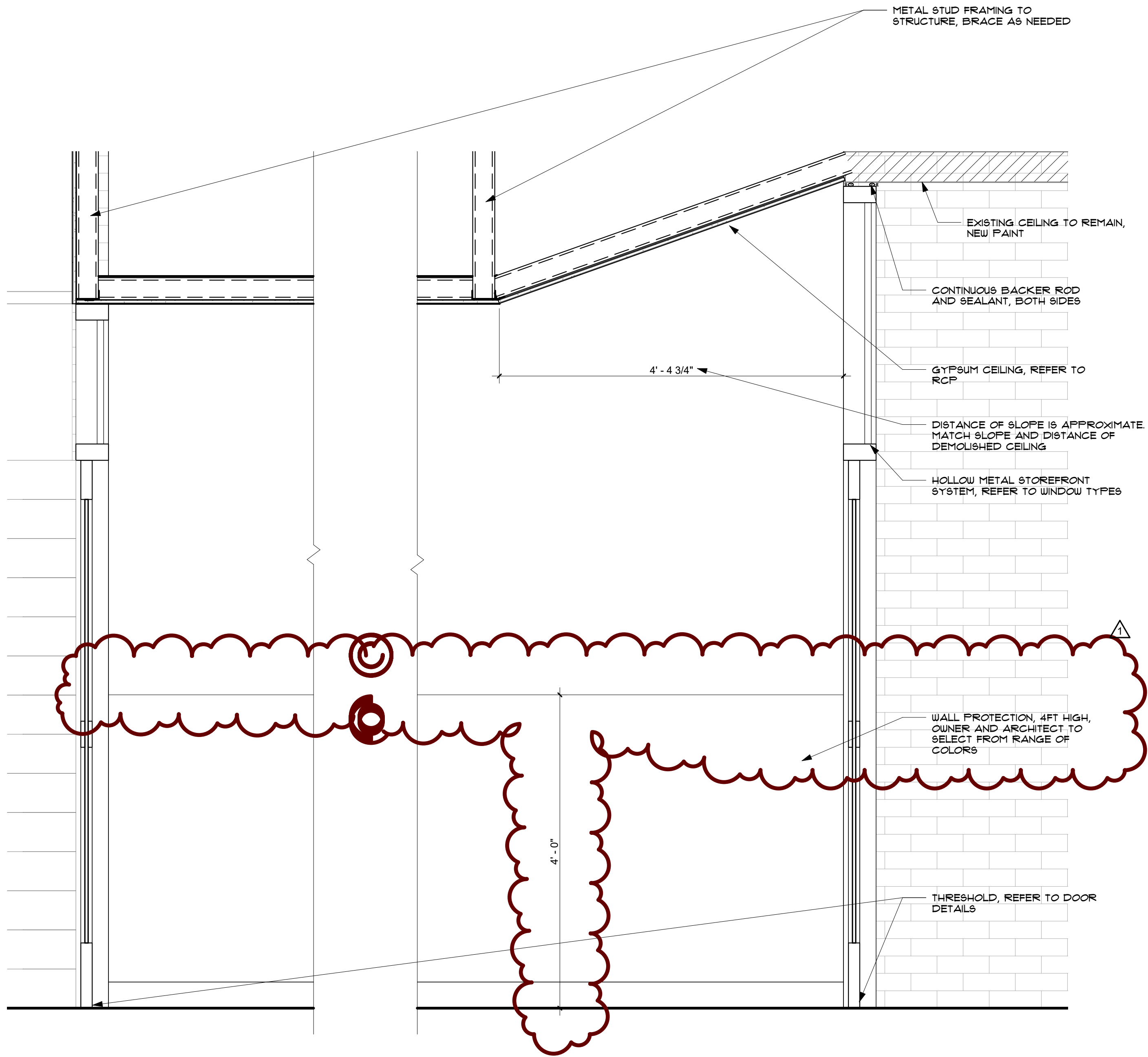


INT. HM JAMB DETAIL
1 1/2" = 1'-0"

GLAZING TYPES	
GL-1:	EXTERIOR SAFETY GLASS HIGH PERFORMANCE LAMINATED GLASS (BASED ON DESIGN ENTRY GUARD, TRISTAR)
GL-2:	INTERIOR GLAZING, 1/4" CLEAR - TEMPERED
NOTE: ALL GLASS TO BE TEMPERED. VERIFY OPENING SIZES ON SITE PRIOR TO FABRICATION AND INSTALLATION. COORDINATE ACCESS CONTROL WITH STOREFRONT FRAMING.	



WINDOW TYPES
1/4" = 1'-0"

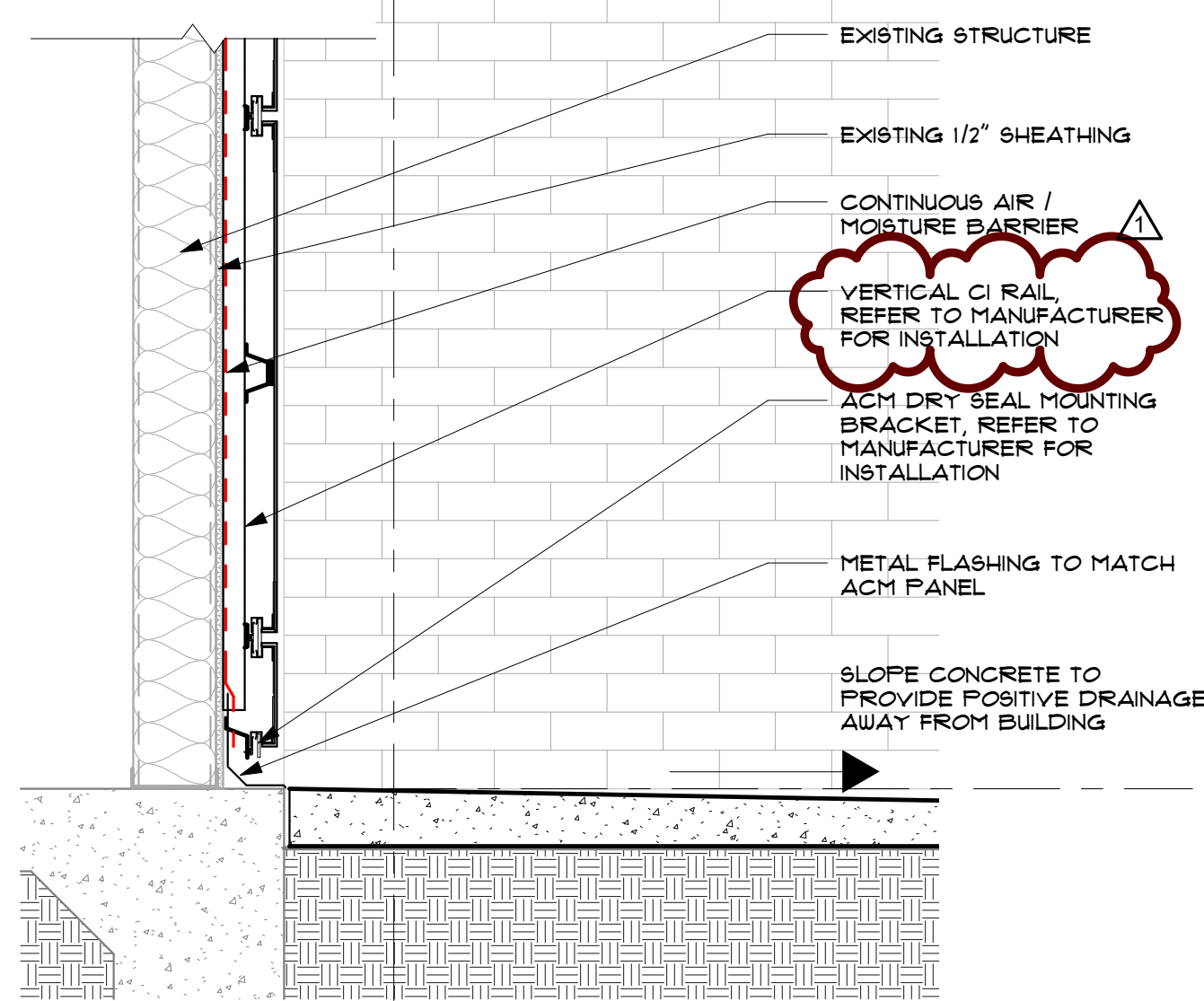


WALL SECTION AT VESTIBULE
1" = 1'-0"

