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May 19, 2021

NOTICE OF ADDENDUM
ADDENDUM NO. 3
City of Madison, Engineering Department

CONTRACT NO. 8981
METRO TRANSIT PHASE 3A – MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as *Metro Transit Phase 3A–Maintenance and Driver Facility Improvements, City of Madison, Contract #8981, as issued on April 8th, 2021* and is hereby made a part of the contract documents.

This addendum consists of the following documents:

Please attach these Addendum documents to the Drawings (Exhibits A and B), Specifications (Exhibits B and C), and Proposal Specifications in your possession.

1. **GENERAL CONTRACT CONDITIONS**

A. None

2. **GENERAL QUESTIONS AND ANSWERS**

- A. On sheet S-151A, between grids G-I and 3-5 there are joists being added between the existing joists. During the walkthrough, it was observed that there are several mechanical, electrical, and plumbing conflicts in the spaces between the joists where new joists are to be added. See photo below as an example. The MEP drawings do not identify or address these conflicts. Please clarify what is to happen in these locations.
- i. Note 10 of the Roof Framing General Notes states "IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REINSTALL ANYTHING IN THE WAY OF THE INSTALLATION OF NEW JOISTS.
 - ii. Most of the conduit shown is planned for demo. Coordinate trades to determine the appropriate course of work.
- B. Please clarify based on past phases and/or existing building information if the existing concrete slab on grade contains concrete reinforcement, welded wire reinforcement or no reinforcement.
- i. The 1979 drawings show: 6 ½" slab on compacted fill with WWF 66x44.
- C. Please clarify the following concerning Room 2121 on sheet A-102B
- i. Drawings seem to indicate a new partition (along with a dashed line) on the plan southwest of room. We can find indication of what this is to be.



- The indication for the partition is noted for information for the current communications room equipment layout. Partition will be provided in forthcoming project and is not part of the current construction package.
 - ii. The walk through did not go to this area. Can you confirm the construction of the existing plan northwest wall that contains call out note 4.117
 - Wall is of gypsum and metal stud construction.
 - iii. Note 4.116 is referenced. Can you confirm that intent of note is to mount panels “up to” 7’-0” AFF in lieu of “@” noted. Also considering question item a). above if just the perimeter walls get plywood or potentially the new “partition” on both sides too?
 - Plywood panels are to be mounted with the top at 7’-0.” Future wall is not part of the current project and will not require plywood.
- D. Please provide the TOW elevations for the loading dock retaining wall on drawing S-101A?
- i. The top of the foundation wall is the bottom of the slab. The slab is shown on S-111A. Top of wall elevations will be added to S-101A.
- E. Detail 15/S-501 calls out 2” rigid around the trench drain and dock ramp slab; however, on S-111A the dock slab is called out as SLB06. Should this slab be SLB06R or disregard the insulation requirement?
- i. The slab around the low end of the loading dock will stay SLB06. The underslab insulation is required as shown on details 15, 16 and 17 on S-501. SLB06R includes 2" of sand that is only needed for hydronic heating conduit. Hydronic heating is not needed at the loading dock and so the sand is not needed.
- F. Under the compressed air piping in 22 15 13 2.1A, would either the Champion Quick Lock and/or the Rapidair Fastpipe Aluminum piping systems be acceptable in lieu of the SCH40 steel currently called out?
- i. No. Provide 40 steel pipe as specified. Existing system is steel pipe and will need to be maintained until future phases occur.
- G. Will alternate vehicle lift manufacturers be acceptable?
- i. No. Steril-Koni is the only approved manufacturer for the in-ground lifts as the established building standard.
- H. Does the project want dual shades (both mesh and blackout) in the Training Room? And mesh only in the Breakroom? The only powered shades are in the Training Room, correct?
- i. Correct, Driver Training #1104 should have dual shades with 5% open mesh and black out fabric. Breakroom #1103 will only have the 5% open mesh - no black out fabric. You are also correct about powered shades only in the Training room.
- I. On sheet QD-101A note at 1.L line there is a note that states to “Demo Existing Flammable Tank Storage Construct Matching Chain Link Fence Enclosure at Location Per Equipment Plans”. There is also a mark note of #123 which just states flammable tank storage. We are unable to find “...at location per equipment plans” per the stated note on equipment plans or any reference on architectural plans. Please clarify what the flammable tank storage is, what size it is to be, what materials it is comprised of, and provide a specification section for chain link fence/posts if that is part of the storage construction.
- i. Existing flammable tank storage (denoted by #123 on sheet QD101A) is a chain link fence enclosure, and shall be demolished. A new flammable tank storage enclosure shall be constructed at the location shown on sheet Q101A, also denoted by #123. See sheet Q101A for typical fencing detail and enclosure layout. Material from the existing chain link fence



enclosure may be reused if they are in excellent condition (free of rust, defects, etc.) and compatible with new construction.

J. Spec Section 11 11 19 Lubrication Systems

- i. 1.4 E Talks about the mounting of the lube reel banks. After looking through the drawings, I see where Q102 notes that the mounting details are with the structural drawings. I went through the structural drawings and have been unable to find any specific info on the reel bracketing required for the lube reel banks that are to be hung from the ceiling. My experience tells me that these brackets could be very expensive depending on what is intended. Hoping you can provide a drawing of what is required.
 - Each reel will require a Lincoln Model 85242 Heavy Duty Reel Mounting Kit. This mounting kit will attach to the structural angles provided in detail 16/S-541 at each reel bank (also see sheets S-151C and S-151D, keyed note 3.507). Alternate reel manufacturers may require a unique mounting bracket.
- ii. 2.1 D states e-stops are to be supplied for a lube dispensing station. I do not see a tapper or other dispensing station shown. Can you clarify?
 - No tapping dispenser station is required.
- iii. 2.1 D 5 suggests that the Waste Oil tank requires an E-stop as well. But then 2.1 G 1 calls for a Lincoln Overfill Valve. Both of these seem redundant, and incorrect. A BJ Enterprise 007 Alarm with a 007SV solenoid valve at each pump would ensure the tank cannot be overfilled from the remote pumps.
 - The BJ Enterprise 007 Alarm with a 007SV solenoid valve at each waste air pump can be used to control overfill, no E-stop needed.
- iv. 2.1 G 1 calls for two Waste oil Evac pumps (#135 on the equip schedule). I was able to locate these on Q101 C&D. I don't however see anything in area F. Assuming they do not want to manually transport waste oil from area F back to the other areas, should there be a pump station in area F also?
 - The only waste oil pumps required are the two shown. No pump is needed in the Maintenance B area.
- v. Is the lube piping required to be supported at a specific dimension? Typically the tubing Mfg states no more than 10' between supports, but I have seen jobs where they go over and above at as little as 4', which of course adds significant costs.
 - Tubing supports must meet the manufacturer's minimum requirements.

3. **ACCEPTABLE EQUIVALENTS**

- A. 11 11 19 Lubrication System
 - i. Samson
 - ii. Balcrank
- B. 12 24 13 Roller Window Shades
 - i. Springs
 - ii. WT
- C. 22 15 19 Air Compressors and Receivers
 - i. Part 2 – Products 2.2.A.1.d: PneuTech

4. **SPECIFICATIONS**

- A. Delete specification sections 07 95 00 Expansion Control and 07 95 13 Expansion Joint Cover Assemblies. Project does not include Expansion Joints.
- B. Specification section 11 11 19 Lubrication Systems (attached).



- i. Replace entire specification for modified requirements.
- C. Specification 22 15 19 Air Compressors and Receivers (attached),
 - i. Add PneuTech to list of acceptable manufacturers.
- D. Specification 27 15 13 Communications Copper Horizontal Cabling (attached),
 - i. Replace entire specification for modified requirements.
- E. Add Specification 27 51 16 Public Address Systems (attached).

5. **DRAWINGS**

A. **Civil**

- i. Drawing C-141 (attached), revise notes regarding water lateral connection detail requirements.

B. **Structural**

- i. Drawing S-001 (attached); Add control joint symbol to General Symbols
- ii. Drawing SD-101A (attached);
 - Add demolition of grade beam
 - Add demolition of additional slab on grade
- iii. Drawing SD-151A (attached); Add demolition of roof for mechanical opening
- iv. Drawing S-101A (attached)
 - Add top of retaining wall elevations at loading dock
 - Add short grade beams
- v. Drawing S-111A (attached)
 - Add slab on grade, interior
 - Add concrete end cap to landscape feature, exterior, at main employee entrance
- vi. Drawing S-131A (attached)
 - Added framing for vertical lift partitions; plan view and KN 3.321, 3.322, 3.323
 - Modified keyed note 3.302 (corrected sheet reference to S-531)
 - Modified Lintel Schedule (changed L20 bearing to 8")
- vii. Drawing S-151A (attached)
 - Added keyed notes; signage, framing clearance.
 - Change W24 beam size.
 - Modify keyed note 3.506
 - Add roof framed opening
 - Changed elevation of (3) W12x40 beams
- viii. Drawing S-151C (attached)
 - Modified keyed note 3.507 – added detail reference for Trapeze Framing.
- ix. Drawing S-151D (attached)
 - Modified keyed note 3.507 – added detail reference for Trapeze Framing.
- x. Drawing S-151F (attached)
 - Added Trapeze Framing near grid E19.
 - Added keyed note 3.507
- xi. Drawing S-501(attached); Deleted rebar terminations on detail 5
- xii. Drawing S-511 (attached); Added detail 14
- xiii. Drawing S-541 (attached); Add weld to detail 12
- xiv. Drawing S-551 (attached); Added details 15, 16 and 18

C. **Architectural**

- i. Drawing A-101A (attached),
 - Add the coordination and details for the folding panel partitions.



- Add keynote 4.138 to concrete end of landscape wall near door 1101B.
- Add keynote 4.138.
- ii. Drawing A-102F (attached),
 - Revise keynote pointing at railings by door 2305B to 4.125.
 - Add keynote 4.125.
- iii. Drawing A-201 (attached),
 - West building elevation 1, revise keynote near door 1101B to 4.138.
 - Add keynote 4.138.
- iv. Drawing A-301 (attached), building section 4, revise detail to coordinate structural modification.
- v. Drawing A-312 (attached),
 - Revise Wall Section 4 for coordination of structure for the folding panel partition.
 - Add Wall Section 5 for coordination of structure for the folding panel partition.
- vi. Drawing A-501 (attached), revise detail 15 to coordinate structural modification.

D. Interiors

- i. Drawing I-101A (attached);
 - Add interior elevation symbol 10/I-403
 - Add enlarged plan detail symbol 22/I-501
 - Add enlarged plan detail symbol 23/I-501
- ii. Drawing I-121A (attached);
 - Remove all existing ceiling hatches from areas outside of work scope.
 - Add ACT-1 at 13'2 1/2" A.F.F. on both sides of operable vertical partition in Driver Training Room 1104.
- iii. Drawing I-403 (attached);
 - Add interior elevation 10/I-403 and label the elevation "General Break Room Wood Wall"
- iv. Drawing I-404 (attached);
 - Detail 1, change text "Powered double roller w/ black out and mesh window shades" to "Powered double roller WSHD-1 and WSHD-2"
 - Detail 5, add section cut 20/I-501 showing WD-1 @ GWB ceiling.
 - Detail 6, change text "Banquette base PMTL-1" to "Banquette base WB-1"
 - Detail 6, add label "Electrical outlets in toe; see electrical for locations and spacing" pointing to electrical outlet.
 - Detail 6, remove furniture in elevation, show routed wood toe base pattern and electrical outlets, and dimension distance from routed openings to electrical outlets.
- v. Drawing I-501 (attached);
 - Detail 8, show routed wood toe base and change text "Perforated PMTL-1 base" to "Routed WB-1 base".
 - Detail 8, add detail call out at routed toe base.
 - Add detail 18/I-501 and label the detail "WD-1 @ ACT-1"
 - Add detail 19/I-501 and label the detail "WD-1 @ Banquette Ceiling Element"
 - Add detail 20/I-501 and label the detail "WD-1 @ GWB"
 - Add detail 21/I-501 and label the detail "Banquette Routed Base".
 - Add detail 22/I-501 and label the detail "WD-1 @ Mullion Wall & Corner".
 - Add detail 23/I-501 and label the detail "WD-1 @ GWB Wall".
- vi. Drawing I-601 (attached);
 - Interior finishes schedule
 - Remove row for finish number PMTL-1. PMTL-1 will not be used in this project.
 - Add finish number "WB-1" with finish description "Wood Base – Type



1”, color “Stain black/brown”, size “6”, and remarks “Banquette routed toe base with marine wood finish; stain color to be approved”.

- Finish number WSHD-1 add remarks “Draper Inc. PW3570 or equal”.
- Finish number WHSD-2 add remarks “Draper Inc. SW7000-V40 or equal”.
- Add General Finish Note 6, “Stair treads, risers, and landings to be RFT-2”.

E. Equipment

- i. Drawings Q-101A (attached), provide fenced flammable storage area as shown.

F. Electrical

- i. Drawing E-601 (attached): In Luminaire Schedule add the following acceptable manufactures as follows: Des; A1, D1, DK1, J1, K2, L1, L3, N6, N11 and S1: Elite Lighting, Des; L2 and L4: Metalumen Manufacturing Inc., Des; OA1: Atlantic Lighting, Des; OA2; LSI Industries, DES; P1: National Lighting Company, Des; P2, P3 and P4: Lightway Industries, Des; Q1: TPR Enterprises and Des; X1, X2: LightAlarms.

G. Technology

- i. Drawing T-101A (attached), room 1108, remove extraneous outlet.

6. PROPOSAL AND CONTRACT SPECIFICATIONS

- A. None.

Please acknowledge this addendum in Section E on page E-1: Bidder’s Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at <https://www.bidexpress.com/> and the City of Madison web site at <http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm>

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

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Rich Lundeen, AIA, Project Manager
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Sincerely,

Robert F. Phillips, P.E., City Engineer

SECTION 11 11 19 LUBRICATION SYSTEMS

PART 1 - GENERAL

1.1 SCOPE

- A. Applicable provisions of the General and Supplementary Conditions and Division 01 govern work under this Section.

1.2 RELATED WORK

- A. Division 22
B. Division 26

1.3 DESCRIPTION

- A. Furnish and install a complete inside "lubrication system" as herein described and shown on drawings. The system is an extension of the existing system. This shall include all items necessary to complete the installation and as usually included in similar work whether specifically mentioned in the Contract Documents or not, including:
1. Lubrication reels
 2. Piping, fittings and valves
 3. Pipe support
 4. Equipment mounting and support
 5. Lube pumps
 6. Lube tanks (existing to be reused)
 7. Installation
 8. Adapters
 9. Emergency Shut Off
 10. Vehicle Oil Pump (Waste Oil System)
 11. Low voltage wiring and components for controls/alarms
- B. The entire project shall be designed, fabricated and installed by a contractor with not less than five years of installation experience with projects of this type and size.
- C. This Contractor shall hire all other trades as required to complete this project.
- D. All piping in building to run as high as possible, verify locations of all HVAC, electrical, plumbing, piping, ductwork, and fire protection piping.
- E. Component and coordination of this system with fluid control system.

1.4 MISCELLANEOUS EQUIPMENT AND INSTALLATION SPECIFICATIONS

- A. This system shall be bid on an installed basis by a qualified and experienced contractor with five years experience in the installation of centralized lubrication systems.

- B. Lubrication system piping shall be of size required for proper function of systems, piping shall be annealed steel tubing and matching fittings.
- C. All reels and pumps shall have shut-off valves and union connections.
- D. The piping shall be installed as per the manufacturer's installation instructions and good practice as noted on the plans. The manufacturers' installation procedure shall be completely followed by the contractor.
- E. The reels shall be mounted and secured to a heavy duty mounting assembly attached directly to the wall, structure, or column and extending down to 16' above the floor in the repair shop and on the supports in the vehicle parking area. One portion of the procedure is being emphasized as follows, but in no way minimizes the remaining manufacturers' installation instructions.
- F. One portion of the procedure is being emphasized as follows, but in no way minimizes the remaining manufacturers' installation instructions.
 - 1. Blow all air lines clean before making final equipment connections.
 - 2. Flush lubricant lines with non-flammable cleaner to remove foreign materials.
 - 3. Do not install control valves before flushing.
 - 4. Each line shall be flushed with the pump to be used on the line.
 - 5. After the lines are flushed, install control valves and pressure test with line under pressure. Check all connections and fittings for leakage.
 - 6. Adjust the hose ball stops so valves hang 7' from floor.

1.5 DRAWINGS

- A. Contractor shall design a system based on equipment locations shown on drawings. Contractors shall use Architectural and Mechanical drawings to do so, coordinate locations with all other contractors, verify equipment, duct, electrical and plumbing locations.
- B. Intent: It is the intent and the requirement of these Contract Documents, including Specifications, to provide finished work, complete in all respects and ready for operation by the Owner.
- C. It is the Contractor's responsibility to review all materials and equipment hereinafter specified or indicated on the Architectural drawings with regard to their proper operation and compliance with all governing Codes and then include in his bid proposal all materials required to provide the Owner with a completely approved and operating system whether or not all items have been specifically mentioned herein.
- D. Any dimensions given in figures on the drawings and details regarding the locations and configuration of any part of this work shall take precedence over dimensions and locations obtained by scaling the drawings. All dimensions, whether given in figures or scaled from the drawings, shall be field verified by the Contractor prior to fabricating any materials or ordering any equipment.
- E. The contractor shall design working shop drawings for review and coordination.

1.6 CODES AND APPROVALS

- A. Comply with all codes, laws and ordinances of all governing bodies having jurisdiction over this work. In the event that the requirements of any of the codes, laws or ordinances conflict with these Contract Documents the more stringent requirements shall govern the Contractor.
- B. This entire installation shall be in complete compliance with guidelines set forth in:
 - 1. N.F.P.A. - latest edition and all other applicable N.F.P.A. Standards.
 - 2. Applicable Local Codes.
 - 3. Fire insurance requirements. (Rating Bureau and Owners)
 - 4. State Codes.
 - 5. Local Codes.
- C. Secure all required permits and pay all fees.

1.7 SUBMITTALS

- A. Submit to the Engineer, preliminary layout and detail drawings with pipe locations and sizes, as specified hereinafter, for approval as to compliance with contract intent.
- B. Submit layout drawings, details and calculations of the system design to Engineer. Engineer shall approve these submittals prior to fabrication or installation of any materials by the contractor and proof of such approval shall be submitted to the Architect.
- C. The above-mentioned submittal shall be submitted in triplicate and shall include catalog cut sheets on the following:
 - 1. All equipment, fittings, pipe, hangers, etc.

1.8 MATERIALS AND WORKMANSHIP

- A. All materials furnished for this work shall be suitable for use on this type of installation.
- B. All work shall be guaranteed for one year from the date of final acceptance by the Owner against defective materials and careless workmanship.
- C. Contractor shall patch the holes made necessary by this work and provide sleeves and waterproof members for any protrusions of the exterior building walls.

1.9 RECORD DRAWINGS

- A. Upon completion of the project the Contractor shall provide the Owner with three (3) sets of Record Drawings updated to reflect any field changes that may have been made to the shop drawings.
- B. Contractor shall review the system installation with the Owner or his representative and instruct him as to the proper care and maintenance procedures. This instruction should include providing all instruction charts describing operation and proper maintenance.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. General:

1. All hose reels located in the lube reel banks, Lube dispensing Station, control valves and pumps shall be matched to a single source manufacturer.

B. Equipment by Lincoln, Graco, **Samson, Balcrank** or pre-approved equal shall be used.

C. Reels:

1. Reels shall be rated "heavy duty" with single pedestal and hose roller arms, permanently lubricated bearings, extra-large ratchet latch, fully ported swivel, be capable of retracting a minimum of 50' x 1/2" hose, carry a minimum one year limited parts and labor warranty, and have metal product identification tags.
2. Bulk Fluid #1, Bulk Fluid #2, Bulk Fluid #3, Bulk Fluid #4 and Anti Freeze.
 - a. #83464-50 Lincoln 50' x 1/2" 2250 psi WP hose
 - b. Lincoln Hose Inlet Kit
 - c. #769 Lincoln Control valve
 - d. #768 Lincoln Control valve
 - e. ~~#Lincoln Solenoid valve with ready lights at all reels~~
 - f. #Lincoln Medium pressure inlet hose kit (comes with hose Reel)
 - g. #Lincoln Lubricant Filter
 - h. #66084 Lincoln 2,000 psi shut-off ball valve
 - i. #Lincoln Non-metered dispensing valve
 - j. #3867 Lincoln metering control valve, 60 quart, preset countdown.(to be used at each Stations, **35** reels)
 - k. **#85242 Lincoln Heavy Duty Reel Mounting Kit**

D. Emergency Shut off for Each Set of Hose Reels, Lube Dispensing Station and Waste Oil Tank:

1. This contractor shall add normally open air solenoid valves, panic push button for shut off and wiring from push button to solenoid valves to shut off supply air to air pumps. Connect solenoid to nearest power circuit.
2. System shall operate by closing air solenoid valves at air pump inlets when panic button is pushed. **Shutting down the air system is also an acceptable emergency shut off method.**
3. Include sign indicating "emergency shut off for lubrication reels." (d)
4. Locations: **Mount panic button on wall or support at 4' above floor near lube areas. Two panic buttons will be required: one on the column at grid lines G and 9, and a second panic button in maintenance B along the west wall, between the two overhead doors**
5. The waste oil tank should have an auto shout off when it reaches 95% full. This should be done by interrupting the air supply only to the waste oil tank via an air solenoid at the tank and each pump station.

E. Pumps

1. At EACH group of lube reels (7 locations)
2. All pumps shall have a minimum 4" diameter air motor size and the lubrication pumps shall have a limited parts and labor warranty.
3. General Lubrication: Fluid #1, Bulk Fluid #2, Bulk Fluid #3, Bulk #4 and Anti Freeze

Quantity	Part #	Description
4	2014	Lincoln Powermaster 3, 10:1 ratio stub pump with 4" diameter air motor and 6" stroke and built-in air muffler with remote wall mount brackets/supports
1	85627	For antifreeze, 1:1 air-operated diaphragm pump with wall mount brackets/supports
5	74024	Lincoln 2' air connect hose
4	1230060	Lincoln 5' x 3/4" product hose
1	1625060	for antifreeze, Lincoln 5' x 1" product hose
5	83132	Lincoln Bung adapter
5	82439	Lincoln low-level cut off
5		Thermal relief valves
5	Local	Suction tubes for between pump and low level cutoff High pressure valves

- a. As needed: suction and pressure hosed for remote location of pumps.
- b. Other miscellaneous items for proper system function.

4. Miscellaneous Pump Accessories

Quantity	Part #	Description
5	83168	Lincoln 1/2" air regulator and gauge
5	70332	Lincoln 3/4" product shut off ball valve
5	66084	Lincoln 1/2" pump air shut off ball valve
5	6600112	Lincoln 3/4" airline filter
5	600212	Lincoln 3/4" airline lubricator
5	70332	Lincoln 3/4" shut-off ball valve for main airline

F. Above Ground Tanks (existing Tank will be reused)

G. Vehicle Oil Pump (Waste Oil pump), 2 Stations,

1. A UL listed evacuation pump is to be mounted on wall 48" above the floor and include air filter, regulator, oiler, 6' x 3/4" suction hose, quick disconnect couplers, shut off valves and back check valves.

Quantity	Part #	Description
2	4100	Lincoln UL evacuation kit. Includes: a 1" inlet UL double
2	256200	Lincoln 1/4" air valve

2	84824	Lincoln overfill warning valve for double wall Tank or
2	72060	Lincoln 5' air connecting hose
2	Local	Local Y-strainer
2	241408	Lincoln 1" fluid coupler
2	613	Lincoln portable waste oil receiver
2	66493	Lincoln 16 gallon drum with threaded hole base
2	84714	Lincoln 20 gallon portable waste oil truck cart
2	241409	Lincoln 1" fluid nipple
2		Air shut off valves

- a. Other miscellaneous items required for proper system function

H. Piping:

1. Vehicle Oil Piping: Black steel ASTM A53 threaded pipe
2. All piping shall be as required for intended use and per industry standards.
3. Piping:
 - a. Oil, etc.: 1" OD steel tubing with a wall thickness of 0.083" with matching joint systems is the minimum piping size – final size by this contractor.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Inspection: Prior to all work of this Section, carefully inspect the installed Work of all other trades and verify that all such Work is complete to the point where this installation may properly commence. Verify that lubrication systems shall be installed in strict accord with all pertinent codes and regulations and the approved Shop Drawings.
- B. Discrepancies: In the event of discrepancy, immediately notify the Architect for clarification and await his decision before proceeding.

3.2 INSTALLATION

- A. Openings, Cutting, Sleeves and Repairing:
 1. The Contractor shall do all necessary openings, required to install all piping, fixtures and equipment. Only saw cutting or core drilling will be allowed. All piping shall be concealed wherever possible.
 2. All openings or holes shall be sleeved.
 3. Provide as necessary to permit installation of piping or any other part of the Work under this Section. Cooperate with other trades and adjust with them, subject to Architect's review, all questions of interference, right-of-way for piping, etc. Make all arrangements with various Contractors for any special framing or chases.
 4. All openings or holes thru new walls, floors, ceiling or footings shall be sawcut or core drilled.

5. Openings around pipes penetrating required fire resistance rated floor, wall and roof assemblies shall be filled solidly with material of fire-resistance rating equal to the required rating of assembly penetrated.
6. On all pipes passing through floors, walls and ceilings, provide chrome plated brass escutcheons of approved design and finish having outside diameter to cover sleeved openings and inside diameter to fit pipe. Securely fasten in place to floors, walls and ceilings.
7. Holes through exterior walls shall be waterproofed and made watertight.
8. The Contractor shall patch and return to original condition all areas damaged, sawcut, core drilled, etc. on this project and site.
9. All holes, openings, etc. cut through any reinforced concrete must be drilled with care so as to avoid spalling and unnecessary damage or weakening of the structural members. Chopping or breaking out will not be permitted. BEFORE cutting or drilling, permission must be obtained from Architect and any damage shall be repaired to Architect's satisfaction. Holes for piping through floors and walls already in place will be by means of core drilling.
10. Provisions for openings, holes, chases and clearances through walls, floors, ceilings, etc. in new construction shall be made in advance of construction of such parts of the building. The openings shall be provided by others during construction of the building, but it shall be the responsibility of the Contractor to furnish the applicable Contractor with all openings, dimensions and sleeves where required for installing this Work. These dimensions shall size and locate the opening sites. If the Contractor neglects to inform the other Contractors of opening requirements before that portion of the building has been constructed, the Contractor shall, at his own expense, cut his own opening and provide framing and lintels as required and approved by the Architect.
11. Sleeves shall be SCH 40 galvanized iron, except pipes passing through floors shall have steel sleeves extended one inch above finished floors. Sleeve shall be 1/2 inch larger than piping. Seal in open space around sleeve with caulking rope and finish with caulking to level of sleeve. Sleeves in outside wall shall be galvanized steel pipe, Schedule 40. 1 inch larger than piping, seal with oakum and finish with caulking to level of sleeve. Take special care in core drilling thru concrete floors so as not to spill water below and cause damage.
12. This contractor shall protect existing/New building, structure, drives, walks, equipment, etc. and furnishings when sawcutting, core drilling or installing this work.

B. Electrical Work:

1. Contractor shall see that starters are properly located allowing for easy access and where ambient temperatures do not exceed normal room temperatures. Starters should not be secured to equipment, but instead to walls in close proximity to equipment.
2. Where walls are not available, provide steel sandwich panels mounted on pipe legs and floor flange.
3. Contractor shall furnish: All motors in connections with this work, starters for all motors, overload protection for all motors and wiring diagrams, mercury float switches with 20' wire.
4. This Contractor shall provide: All conduit, wiring and connectors of all requirements for all equipment requiring electrical service, all remote control devices including starters and final wiring connections.

C. Painting and Finishes:

1. Painting will be done by others.
2. Structural iron, iron pipe supports, platforms exposed pipe hangers, etc. provided by this Contractor and any equipment which is not furnished with an enamel finish shall be wire brushed free of rust, scale, etc., and given one coat of aluminum colored "Rustoleum" paint by a Journeyman Painter under the employ of the Contractor.
3. Any surfaces of equipment in these areas where finish has been rusted or destroyed shall be refinished.
4. The piping included as part of section (2.1)(H) of this specification section does not need to be painted.

D. General Pipe Work:

1. All piping shall be cleaned before installation by blowing out with compressed air or by other approved method. Provide temporary plugs or cap for all open ends of pipe and fixture when work is not being carried on to completion.

E. Lubrication System Layout:

1. General:
 - a. Layout the lubrication system in careful coordination with the approved Shop Drawings, determining proper elevation for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system.
 - b. Diagrammatic layouts for water, soil and vent piping are intended as a guide only and do not relieve the Contractor of any and all requirements of the State and Local Codes.
2. Information given herein and on Drawings is as exact as could be secured. Size and location shown are taken from the field survey. This Contractor must, therefore, examine location carefully and verify all measurements, distances, levels, etc. before starting work.
3. Wherever the location of piping of equipment is governed by architectural features, this Contractor shall establish their location by referring to the General Drawings; he shall not scale the Drawings for exact dimensions.
4. Services: Locations of services are approximate, and Contractor shall:
 - a. Check existing locations, elevations and pitches of present piping before making connections to same;
 - b. Report immediately to Architect in writing any existing conditions which will prohibit the installation of new work;
 - c. Await Architect's decision on approximate adjustment of line locations and elevations before proceeding.
5. In event Drawings and Specifications are not in full accord and alterations, additions or deductions are necessary or exception in regard to size of equipment, notify Architect immediately, in writing and await his decision.

6. These Specifications and the accompanying Drawings are intended to provide for a finished and complete lubrication system.

3.3 FIELD QUALITY CONTROL

A. Tests:

1. General:

- a. All tests and trials requested or directed by the Architect must be made by the Contractor without additional cost before acceptance of the Work.
- b. Furnish all test pumps, gauges, equipment, and personnel required and test as necessary to demonstrate the integrity of the finished lubrication installation to the approval of all pertinent authorities and the Architect.

2. The contractor shall conduct tests of systems as required by codes, regulatory agencies, and this specification. Tests shall be made with the medium and under pressure as stated in the test requirements. Notify the Engineer and regulatory agencies prior to conducting tests. Contractor shall complete the attached certification form and submit to the Engineer when tests have been completed.

Type of System	Gauge Pressure	Medium
Lube Piping	150% of Normal Static Pressure	Air

3. The pressure in pounds per square inch, gauge, are given as an initial pressure to be applied to lines being tested, together with test medium. Tests are to be applied for a minimum period of four (4) hours and until tests are complete. Final pressures at the end of test period may vary only by that caused by expansion of the test medium due to temperature changes.
4. Check of systems during application of test pressures should include visual check for water medium leakage, soap bubble or similar for air and nitrogen medium.
5. This Contractor shall include all temporary caps, plugs, valves, fittings, air bleeds, etc. as required for tests.
6. Architect's Right to Retesting
 - a. Should the Contractor refuse or neglect to make any tests necessary to demonstration of the integrity of the completed system, the Architect may retain the services of an outside consultant to make all such tests and their resulting adjustments and balance.
 - b. The cost for such tests shall be deducted from amounts owing to the Contractor and shall not be borne by the Owner.

3.4 ADJUSTMENT AND CLEANING

- A. As completion of the Work, remove protective material from all lubrication equipment and piping, all paint and plaster splatterings and clean the fixtures and equipment. They are to be left and ready for use.

- B. Make good and pay for glass breakage, plaster patching and repairs to all other finished Work caused by this installation. Contractor shall patch and return to original condition all floors, walls, ceiling, etc., damaged as a result of his work.
- C. Rubbish removal as directed by Architect during progress of Work and at time of completion. Leave building and premises in clean, orderly condition.

3.5 HOLES THRU FIRE WALLS

- A. Comply with all State and Local Codes with regard to all pipe types passing thru fire walls and rated rooms.

3.6 PIPE IDENTIFICATION

- A. Identify all mechanical equipment with nameplate bearing equipment name and number, using 1½" white Bakelite with ½" black letters permanently mounted in a conspicuous place. Use mechanical fasteners instead of adhesive to mount nameplates wherever possible.
- B. Markings. Each piping system furnished and installed shall be identified. The direction of flow shall be indicated by means of stenciled legends and flow arrows. The marking shall be applied after all painting and cleaning of the piping and insulation is completed.
- C. Location. The legend and flow arrow shall be applied at all valve locations at all points where piping enters or leaves a wall, partition, bulkhead, cluster of piping, or similar obstruction and at approximately 30 feet intervals on pipe runs with at least one in each space or room. Color shall be verified with Owner with stencils sized as follows: Over 2" - 1" high; 2" and under - ½" high. The marking shall be located so as to be conspicuous and legible at all times from any reasonable point.
- D. Valve Charts and Tags. Valve charts will be provided for each piping system. They shall consist of schematic drawings of piping layouts, which show and identify each valve and describes its function. Upon completion of the work, two copies of each chart, sealed to rigid backboard with clear lacquer under glass and framed, shall be mounted in the mechanical room where directed by the Owner. Valve lists shall be furnished as required. Provide 1 1/4" plastic or brass tags with 1/4" letters for all valves. Attach tags to valve handles by chrome plated "S" hooks. Furnish printed lists showing valve number, service, and location in each copy of Owner's Service Manual. Tags equal to Seton #2960 are acceptable.
- E. Identification Symbol types and colors shall be verified with Owner.

3.7 PIPE HANGERS AND SUPPORTS

- A. This Contractor shall be responsible to support and hang this work in a proper manner as per all codes and jobsite requirements.

END OF SECTION 11 11 19

SECTION 22 15 19 AIR COMPRESSORS AND RECEIVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Standard Specifications, Proposal Documents, Special Provisions, Supplemental Specifications, Bid Item Manual and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Lubricated, reciprocating air compressors.

1.3 DEFINITIONS

- A. Actual Air: Air delivered from air compressors. Flow rate is delivered compressed air measured in acfm.
- B. Standard Air: Free air at 68 deg F and 1 atmosphere (29.92 in. Hg) before compression or expansion and measured in scfm.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Operation and Maintenance Data: For compressed-air equipment to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASME Compliance: Fabricate and label receivers to comply with ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PACKAGED AIR COMPRESSORS AND RECEIVERS

- A. General Description: Factory-assembled, -wired, -piped, and -tested; electric-motor-driven; air-cooled; continuous-duty air compressors and receivers that deliver air of quality equal to intake air.
- B. Control Panels: Automatic control station with load control and protection functions. Comply with NEMA ICS 2 and UL 508.
 - 1. Enclosure: NEMA ICS 6, Type 12 control panel unless otherwise indicated.
 - 2. Motor Controllers: Full-voltage, combination magnetic type with under voltage release feature and motor-circuit-protector-type disconnecting means and short-circuit protective device.
 - 3. Control Voltage: 120-V ac or less, using integral control power transformer.
 - 4. Motor Overload Protection: Overload relay in each phase.
 - 5. Starting Devices: Hand-off-automatic selector switch in cover of control panel, plus pilot device for automatic control.
- C. Mounting Frame: Fabricate mounting and attachment to pressure vessel with reinforcement strong enough to resist packaged equipment movement during a seismic event when base is anchored to building structure.

2.2 ROTARY-SCREW AIR COMPRESSORS

- A. Rotary-Screw Air Compressors:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Ingersoll Rand.
 - b. Kaeser.
 - c. Quincy.
 - d. PneuTech
 - 2. Description: Packaged unit.
 - 3. Air Compressor(s): Single-stage, oil-free, rotary-screw type with nonlubricated helical screws and lubricated gearbox, and of construction that prohibits oil from entering compression chamber.
 - a. Cooling/Lubrication System: Unit-mounted, air-cooled exchanger package pre-piped to unit; with air-pressure circulation system with coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - b. Air Filter: Dry type, with maintenance indicator and cleanable replaceable filter element.
 - c. Air/Coolant Receiver and Separation System: 150-psig- (1035-kPa-) rated steel tank with ASME safety valve, coolant-level gage, multistage air-coolant separator element, minimum pressure valve, blowdown valve, discharge check valve, coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - d. Capacity Control: Capacity modulation between zero and 100 percent air delivery, with operating pressures between 60 and 135 psig (345 and 690 kPa). Include necessary control to hold constant pressure. When air

demand is zero, unload compressor by using pressure switch and blowdown valve.

e. Mounting: Freestanding.

4. Sound-attenuation enclosure.

B. Capacities and Characteristics:

1. Compressed-Air Service: Shop air.
2. Air Compressor(s): One.
3. Standard-Air Capacity of Each Air Compressor: 335 scfm (standard L/s) free air.
4. Actual-Air Capacity of Each Air Compressor: 300 acfm (actual L/s) delivered.
5. Discharge-Air Pressure: 135.
6. Discharge-Air Temperature: 100° F (deg C) or less.
7. Motor (Each Air Compressor):

- a. Horsepower: 75.
- b. Speed: 1531 rpm.

8. Electrical Characteristics:

- a. Volts: 460.
- b. Phase(s): Three.
- c. Hertz: 60.
- d. Full-Load Amperes: 101.
- e. Maximum Overcurrent Protection: 150 amperage.

2.3 RECEIVER TANK

A. Steel tank constructed according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

1. Orientation: Vertical Arrangement.
2. Capacity: See drawing schedule.
3. Interior finish: Epoxy.
4. Pressure Rating: 165psig minimum.
5. Pressure Regulator Setting: 135psig.
6. Pressure Relief Valve Setting: 137psig.
7. Accessories: Include safety valve, pressure gage, drain, and pressure-reducing valve.

2.4 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified.

1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
2. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in Division 26 Sections.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Equipment Mounting: Install air compressors and air dryers anchored to concrete bases using elastomeric pads. Comply with requirements in Division 03 Section "Cast-in-Place Concrete."
- B. Arrange equipment so controls and devices are accessible for servicing.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Install the following devices on compressed-air equipment:
 - 1. Pressure Gage and Safety Valve: Install on each compressed-air receiver.
 - 2. Pressure Regulators: Install downstream from air compressors and dryers.
 - 3. Automatic Drain Valves: Install on filters and dryers. Discharge condensate over nearest floor or open site drain.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Division 22 Section "Compressed Air Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to machine to allow service and maintenance.

3.3 IDENTIFICATION

- A. Identify general-service air compressors and components. Comply with requirements for identification specified in Division 22 Section "Identification for Plumbing."

3.4 STARTUP SERVICE

- A. Perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
 - 2. Verify that air-compressor inlet filters and piping are clear.
 - 3. Check for equipment vibration-control supports and flexible pipe connectors and verify that equipment is properly attached to substrate.
 - 4. Check safety valves for correct settings. Ensure that settings are higher than air-compressor discharge pressure but not higher than rating of system components.
 - 5. Drain receiver tanks.
 - 6. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 7. Test and adjust controls and safeties.

3.5 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain air compressors and dryers.

END OF SECTION 22 15 19

SECTION 27 15 13 COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
1. Category 6 twisted pair cable.
 2. Twisted pair cable hardware, including plugs and jacks.
 3. Cable management system.
 4. Cabling identification products.
 5. Grounding provisions for twisted pair cable.
 6. Source quality control requirements for twisted pair cable.

1.3 DEFINITIONS

- A. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- B. EMI: Electromagnetic interference.
- C. FTP: Shielded twisted pair.
- D. F/FTP: Overall foil screened cable with foil screened twisted pair.
- E. F/UTP: Overall foil screened cable with unscreened twisted pair.
- F. IDC: Insulation displacement connector.
- G. LAN: Local area network.
- H. Jack: Also commonly called an "outlet," it is the fixed, female connector.
- I. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.
- J. RCDD: Registered Communications Distribution Designer.
- K. Screen: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- L. Shield: A metallic layer, either a foil or braid, placed around a pair or group of conductors.

- M. S/FTP: Overall braid screened cable with foil screened twisted pair.
- N. S/UTP: Overall braid screened cable with unscreened twisted pairs.
- O. UTP: Unscreened (unshielded) twisted pair.

1.4 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Horizontal cable cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.
 - 1. TIA-568-C.1 requires that a minimum of two equipment outlets be installed for each work area.
 - 2. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications equipment outlet.
 - 3. Bridged taps and splices shall not be installed in the horizontal cabling.
- B. A work area is approximately 100 sq. ft. (9.3 sq. m), and includes the components that extend from the equipment outlets to the station equipment.
- C. The maximum allowable horizontal cable length is 295 feet (90 m). This maximum allowable length does not include an allowance for the length of 16 feet (4.9 m) to the workstation equipment or in the horizontal cross-connect.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Reviewed and stamped by RCDD.
 - 1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
 - 2. System Labeling Schedules: Electronic copy of labeling schedules that are part of the cabling and asset identification system of the software.
 - 3. Cabling administration Drawings and printouts.
 - 4. Wiring diagrams and installation details of telecommunications equipment, to show location and layout of telecommunications equipment, including the following:
 - a. Telecommunications rooms plans and elevations.
 - b. Telecommunications pathways.
 - c. Telecommunications system access points.
 - d. Telecommunications grounding system.
 - e. Telecommunications conductor drop locations.
 - f. Typical telecommunications details.
 - g. Mechanical, electrical, and plumbing systems.