1/17/2022 10:49:43 AM

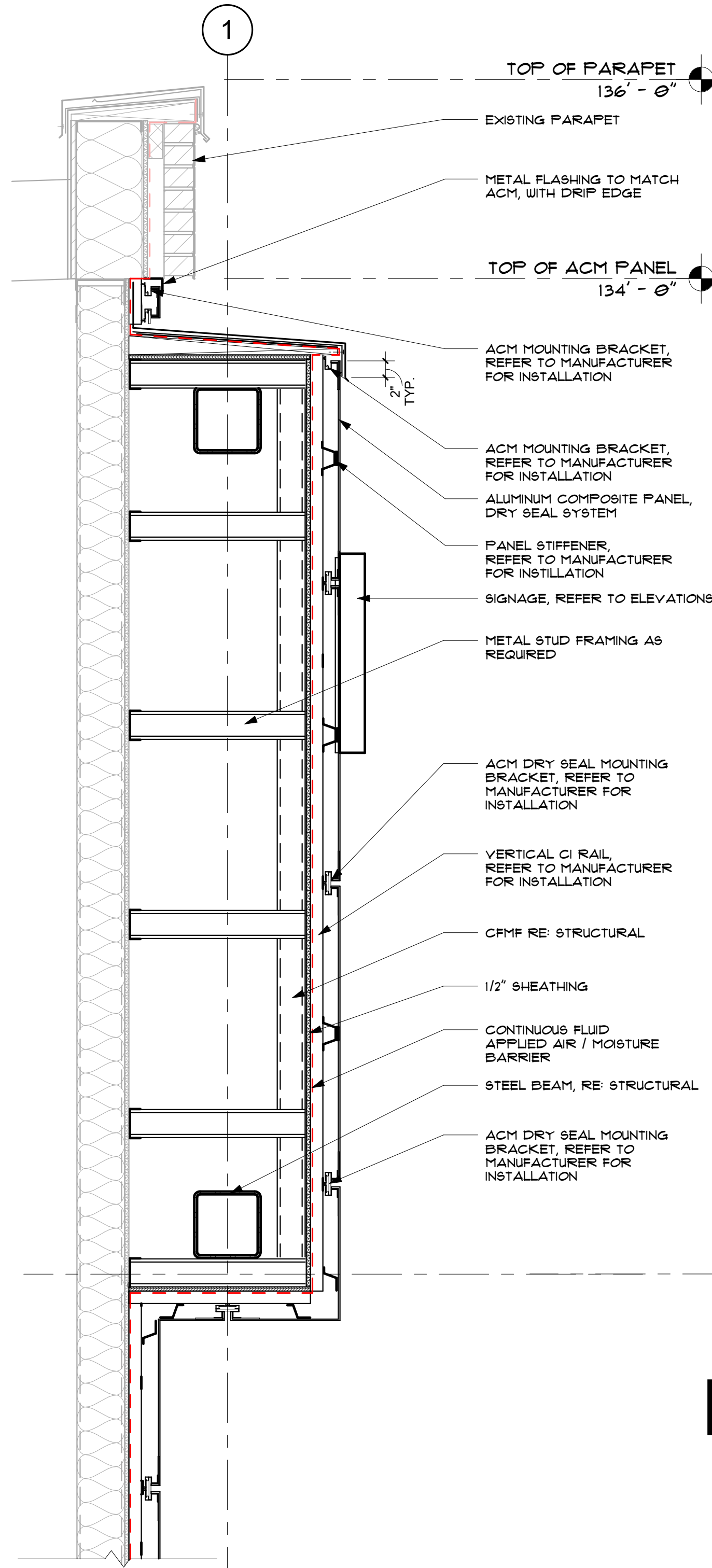
C WALL SECTION AT NEW FACADE

1" = 1'-0"



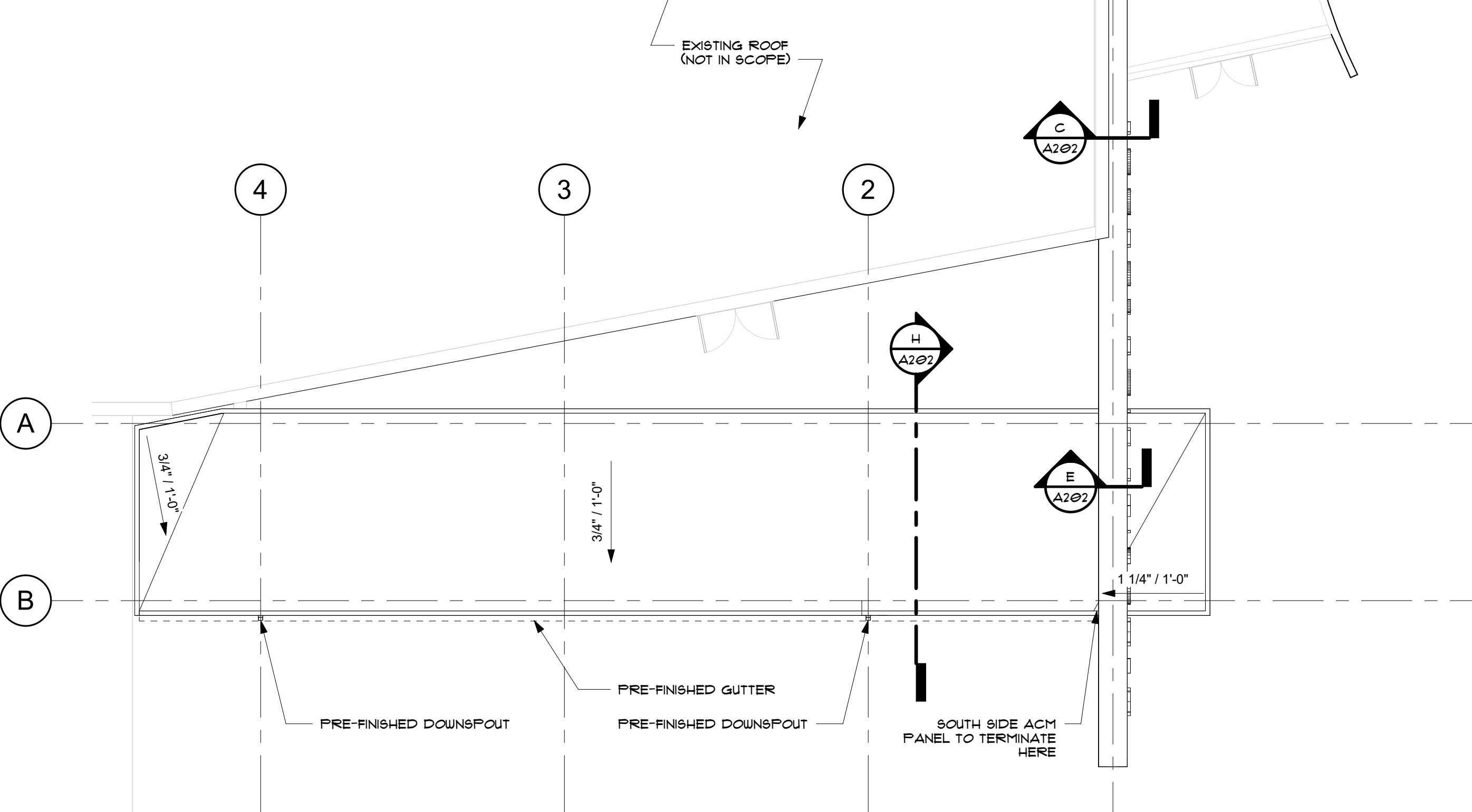
J WALL SECTION AT NEW FACADE

1" = 1'-0"



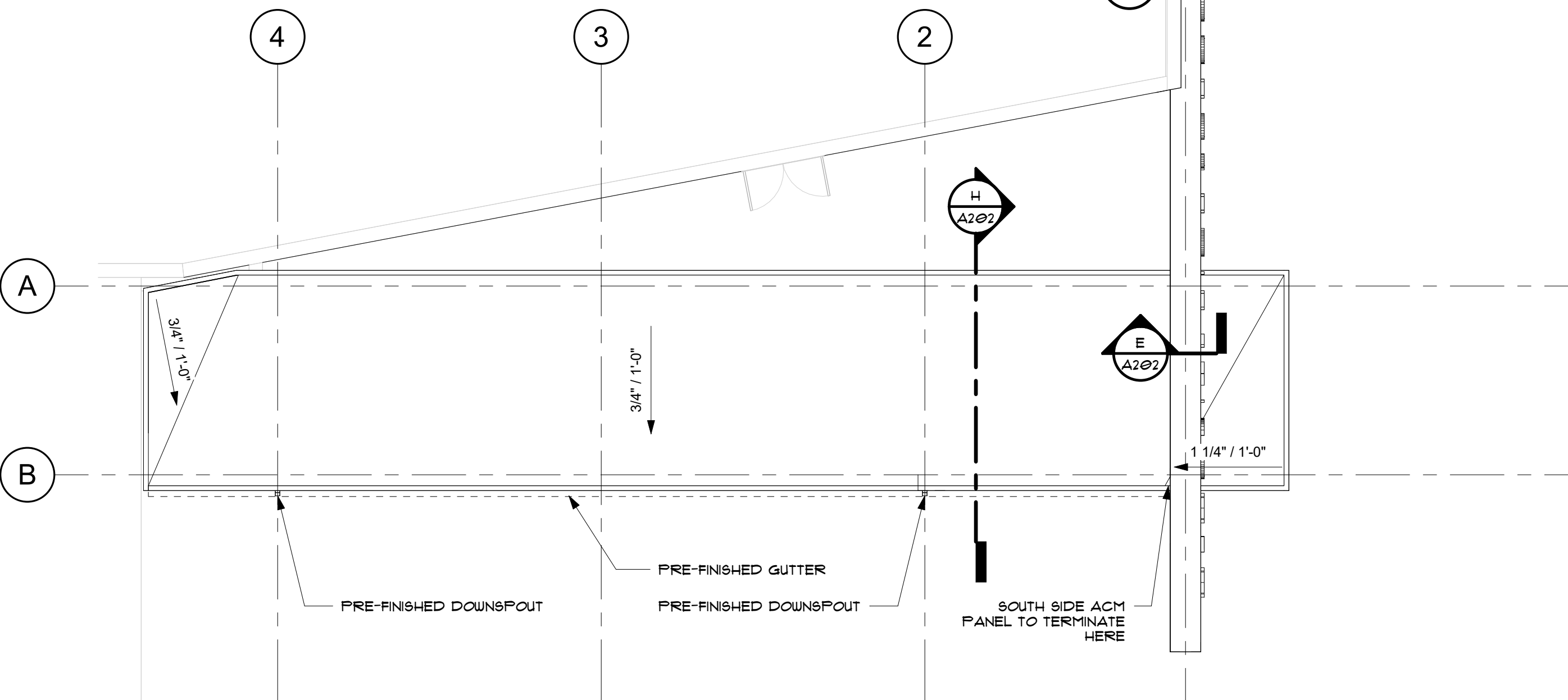
E WALL SECTION AT SIGNAGE

1" = 1'-0"



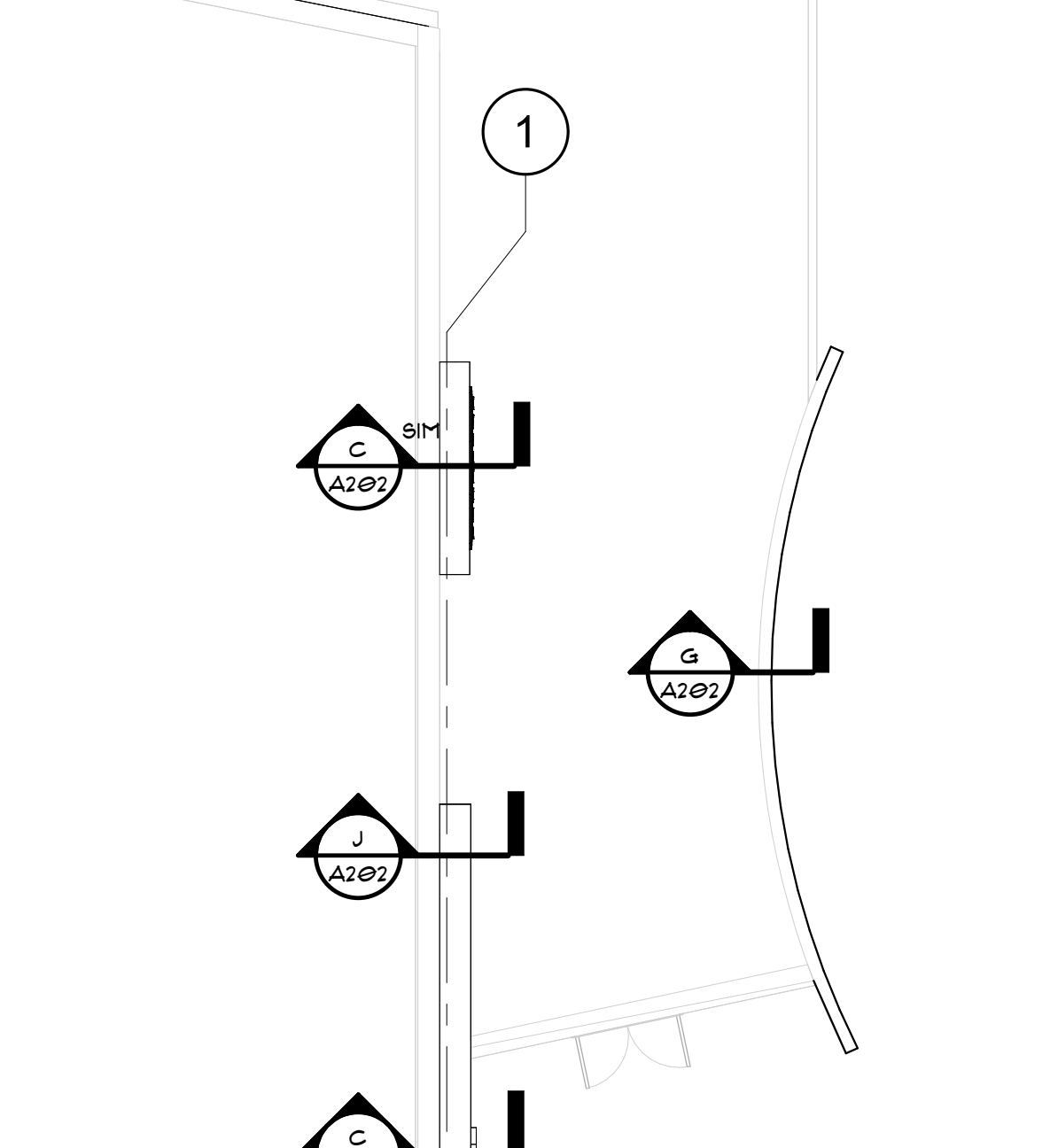
B CANOPY ROOF PLAN

1/8" = 1'-0"



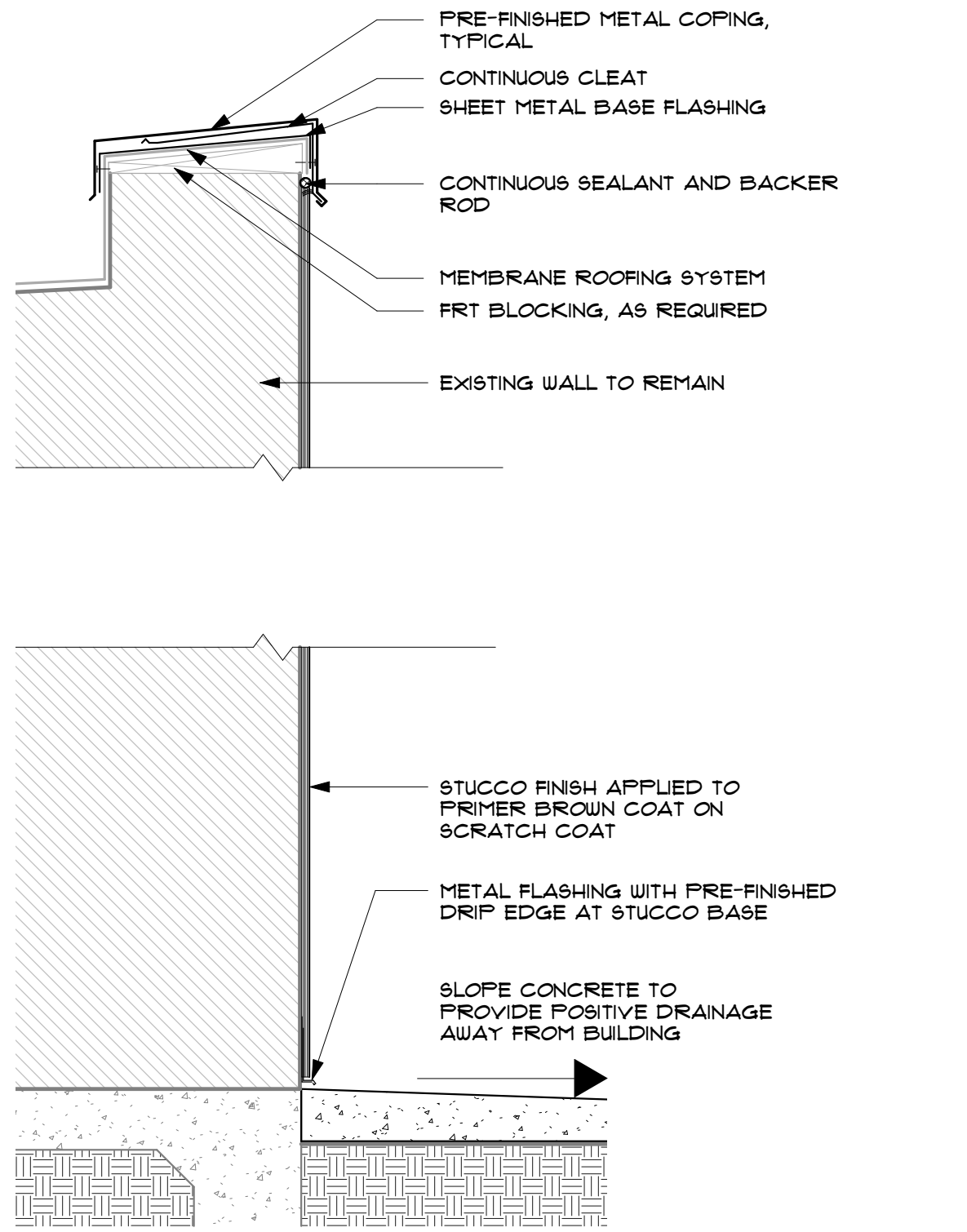
G WALL SECTION - CURVED WALL

1" = 1'-0"