- C. Twisted pair cable testing plan.
- D. Samples: For telecommunications jacks and plugs, in specified finish, one for each type and configuration.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For RCDD, installation supervisor, and field inspector.
- B. Product Certificates: For each type of product.
- C. Source quality-control reports.
- D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For splices and connectors to include in maintenance manuals.
- B. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or compact disk, complete with data files.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Connecting Blocks: One of each type.
 - 2. Faceplates: One of each type.
 - 3. Jacks: Ten of each type.
 - 4. Patch-Panel Units: One of each type.
 - 5. Plugs: Ten of each type.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
 - 1. Layout Responsibility: Preparation of Shop Drawings and cabling administration Drawings, cabling administration Drawings, and field testing program development by an RCDD.
 - 2. Installation Supervision: Installation shall be under the direct supervision of Technician, who shall be present at all times when Work of this Section is performed at Project site.
 - 3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.
 - 4. The Contractor shall have experience in the installation and testing of similar systems as specified in the plans and specifications for this contract.

5. The Contractor shall have completed at least 2 projects of similar size and scope within the last 24 months.
 6. The contractor shall provide references upon request. Information to provide shall include project name, address, date of installation, client name, title, telephone number, and project description.
 7. The Contractor shall be certified by the connectivity manufacturer to install, service and warranty the specified product from the time of bidding through the duration of the contract installation and warranty period.
 8. The Contractor must maintain a State Contractors License as required by the State of Wisconsin.
 9. All members of the Contractors installation team must be certified by the manufacturer as having completed the necessary training to complete their part of the installation. All personnel shall be adequately trained in the use of tools and equipment required for the complete installation.
 10. The Contractor shall own and maintain tools, installation equipment, and testing equipment necessary for the successful installation and testing of Optical and Category 5E, 6, and 6A premise distribution systems.
 11. The Owners reserves the right to require the Contractor to remove from the project any such employee the Owner deems to be incompetent, careless, or insubordinate.
- B. Testing Agency Qualifications: Testing agency must have personnel certified by BICSI on staff.
1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
1. Test each pair of twisted pair cable for open and short circuits.

1.11 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.12 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

- B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.
- C. Grounding: Comply with TIA-607-B.

2.2 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
 - 1. Communications, Plenum Rated: Type CMP complying with UL 1685.
- B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.
- C. RoHS compliant.

2.3 CATEGORY 6 TWISTED PAIR CABLE

- A. Plenum cable construction shall be four twisted pairs of 23AWG insulated solid conductors with a ripcord surrounded by a tight outer jacket.
- B. Non-plenum cable construction shall be four twisted pairs of 23AWG insulated solid conductors with a ripcord surrounded by a tight outer jacket.
- C. No minimum compliant cable will be accepted, this facility requires additional band width.
- D. The ripcord shall be directly underneath the outer jacket.
- E. Cable shall be marked with the manufacturer and pertinent information. UL, ETL, or CSA agency certification or verification markings shall be on the cable jacket according to the certifying agency's requirements.
- F. Color coding of pairs shall be as follows:
 - 1. Pair 1: white/blue; blue
 - 2. Pair 2: white/orange; orange
 - 3. Pair 3: white/green; green
 - 4. Pair 4: white/brown; brown
- G. Plenum or riser rated jackets
- H. Cable shall be supplied in 1000 foot spools or 1000 foot Reelex boxes.
- I. Cable shall exceed CAT6 transmission requirements specified in ANSI/TIA/EIA-568-C-2.
- J. Cable shall be UL and C(UL) listed.
- K. Cable shall exceed the requirements of TIA/TSB-155, 10 GB/S Ethernet operation over 37 meters channel length.

- L. CAT6 UTP horizontal distribution cable as specified in the contract documents shall be
 - 1. Mohawk Advancenet Cable
 - a. Plenum M57193
 - b. Riser M57202

2.4 TWISTED PAIR CABLE HARDWARE

- A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.
- B. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Hubbell Premise Wiring; brand of Hubbell Electrical Solutions; Hubbell Incorporated.
- C. Patch Panel: Modular panels housing numbered jack units with IDC-type connectors at each jack location for permanent termination of pair groups of installed cables.
 - 1. CAT6 patch panels shall be standard 8-position, RJ-45 style, un-keyed, FCC-compliant receptacle in 24 and 48 port configurations.
 - 2. Panel frames shall be black powder coated 14 gauge steel with rolled edges on top and bottom for proper stiffness.
 - 3. Panels shall accommodate a minimum of 24 ports for each rack mount unit (1 RMU=1.75 inches). 48 ports are recommended.
 - 4. Panels shall be designed for 4-pair, 100 ohm balanced unshielded twisted pair (UTP) cable.
 - 5. Panels shall terminate 26-22 AWG solid connectors
 - 6. Panels shall have individual port identification numbers on the front and rear of the panel. Panels shall have the CAT6 designation visible from the front when installed.
 - 7. Printed circuit boards shall be fully enclosed front and rear for physical protection.
 - 8. Panel contacts shall accept a minimum of 2000 mating cycles without degradation of electrical or mechanical performance.
 - 9. Panel termination method shall follow the industry standard 110 IDC punch-down using a standard 110 impact termination tool.
 - 10. CAT6 panels shall be backward compatible with existing category 3, 5, and 5E cabling systems for fit, form, and function.
 - 11. CAT6 patch panels when installed shall exceed the link or channel performance requirements of ANSI/TIA/EIA-568-C.2.
 - 12. CAT6 patch panels shall be able to accommodate 10G in a 37 meter channel per TSB-155.
 - 13. CAT6 patch panels shall be:
 - a. Hubbell (Nextspeed 6 series)
 - b. 24 port – P6E24U
 - c. 48 port – P6E48UFeatures:

14. Construction: 16-gauge steel and mountable on 19-inch (483 mm) equipment racks.
- D. Patch Cords: Factory-made, four-pair cables in 48-inch (1200-mm) lengths; terminated with an eight-position modular plug at each end.
1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
 2. Patch cords shall have color-coded boots for circuit identification.
- E. Plugs and Plug Assemblies:
1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
 2. Standard: Comply with TIA-568-C.2.
 3. Marked to indicate transmission performance.
- F. Jacks and Jack Assemblies:
1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
 2. Designed to snap-in to a patch panel or faceplate.
 3. Standard: Comply with TIA-568-C.2.
 4. Marked to indicate transmission performance.
- G. Faceplate:
1. Two, and Four port, vertical single gang faceplates designed to mount to single gang wall boxes.
 2. Plastic Faceplate: High-impact plastic. Coordinate color with Section 26 27 26 "Wiring Devices."
 3. Metal Faceplate: Stainless steel, complying with requirements in Section 26 27 26 "Wiring Devices."
 4. For use with snap-in jacks accommodating any combination of twisted pair, optical fiber, and coaxial work area cords.
 - a. Flush mounting jacks, positioning the cord at a 45-degree angle.
- H. Legend:
1. Machine printed, in the field, using adhesive-tape label.
 2. Snap-in, clear-label covers and machine-printed paper inserts.
 3. UL 2043.

2.5 IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.6 GROUNDING

- A. Comply with TIA-607-B.

2.7 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate cables.
- B. Factory test cables on reels according to TIA-568-C.1.
- C. Factory test twisted pair cables according to TIA-568-C.2.
- D. Cable will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.
 - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

3.2 INSTALLATION OF PATHWAYS

- A. Comply with requirements for demarcation point, cabinets, and racks specified in Section 27 11 00 "Communications Equipment Room Fittings."
- B. Drawings indicate general arrangement of pathways and fittings.

3.3 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. General Requirements for Cabling:
 - 1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.

2. Comply with BICSI's "Information Transport Systems Installation Methods Manual (ITSIMM)," "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
 3. Install 110-style IDC termination hardware unless otherwise indicated.
 4. Do not untwist twisted pair cables more than 1/2 inch (12 mm) from the point of termination to maintain cable geometry.
 5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
 6. Consolidation points may be used only for making a direct connection to equipment outlets:
 - a. Do not use consolidation point as a cross-connect point, as a patch connection, or for direct connection to workstation equipment.
 - b. Locate consolidation points for twisted-pair cables at least 49 feet (15 m) from communications equipment room.
 7. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 8. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
 9. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
 10. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation, and replace it with new cable.
 11. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
 12. In the communications equipment room, install a 10-foot- (3-m-) long service loop on each end of cable.
 13. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.
- C. Open-Cable Installation:
1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
 2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches (1524 mm) apart.
 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- D. Installation of Cable Routed Exposed under Raised Floors:
1. Install plenum-rated cable only.

2. Install cabling after the flooring system has been installed in raised floor areas.
 3. Coil cable 6 feet (1800 mm) long not less than 12 inches (300 mm) in diameter below each feed point.
- E. Group connecting hardware for cables into separate logical fields.
- F. Separation from EMI Sources:
1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches (127 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (300 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (600 mm).
 3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches (64 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (300 mm).
 4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches (76 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
 5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches (1200 mm).
 6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).

3.4 FIRESTOPPING

- A. Comply with TIA-569-D, Annex A, "Firestopping."

- B. Comply with "Firestopping Systems" Article in BICSI's "Telecommunications Distribution Methods Manual."

3.5 GROUNDING

- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- B. Comply with TIA-607-B and NECA/BICSI-607.
- C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.
- D. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

3.6 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 27 05 53 "Identification for Communications Systems."
 - 1. Administration Class: Class 3.
 - 2. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.
- B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 3 level of administration, including optional identification requirements of this standard.
- C. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.
- D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.
- E. Cable and Wire Identification:
 - 1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
 - 2. Each wire connected to building-mounted devices is not required to be numbered at the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.

3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
 4. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.
 - a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.
 - b. Label each unit and field within distribution racks and frames.
 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and -connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- F. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
1. Cables use flexible vinyl or polyester that flexes as cables are bent.

3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections with the assistance of a factory-authorized service representative.
- B. Tests and Inspections:
1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1.
 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
 - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.

- D. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
- E. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

END OF SECTION 27 15 13

SECTION 27 51 16 PUBLIC ADDRESS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
1. Power amplifiers.
 2. Control system.
 3. Microphones.
 4. Telephone paging adapters.
 5. Tone generator.
 6. Monitor panel.
 7. Loudspeakers.
 8. Microphone and headphone outlets.
 9. Battery backup power unit.
 10. Conductors and cables.

1.3 DEFINITIONS

- A. Channels: Separate parallel signal paths, from sources to loudspeakers or loudspeaker zones, with separate amplification and switching that permit selection between paths for speaker alternative program signals.
- B. VU: Volume unit.
- C. Zone: Separate group of loudspeakers and associated supply wiring that may be arranged for selective switching between different channels.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Power, signal, and control wiring.
1. Include plans, elevations, sections, and attachment details.
 2. Include details of equipment assemblies. Indicate dimensions, weights, required clearances, method of field assembly, components, and location and size of each field connection.
 3. Console layouts.
 4. Control panels.
 5. Rack arrangements.
 6. Calculations: For sizing backup battery.

7. Wiring Diagrams: For power, signal, and control wiring.
 - a. Identify terminals to facilitate installation, operation, and maintenance.
 - b. Single-line diagram showing interconnection of components.
 - c. Cabling diagram showing cable routing.
- C. Delegated-Design Submittal: For supports and seismic restraints for control consoles, equipment cabinets and racks, and components indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 1. Detail fabrication and assembly of supports and seismic restraints for control consoles, equipment cabinets and racks, and components.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings are shown and coordinated with each other, using input from installers of the items involved.
- B. Qualification Data: For Installer and testing agency.
- C. Seismic Qualification Certificates: For control consoles, equipment cabinets and racks, accessories, and components, from manufacturer.
 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation. Include qualification data for testing agency.
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For public address systems to include in emergency, operation, and maintenance manuals.
 1. In addition to items specified in Section 01 77 00 "Closeout Procedures" and Section 01 78 23 "Operation and Maintenance Data," include the following:
 - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
 - b. Operating instructions laminated and mounted adjacent to operating console location.
 - c. Training plan.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Testing Agency Qualifications: Qualified agency, with the experience and capability to conduct testing indicated.
 - 1. Testing Agency's Field Supervisor: Currently certified to supervise on-site testing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Bogen Communications, Inc.
 - 2. TOA Electronics.
 - 3. Valcom.
- B. Source Limitations: Obtain public address system from single source from single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with NFPA 70.

2.2 FUNCTIONAL DESCRIPTION OF SYSTEM

- A. System Functions:
 - 1. Selectively connect any zone to any available signal channel.
 - 2. Selectively control sound from microphone outlets and other inputs.
 - 3. "All-call" feature shall connect the all-call sound signal simultaneously to all zones regardless of zone or channel switch settings.
 - 4. Telephone paging adapter shall allow paging by dialing an extension from any local telephone instrument and speaking into the telephone.
 - 5. Produce a program-signal tone that is amplified and sounded over all speakers, overriding signals currently being distributed.
 - 6. Reproduce high-quality sound that is free of noise and distortion at all loudspeakers at all times during equipment operation including standby mode with inputs off; output free of nonuniform coverage of amplified sound.

2.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports and seismic restraints for control consoles, equipment cabinets and racks, and components, including comprehensive engineering

analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

- B. Seismic Performance: Supports and seismic restraints for control consoles, equipment cabinets and racks, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

2.4 SYSTEM DESCRIPTION

- A. Compatibility of Components: Coordinate component features to form an integrated system. Match components and interconnections for optimum performance of specified functions.
- B. Equipment: Comply with UL 813. Equipment shall be modular, using solid-state components, and fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz.
- C. Equipment Mounting: Where rack, cabinet, or console mounting is indicated, equipment shall be designed to mount in a 19-inch housing complying with EIA/ECA-310-E.
- D. Weather-Resistant Equipment: Listed and labeled by a qualified testing agency for duty outdoors or in damp locations.

2.5 POWER AMPLIFIERS

- A. Mounting: Rack.
- B. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each station and speaker connected in all-call mode of operation, plus a 25 percent allowance for future stations.
- C. Total Harmonic Distortion: Less than 3 percent at rated power output from 50 to 12,000 Hz.
- D. Minimum Signal-to-Noise Ratio: 80 dB, at rated output.
- E. Frequency Response: Within plus or minus 3 dB from 20 to 12,000 Hz.
- F. Output Regulation: Less than 2 dB from full to no load.
- G. Controls: On-off, input levels, and low-cut filter.
- H. Input Sensitivity: Matched to preamplifier and to provide full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on speaker microphone or handset transmitter.

2.6 MICROPHONES

A. Paging Microphone:

1. Type: Dynamic, with cardioid polar characteristic.
2. Impedance: 500 ohms.
3. Frequency Response: Uniform, 100 to 12,000 Hz.
4. Sensitivity: Minus 70 dB +/- 6 dB.
5. Output Level: Minus 58 dB, minimum.
6. Cable: Braided shield cable with XLR connectors. Coordinate impedance with microphone impedance.
7. Mounting: Desk stand with integral-locking, press-to-talk switch.

2.7 VOLUME LIMITER/COMPRESSOR

A. Minimum Performance Requirements:

1. Frequency Response: 45 to 15,000 Hz, plus or minus 1 dB minimum.
2. Reduction Ratio: Automatically vary compression ratio, and attack and release times for voice and music inputs.
 - a. Compression Ratio Range: 3:1 to 10:1 minimum.
 - b. Averaging Compressor Attack Time: Up to 500 milliseconds.
 - c. Signal Fast Compression Attack Time: Less than 10 milliseconds.
 - d. Release time: Up to 500 milliseconds.
3. Distortion: 0.5 percent, maximum.
4. Rated Output: Minimum of plus 14 dB.
5. Inputs: Minimum of two inputs with variable front-panel gain controls and VU or decibel meter for input adjustment.
6. Rack mounted.

2.8 CONTROL SYSTEM

A. Cabinet: Modular, rack-mount style; complying with EIA/ECA-310-E.

B. Panel for Equipment and Controls: Rack mounted.

C. Controls:

1. Switching devices to select signal sources for distribution channels.
2. Program selector switch to select source for each program channel.
3. Switching devices to select zones for paging.
4. All-call capability.
5. Emergency override over all-call.

D. Indicators: A visual annunciation for each distribution channel to indicate source being used.

E. Self-Contained Power and Control Unit: A single assembly of basic control, electronics, and power supply necessary to accomplish specified functions.

- F. Spare Positions: 20 percent spare zone control.
- G. Microphone jack.

2.9 TELEPHONE PAGING ADAPTER

- A. Adapters shall accept voice signals from telephone extension dialing access and automatically provide amplifier input and program override for preselected zones.
 - 1. Minimum Frequency Response: Flat, 200 to 2500 Hz.
 - 2. Impedance Matching: Adapter matches telephone line to public address equipment input.
 - 3. Rack mounted.

2.10 TONE GENERATOR

- A. Tone generator shall provide clock and program interface with public address system.
- B. Signals: Minimum of seven distinct, audible signal types including wail, warble, high/low, alarm, repeating and single-stroke chimes, and tone.
- C. Pitch Control: Chimes and tone.
- D. Volume Control: All outputs.
- E. Activation-Switch Network: Establishes priority and hierarchy of output signals produced by different activation setups.
- F. Mounting: Rack.

2.11 LOUDSPEAKERS

- A. Cone-Type Loudspeakers:
 - 1. Minimum Axial Sensitivity: 91 dB at 1 m, with 1-W input.
 - 2. Frequency Response: Within plus or minus 3 dB from 50 to 15,000 Hz.
 - 3. Size: 8 inches] with 1-inch voice coil and minimum 5-oz. ceramic magnet.
 - 4. Rated Output Level: 10 W.
 - 5. Minimum Dispersion Angle: 100 degrees.
 - 6. Matching Transformer: Full-power rated with four taps. Maximum insertion loss of 0.5 dB.
 - 7. Surface-Mounted Units: Ceiling, wall, or pendant mounted, as indicated, in steel back boxes, acoustically dampened. Front face of at least 0.0478-inch steel and whole assembly rust proofed and shop primed for field painting.
 - 8. Flush-Ceiling-Mounted Units: In steel back boxes, acoustically dampened. Metal ceiling grille with white baked enamel.
- B. Horn-Type Loudspeakers:
 - 1. Type: Single-horn units, double-reentrant design, with minimum full-range power rating of 15 W.

2. Matching Transformer: Full-power rated with four standard taps. Maximum insertion loss of 0.5 dB.
3. Frequency Response: Within plus or minus 3 dB from 250 to 12,000 Hz.
4. Dispersion Angle: 130 by 110 degrees.
5. Mounting: Integral bracket.
6. Units in Damp, Wet, or Outdoor Locations: Listed and labeled for environment in which they are located.
7. Units in Hazardous (Classified) Locations: Listed and labeled for environment in which they are located. Provide any accessories required to maintain listing.

2.12 OUTLETS

- A. Microphone Outlet: Three-pole, polarized, locking-type, microphone receptacles in single-gang boxes. Equip wall outlets with brushed stainless-steel device plates. Equip floor outlets with gray tapered rubber or plastic cable nozzles and fixed outlet covers.

2.13 CONDUCTORS AND CABLES

- A. Jacketed, twisted pair and twisted multipair, untinned solid copper.
 1. Insulation for Wire in Conduit: Thermoplastic, not less than 1/32 inch thick.
 2. Microphone Cables: Neoprene jacketed, not less than 2/64 inch thick, over shield with filled interstices. Shield No. 34 AWG, tinned, soft-copper strands formed into a braid or approved equivalent foil. Shielding coverage on conductors is not less than 60 percent.
 3. Plenum Cable: Listed and labeled for plenum installation.

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Install cables in pathways and cable trays except within consoles, cabinets, desks, and counters, and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal pathway and cables except in unfinished spaces.
 1. Install plenum cable in environmental air spaces, including plenum ceilings.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.2 INSTALLATION OF PATHWAYS

- A. Install manufactured conduit sweeps and long-radius elbows whenever possible.

3.3 INSTALLATION OF CABLES

- A. Comply with NECA 1.
- B. General Cable Installation Requirements:
 - 1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
 - 2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.
 - 3. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 - 4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
 - 5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
 - 6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used.
- C. Open-Cable Installation:
 - 1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
 - 2. Suspend speaker cable not in a wireway or pathway a minimum of 8 inches above ceiling by cable supports not more than 60 inches apart.
 - 3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.
- D. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate pathways or, where exposed or in same enclosure, separate conductors at least 12 inches apart for speaker microphones and adjacent parallel power and telephone wiring. Separate other communication equipment conductors as recommended by equipment manufacturer.

3.4 INSTALLATION

- A. Coordinate layout and installation of system components and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.
- B. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- C. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- D. Equipment Cabinets and Racks:

1. Group items of same function together, either vertically or side by side, and arrange controls symmetrically. Mount monitor panel above the amplifiers.
 2. Arrange all inputs, outputs, interconnections, and test points so they are accessible at rear of rack for maintenance and testing, with each item removable from rack without disturbing other items or connections.
 3. Blank Panels: Cover empty space in equipment racks so entire front of rack is occupied by panels.
- E. Volume Limiter/Compressor: Equip each zone with a volume limiter/compressor. Install in central equipment cabinet. Arrange to provide a constant input to power amplifiers.
- F. Wall-Mounted Outlets: Flush mounted.
- G. Floor-Mounted Outlets: Conceal in floor and install cable nozzles through outlet covers. Secure outlet covers in place. Trim with carpet in carpeted areas.
- H. Conductor Sizing: Unless otherwise indicated, size speaker circuit conductors from racks to loudspeaker outlets not smaller than No. 18 AWG and conductors from microphone receptacles to amplifiers not smaller than No. 22 AWG.
- I. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.
- J. Speaker-Line Matching Transformer Connections: Make initial connections using lowest tap settings.

3.5 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.
- C. Install grounding electrodes as specified in Section 27 05 26 "Grounding and Bonding for Communications Systems."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:

1. Schedule tests with at least seven days' advance notice of test performance.
 2. After installing public address system and after electrical circuitry has been energized, test for compliance with requirements.
 3. Operational Test: Perform tests that include originating program and page messages at microphone outlets, preamplifier program inputs, and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
 4. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a. Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000-Hz signal. Replace all other microphones at corresponding connectors with dummy loads, each equal in impedance to microphone it replaces. Measure signal-to-noise ratio.
 - b. Repeat test for each separately controlled zone of loudspeakers.
 - c. Minimum acceptance ratio is 50 dB.
 5. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 50, 200, 400, 1000, 3000, 8000, and 12,000 Hz into each preamplifier channel. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 3 percent total harmonics.
 6. Acoustic Coverage Test: Feed pink noise into system using octaves centered at 500 and 4000 Hz. Use sound-level meter with octave-band filters to measure level at five locations in each zone. For spaces with seated audiences, maximum permissible variation in level is plus or minus 2 dB. In addition, the levels between locations in same zone and between locations in adjacent zones must not vary more than plus or minus 3 dB.
 7. Power Output Test: Measure electrical power output of each power amplifier at normal gain settings of 50, 1000, and 12,000 Hz. Maximum variation in power output at these frequencies must not exceed plus or minus 1 dB.
 8. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Section 27 05 26 "Grounding and Bonding for Communications Systems."
- E. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging speaker-line matching transformers.
- F. Public address system will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.
1. Include a record of final speaker-line matching transformer-tap settings and signal ground-resistance measurement certified by Installer.

3.7 STARTUP SERVICE

- A. Perform startup service.

1. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
2. Complete installation and startup checks according to manufacturer's written instructions.

3.8 ADJUSTING

- A. On-Site Assistance: Engage a factory-authorized service representative to provide on-site assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions.
- B. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.9 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain the public address system and equipment. Refer to Section 01 79 00 "Demonstration and Training."

END OF SECTION 27 51 16

**CITY OF MADISON
METRO TRANSIT - PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1 SOUTH INGERSOLL ST.
MADISON, WI 53703**

ISSUED
04/08/21 BID SET
05/13/21 ADDENDUM #2
05/20/21 ADDENDUM #3

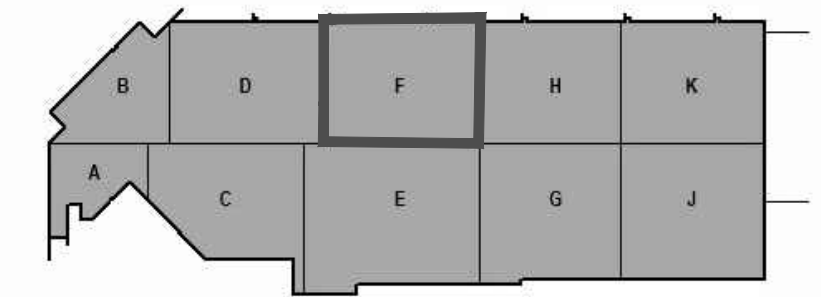
CONTRACT NO.: R581
M&H NO.: 4503500-190896.03
DATE: APRIL 8, 2021
DESIGNED BY: ACA
DRAWN BY: KSD
CHECKED BY: ACA
DO NOT SCALE DRAWINGS

SHEET CONTENTS
SITE UTILITY PLAN

SHEET NO.

C-141

SITE KEY PLAN



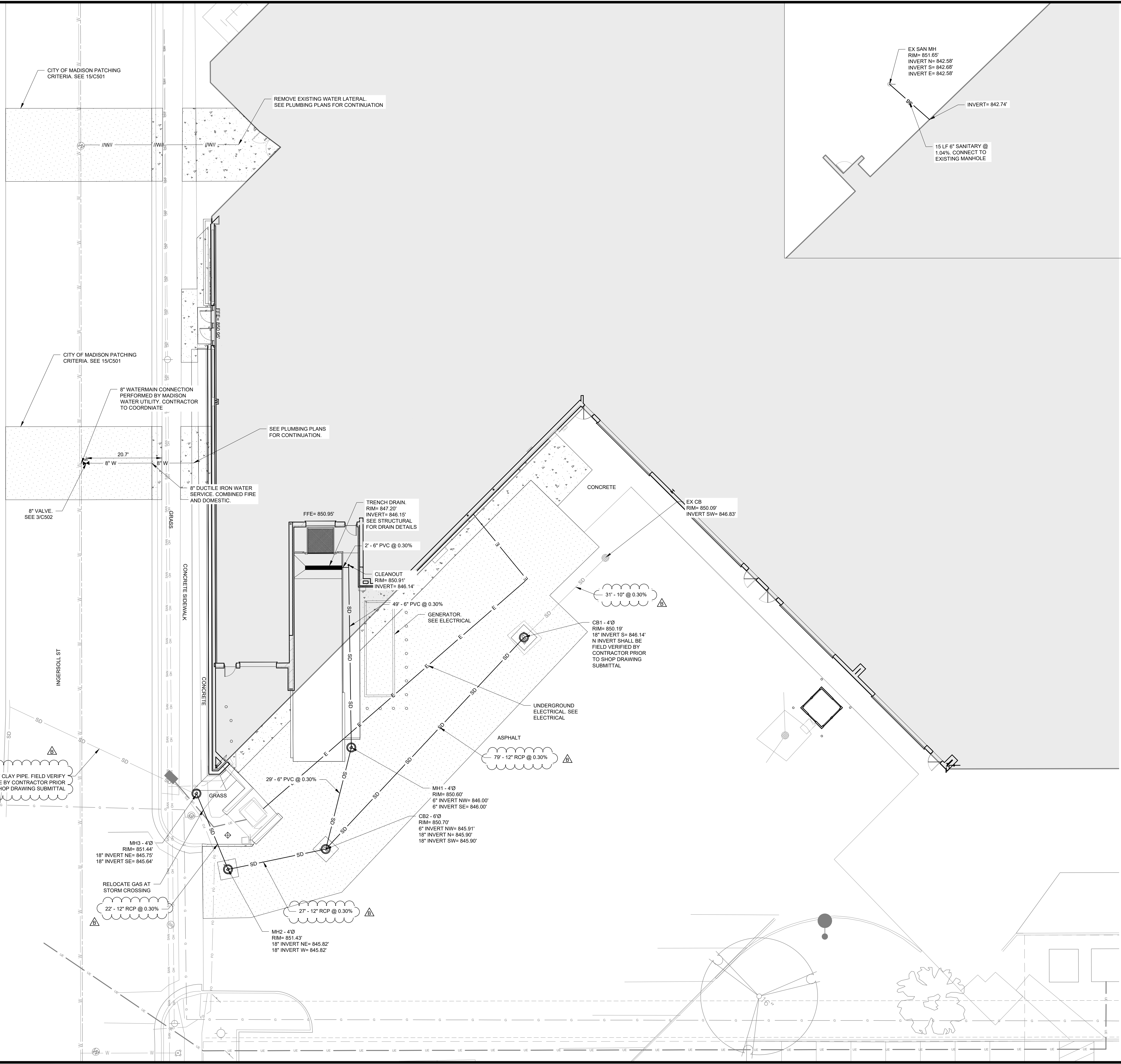
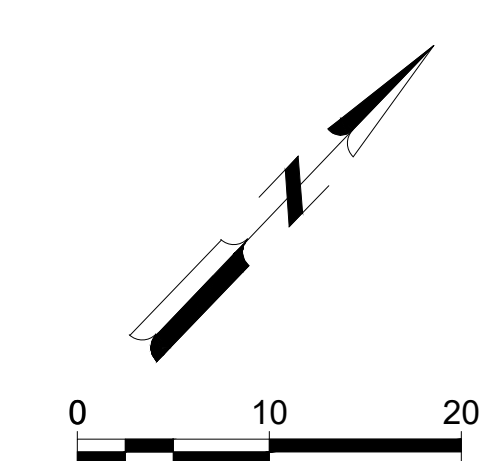
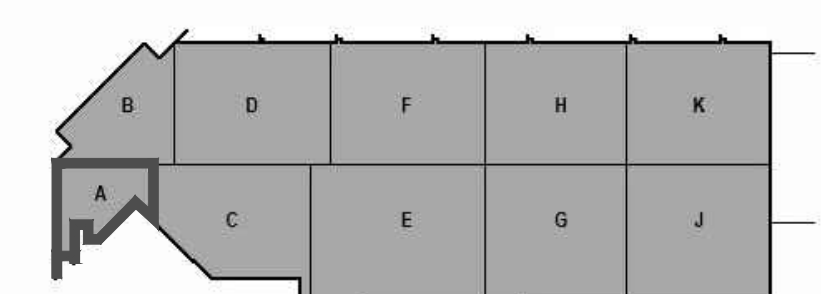
NOTES:

- 1) REFERENCE G-020 THROUGH G-030 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- 2) REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- 3) REFERENCE Q-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- 4) FOR WATER LATERAL CONNECTION, CONTRACTOR SHALL APPLY FOR A SERVICE CONNECTION APPLICATION EMAILED TO AMY.JONES@MADISONWATER.ORG
HTTPS://WWW.CITYOFMADISON.COM/WATER/PLUMBERS-CONTRACTORS.
CONTRACTOR RESPONSIBLE FOR RIGHT-OF-WAY PERMIT, TRAFFIC CONTROL, SAW CUTS, EXCAVATION, BACKFILL, TESTING, AND COORDINATION. MADISON WATER UTILITY WILL FURNISH AND INSTALL LIVE TAP.

LEGEND:

- BOLLARD
- FIRE HYDRANT
- LIGHT POLE
- STORM INLET, ROUND
- STORM SEWER MANHOLE
- WATER VALVE
- FENCE
- TEMPORARY CONSTRUCTION FENCE
- STORM SEWER / CULVERT
- WATER
- WATER REMOVAL
- ASPHALT
- CONCRETE

SITE KEY PLAN



CITY OF MADISON PATCHING CRITERIA. SEE 15/C501

REMOVE EXISTING WATER LATERAL SEE PLUMBING PLANS FOR CONTINUATION

CITY OF MADISON PATCHING CRITERIA. SEE 15/C501

8" WATERMAIN CONNECTION PERFORMED BY MADISON WATER UTILITY. CONTRACTOR TO COORDINATE

SEE PLUMBING PLANS FOR CONTINUATION.

8" DUCTILE IRON WATER SERVICE. COMBINED FIRE AND DOMESTIC.

8" VALVE. SEE 3/C502

FFE= 850.95'

TRENCH DRAIN. RIM= 847.20' INVERT= 848.15' SEE STRUCTURAL FOR DRAIN DETAILS

CLEANOUT RIM= 850.91' INVERT= 846.14'

GENERATOR. SEE ELECTRICAL

CB1 - 4'Ø RIM= 850.19' 18" INVERT S= 846.14' N INVERT SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO SHOP DRAWING SUBMITTAL

UNDERGROUND ELECTRICAL. SEE ELECTRICAL

MH1 - 4'Ø RIM= 850.60' 6" INVERT NW= 846.00' 6" INVERT SE= 846.00'

CB2 - 6'Ø RIM= 850.70' 6" INVERT NW= 845.91' 18" INVERT N= 845.90' 18" INVERT SW= 845.90'

MH3 - 4'Ø RIM= 851.44' 18" INVERT NE= 845.73' 18" INVERT SE= 845.64'

RELOCATE GAS AT STORM CROSSING

MH2 - 4'Ø RIM= 851.43' 18" INVERT NE= 845.82' 18" INVERT W= 845.82'

STRUCTURAL DESIGN CRITERIA

- GOVERNING CODE:** WISCONSIN COMMERCIAL BUILDING CODE SPS 361-366
2015 INTERNATIONAL BUILDING CODE
- RISK CATEGORY:** II
- FLOOR LIVE LOAD (1603.1.1)**
FLOOR AT GRADE: WI DOT: 11K WHEEL, 34K TANDEM
SECOND FLOOR: 20 PSF
MEZZANINE: 80 PSF
- ROOF LIVE LOAD (1603.1.2)**
MINIMUM ROOF LIVE LOAD: 20 PSF
- ROOF SNOW LOAD (1603.1.3)**
GROUND SNOW LOAD: Ps = 30 PSF
FLAT-ROOF SNOW LOAD: Ps = 23 PSF
SNOW EXPOSURE FACTOR: Ce = 1.1
THERMAL FACTOR: It = 1.0
Cr = 1.0
- WIND DESIGN DATA (1603.1.4)**
ULTIMATE WIND SPEED (3-SECOND GUST): Vult = 115 MPH
NOMINAL WIND SPEED (3-SECOND GUST): V30 = 90 MPH
WIND EXPOSURE: C
INTERNAL PRESSURE COEFFICIENT: GCPI = +/- 0.15
- EARTHQUAKE DESIGN DATA (1603.1.5)**
IMPORTANCE FACTOR: Ie = 1
MAPPED, MCE, 5% DAMPED, SPECTRAL ACCELERATIONS:
AT SHORT PERIODS: Ss = 0.09 G
AT A PERIOD OF 1 SECOND: S1 = 0.05 G
SITE CLASS: D
DESIGN EARTHQUAKE SPECTRAL ACCELERATIONS:
AT SHORT PERIODS: Ss = 0.09 G
AT A PERIOD OF 1 SECOND: S1 = 0.073 G

- GEOTECHNICAL DESIGN DATA (1603.1.6)**
NET ALLOWABLE SOIL BEARING PRESSURE 1500 PSF
PER CGC GEOTECHNICAL REPORT, PROJECT CI 15051-8 DATED 06/12/2018
- FLOOD DESIGN DATA (1603.1.7)**
BUILDING IS NOT LOCATED IN FLOOD HAZARD AREA; THEREFORE FLOOD DESIGN DATA IS NOT REQUIRED
- SPECIAL LOADS (1603.1.8)**
SPECIAL LOADING CONDITIONS ARE NOT APPLICABLE TO THE DESIGN OF THIS BUILDING; THEREFORE SPECIAL LOADS ARE NOT REQUIRED

- PHOTOVOLTAIC PANEL SYSTEM LOADS (1603.1.8.1)**
PANEL SYSTEM: N/A
SUPPORT SYSTEM: N/A
- STRUCTURAL OBSERVATIONS FOR SEISMIC AND/OR WIND RESISTANCE**
STRUCTURAL OBSERVATIONS FOR SEISMIC AND WIND RESISTANCE ARE NOT REQUIRED.

GENERAL NOTES

- FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION - RESOLVE ANY DISCREPANCY WITH ARCHITECT/ENGINEER.
DO NOT SCALE DRAWINGS!!!
- FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINTS AND SCORE LINES, SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS.
- VERIFY ALL SIZES, WEIGHTS AND LOCATIONS OF MECHANICAL AND ELECTRICAL EQUIPMENT, ROOF PENETRATIONS, DUCTS, ETC. WITH MECHANICAL AND ELECTRICAL CONTRACTORS AND FIELD CONDITIONS.
- DETAILS MARKED "TYPICAL" MAY OR MAY NOT BE CUT ON PLANS, BUT SHALL APPLY UNLESS NOTED OTHERWISE.
- STRUCTURAL SYSTEM IS DESIGNED TO WORK AS A COMPLETED SYSTEM, ANY SHORING OR BRACING NECESSARY DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING PLANS FOR SLEEVES, INSERTS, ETC. NOT SHOWN ON STRUCTURAL PLANS.
- NO PIPES OR SLEEVES FOR MECHANICAL TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY AND ALL ACCIDENTS WHICH RESULT IN DEATH, PERSONAL INJURY, OR DAMAGE TO PROPERTY ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF THE WORK.
- CONTRACTOR SHALL POST LIVE LOADS PER SECTION 106.1 OF THE GOVERNING CODE.
- SECTIONS, DETAILS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR CONDITIONS ELSEWHERE, UNLESS OTHERWISE SHOWN.

EARTHWORK NOTES

- REFERENCE GEOTECHNICAL DATA AND EARTH MOVING SPECIFICATION FOR DEFINITION OF MATERIALS AND COMPACTION REQUIREMENTS.
- REFERENCE GEOTECHNICAL DATA AND EARTH MOVING SPECIFICATION FOR REQUIREMENTS FOR EXCAVATION AND CONTROL OF SURFACE WATER AND GROUND WATER.
- UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL RETAIN AN INDEPENDENT, QUALIFIED GEOTECHNICAL ENGINEERING FIRM/TESTING AGENCY TO IDENTIFY AREAS OF POOR SOILS, TO MONITOR PROPER SUBGRADE PREPARATIONS AND TO OVERSEE AND TEST THE PLACEMENT OF COMPACTED FILL MATERIAL.
- ALL SUBTERRANEAN STRUCTURES, UTILITIES, PIPING, ETC. IN THE AREA OF EXCAVATIONS SHALL BE LOCATED AND MARKED BY CONTRACTOR PRIOR TO EARTH REMOVAL WORK. CONTRACTOR SHALL MAINTAIN MARKERS UNTIL EXCAVATION ACTIVITIES HAVE CEASED. IF UNDERGROUND UTILITY CONFLICTS ARE DISCOVERED BEFORE OR ENCOUNTERED DURING EXCAVATION, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
- BEFORE PLACING FOOTINGS, FOUNDATIONS OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE SPECIFICATIONS.
- DO NOT BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST AND/OR ICE.
- PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

FOUNDATION NOTES

- FOOTING SUBGRADES SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER, AND LOOSE SOIL.
- ALL COLUMN FOOTINGS ARE TO BE CENTERED UNDER COLUMN CENTERLINES, UNLESS INDICATED OTHERWISE.
- THE FOUNDATION CONTRACTOR SHALL FULLY REVIEW UNDER-GROUND PLUMBING DRAWINGS AND SHALL COORDINATE WITH THE UNDER-GROUND PLUMBING CONTRACTOR TO DEPRESS FOOTINGS AND PROVIDE PIPE SLEEVES THROUGH FOUNDATION WALLS AS NECESSARY TO ACCOMMODATE PLUMBING LINES OR TRAPS WHICH PENETRATE CONCRETE FOOTINGS OR FOUNDATIONS.
- PROVIDE PVC SLEEVES THROUGH FOUNDATION WALLS/FOOTINGS FOR PIPE, CONDUIT, AND CABLE PENETRATIONS. EXCAVATION TRENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
- REFER TO ELECTRICAL DRAWING SITE LIGHTING FOR POLE BASES. SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.
- COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS FOR MISCELLANEOUS FOUNDATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
- CONTROL JOINTS IN THE CAST-IN-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT SPACINGS NOT TO EXCEED 20' O.C. OR AS LOCATED PER DRAWINGS AND SHOULD ALIGN WITH MASONRY CONTROL JOINTS WHERE APPLICABLE. SEE DETAIL SHEETS FOR CONTROL JOINT DETAILS. PROVIDE VERTICAL "V" GROOVE AT ALL CONSTRUCTION AND CONTROL JOINTS. CONTRACTOR SHALL SUBMIT PLANS OF JOINT LOCATIONS FOR APPROVAL.
- A LEAN CONCRETE MUD SLAB 2" TO 3" THICK SHALL BE USED IN THE FOOTING EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
- COORDINATE GROUNDING REQUIREMENTS FOR FOUNDATION/FOOTING REINFORCING STEEL WITH ELECTRICAL DRAWINGS. COORDINATE INSTALLATION OF GROUNDING WIRE/EQUIPMENT WITH ELECTRICAL CONTRACTOR PRIOR TO CASTING CONCRETE. REFER TO NOTE CR-11 FOR ADDITIONAL INFORMATION.
- SEE TYPICAL SLAB-ON-GRADE DETAILS FOR SLAB AND SUB-BASE REQUIREMENTS. THESE WILL BE TYPICAL THROUGHOUT UNLESS NOTED OTHERWISE.