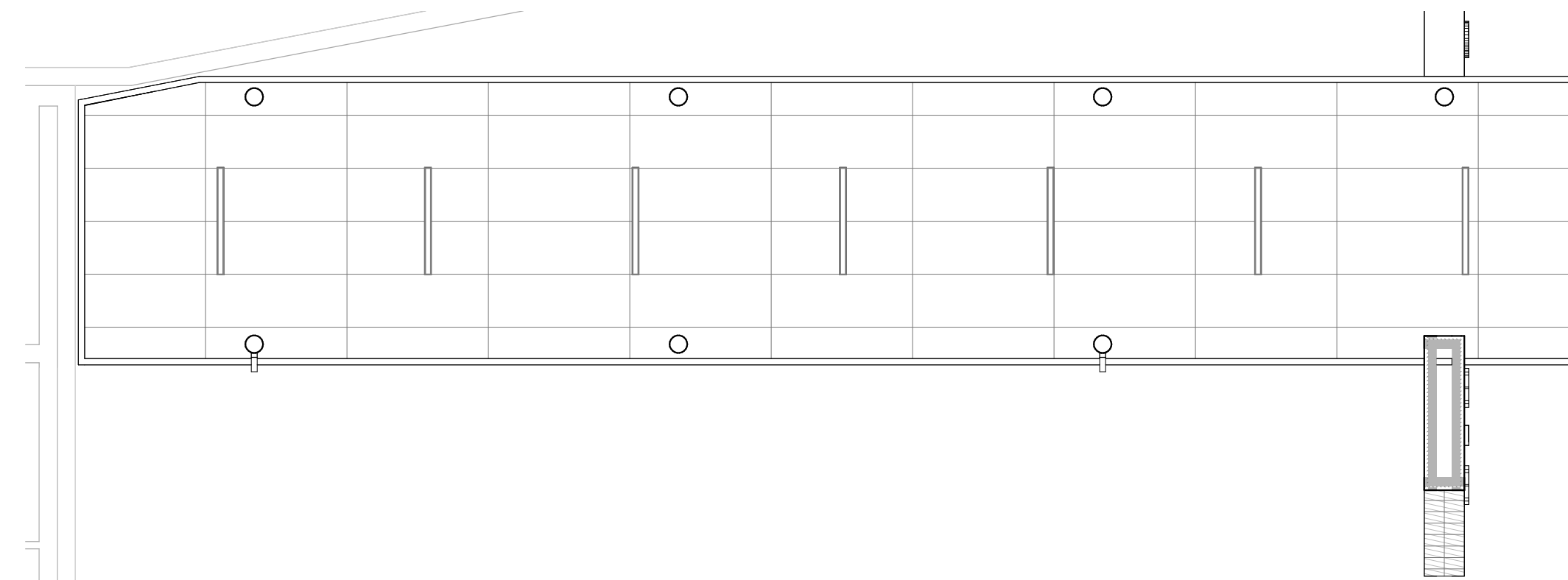
H CANOPY SECTION DETAIL

1 1/2" = 1'-0"



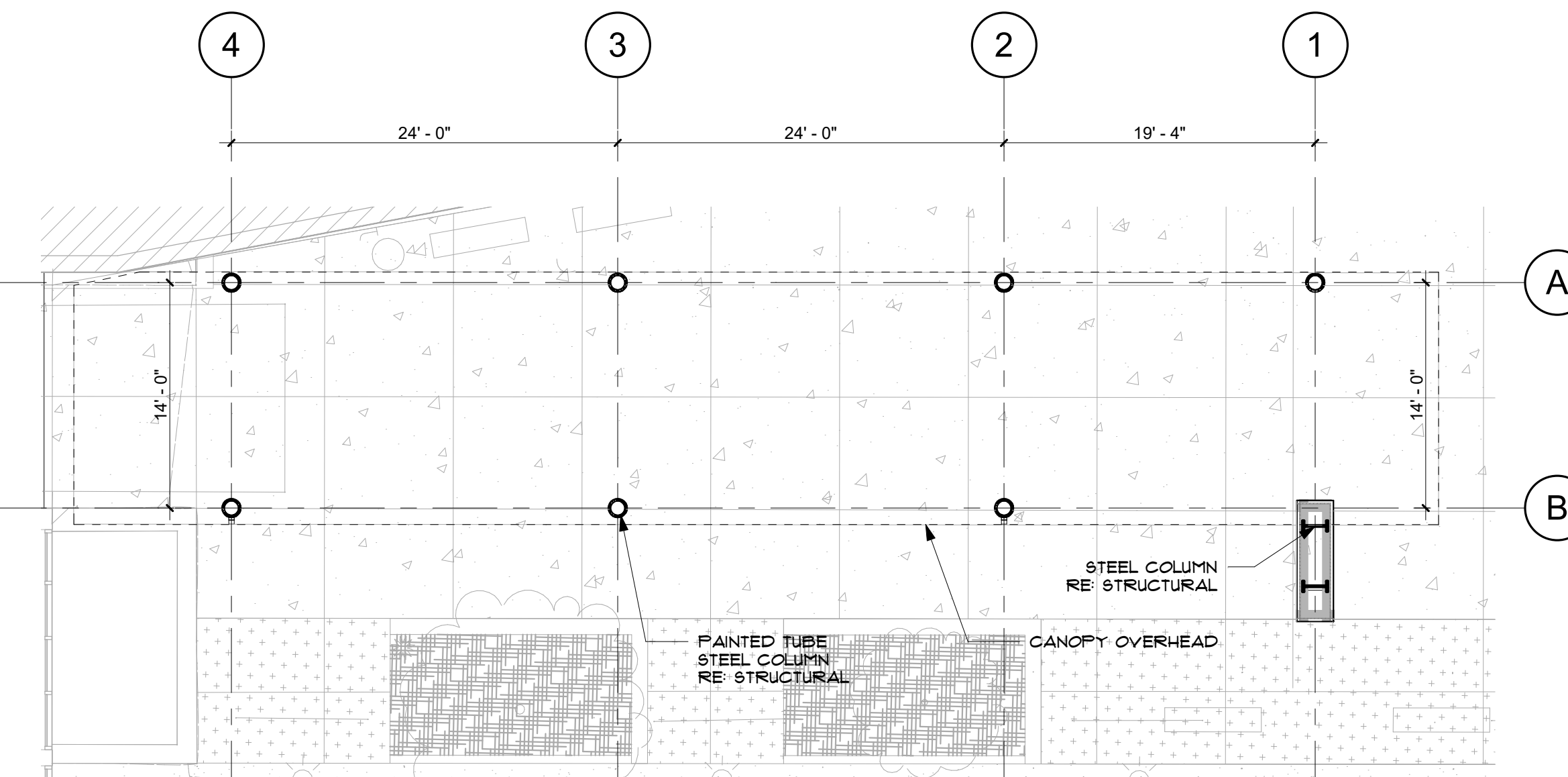
D CANOPY REFLECTED CEILING PLAN

1/8" = 1'-0"