CONCRETE & REINFORCING STEEL NOTES

- MATERIAL PROPERTIES (U.N.O.)**
- COMPRESSIVE STRENGTH - Fc = 4 KSI
CONCRETE REINFORCEMENT - Fy = 60 KSI (A615 GR 60)
- CR-1. PROVIDE HOT/COLD WEATHER PROCEDURES AND PROTECTION IN ACCORDANCE WITH ACI RECOMMENDATIONS AND PROJECT SPECIFICATIONS.
- CR-2. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM WITH THE LOCAL BUILDING CODE REQUIREMENTS AND THOSE OF THE FOLLOWING STANDARDS (LATEST EDITION):
- "ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONC."
"ACI 315, DETAILS AND CONSTRUCTION OF REINFORCED CONC."
"ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BLDGS."
"ACI 307, RECOMMENDED PRACTICE FOR CONCRETE FORM WORK"
- CR-3. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315.
- CR-4. ALL REINFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST CRSI MANUAL OF STANDARD PRACTICE AND SHALL BE CLEAN AND FREE OF GREASE AND SCALING RUST.
- CR-5. SEE SECTION 03300.0 OF SPECIFICATIONS FOR INFORMATION REGARDING CONCRETE MIX DESIGN, TESTING, MATERIALS, AND ADMIXTURES.
- CR-6. CONCRETE REINFORCEMENT PROTECTION/CLEAR COVER, U.N.O.:
- | | |
|--|----------|
| FOOTINGS:
BOTTOM & SIDES
TOP | 3"
2" |
| WALLS:
EXTERIOR EXPOSURE
INTERIOR EXPOSURE | 2"
1" |
| BEAMS/COLUMNS:
OVER TOP OF STIRRUPS | 1 1/2" |
| ELEVATED SLABS: | 1" |
- CR-7. ALL BAR LAPS SHALL CONFORM TO ACI 318-14, PARAGRAPH 25.5.1, CLASS "B" SPLICE CRITERIA. USE TOP BAR LAP LENGTHS FOR TOP BARS IN SLABS AND BEAMS OVER 12' SPAN.
- CR-8. LAP LENGTH SHALL BE SPECIFICALLY NOTED ON SHOP DRAWINGS WHERE MORE THAN ONE BAR MAKES UP A CONTINUOUS STRING.
- CR-9. HORIZONTAL BARS SHALL BE DETAILED TO SHOW THE DISTANCE FROM AT LEAST ONE END OF THE BAR TO THE NEAREST BUILDING GRID LINE OR WALL.
- CR-10. CONTINUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN TRANSVERSE SECTION ONLY, SHALL BE LAPPED AS FOLLOWS:
TOP BARS NEAR MID-SPANS; BOTTOM BARS DIRECTLY OVER SUPPORTS, U.N.O.
- CR-11. PROVIDE ONE (1) HOOKED REINFORCING BAR IN CONCRETE FOOTING TO SERVE AS A "CONCRETE ENCASED ELECTRODE" IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT LOCATION. HOOKED REINFORCING BAR SHALL CONFORM TO THE FOLLOWING:
A. UNDATED, LOW-ALLOY STEEL, CONFORMING TO ASTM A706.
B. BAR SIZE NUMBER 4 HOOKED AT ONE END ONLY.
C. MINIMUM HORIZONTAL LENGTH OF REINFORCING BAR ENCASED IN CONCRETE FOOTING SHALL BE 20" AS DEFINED IN NEC, ARTICLE 250.
D. MINIMUM VERTICAL PROJECTION OF REINFORCING BAR ABOVE CONCRETE SLAB SHALL BE 0'-6".
E. MINIMUM COVER ALL AROUND REINFORCING BAR SHALL BE 2".
- CR-12. ALL CONCRETE FOUNDATION WALLS SHALL HAVE A MINIMUM OF (2) #5 BARS CONTINUOUS TOP AND BOTTOM, UNLESS INDICATED OTHERWISE.
- CR-13. ALL OPENINGS IN CONCRETE FOUNDATION WALLS ARE TO HAVE (4) #5 DIAGONAL BARS EACH FACE OF THE WALL AND SHALL EXTEND 2 FEET BEYOND OPENING ON EACH SIDE, UNLESS INDICATED OTHERWISE.
- CR-14. PROVIDE FOOTING DOWELS TO MATCH VERTICAL WALL REINFORCING. WHERE WALL REINFORCING IS NOT INDICATED, DOWEL FOOTING TO FOUNDATION WALLS WITH #5 REBAR AT 16" O.C. BY 3'-0" LONG, WITH STANDARD HOOKS EMBEDDED A MINIMUM OF 9" INTO FOOTING.
- CR-15. ALL PIER FOOTINGS TO HAVE DOWELS WITH STANDARD HOOKS OF SAME SIZE AND QUANTITY AS PIER STEEL. DOWELS TO LAP PIER STEEL AS REQUIRED FOR A CLASS "B" TENSION SPICE. HOOK UNDER FOOTING REINFORCEMENT, UNLESS INDICATED OTHERWISE.
- CR-16. HOOK HORIZONTAL WALL AND BEAM REINFORCING BARS AT DISCONTINUOUS ENDS, TYPICAL UNLESS INDICATED OTHERWISE. EXTEND REINFORCEMENT TO FAR FACE OF PIERS/PEDESTALS AND/OR COLUMNS UNLESS INDICATED OTHERWISE.
- CR-17. WATER STOPS SHALL BE PROVIDED IN HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS WHERE FINISHED FLOOR IS BELOW EXTERIOR GRADE UNLESS OMISSION IS APPROVED BY THE ENGINEER.
- CR-18. PROVIDE ADDITIONAL #4 BARS AT 4'-0" LONG 1' BELOW TOP OF SLAB AT 45° TO ALL RE-ENTRANT CORNERS/OPENINGS IN CONCRETE SLABS AND AS INDICATED ON DRAWINGS.
- CR-19. REFER TO FLATWORK DRAWINGS AND/OR SPECIFICATIONS FOR SLAB-ON-GRADE FINISH TYPES AND DEPRESSIONS REQUIRED FOR MATS, TILE, AND OTHER FINISH MATERIALS.
- CR-20. THICKEN THE SLAB-ON-GRADE BENEATH INTERIOR MASONRY PARTITIONS 8 INCHES BELOW BOTTOM OF SLAB ON GRADE. THICKENED PORTION TO EXTEND 8 INCHES BEYOND THE FACE OF THE WALL ON EACH SIDE. REINFORCE THE THICKENED PORTION WITH (3) CONTINUOUS, LONGITUDINAL REINFORCING BARS AND 45 TRANSVERSE BARS AT 16" O.C., UNLESS INDICATED OTHERWISE.
- CR-21. PITCH CONCRETE TO FLOOR DRAINS. COORDINATE WITH PLUMBING AND ARCHITECTURAL DRAWINGS.
- CR-22. PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS-ON-GRADE AT 15 FOOT MAXIMUM CENTERS EACH DIRECTION, UNLESS INDICATED OTHERWISE. CONTRACTOR SHALL SUBMIT PLANS OF JOINT LOCATIONS TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO CASTING SLABS-ON-GRADE. COORDINATE WITH ARCHITECTURAL DRAWINGS AND FLOOR FINISHES SUCH AS TILE AND TERRAZZO.
- CR-23. ALL DOWELS INTO EXISTING CONCRETE OR SOLID MASONRY TO BE EPOXY ADHESIVE ANCHORS.
- CR-24. ALUMINUM CONDUIT IS NOT PERMITTED TO BE EMBEDDED IN CONCRETE.
- CR-25. WHEN DRILLING INTO EXISTING CONCRETE USE GROUND PENETRATING RADAR OR XRAY SCANNING TO LOCATE EXISTING REINFORCING. DO NOT DRILL THROUGH EXISTING REINFORCING. CONTACT ENGINEER IMMEDIATELY IF ANCHOR LOCATIONS INTERFERE WITH EXISTING REINFORCING.

MASONRY NOTES

- MATERIAL PROPERTIES (U.N.O.)**
- COMPRESSIVE STRENGTH - Fm = 2000 PSI
MASONRY REINFORCEMENT - Fy = 60 KSI (A615 GR 60)
MORTAR - Fc = 2500 PSI (ASTM C270)
GROUT AT 28-DAYS - 2500 PSI (ASTM C476)
- M-1. PROVIDE HOT AND COLD WEATHER PROCEDURES AND TEMPORARY MOISTURE PROTECTION IN ACCORDANCE WITH ACI RECOMMENDATIONS AND PROJECT SPECIFICATIONS.
- M-2. MASONRY SHALL BE PLACED IN ONE-HALF RUNNING BOND U.N.O.
- M-3. HOLLOW MASONRY UNITS SHALL BE LAID WITH FULL HEAD JOINTS AND FULL BED JOINTS OF THE FACE SHELLS AND UNDER WEBS WHERE THE ADJACENT CELLS ARE TO BE FILLED WITH GROUT AND AT THE BOTTOM COURSE.
- M-4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS.
- M-5. REFER TO ARCHITECTURAL PLANS AND DOORFRAME SCHEDULES FOR LINTEL ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.
- M-6. ALL MASONRY WALLS ARE TO HAVE 9 GAUGE HORIZONTAL JOINT REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY.
- M-7. ALL LAPS SHALL BE 48 BAR DIAMETERS UNLESS INDICATED OTHERWISE.
- M-8. GROUT SOLID ALL JAMBS IN ALL MASONRY WALLS FULL HEIGHT TO UNDERSIDE OF LINTEL. EXTEND GROUTED JAMB FROM FACE OF MASONRY OPENING AT LEAST 24" (A MINIMUM OF 3 CELLS). AT OTHER BEAM BEARING LOCATIONS, GROUT SOLID A MINIMUM 24" X 24" AREA BENEATH THE BEARING PLATE, UNLESS INDICATED OTHERWISE.
- M-9. PROVIDE CORNER SPLICE BARS FOR ALL BOND BEAMS OCCURRING AT CORNERS OR WALL INTERSECTIONS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM.
- M-10. ALL NON-STRUCTURAL MASONRY WALLS SHALL BE REINFORCED WITH A MINIMUM #5 VERTICAL BARS AT 48" O.C. WITH THAT CORE GROUTED AND HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE A CONTINUOUS BOND BEAM AT TOP OF WALL WITH (2) #5 BARS CONTINUOUS, GROUT BOND BEAM SOLID. PROVIDE #5 DOWEL AT 48" O.C., INTO FOOTINGS.
- M-11. USE SLEEVE ANCHORS IN NON-STRUCTURAL MASONRY WALL PARTITIONS, UNLESS INDICATED OTHERWISE.
- M-12. REFER TO STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS FOR CONTROL JOINT LOCATIONS. WHERE MASONRY CONTROL JOINT LOCATIONS ARE NOT INDICATED, PROVIDE THEM AT 25' MAXIMUM CENTERS. SUBMIT MASONRY CONTROL JOINT LAYOUT TO THE ENGINEER FOR APPROVAL.
- M-13. PROVIDE HORIZONTAL BOND BEAMS (DIAPHRAGM CHORDS) WITH (2) #5 BARS CONTINUOUS, BENEATH FLOOR/ROOF BEAM BEARING ELEVATIONS AND AT DECK EDGE.
- M-14. PROVIDE 10 GAGE BENT SLIP JOINT PLATES 4' x 4' x 1'-0" LONG AT 3'-0" O.C. EACH SIDE OF THE TOP OF ALL NON-STRUCTURAL MASONRY WALLS. ATTACH TO UNDERSIDE OF METAL DECK USING SELF-TAPPING CONCRETE SCREWS WITH 3 (MINIMUM) SELF-DRILLING, SELF-THREADING SCREWS (#12) AS REQUIRED BY THICKNESS OF BASE METAL. ATTACH TO UNDERSIDE OF CONCRETE DECK WITH 2 (MINIMUM) SELF-TAPPING CONCRETE SCREWS 3/16" DIAMETER. SEE ARCHITECTURAL DRAWINGS FOR NON-STRUCTURAL MASONRY WALL LOCATIONS. MAINTAIN 1" (MINIMUM) GAP BETWEEN TOP OF MASONRY WALL AND UNDERSIDE OF STRUCTURE. DO NOT ATTACH PLATES TO MASONRY WALL, UNLESS INDICATED OTHERWISE.

SHOP DRAWINGS

- SD-1. SHOP DRAWINGS SHALL BE SUBMITTED FOR STRUCTURAL ITEMS AS REQUIRED BY THE SPECIFICATIONS. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.
- SD-2. THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMITTAL. REVIEWED SUBMITTALS SHALL BE STAMPED BY THE CONTRACTOR. ANY SHOP DRAWING OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE REJECTED. GENERAL CONTRACTOR SHALL CLOUD OR FLAG ALL ITEMS NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SHALL VERIFY ALL DIMENSIONS.
- SD-3. ANY CHANGES, SUBSTITUTIONS OR DEVIATIONS FROM THE ORIGINAL CONTRACT DRAWINGS SHALL BE CLOUDED BY THE MANUFACTURER OR FABRICATOR. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS WHICH ARE CLOUDED OR FLAGGED BY SUBMITTING PARTIES SHALL NOT BE CONSIDERED APPROVED AFTER THE ENGINEER'S REVIEW, UNLESS SPECIFICALLY NOTED ACCORDINGLY BY THE ENGINEER.
- SD-4. THE APPROVED SHOP DRAWINGS DO NOT REPLACE THE ORIGINAL CONTRACT DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY ARE NOT TO BE CONSIDERED CHANGES TO THE ORIGINAL CONTRACT DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ITEMS OMITTED OR SHOWN INCORRECTLY ARE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DRAWINGS.
- SD-5. SHOP DRAWING REVIEW IS INTENDED ONLY FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND CONSTRUCTION DOCUMENTS.
- SD-6. SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF MAJOR ERRORS ARE FOUND DURING REVIEW.
- SD-7. ALLOW A MINIMUM OF (10) WORKING DAYS FOR REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER.

DELEGATED DESIGN SUBMITTALS

- DOCUMENTS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVIEWED BY THE ENGINEER OF RECORD IN RESPONSIBLE CHARGE WHO SHALL FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THEY HAVE BEEN REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING.
- DS-1. HELICAL PILES - SPECIFICATION SECTION 316615.
- DS-2. PIPE AND TUBE RAILINGS - SPECIFICATION SECTION 056213.
- DS-3. COLD FORMED METAL FRAMING - SPECIFICATION SECTION 054000.

STRUCTURAL STEEL NOTES

- MATERIAL PROPERTIES (U.N.O.)**
- W SHAPES - Fy = 50 KSI (A992 OR A572 GR 50)
C-SHAPES & ANGLES - Fy = 36 KSI (A36)
PLATES & BARS - Fy = 36 KSI (A36)
RECTANGULAR HSS - Fy = 46 KSI (A500 GR B)
ROUND HSS - Fy = 42 KSI (A500 GR B)
PIPE - Fy = 42 KSI (A53 GR B)
RODS - Fy = 36 KSI (A36)
- S-1. STEEL BEAMS WITH RESIDUAL CAMBER RESULTING FROM MILL FABRICATION OR ROLLING SHALL BE SUB FABRICATED AND ERECTED SUCH THAT THIS RESIDUAL CAMBER COUNTERACTS GRAVITY LOAD DEFLECTION.
- S-2. ALL BOLTED CONNECTIONS SHALL UTILIZE 3/4 INCH DIAMETER A325 BOLTS TIGHTENED TO THE SNUG-TIGHT CONDITION. THE SNUG-TIGHT CONDITION IS DEFINED BY THE RSSCS' SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. UNLESS INDICATED OTHERWISE.
- S-3. STEEL CONNECTIONS NOT DETAILED ON THE PLANS ARE TO BE THE FABRICATOR'S STANDARD AND ARE TO BE SELECTED AND DESIGNED IN ACCORDANCE WITH AISC ASD SPECIFICATIONS, TYPE 2 FRAMING CONNECTIONS, FOR THE REACTIONS INDICATED.
- MINIMUM NO. BOLTS PER CONNECTION
n = 2 FOR MEMBERS 10 INCHES DEEP OR LESS
n = 3 FOR MEMBERS 12 TO 15 INCHES DEEP
n = 4 FOR MEMBERS 16 INCHES DEEP
n = 5 FOR MEMBERS 18 INCHES DEEP
n = 6 FOR MEMBERS 21 INCHES DEEP
n = 7 FOR MEMBERS 24 INCHES DEEP
n = 8 FOR MEMBERS 30 INCHES DEEP
n = 9 FOR MEMBERS 36 INCHES DEEP
n = 10 FOR MEMBERS 38 INCHES DEEP
- S-4. THE MINIMUM CONNECTION PLATE ANGLE THICKNESS SHALL BE 5/16". THE MINIMUM WELD 1/4" AND THE MINIMUM DESIGN LOAD ON ANY CONNECTION TO KIPS, UNLESS INDICATED OTHERWISE.
- S-5. ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THROUGH PLATE CONNECTIONS UNLESS OTHERWISE INDICATED.
- S-6. ALL ANCHOR BOLTS ARE TO BE 3/4" INCH DIAMETER F1554 GR. 55 THREADED RODS UNLESS INDICATED OTHERWISE. (2)-1/2 INCH DIAMETER ANCHOR BOLTS SHALL BE PROVIDED AT ALL BEAM AND LINTEL BEARINGS ON CONCRETE OR MASONRY, UNLESS INDICATED OTHERWISE.
- S-7. POST INSTALLED ANCHORS ARE TO BE ADHESIVE ANCHORS. INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED, UNLESS INDICATED OTHERWISE.
- S-8. STUD ANCHORS ARE TO BE NELSON STUDS OR EQUAL (ASTM A108).
- S-9. BEAM AND LINTEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 1/2" NON-SHRINK GROUT.
- S-10. ALL WELDING OF NEW STEEL IS TO BE WITH E70XX ELECTRODES, U.N.O. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS SPECIFICATIONS BY CERTIFIED WELDERS.
- S-11. WHEN FIELD WELDING TO EXISTING STEEL, ADJUST WELDING PROCEDURES AS REQUIRED TO BE COMPATIBLE WITH THE NEW AND EXISTING STEEL.
- S-12. THE CONTRACTOR SHALL FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, BRACING, ETC.) AS INDICATED AND AS NECESSARY PER ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
- S-13. ALL EXTERIOR MASONRY SHELF ANGLES, LINTEL BEAMS, AND LINTEL PLATES SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A123.

STEEL BAR JOISTS

- MATERIAL PROPERTIES (U.N.O.)**
- COMPLY WITH SJIS "SPECIFICATIONS" FOR WEB AND STEEL-ANGLE CHORD MEMBERS.
- J-1. BAR JOISTS SHALL BE DESIGNED TO RESIST FORCES INDICATED ON DRAWINGS AND SPREAD LOADS.
- J-2. TYPICAL BAR JOISTS ARE NOT DESIGNED FOR CONCENTRATED LOADS. PLACE LOADS AT PANEL POINTS OR WEI. ADDITIONAL DOUBLE ANGLE MEMBER ONE EACH SIDE FROM POINT OF CONCENTRATED LOAD TO THE NEAREST PANEL POINT ON THE OPPOSITE CHORD.
- J-3. ALL FIELD MODIFICATIONS OR REPAIRS TO THE JOIST, OR JOIST GIRDERS, SHALL BE APPROVED BY THE JOIST MANUFACTURER IN WRITING. THIS LETTER SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW.
- J-4. CUTTING & DRILLING OF CHORD OR WEB MEMBERS IN BAR JOISTS, OR JOIST GIRDERS, IS NOT PERMITTED.
- J-5. ALL BRIDGING SHALL BE EQUALLY SPACED, UNLESS NOTED OTHERWISE, BY JOIST MANUFACTURER.
- J-6. CONTRACTOR(S) SHALL PROVIDE MEANS FOR ADEQUATE DISTRIBUTION OF LOADS AT PANEL POINTS OR WEI. ADDITIONAL DOUBLE ANGLE MEMBER ONE EACH SIDE FROM POINT OF CONCENTRATED LOAD TO THE NEAREST PANEL POINT ON THE OPPOSITE CHORD.
- J-7. JOIST SHALL BE CONSIDERED AS UNSTABLE DURING ERECTION. UNDER NO CIRCUMSTANCES ARE CONSTRUCTION LOADS OF ANY DESCRIPTION TO BE PLACED ON UNBRIDGED JOISTS. THE APPLICATION OF CONSTRUCTION LOADS ON UNBRIDGED JOISTS IS IN DIRECT VIOLATION OF O.S.H.A. REGULATIONS.
- J-8. WHERE X-BRIDGING INTERFERES WITH MECHANICAL PIPING OR DUCTWORK, UTILIZE HORIZONTAL BRIDGING AS DIRECTED BY JOIST MANUFACTURER.
- J-9. ALL BRIDGING SHALL BE PER SJJ AND AS REQUIRED FOR DESIGN LOADS.
- J-10. PROVIDE JOIST WITH UPLIFT CAPACITY AS REQUIRED BY THE BUILDING CODE AND THE STRUCTURAL DESIGN CRITERIA.

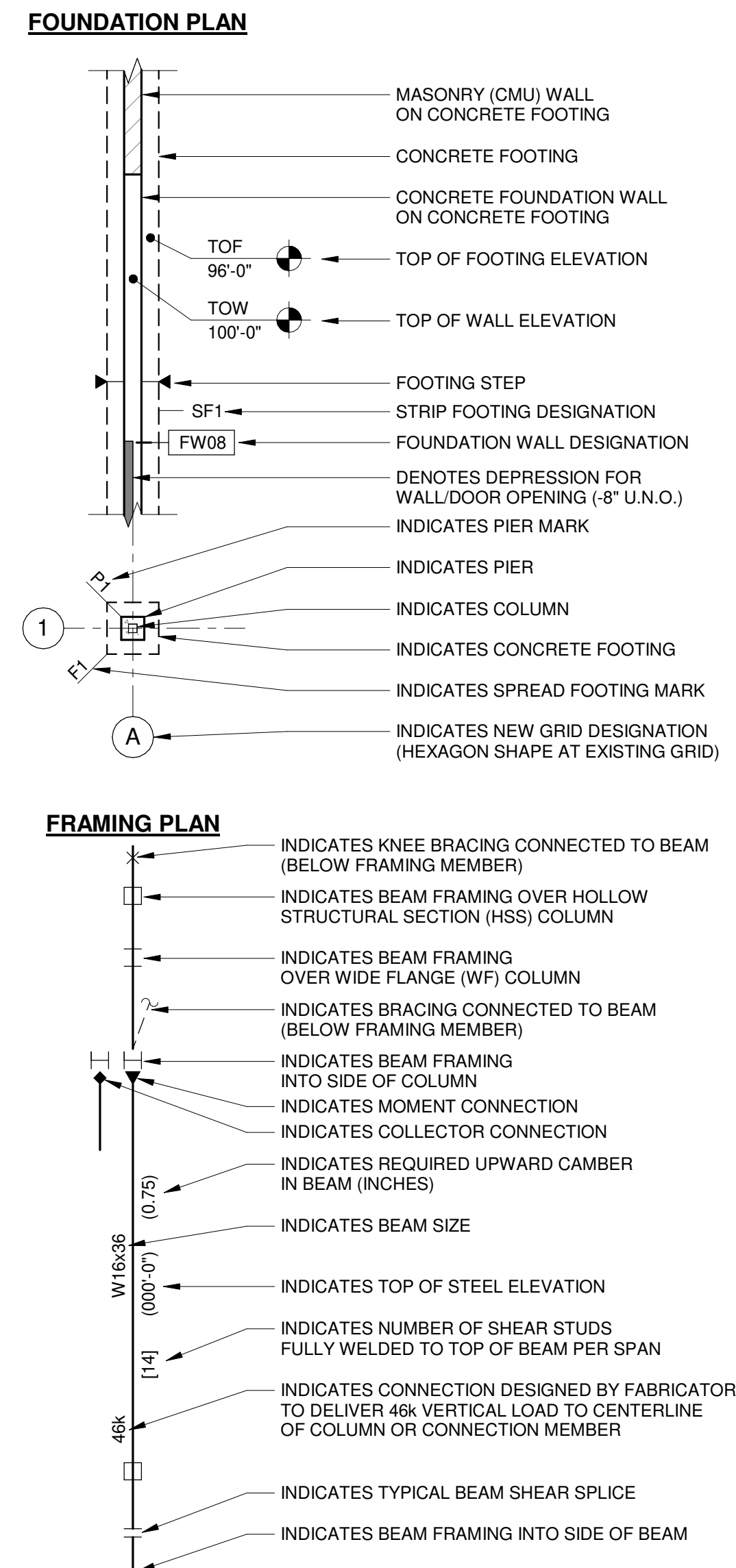
METAL DECK

- MATERIAL PROPERTIES (U.N.O.)**
- ROOF DECK: GALVANIZED, Fy = 33 KSI
FORM DECK: GALVANIZED, Fy = 33 KSI
- MD-1. SEE PLAN FOR DEPTH AND GAUGE.
- MD-2. METAL DECKING SHALL BE CONTINUOUS OVER 3 SPANS AND HAVE JOINTS OVER SUPPORTING MEMBERS, UNLESS INDICATED OTHERWISE.
- MD-3. BUTTON PUNCHING ROOF DECK IS NOT PERMITTED. REFERENCE DRAWINGS FOR ROOF DECK ATTACHMENT REQUIREMENTS. STRUCTURAL DIAPHRAGM ACTION IS PROVIDED BY THE ROOF DECK AND ITS ATTACHMENT.
- MD-4. ALL MISCELLANEOUS OPENINGS IN METAL ROOF DECK ARE TO BE FRAMED BY 15x3x3/8 ANGLES. LONG LEG OF ANGLES SHALL BE VERTICAL. ANGLES SHALL BE WELDED TO THE TOP CHORD/FLANGE OF ROOF FRAMING AND EACH OTHER, UNLESS INDICATED OTHERWISE.
- MD-5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POUR STOPS AT EDGES OF METAL DECK PER SDI POUR STOP SELECTION TABLE/RECOMMENDATIONS OR BENT PLATE POUR STOPS AS REQUIRED TO FORM THE SLAB EDGE, UNLESS INDICATED OTHERWISE.
- MD-6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COLUMN CLOSURES AND ALL OTHER RELATED ACCESSORIES REQUIRED FOR COMPLETE DECK INSTALLATION AT ROOFS AND FLOORS.

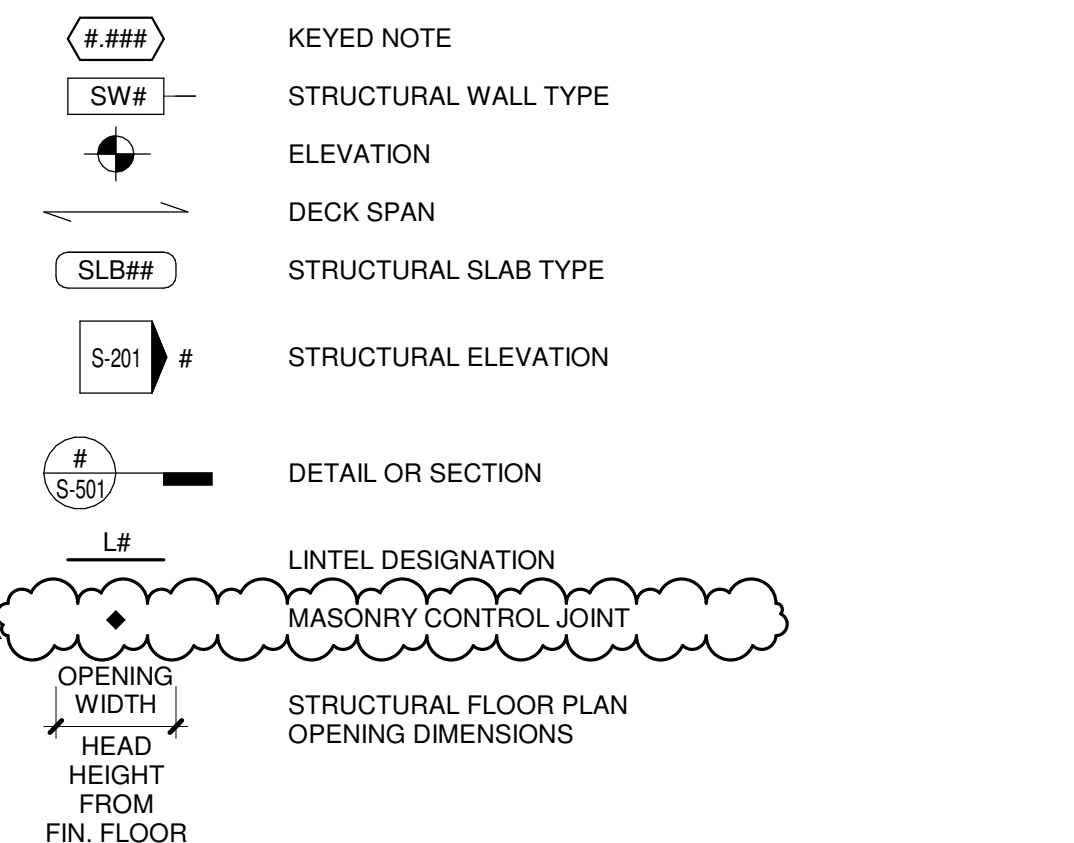
OBSERVATION AND INSPECTION

- O-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM ALL STRUCTURAL WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY STRUCTURAL INSPECTION PROVIDED BY OTHERS DOES NOT RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY. ANY STRUCTURAL DEVIATIONS FROM THE CONTRACT DOCUMENTS THAT ARE FOUND AT A LATER DATE SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT COST OR ANY DELAY TO THE PROJECT SCHEDULE.
- O-2. THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION AGENCY TO PROVIDE CONSTRUCTION OBSERVATIONS AND INSPECTIONS.
- O-3. THE CONTRACTOR SHALL PROVIDE THE INSPECTION AGENCY ACCESS TO ALL PLACES WHERE THE WORK IS BEING PERFORMED. A MINIMUM OF 24 HOURS NOTIFICATION SHALL BE GIVEN TO THE INSPECTION AGENCY PRIOR TO THE COMMENCEMENT OF WORK REQUIRING OBSERVATION OR INSPECTION.
- O-4. THE INSPECTION AGENCY IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES FROM THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISHES TO QUESTION THE TESTING AGENCY'S INTERPRETATION OF THE CONTRACT DOCUMENTS, HE MAY DO SO DIRECTLY WITH THE STRUCTURAL ENGINEER.
- O-5. THE TESTING AGENCY IS NOT AUTHORIZED TO STOP OR DELAY THE WORK IF THE CONTRACTOR ELECTS TO CONTINUE WITH A CERTAIN PORTION OF WORK AFTER BEING NOTIFIED BY THE TESTING AGENCY THAT SUCH WORK IS NOT IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR DOES SO AT THEIR OWN RISK AND MAY BE REQUIRED TO CORRECT THE WORK AT A LATER DATE.
- O-6. THE INSPECTING AGENCY IS NOT INSPECTING FOR O.S.H.A. COMPLIANCE OR REQUIRED TO INSPECT TEMPORARY CONSTRUCTION, SUCH AS TEMPORARY BRACING. TEMPORARY CONSTRUCTION IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
- O-7. THE CONTRACTOR SHALL NOTIFY THE INSPECTION AGENCY OF ANY WELDS THAT WERE DONE IN THE FIELD THAT WERE NOT DETAILED AS FIELD WELDS ON THE DESIGN DRAWINGS.
- O-8. INSPECTION AGENCY SHALL:
A. OBSERVE SHORING AND REMOVAL OF BALLAST BEFORE REINFORCING
B. OBSERVE ABSENCE OF SNOW DURING REINFORCING
C. VISUALLY OBSERVE ALL FIELD WELDS
D. CLOSELY INSPECT ANY NONCONFORMING WELDS
E. IMMEDIATELY NOTIFY THE CONTRACTOR OF NON-CONFORMING WORK.
F. ISSUE BI-WEEKLY PROGRESS REPORTS
G. OBSERVE INSTALLATION, REINSTALLATION OF JOIST BRIDGING AND BRACING
H. SERVE NEW JOIST TOP CHORD CONNECTION TO ROOF DECK
I. OBSERVE NO WELD HSS4x4 TO HSS4x4 ON DETAILS 11S-543 AND 21S-543 UNTIL AFTER MAU-6 PLACEMENT
- O-9. WELD INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- O-10. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN.
- O-11. PROGRESS REPORTS SHALL INCLUDE DOCUMENTATION OF ALL OBSERVATION AND INSPECTIONS AND NONCONFORMANCES. PROGRESS REPORTS SHALL BE SIGNED AND SIGNED BY A PROFESSIONAL ENGINEER.
- O-12. CONTRACTOR SHALL CORRECT ALL NONCONFORMANCES AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOT APPLY COST OF CORRECTIONS TO ALLOWANCE.
- O-13. CONTRACTOR SHALL PROVIDE REINSPECTION OF ALL NONCONFORMANCES AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOT APPLY COST OF REINSPECTION TO ALLOWANCE.
- O-14. THE CONTRACTOR SHALL NOT APPLY THE COST OF THE CONTRACTOR'S QA/QC PROGRAM NOR INSPECTIONS TO THE ALLOWANCE.
- O-15. OBSERVATION OF FIELD WELDS SHALL INCLUDE PLACEMENT, TYPE, SIZE, FUSION, POROSITY, CRACKING, UNDERCUT, SPATTER AND SMOOTHNESS FOLLOWING AWS D1.1.

STRUCTURAL SYMBOLOLOGY



GENERAL SYMBOLS



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Madison, WI 53762
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meadhunt.com

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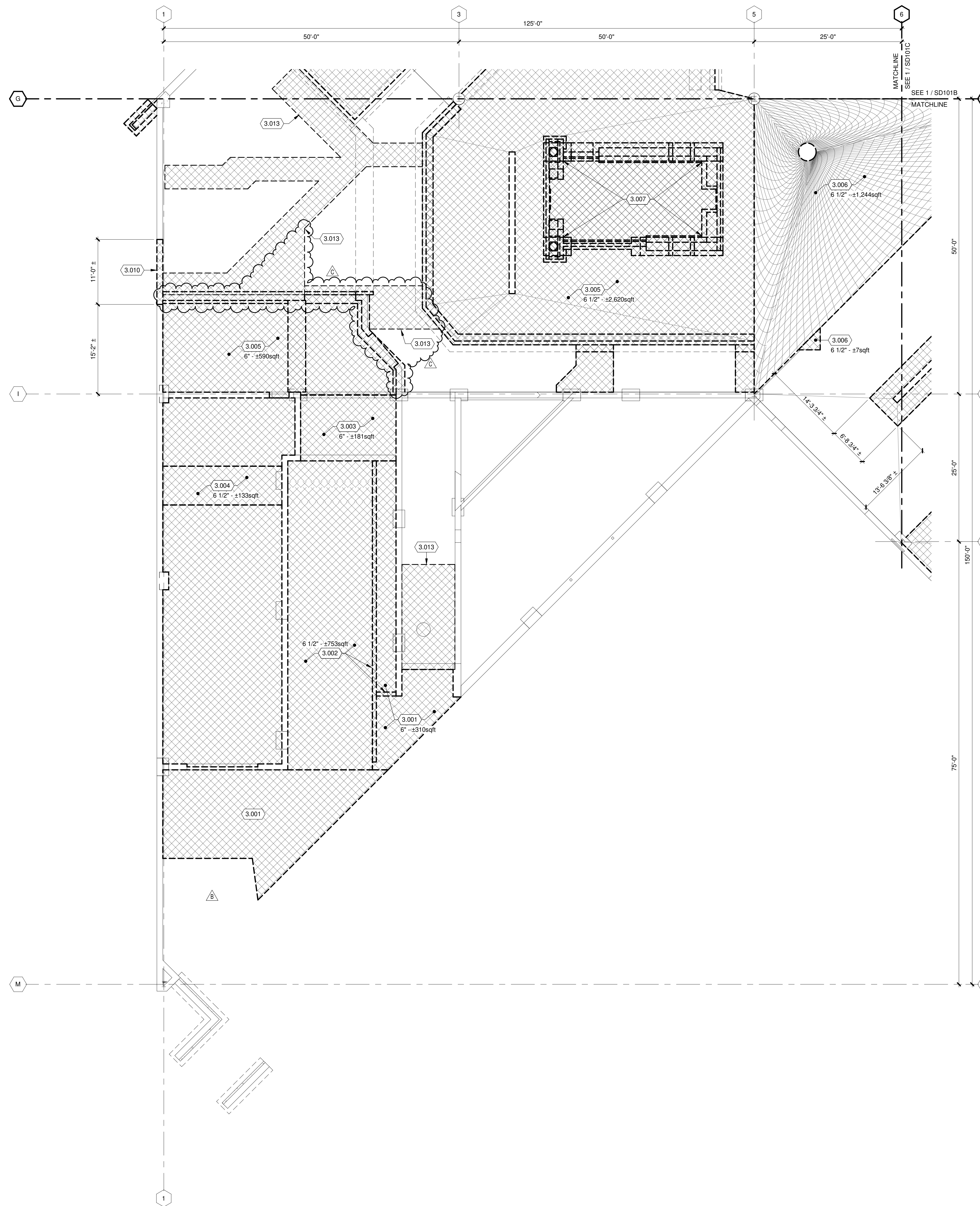
CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

ISSUED
04/08/21 BID SET
05/13/21 ADDENDUM #2
05/20/21 ADDENDUM #3

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SHEET CONTENTS
STRUCTURAL NOTES

SHEET NO.:
S-001



**FOUNDATION AND FLATWORK
DEMOLITION PLAN GENERAL NOTES:**

1. REFERENCE G-020 THROUGH G-030 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
2. REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
3. REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
4. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
5. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
6. REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
7. **ATTENTION:** FULL EXTENT OF DEMOLITION REQUIRED MAY NOT BE CAPTURED ON DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL REQUIRED DEMOLITION WITH OUR DISCIPLINES AND IN-FIELD CONDITIONS.



KEYED NOTES

- 3.001 REMOVE EXISTING EXTERIOR SLAB AS SHOWN.
- 3.002 REMOVE EXISTING LOADING DOCK SLAB AND RETAINING WALLS AS SHOWN. SLAB THICKNESS AND SQUARE FOOTAGE FOR REFERENCE. FIELD VERIFY.
- 3.003 REMOVE EXISTING 2-WAY LOADING DOCK SLAB AS SHOWN. EXISTING GRADE BEAMS TO REMAIN. SLAB THICKNESS AND SQUARE FOOTAGE FOR REFERENCE. FIELD VERIFY.
- 3.004 REMOVE EXISTING INTERIOR SLAB AS SHOWN FOR NEW FOUNDATION INSTALLATION. EXISTING GRADE BEAMS TO REMAIN. SLAB THICKNESS AND SQUARE FOOTAGE FOR REFERENCE. FIELD VERIFY.
- 3.005 REMOVE EXISTING INTERIOR SLAB AND THICKENED SLAB AS SHOWN. EXISTING GRADE BEAMS AND FOOTINGS TO REMAIN. SLAB THICKNESS AND SQUARE FOOTAGE FOR REFERENCE. FIELD VERIFY.
- 3.006 REMOVE EXISTING INTERIOR SLAB AS SHOWN. SLAB THICKNESS AND SQUARE FOOTAGE FOR REFERENCE. FIELD VERIFY.
- 3.007 REMOVE EXISTING VEHICLE LIFT AND ASSOCIATED CONCRETE SLAB AND FOUNDATIONS. EXISTING STEEL PILES TO REMAIN. TURN OVER LIFT AND ASSOCIATED COMPONENTS TO OWNER AS REQUIRED.
- 3.010 CUT DOWN AND REMOVE EXISTING CONCRETE WALL/GRADE BEAM AS REQUIRED FOR NEW DOORS. TOP OF WALL/GRADE BEAM SHALL BE CUT DOWN TO ELEVATION 99'-8". PREP TOP OF WALL FOR NEW FLOOR FINISH. COORDINATE WITH ARCHITECTURAL. PATCH CONCRETE TO FINISHED FLOOR. COORDINATE WITH OTHER MATERIALS FOR FINISH AND EXACT ELEVATION.
- 3.013 REMOVE EXISTING SLAB AS REQUIRED FOR DEMO/INSTALLATION OF PLUMBING. COORDINATE LOCATIONS WITH PLUMBING. REPLACE SLAB AFTER COMPLETION OF PLUMBING WORK WITH SLAB TYPE SLB06. MATCH ADJACENT FLOOR ELEVATIONS AND SLOPES.