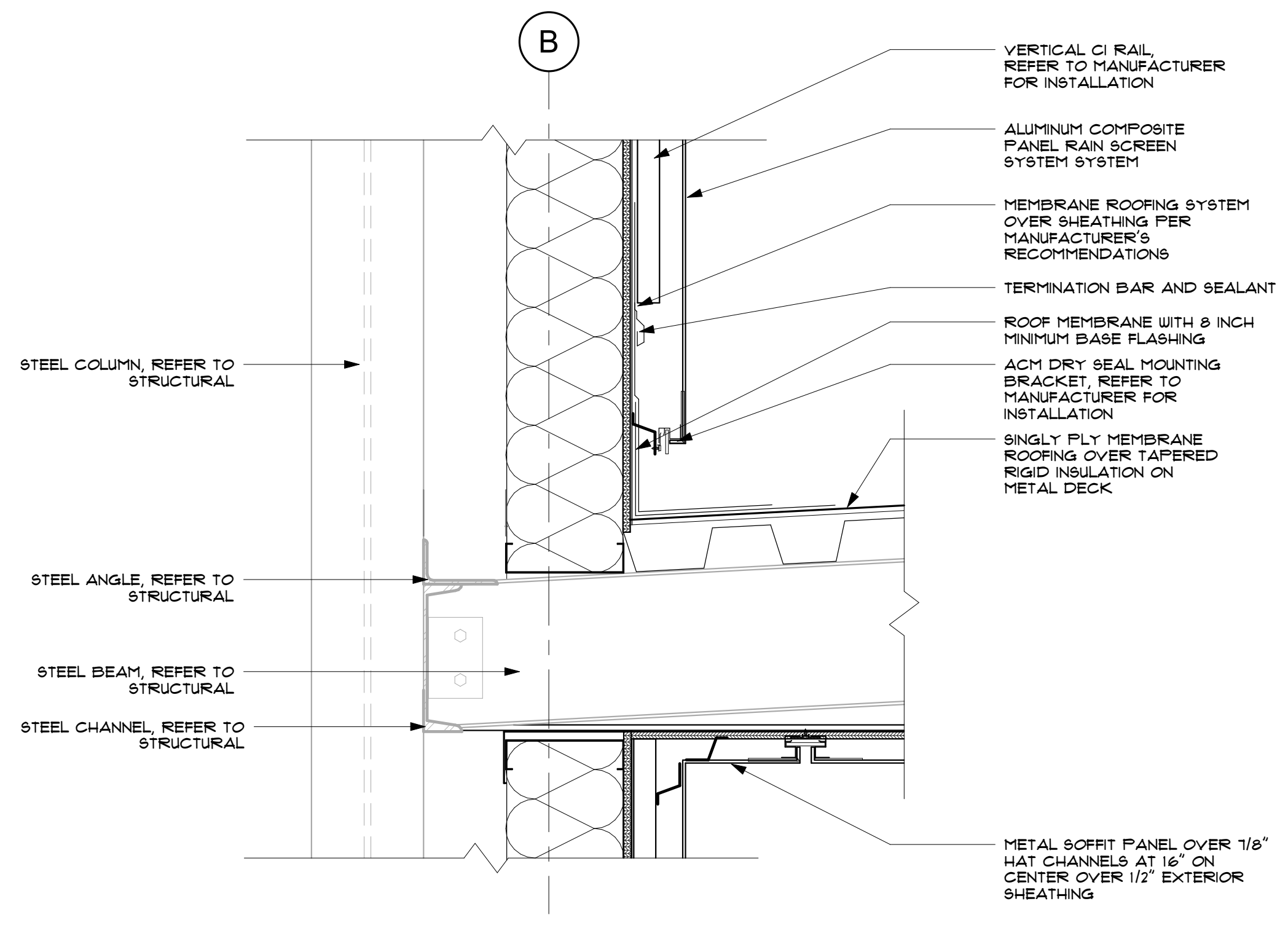
A CANOPY PLAN

1/8" = 1'-0"



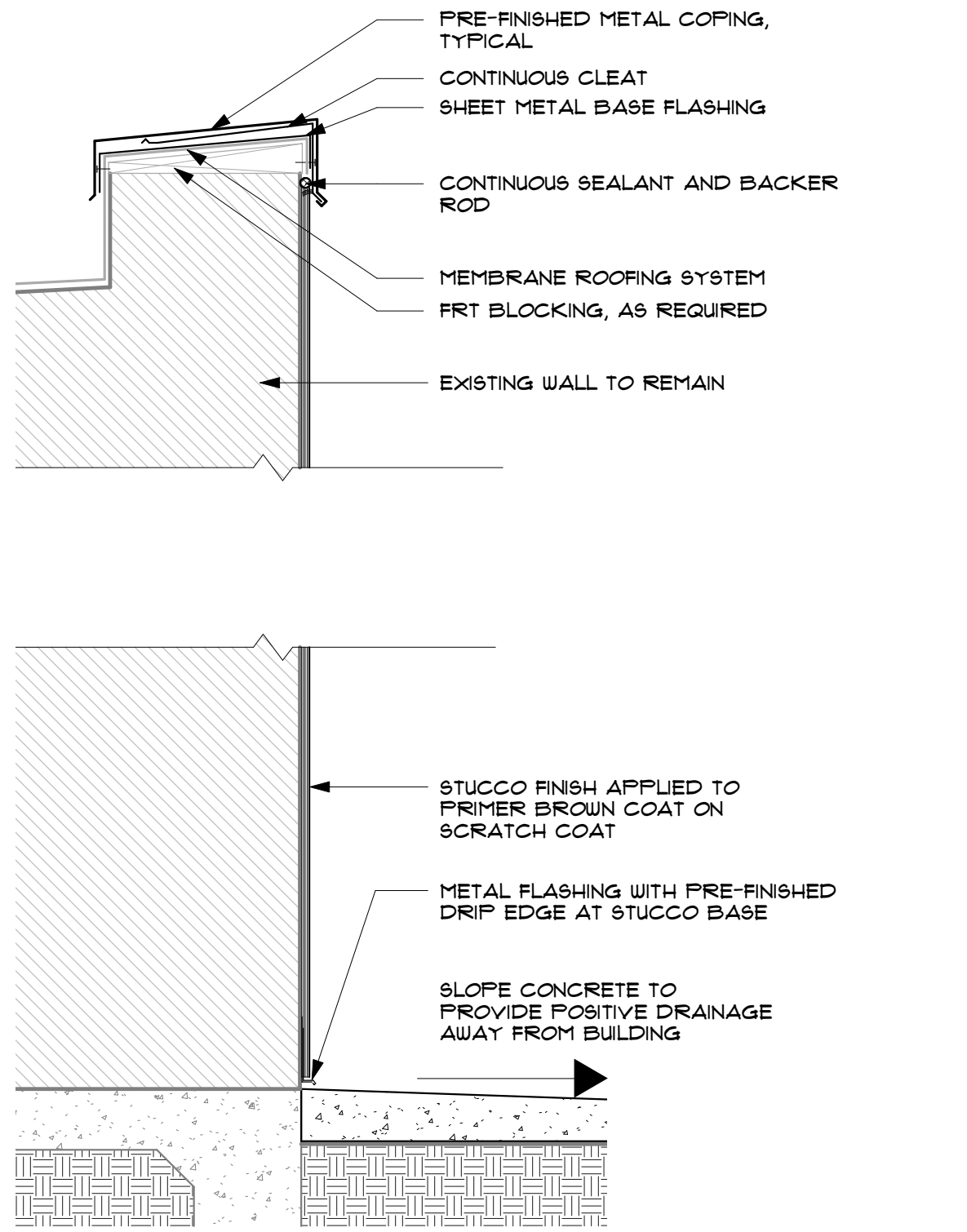
F CANOPY SECTION DETAIL AT COLUMN

1 1/2" = 1'-0"



H CANOPY SECTION DETAIL

1 1/2" = 1'-0"



ROOF PLAN GENERAL NOTES

1. ALL ROOFING SURFACES TO SLOPE 1/4 INCH PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.
2. PROVIDE CURB HEIGHTS FOR EQUIPMENT AND ROOF HATCHES AS REQUIRED TO MAINTAIN 8 INCHES MINIMUM ABOVE FINISHED ROOF SURFACE, UNLESS MORE STRINGENT CONDITIONS ARE INDICATED OR REQUIRED BY ROOF OR EQUIPMENT MANUFACTURERS.
3. PROVIDE WALKWAY PROTECTION TO MAJOR MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT AS REQUIRED FOR SERVICE ACCESS. WALKWAY PROTECTION MAY NOT BE INDICATED, BUT IF INDICATED IT'S A GENERAL LAYOUT AND MAY NOT SHOW ALL FINAL LOCATIONS OF ALL EQUIPMENT, RE: SPECIFICATIONS.
4. ALL ROOFTOP MECHANICAL, ELECTRICAL, AND / OR PLUMBING EQUIPMENT IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. REFERENCE MEP DOCUMENTS AND SPECIFICATIONS FOR FURTHER DESIGN INFORMATION.
5. INSTALL ROOFING IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. INSTALL GUTTERS AND DOWNSPOUTS IN ACCORDANCE WITH SMACNA GUIDELINES.
7. PROVIDE RIDGE CAPS AT ALL ROOF RIDGES.
8. PIPE AND VENT PENETRATIONS: PROVIDE PRE-MOLDED PIPE SLEEVES ONLY. FOR ALL PENETRATIONS, AS RECOMMENDED BY MANUFACTURER FOR SIZE, TYPE AND APPLICATION. PITCH PANS ARE NOT ALLOWED.
9. ALL EXPOSED STEEL TO BE PAINTED PT-X



MEMORIAL HIGH SCHOOL - TULSA PUBLIC
SCHOOLS NEW FACADE/SECURE ENTRY
5840 S HUDSON AVE, TULSA, OK 74135

A202
CANOPY AND MISC DETAILS

GH2 ARCHITECTS

GH2.COM

GH2 PROJECT NUMBER:

20210120.01

ISSUE DATE:

October 20, 2022

ISSUE:

BID SET

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	Revision 01	XX.XX.202X

SHEET NAME:

CANOPY AND MISC
DETAILS

SHEET NUMBER:

A202

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DEVICE SUBSCRIPT		
Q AFT A/C AFL AF AT BMS BTC CCT CT CTL D (E) (ER) EFO EQ EWC FACP GFCI GFI GFP JB K	LOWER CASE LETTER INDICATES DEVICE CONTROL ARRANGEMENT ABOVE FINISHED FLOOR HVAC APPLIANCE AMP FUSE AMP TRIP BUILDING MANAGEMENT SYSTEM BRANCH TO CONNECTION COMMUNICATION CIRCUIT CURRENT TRANSFORMER CONTROL DATA OUTLET EXISTING TO REMAIN (260450) EXISTING RELOCATED EMERGENCY CIRCUIT EMERGENCY POWER OFF EQUAL ELECTRIC WATER COOLER FIRE ALARM CONTROL PANEL GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE GROUND FAULT CIRCUIT INTERRUPTING BREAKER PROTECTED FEED THROUGH GROUND FAULT CIRCUIT INTERRUPTING PROTECTED JUNCTION BOX KEY OPERATED	LV LMC LGT M MTR NL NCPD OHE OHT (R) (RV) (RS) RCP RI S.E.R. SPD S.T. SW U.C. UGE UGT UGF UNO WP WPS
		LOW-VOLTAGE LIQUID-TIGHT FLEXIBLE METAL CONDUIT LIGHTING FRACTIONAL HP RATED SWITCH MOTOR NIGHT LIGHT OVER-CURRENT PROTECTION DEVICE OVERHEAD ELECTRIC OVERHEAD TELEPHONE REMOVE (260450) REMOVE AND REINSTALL (260450) REMOVE AND SALVAGE (260450) RECEPTACLE ROUGH-IN ONLY SERVICE ENTRANCE RATED SURGE PROTECTION DEVICE SHUNT-TRIP BREAKER SPLIT WIRED RECEPTACLE FOR HALF SWITCHING UNDER COUNTER UNDERGROUND ELECTRIC UNDERGROUND TELEPHONE UNDERGROUND FIBER UNLESS NOTED OTHERWISE WEATHERPROOF WHILE IN USE WEATHERPROOF SPRING COVER DEVICE

ELECTRICAL GRAPHIC SYMBOL LEGEND		
WALL MOUNTED DEVICES WALL MOUNTED, SIMPLEX RECEPTACLE DUPLEX RECEPTACLE QUAD RECEPTACLE SURFACE MOUNTED, SPECIAL RECEPTACLE DUPLEX RECEPTACLE W/GFCI QUAD RECEPTACLE W/GFCI JUNCTION BOX PLUGMOLD CEILING MOUNTED DEVICES DUPLEX RECEPTACLE QUAD RECEPTACLE SPECIAL RECEPTACLE WIRELESS ACCESS POINT SPEAKER SMARTBOARD PROJECTOR WALL MOUNTED, LOW-VOLTAGE DEVICES DIGITAL OUTLET - CAT 6 INTERCOM BUTTON IP INTERCOM SYSTEM-CLASSROOMS K-6 IP INTERCOM SYSTEM-CLASSROOMS 7-12 IP CLOCK - SINGLE/DOUBLE FACE (SF/DF) IP HORN/SPEAKER WALL MOUNTED, AUDIO/VISUAL/CTV OUTLET	CONTROL DEVICES \$ SWITCH \$2 2 POLE SWITCH \$3 THREE WAY SWITCH \$4 FOUR WAY SWITCH \$D DIMMER SWITCH \$K KEYED SWITCH \$ SWITCH WITH RED/GREEN PILOT LIGHT \$M MOTOR RATED SWITCH \$S CEILING MOUNTED, OCCUPANCY SENSOR \$P PHOTOCELL/CONTACTOR FACING NORTH SECURITY DEVICES X KEYPAD - WALL/PEDESTAL MOUNTED M MOTION DETECTOR - CEILING MOUNTED P WORKSTATION ALARM PUSHBUTTON M MAGNETIC LOCKSET C SURVEILLANCE CAMERA - CEILING MOUNTED C SURVEILLANCE CAMERA - WALL MOUNTED B WALL MOUNTED, BUZZER P PUSH BUTTON - WALL MOUNTED A ALARM CONTACT	SWITCHES/MOTORS/TRANSFORMERS/ETC NON-FUSED DISCONNECT FUSED DISCONNECT COMBO MTR. STARTER DISCONNECT MOTOR VARIABLE FREQUENCY DRIVE SURGE PROTECTION DEVICE ATS-AUTOMATIC TRANSFER SWITCH MANUAL TRANSFER SWITCH RECESSED PANELBOARD SURFACE-MOUNTED PANELBOARD ISOLATION TRANSFORMER TRANSFORMER METER RACEWAYS ----- UNDERGROUND CONDUIT - - - - - CONCEALED CONDUIT - - - - - EXPOSED CONDUIT - - - - - HOMERUN - - - - - INTERCONNECTED HOMERUN CKT. SECURITY/ACCESS CONTROL LEGEND A CARD READER S KEY PAD: NAPCO RPICAEZ TOUCH-PAD CLASSROOM SECURITY SENSOR - NAPCO C100STE W 12V POWER SUPPLY S CORRIDOR SECURITY SENSOR - NAPCO MAB000 100 IRMM S EQUIPMENT SECURITY SENSOR - SUPCO LOW PRESSURE SENSOR (SLP2565 & SF9602) 2N HELIOS IP FORCE

LIGHT FIXTURE SCHEDULE					
FIXTURE/TYPE	MANUFACTURER CATALOG NUMBER	VOLTS WATTS	LAMP TYPE	MOUNTING	FIXTURE NOTES
A	METALUX: 24FP4740C LS: SFP24-LED-40-UE-DM-50	120 41	LED 5000K	RECESSED	2x4 LED LAY-IN
B	CORONET: LSR4-B-40-MED-UNV-DB-XX-T-FL-NA-NA-NA	120 42	LED 4000K	RECESSED	8'-0" LED RECESSED FIXTURE COLOR BY ARCHITECT
B1	LUMENWERK: V3SCALR-D-WELL-EPD0-SW-80-450-40-6FT-UNV-D1-1C- EF-DTR-X1	120 31	LED 4000K	RECESSED	6'-0" LED RECESSED FIXTURE COLOR BY ARCHITECT
C	BK LIGHTING: HP2-LED-TR-X-63-XX-13-010-MT-AH-GM-R	120 20	LED 4000K	RECESSED	LED IN GROUND WALL WASH COLOR BY ARCHITECT
D	HALO: HCB15D010-HM60525840-61W0H NEW 40RXL-120-B-50-DM1-UNV-OW-OF-CS GOTHAM: 50/50-AR-MWD-LSS-120-6200	120 20	LED 5000K	RECESSED	6" LED DOWNLIGHT
F	LUMARK: NFELD-S-C15-D-UNV-66T-CB	120 51	LED 4000K 70 CRI	POLE MOUNTED	LED WALL WASH FLOOD LIGHT
S	LANDSCAPE FORMS: FGP-500L5-056F-40K-VV1-12-TW1	120 57	LED 4000K	POLE MOUNTED	12' LED AREA LIGHTS COLOR BY ARCHITECT
EM	LITHONIA: ELMZ LED H0 SD SURE LITE: SELZSR16SD DUAL LITE: EVM1	120	LED	CEILING, WALL, OR END MOUNTED	EMERGENCY EGRESS LIGHT PROVIDE WEATHER-PROOF DUAL REMOTE HEAD AT EXITS SHOWN ON DRAWINGS ATTACH TO FIXTURES SPECIFIED
RH	LITHONIA: ELA LED T QMP L0309 SD SURE LITE: SRP25DQY DUAL LITE: EVO-DW	120 8	LED	WALL MOUNTED	WEATHER-PROOF/VANDAL RESISTANT REMOTE HEAD UNIVERSAL MOUNT AT EXTERIOR OF BUILDING. INTERCONNECT TO EXIT LIGHT 90-MIN EMERGENCY BATTERY BACKUP INDICATED ON DRAWINGS.
X	LITHONIA: LQM S W 3 R 120/277 EL N SD SURE LITE: LPMR5SD DUAL LITE: EXCURMDH1-0	120 5	LED	CEILING, WALL, OR END MOUNTED	SINGLE OR DOUBLE FACE PER DRAWING. (90-MIN. BATTERY BACKUP)
XH	LITHONIA: LHQM S W 3 R H0 SD SURE LITE: LPMZSR3SD DUAL LITE: EXCURMDH1	120 8	LED	CEILING, WALL, OR END MOUNTED	SINGLE OR DOUBLE FACE PER DRAWING. (90-MIN. BATTERY BACKUP)
GENERAL NOTES: A) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ACCESSORIES REQUIRED FOR COMPLETE FIXTURE PACKAGE SHOWN ON SCHEDULES, DETAILS, PLANS, AND SPECIFICATIONS. B) NO SUBSTITUTIONS ACCEPTED. C) CONTRACTOR SHALL PROVIDE DIMMING DRIVERS IN LED FIXTURES REQUIRED FOR CONTROL SYSTEM COMPATIBILITY. D) PROVIDE WIRE GUARDS IN GYMNASIUM LOCATIONS. E) PROVIDE GYPSUM BOARD CEILING FRAMING KIT IN AREAS WITH HARD CEILING.					