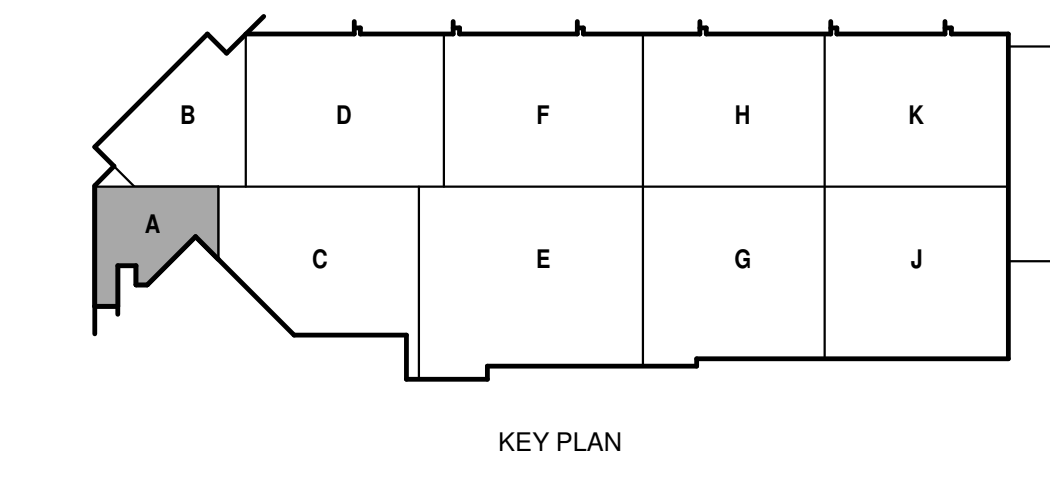
**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
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1101 EAST WASHINGTON AVE.
MADISON, WI 53703**

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SHEET CONTENTS
FOUNDATION AND
FLATWORK
DEMOLITION PLAN -
AREA A

SHEET NO.:



TRUE PLAN
NORTH NORTH
FOUNDATION/FLATWORK DEMOLITION PLAN - AREA A
1/8" = 1'-0"

SD101A



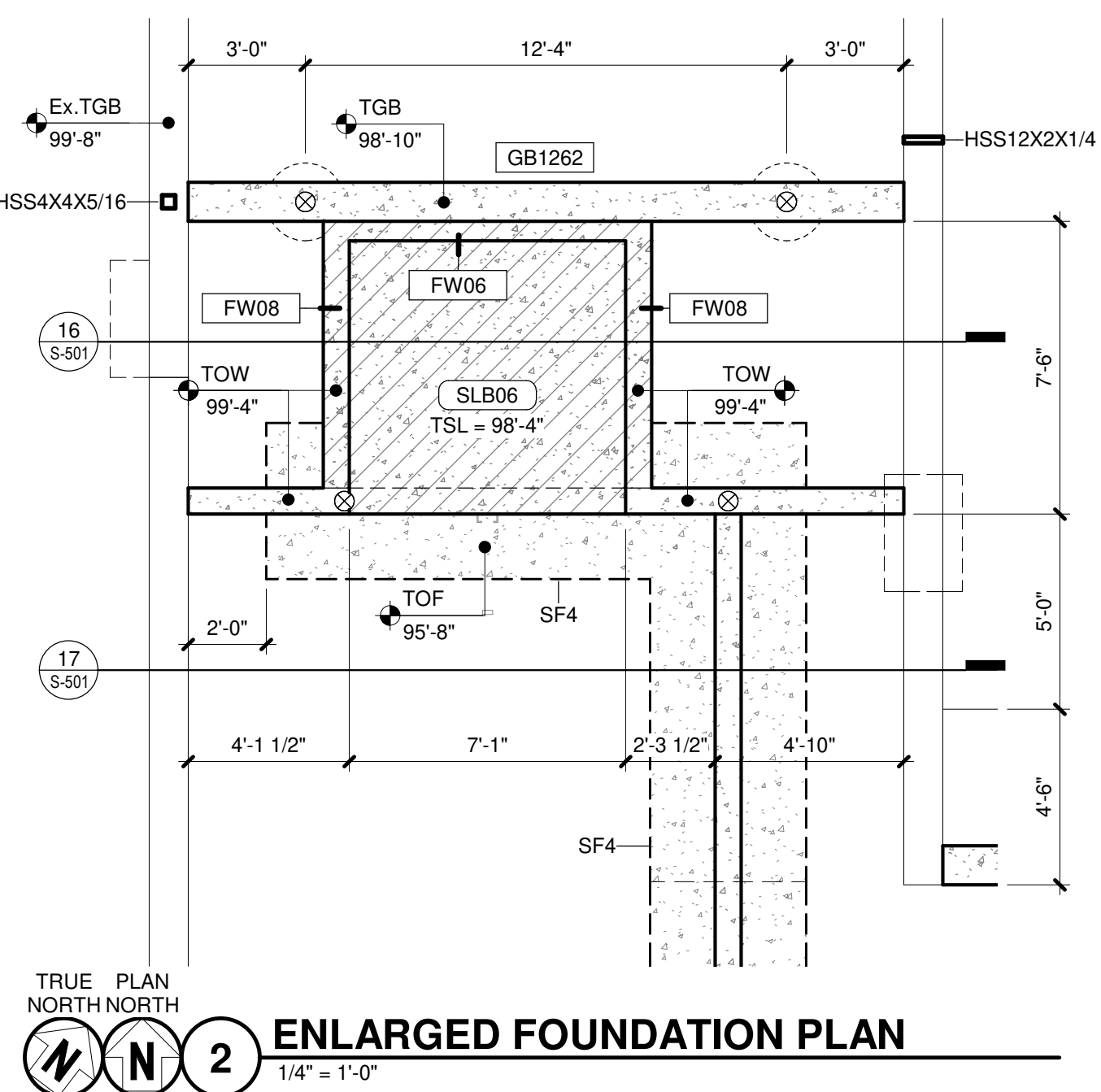
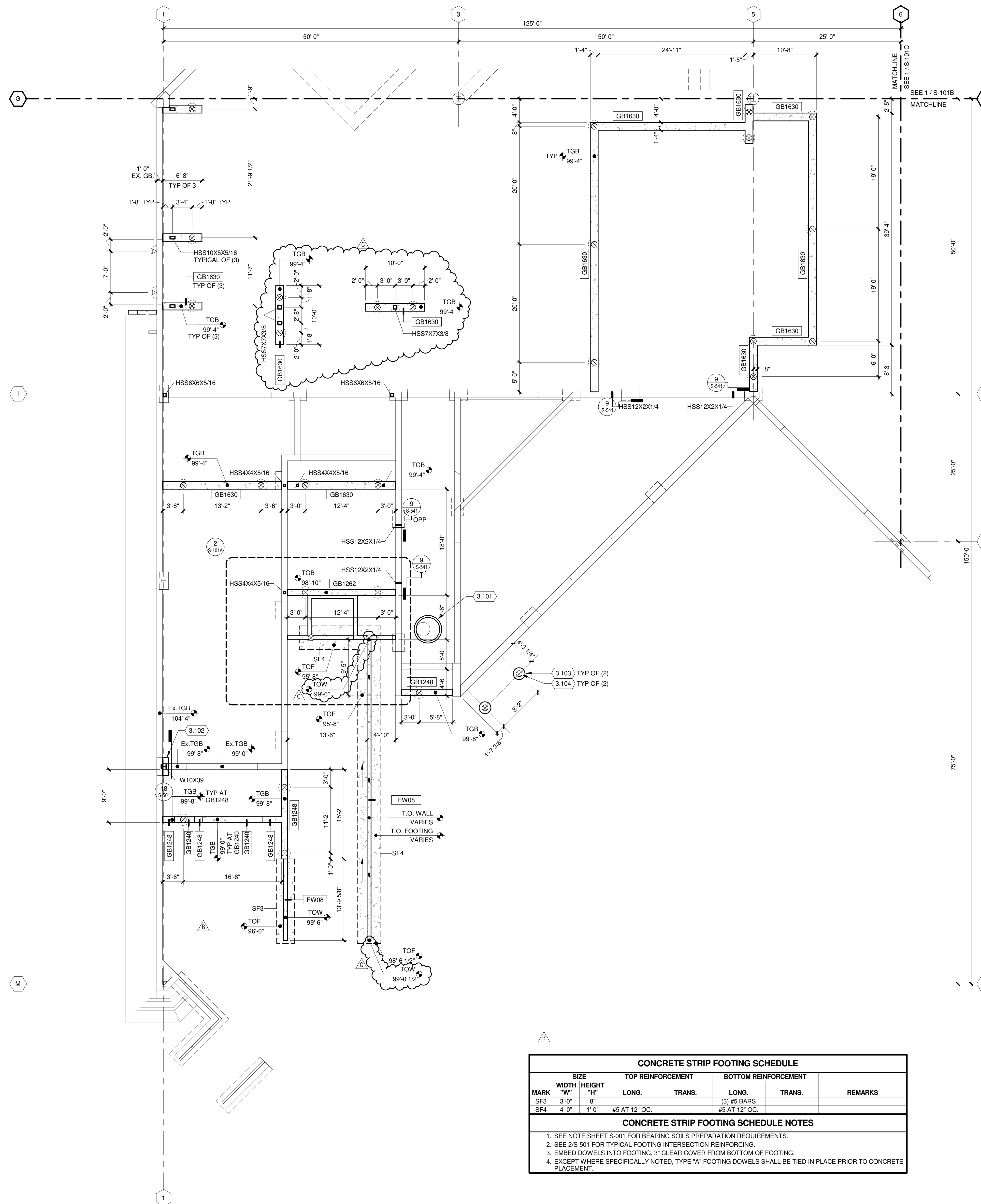
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FOUNDATION PLAN GENERAL NOTES:

- REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOGY.
- REFER TO SHEET S-501 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
- TOP OF FOOTING ELEVATION = 96'-0" UNLESS NOTED OTHERWISE.
- TOP OF FOUNDATION WALL ELEVATION = 100'-0" UNLESS NOTED OTHERWISE.
- STRIP FOOTINGS AND GRADE BEAMS SHALL BE CENTERED UNDER FOUNDATION AND/OR MASONRY WALLS UNLESS NOTED OTHERWISE.
- RETROFIT HELICAL PIER
 - 32 KIP SERVICE LEVEL CAPACITY
 - MINIMUM EMBEDMENT DEPTH = 29'-0"
 - NEW HELICAL PIER
 - 32 KIP SERVICE LEVEL CAPACITY
 - MINIMUM EMBEDMENT DEPTH = 29'-0"

KEYED NOTES

- 4'-0" DIAMETER X 6'-0" DEEP MANHOLE WITH SOLID BOTTOM, FLAT TOP WITH 28" DIAMETER OFFSET MANWAY HOLE, CAST IRON CASTING WITH SLOTTED CAST IRON GRATE, FILL BOTTOM 5'-0" WITH CLEAR, WASHED 3/4" LIMESTONE, LESS THAN 5% PASSING 30" MINERAL MUST BE LIMESTONE FOR NEUTRALIZATION OF SPILLED BATTERY ACID.
- NEW PIER AT EXISTING GRADE BEAM, SEE DETAIL 14-S-501.
- 24" DIAMETER CONCRETE PIER, FULL 8'-0" HEIGHT TO BE POURED AT THE SAME TIME. REINFORCING SHALL BE (5) #5 VERTICAL BARS, #3 TIES SPACED AT 12" VERTICALLY, AND TRIPLE TOP TIE IN THE TOP 12" OF PIER. DOME TOP OF PIER WITH SLOPE OF 1/4" PER FOOT MINIMUM.
- HELICAL PIER, 10 KIP COMPRESSION CAPACITY.

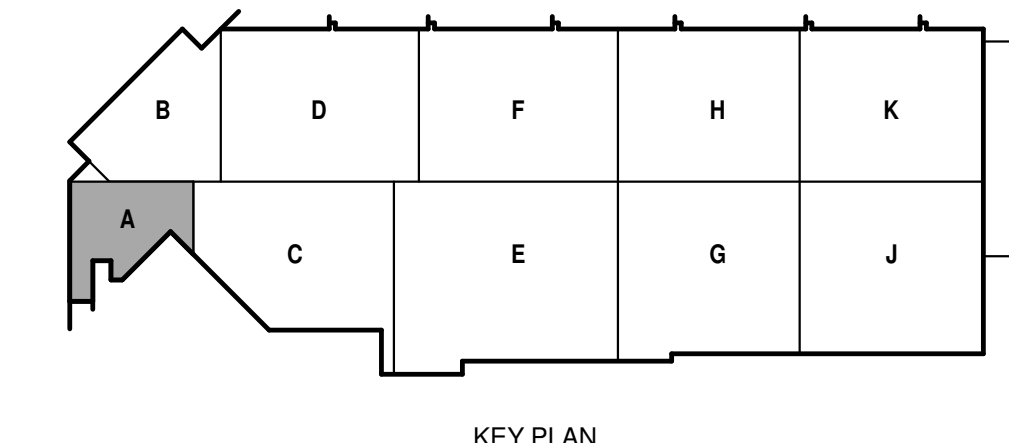


CONCRETE STRIP FOOTING SCHEDULE							
MARK	SIZE		TOP REINFORCEMENT		BOTTOM REINFORCEMENT		REMARKS
	WIDTH "W"	HEIGHT "H"	LONG.	TRANS.	LONG.	TRANS.	
SF3	3'-0"	8"			(3) #5 BARS		
SF4	4'-0"	1'-0"	#5 AT 12" OC.		#5 AT 12" OC.		

CONCRETE STRIP FOOTING SCHEDULE NOTES

- SEE NOTE SHEET S-001 FOR BEARING SOILS PREPARATION REQUIREMENTS.
- SEE S-501 FOR TYPICAL FOOTING INTERSECTION REINFORCING.
- EMBED DOWELS INTO FOOTING, 3" CLEAR COVER FROM BOTTOM OF FOOTING.
- EXCEPT WHERE SPECIFICALLY NOTED, TYPE "A" FOOTING DOWELS SHALL BE TIED IN PLACE PRIOR TO CONCRETE PLACEMENT.

TRUE PLAN NORTH NORTH
FOUNDATION PLAN - AREA A
1/8" = 1'-0"



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SHEET CONTENTS
FOUNDATION PLAN - AREA A

SHEET NO.:

S-101A



**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
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SHEET CONTENTS
FIRST FLOOR
FLATWORK PLAN -
AREA A

SHEET NO.:

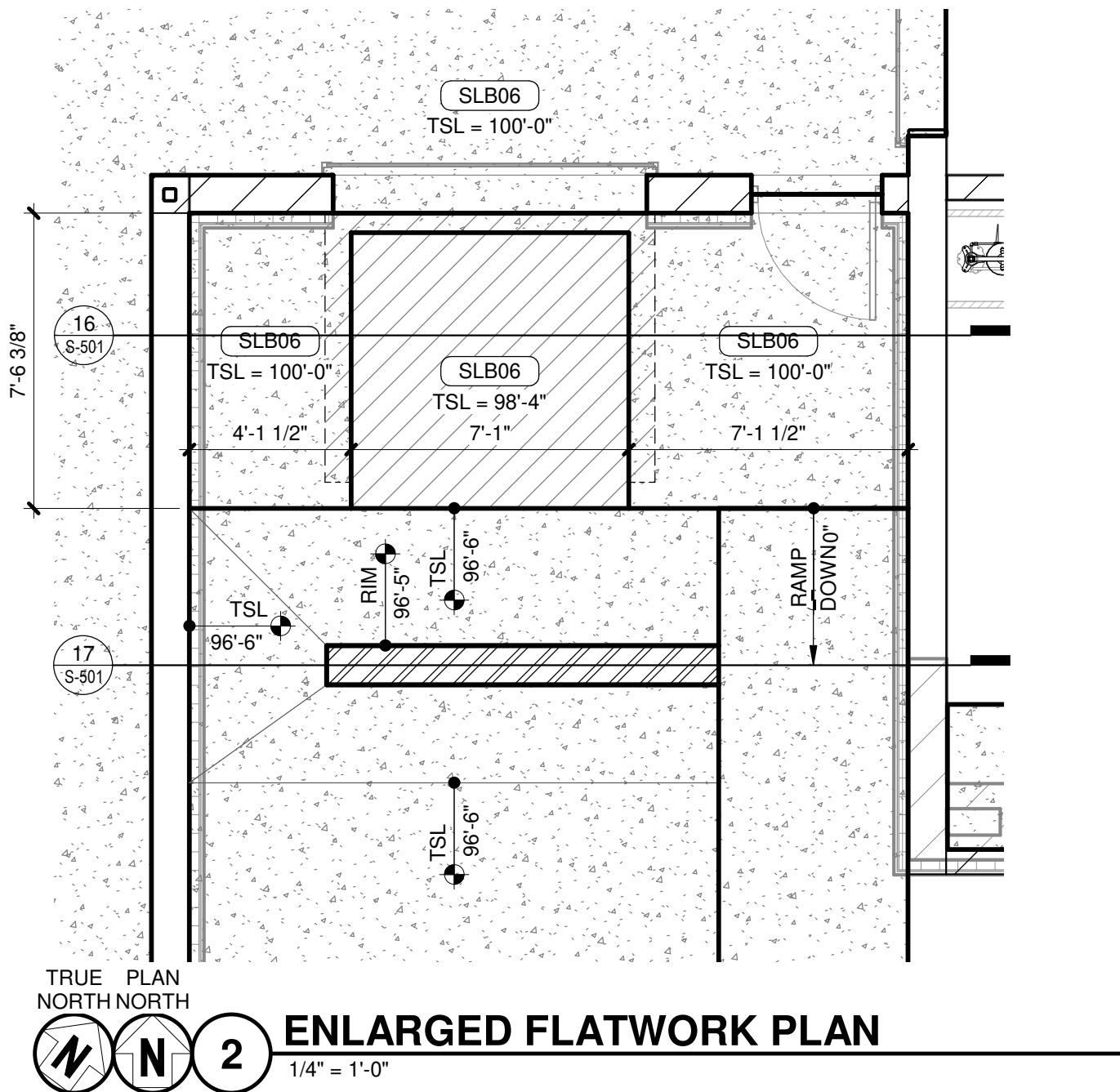
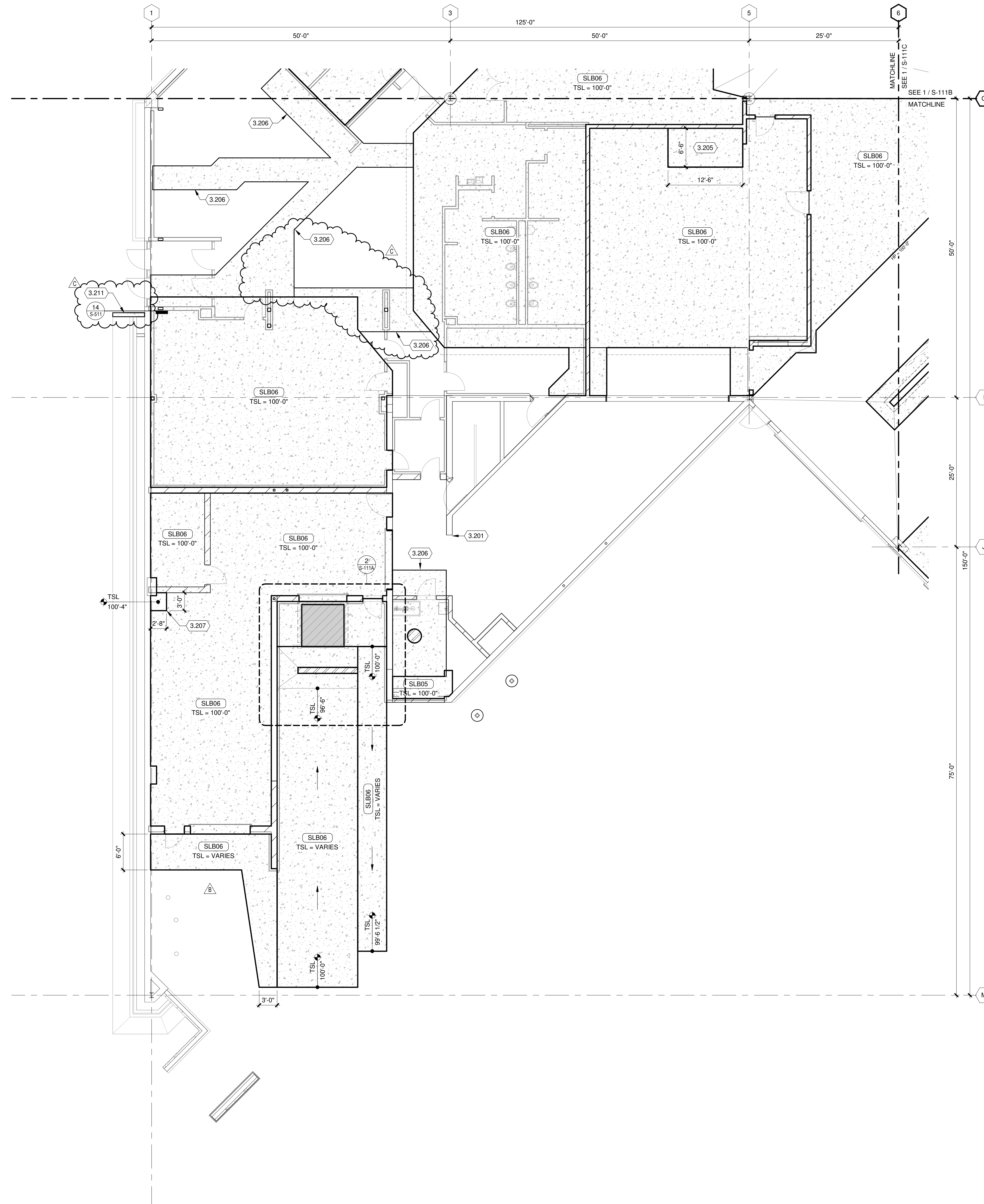
S-111A

**FLATWORK
PLAN GENERAL NOTES:**

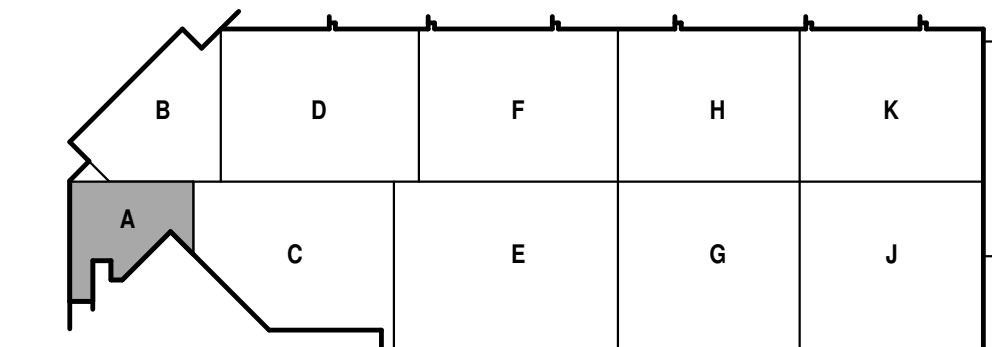
- REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOGY.
- REFER TO SHEET S-511 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
- REFER TO DETAIL 1/S-511 FOR STRUCTURAL SLAB TYPES.
- FLOAT AND TROWEL FLOOR SLABS PER REQUIREMENTS OF ARCH. FLOOR FINISH SYSTEM.
- (2) DASHED LINES = - - - INDICATE (2) ADDITIONAL #4 BARS (5'-0" LONG) DIAGONAL 6" FROM CORNER IN SLAB, 2" CLEAR FROM TOP OF SLAB.
- DOWEL ALL NEW SLAB/INFILL TO EXISTING PER DETAIL 9/S-511, UNLESS INDICATED OTHERWISE.
- ATTENTION:** FULL EXTENT OF SLAB REPLACEMENT REQUIRED DUE TO OTHER DISCIPLINES DEMOLITION MAY NOT BE CAPTURED ON DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL REQUIRED SLAB REPLACEMENT WITH OTHER DISCIPLINES AND IN-FIELD CONDITIONS.