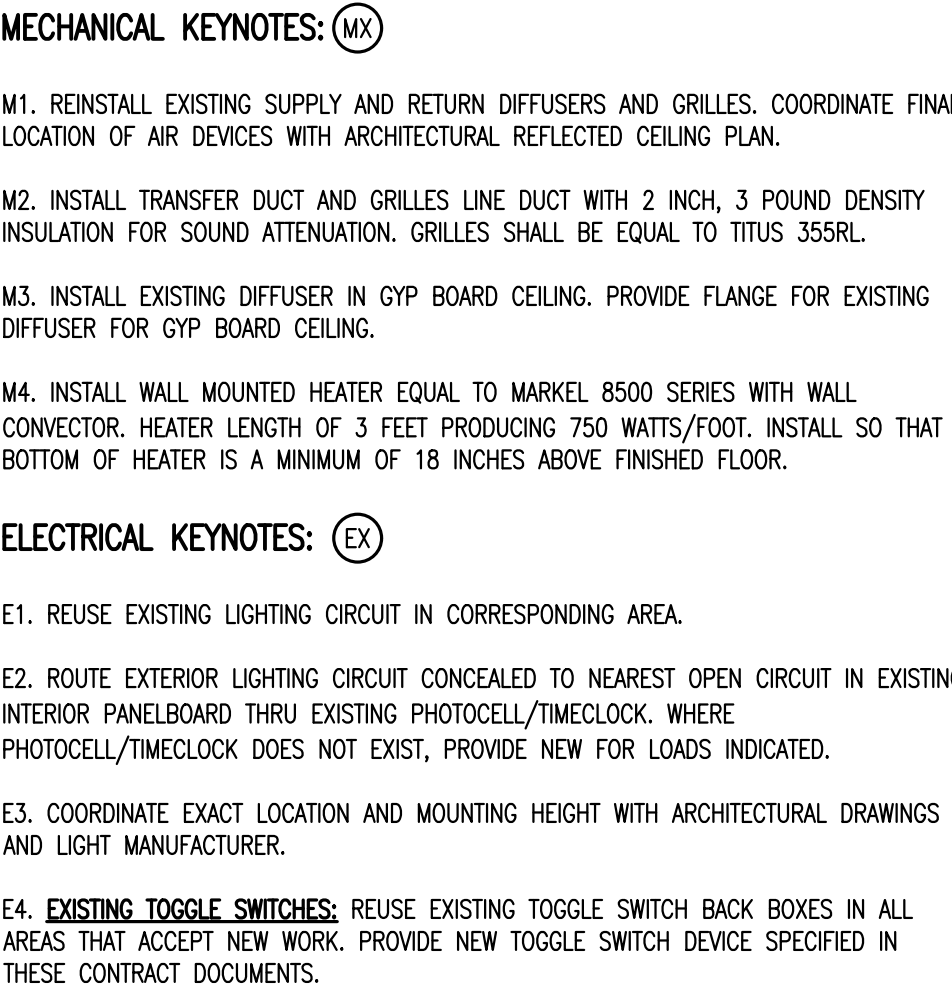
ELECTRICAL GENERAL NOTES:

- A. **SITE OBSERVATION:** CONTRACTOR AND ASSOCIATED DIVISION TRADES SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE SCOPE OF WORK DESIGNATED FOR THIS FACILITY PRIOR TO BIDDING. FAILURE TO SIGN-IN AND ATTEND THE PRE-CONSTRUCTION MEETING MAY EXCLUDE CONTRACTOR FROM FUTURE CLAIMS WHERE THE SCOPE OF WORK AND INTENT OF CONTRACT DOCUMENTS IS OPENLY EXPRESSED AND DOCUMENTED FOR FUTURE RESPONSES.
- B. **CODE COMPLIANCE, PERMITS AND LICENSES:** ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES. IN EVENT OF CONFLICT BETWEEN DRAWINGS, SPECIFICATIONS, CODES AND ORDINANCES, THE MOST STRINGENT REQUIREMENT FROM THE AUTHORITY HAVING JURISDICTION SHALL TAKE PRECEDENCE. PROVIDE ALL NECESSARY PERMITS AND LICENSES REQUIRED FOR WORK, PAY ALL LIABILITIES, INCLUDING, BUT NOT LIMITED TO UTILITY DISPOSAL, INSPECTION FEES, AND TEMPORARY AND PERMANENT CONSTRUCTION PERMITS.
- C. **MATERIALS:** ALL MATERIALS SHALL BE NEW AND U.L.L. LISTED FOR THE APPLICATION. REUSE OF EXISTING MATERIALS MUST BE APPROVED PRIOR TO BID BY THE ENGINEER OR RECORD PROVIDER. PROVIDE CONDITIONAL INFORMATION FOR PROPOSED SUBSTITUTIONS OR SUBSTITUTED EQUIPMENT OTHER THAN LISTED IN THE CONTRACT DOCUMENTS OR SUBMITTED DURING PRODUCT REVIEW WHICH REQUIRES ADDITIONAL SPACE, SUPPORT, LAYOUT CONDITIONS, OR OTHER ELECTRICAL REQUIREMENTS. PROVIDE REQUIRED WORK ONLY AFTER WRITTEN NOTICE TO PROCEED FROM OWNER OR ENGINEER OF RECORD.
- D. **SUBSTITUTIONS:** SUBSTITUTIONS SHALL NOT BE ALLOWED AFTER APPROVAL OF SUBMITTED EQUIPMENT AND DEVICES UNLESS BY SPECIAL PERMISSION. NOTIFY ARCHITECT AND REQUEST ADDITIONAL INFORMATION FOR PROPOSED SUBSTITUTIONS OR SUBSTITUTED EQUIPMENT OTHER THAN LISTED IN THE CONTRACT DOCUMENTS OR SUBMITTED DURING PRODUCT REVIEW WHICH REQUIRES ADDITIONAL SPACE, SUPPORT, LAYOUT CONDITIONS, OR OTHER ELECTRICAL REQUIREMENTS. PROVIDE REQUIRED WORK ONLY AFTER WRITTEN NOTICE TO PROCEED FROM OWNER OR ENGINEER OF RECORD.
- E. **TYPICAL DEVICE MOUNTING HEIGHTS - UNLESS NOTED OTHERWISE:**
PANELBOARDS - 78" AFF TO TOP OF CABINET (MAX.)
CONTROL PANELS - 72" AFF TO TOP OF CABINET (MAX.)
DISCONNECTS - 64" AFF TO TOP OF CABINET (MAX.)
POWER/COMM. OUTLETS - 18" AFF TO CENTER OF DEVICE
TOGGLE SWITCHES - 48" AFF TO CENTER OF DEVICE
WHERE DEVICES ARE INDICATED BY DIMENSIONS, CENTER BETWEEN TOP OF DOOR TRIM AND CEILING LINE. ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER TYPICAL HEIGHTS LISTED. DEVICES LOCATED ABOVE COUNTERS SHALL BE MOUNTED 8" ABOVE COUNTERTOPS TO CENTER OF DEVICE.
- F. **DIVISION TRADE COORDINATION:** COORDINATE WITH DIVISION TRADES AND THE ACTUAL CONDITIONS OF CONSTRUCTION. RESOLVE CONFLICTS BETWEEN DIVISION TRADES FOR LOCATION OF EQUIPMENT INSTALLED AND ACCESSORIES REQUIRED. THAT ANY DEVIATIONS ARE COORDINATED AND THE EQUIPMENT IS INSTALLED AS A COMPLETE AND OPERABLE SYSTEM. COORDINATE POWER REQUIREMENTS FOR EQUIPMENT PRIOR TO SUBMITTAL REVIEW BY ENGINEER OF RECORD. COORDINATION OF OTHER TRADES SORT-OF-OF WORK AND MATERIALS ARE A NORMAL PART OF THE CONSTRUCTION PROCESS. THE INTENT OF THE WORK IS IDENTIFIED IN THE FULL SET OF CONTRACT DOCUMENTS AND IS NOT LIMITED BY DIVISION TRADES. FAILURE TO COORDINATE THE WORK SHALL NOT BE SUBJECT TO MONETARY CLAIMS. INSTALL EQUIPMENT AND DEVICES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. CLEARANCES TO REQUIREMENTS FOR OPERATION AND ACCESS FOR PRODUCT SERVICING, COORDINATE WITH DIVISION 22 & 23 MECHANICAL DIVISIONS SO AS NOT TO INSTALL JUNCTION BOXES ABOVE DUCT WORK OR INACCESSIBLE TO PERSONNEL.
- G. **DEVIATIONS FROM CONTRACT DOCUMENTS:** MECHANICAL AND ELECTRICAL PLANS ARE SEPARATE. THE APPROVAL FROM THE ARCHITECT OR ENGINEER SHALL BE OBTAINED BEFORE DEVIATIONS FROM THE ARCHITECT OR ENGINEER SHALL BE OBTAINED FROM PLANS WITHOUT NOTIFICATION SHALL NOT BE COMPENSATED AND SHALL BE RESPONSIBLE FOR THE ADDITIONAL WORK REQUIRED. CONTRACTOR SHALL COORDINATE THE GENERAL WORK IN ORDER THAT EACH DIVISION TRADE WORK AND THE WORK OF THEIR SUB-CONTRACTORS WILL BE PROPERLY INSTALLED. CONTRACTOR SHALL INFORM ARCHITECT OF EXISTING CONDITIONS THAT ARE DISCOVERED DURING WORK IN PROCESS THAT WOULD REQUIRE DEVIATIONS FROM THE ORIGINAL CONSTRUCTION DOCUMENTS BEFORE PROCEEDING WITH WORK.
- H. **EXISTING SYSTEMS:** CONTRACTOR SHALL PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. ALL WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
- I. **GROUNDING:** ALL LIGHT FIXTURES SHALL BE REQUIRED TO BE GROUNDED BY AN INSTALLED GROUNDING CONDUCTOR. PROVIDE BARE COPPER GROUND BAR INSULATED FROM BUILDING STEEL AT ELECTRICAL DEVICES. PROVIDE LOW-VOLTAGE SYSTEMS, INTERCONNECT LOW-VOLTAGE GROUNDING SYSTEMS TO THE MAIN GROUNDING ELECTRODE SYSTEM WHERE REQUIRED BY CODE. PROVIDE IRREVERSIBLE GROUNDING CONNECTIONS USING EXOTHERMIC WELDS.
- J. **WET LOCATION LISTED DEVICES:** GFCI RECEPTACLES SHALL BE USED AT LOCATIONS WITHIN 6'-0" OF SINKS AND WATER. GFCI OUTLETS IN KITCHEN AREAS SHALL HAVE DEDICATED CIRCUITS WITH DEDICATED NEUTRAL CONDUCTORS. PANELBOARDS AND METAL ENCLOSED DISCONNECT MEANS SHALL BE NEMA 4X STAINLESS STEEL UNLESS NOTED OTHERWISE.
- K. **FIRE AND SMOKE WALL ASSEMBLIES:** CONTRACTOR SHALL IDENTIFY ALL FIRE AND SMOKE RATED WALLS AND PROVIDE U.L. LISTED SEALS AT NEW AND EXISTING PENETRATIONS THROUGH RATED WALLS. PROVIDE 2X4/1P BREAKER WITH 2X4/1P DISCONNECT HANDLE FOR CONNECTION OF LINE-VOLTAGE SMOKE DAMPERS INSTALLED BY DIVISION 23 CONTRACTOR.
- L. **RACEWAYS AND JUNCTION BOXES:** CONDUIT RACEWAYS SHALL BE COMMERCIAL GRADE STEEL AND ALUMINUM U.L. LISTED FOR THE APPLICATION AND NOT LESS THAN 3/4" IN TRADE SIZE. METAL CABLES ARE ALLOWED ONLY IN LIMITED LIGHTING AND MILLWORK APPLICATIONS AND LOCATIONS SUBJECT TO THE APPROVAL BY THE ENGINEER OF RECORD PRIOR TO INSTALLATION. ALL EXPOSED EXTERIOR CONDUIT SHALL BE RIGID ONLY. IDENTIFY ALL EXPANSION JOINTS AND PROVIDE FOR EXPANSION JOINTS IN ALL CONDUITS CROSSING BUILDING BOUNDARIES. EXPOSED CONDUIT, JUNCTION BOXES AND ACCESSORIES IN FINISHED AREAS TO BE PAINTED AS DIRECTED BY ARCHITECT. COORDINATE CONDUIT RUNS IN EXPOSED AREAS SO THAT ALL RUNS ARE MADE PARALLEL OR PERPENDICULAR TO STRUCTURE.
- M. **RENDERING:** COVERPLATES IN UNFINISHED AREAS AND CEILING CAVITIES SHALL BE LABELED WITH PERMANENT BLACK MARKER WITH CORRESPONDING CIRCUIT. PROVIDE ADHESIVE LABELS WITH PANEL AND CIRCUIT DESIGNATION ON COVERPLATES OF DEVICES IN FINISHED AREAS.

LOW-VOLTAGE CABLE GENERAL NOTES:

- A. **HORIZONTAL CABLES:** BUNDLE AND TRAIL CABLE FOR EACH SYSTEM AND ROUTE. BUNDLES IN ACCESSIBLE CEILING CAVITY ON MULTI-LEVEL, 1/2" HOODS SIZED FOR 40% FILL AT 6'-0" INTERVALS BACK TO SYSTEM HEAD-END EQUIPMENT. IN LOCATIONS OF EXPOSED AND FINISHED CEILING STRUCTURES, ROUTE IN EMT RACEWAYS.
- B. **WALL RACEWAYS:** ROUTE IN 1" RACEWAY FROM WALL ACTIVATION OUTLET IN ROOMS/OFFICES CONCEALED TO CORRIDOR ACCESSIBLE CEILING CAVITY. PROVIDE END-BUSHING AND SLACK-CLIP AT CONDUIT ENDS. BUNDLE, TRAIL, ROUTE, CABLES ON 1/2" HOODS AT 6'-0" INTERVALS BACK TO SYSTEM HEAD-END EQUIPMENT. ROUTE ALL LOW-VOLTAGE CABLES IN EMT RACEWAYS IN LOCATION OF EXPOSED AND FINISHED CEILING STRUCTURES.
- C. **SYSTEM CABLES:** VERIFY EACH SYSTEM CABLE COLORS WITH OWNER PRIOR TO WORK. PROVIDE THE FOLLOWING PER OWNER/GUIDELINES:
DATA: BLUE
SECURITY: MATCH
ACCESS CONTROLS: MATCH
SURVEILLANCE: MATCH
WIRELESS POINTS: MATCH
- F. **RACEWAYS AND BOXES:** CONDUIT RACEWAYS SHALL BE COMMERCIAL GRADE STEEL AND ALUMINUM U.L. LISTED FOR THE APPLICATION AND NOT LESS THAN 1" IN TRADE SIZE AND LARGER AT WORKSTATIONS WITH CONTROLS. ALL EXPOSED EXTERIOR CONDUIT SHALL BE RIGID ONLY. IDENTIFY ALL EXPANSION JOINTS AND PROVIDE FOR EXPANSION JOINTS IN ALL CONDUITS CROSSING BUILDING BOUNDARIES. EXPOSED CONDUIT, JUNCTION BOXES AND ACCESSORIES IN FINISHED AREAS TO BE PAINTED AS DIRECTED BY ARCHITECT. COORDINATE CONDUIT RUNS IN EXPOSED AREAS SO THAT ALL RUNS ARE MADE PARALLEL OR PERPENDICULAR TO STRUCTURE.
- G. **FIRE AND SMOKE WALL ASSEMBLIES:** CONTRACTOR SHALL IDENTIFY ALL FIRE AND SMOKE RATED WALLS AND PROVIDE U.L. LISTED SEALS AT NEW AND EXISTING PENETRATIONS.
- H. **EXISTING FIRE ALARM:** VERIFY EXISTING MAIN ALARM SYSTEM CAN ACCEPT NEW WORK INDICATED. PROVIDE ADDITIONAL ADDRESSABLE MODULES REQUIRED FOR INITIATING AND ANNUNCIATION. FIRE ALARM DEVICES AND APPLIANCES INDICATED SHALL BE U.L. LISTED FOR EXISTING FIRE ALARM SYSTEM. ROUTE HORIZONTAL CABLES TO DEVICES ON SPECIFIED HANGERS. WHERE RACEWAYS ARE EXPOSED, PAINT RED. SUBMIT UPGRADED FIRE ALARM SYSTEM SHOP DRAWINGS TO FIRE MARSHALL OR AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. SUBMIT APPROVED SHOP DRAWINGS TO OWNER AND ARCHITECT AT PROJECT CLOSOUT.



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