KEYED NOTES

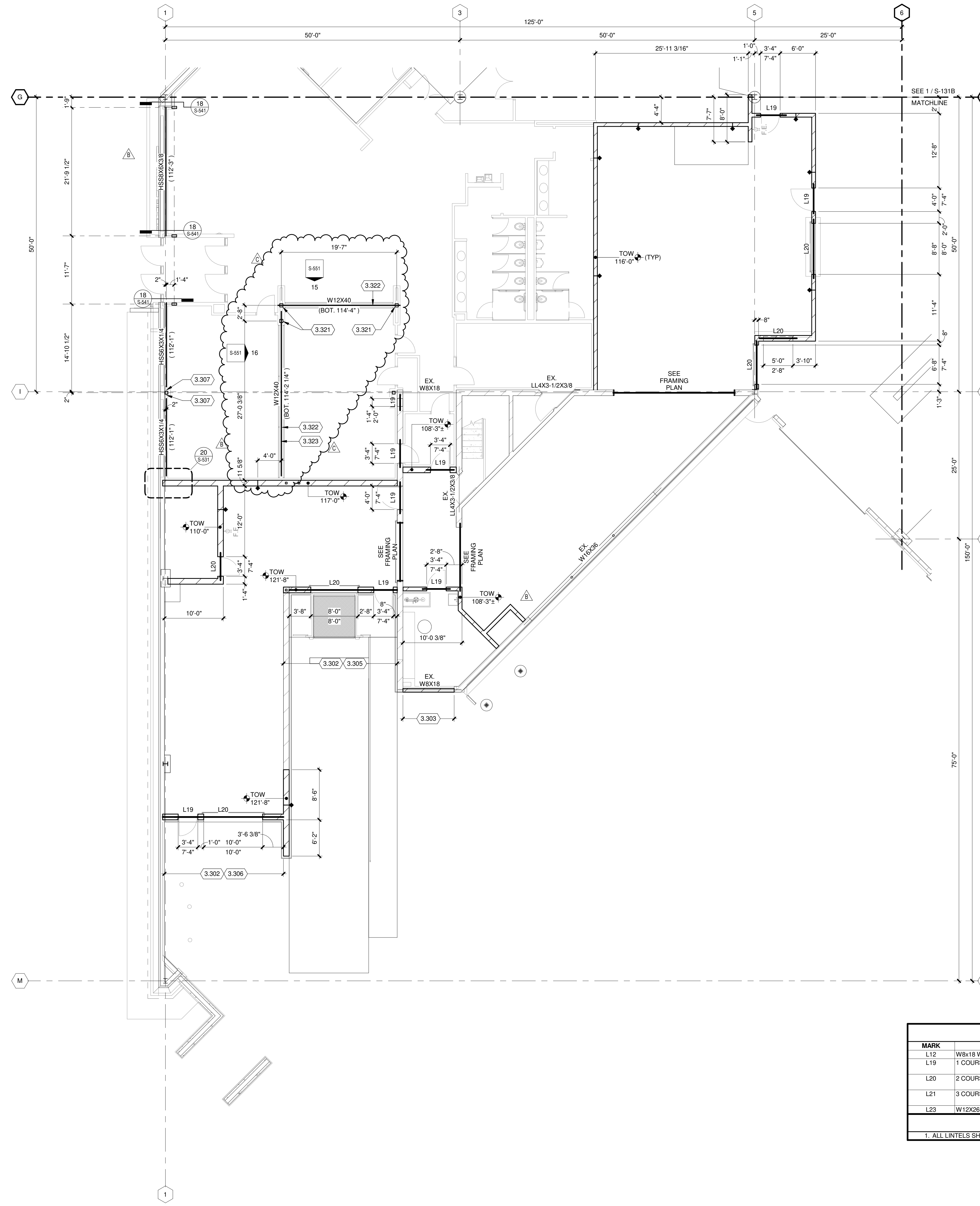
- PATCH SLAB AT WALL REMOVAL. MATCH EXISTING THICKNESS. DOWEL PER DETAIL 9/S-511.
- 12" ISOLATED EQUIPMENT PAD, SEE DETAIL 7/S-511. TOP OF SLAB ELEVATION = 100'-0".
- SLAB REPLACEMENT AFTER COMPLETION OF PLUMBING DEMO/INSTALLATION. COORDINATE LOCATIONS WITH PLUMBING. REPLACE WITH SLAB TYPE SLB06. MATCH ADJACENT FLOOR ELEVATIONS AND SLOPES.
- NEW EQUIPMENT PAD. SEE DETAIL 6/S-511. COORDINATE EXACT SIZE AND LOCATION WITH CORRESPONDING EQUIPMENT SUPPLIER.
- NEW 8" WIDE CONCRETE CAP ON EXISTING CONCRETE LANDSCAPE FEATURE. EXTEND DOWN TO ELEVATION 99'-4".



TRUE PLAN
NORTH NORTH
1
FIRST FLOOR FLATWORK PLAN - AREA A
1/8" = 1'-0"



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STRUCTURAL FLOOR PLAN GENERAL NOTES:

- REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS AND SYMBOLOGY.
- REFER TO SHEET S-131A FOR LINTEL SCHEDULE.
- REFER TO SHEET S-531 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
- ALL MASONRY WALLS SHALL BE REINFORCED WITH #5 VERTICAL BARS AT 48" O.C., CENTERED IN WALL, UNLESS INDICATED OTHERWISE.
- GROUT ALL MASONRY SOLID BELOW FINISHED FLOOR ELEVATION AND 1 FULL COURSE ABOVE FINISHED FLOOR.
- ALL MASONRY WALL REINFORCEMENT SHALL BE FULL HEIGHT UNLESS NOTED OR DETAILED OTHERWISE.
- STRUCTURAL WALL TYPES SHALL REMAIN CONTINUOUS ACROSS LINTELS AND MASONRY CONTROL JOINTS (MCJ), UNLESS NOTED OR DETAILED OTHERWISE.
- PROVIDE L19 LINTEL AT ALL MASONRY OPENINGS (NOT INDICATED EXCEEDING 1'-0" (4'-0" MAX) IN WIDTH. COORDINATE WITH ALL OTHER DISCIPLINES FOR LOCATION AND SIZE OF SUCH PENETRATIONS.
- COORDINATE REQUIRED WALL PENETRATIONS WITH ALL OTHER DISCIPLINES TO AVOID PENETRATION OF STRUCTURAL MEMBERS AT LINTELS, TOP OF WALL, AND ANY OTHER STRUCTURAL ELEMENTS IN THE FIELD OF THE MASONRY WALL. NOTIFY ENGINEER PRIOR TO PENETRATION OF ANY STRUCTURAL MEMBERS INCLUDING, BUT NOT LIMITED TO, BOND BEAMS AND PORTIONS OF FULLY GROUTED MASONRY WALLS.
- CONTROL JOINTS IN MASONRY SHALL NOT BE LOCATED CLOSER THAN 2'-0" TO THE EDGE OF MASONRY OPENINGS, UNLESS NOTED OTHERWISE.

KEYED NOTES

- 3.302 NEW 12" CMU WALL FULLY GROUTED, FULL HEIGHT, WITH JAMB REINFORCING PER DETAIL S3-S31.
- 3.303 NEW 8" CMU INFILL FULLY GROUTED WITH #5 VERTICAL BAR EACH CORE.
- 3.305 LINTEL L20 SHALL SPAN ENTIRE LENGTH OF THIS WALL.
- 3.306 LINTEL L20 SHALL SPAN ENTIRE LENGTH OF THIS WALL. FULL LENGTH BOND BEAM WITH (2) #5 BARS AT 4'-0" VERTICAL SPACING ABOVE OPENINGS.
- 3.307 FIELD WELD HSS LINTEL BEAM TO HSS COLUMN WITH 1/4" FILLET WELD, THREE SIDES.
- 3.321 HSS7X7X3/8 COLUMN, SEE DETAIL 18/S-551 FOR BASE/CAP PLATE.
- 3.322 MAKE NO CONNECTION BETWEEN THE W12 PARTITION SUPPORT FRAMING AND THE ROOF STRUCTURE.
- 3.323 MAKE NO CONNECTION BETWEEN THE W12 PARTITION SUPPORT FRAMING AND THE W24 BEAM ABOVE. ATTACH SIGNS TO BOTH SIDES OF W12 BEAM AT MIDPOINT OF BEAM. SIGNS SHALL HAVE 1" RAISED LETTERING THAT STATES "NO CONNECTION BETWEEN THIS W12 AND THE W24 ABOVE. DO NOT INSTALL ANYTHING BETWEEN THE BEAMS. PAINT SIGN YELLOW WITH RED LETTERING.

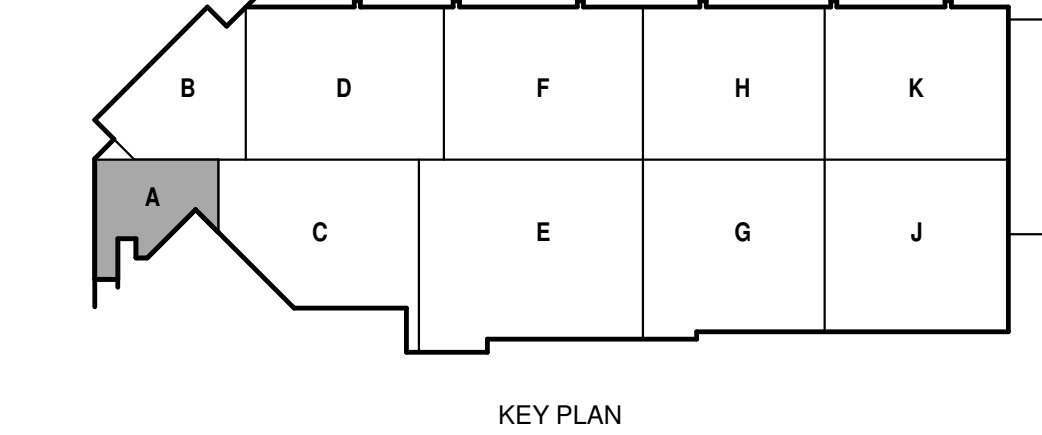
LINTEL SCHEDULE				
MARK	DESCRIPTION	BEARING	DETAIL	REMARKS
L12	W8x18 WITH PLATE	8" E.E.		
L19	1 COURSE BOND BEAM WITH (2) #5 AT BOTTOM	8" E.E.		NO BOTTOM PLATE
L20	2 COURSE BOND BEAM WITH (2) #5 AT BOTTOM	8" E.E.		NO BOTTOM PLATE
L21	3 COURSE BOND BEAM WITH (2) #5 AT BOTTOM	24" E.E.		NO BOTTOM PLATE
L23	W12X26 WITH PL1/4x11-1/2	8" E.E.		

LINTEL SCHEDULE GENERAL NOTES

1. ALL LINTELS SHALL HAVE 1/4" THICK BOTTOM PLATE TO MATCH WIDTH OF WALL MINUS 1/4" EACH SIDE U.N.O.

TRUE PLAN NORTH NORTH

STRUCTURAL FIRST FLOOR PLAN - AREA A
 1/8" = 1'-0"



Mead & Hunt
 Mead & Hunt, Inc.
 2440 Deming Way
 Middleton, WI 53562
 phone: 608-273-6380
 meadhunt.com

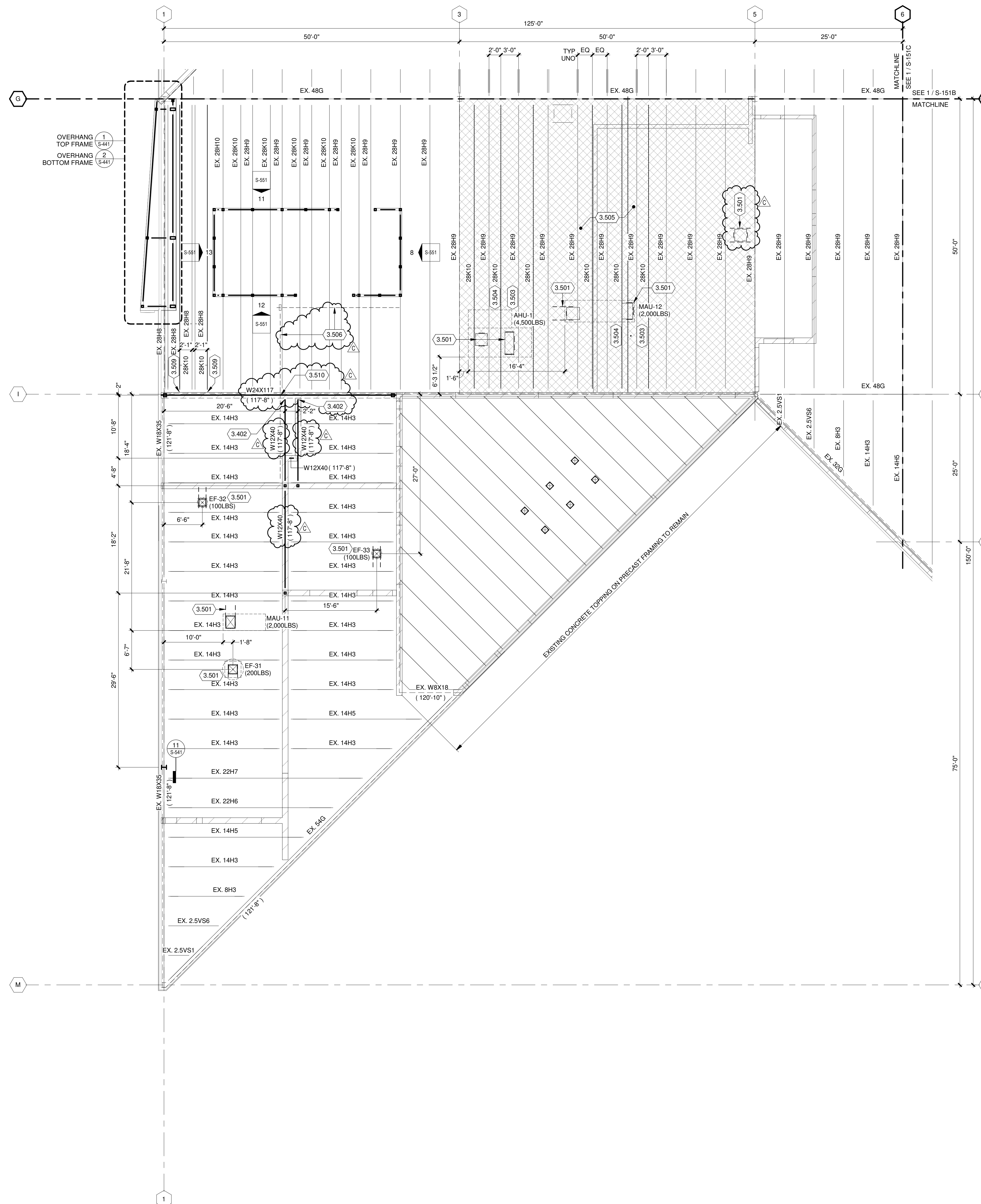


CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS
 1101 EAST WASHINGTON AVE.
 MADISON, WI 53703

ISSUED
 04/08/21 BID SET
 B 05/13/21 ADDENDUM #2
 C 05/20/21 ADDENDUM #3

CONTRACT NO.: 8981
 RFP NO.: 4503500-1908996.03
 DATE: APRIL 8, 2021
 DESIGNED BY: DXC
 DRAWN BY: NJB / MJE
 CHECKED BY: DRM
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SHEET NO.:
S-131A



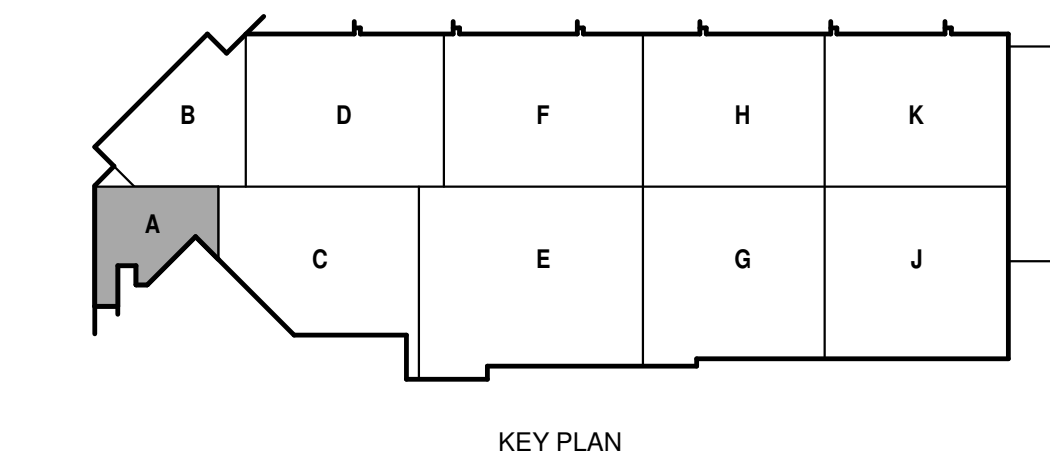
**ROOF FRAMING
PLAN GENERAL NOTES:**

- REFERENCE G-020 THROUGH G-030 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
- REFER TO SHEET S-010 FOR ROOF LOADING PLAN AND SPECIAL JOIST LOADING REQUIREMENTS.
- REFER TO SHEETS S-541 AND S-551 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
- MINIMUM JOIST BEARING LENGTH REQUIREMENTS ARE AS FOLLOWS UNLESS NOTED OR DETAILED OTHERWISE:
 - A. AT MASONRY WALLS
 - "K" SERIES - MINIMUM 4"
 - "KCS" SERIES - MINIMUM 4"
 - B. AT STEEL BEAMS
 - "K" SERIES - MINIMUM 2 1/2"
 - "KCS" SERIES - MINIMUM 2 1/2"
- ALL NEW JOISTS SHALL BE DESIGNED AND SUPPLIED WITH AT LEAST ONE MOMENT SPLICE. CONTRACTOR SHALL PROVIDE ADDITIONAL MOMENT SPLICES TO INSTALL SISTER JOIST AMONG EXISTING UTILITIES OR OTHER OBSTRUCTIONS. MOMENT SPLICES SHALL BE DESIGNED AND STAMPED BY PROFESSIONAL ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REINSTALL ANYTHING IN THE WAY OF THE INSTALLATION OF NEW NEW JOISTS. MOMENT CONNECTIONS MUST BE SHOP FABRICATED.
- BRACE NEW JOISTS AT FIFTH POINTS PER DETAIL 10/S-551. NEW JOISTS SHALL BE DESIGNED FOR TOP CHORD BRACING AT THESE POINTS ONLY.
- REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST MUST BE DONE WITH NO LOAD ON ROOF. REMOVE BALLAST, SNOW, ICE AND WATER BEFORE REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST.
- CUT BRIDGING AND BRACING TO INSTALL NEW JOIST. REINSTALL BRIDGING AND BRACING TO ORIGINAL CONDITIONS OR SJI MINIMUM REQUIREMENTS WHICHEVER IS GREATER.
- BALLAST REMOVED MAY NOT BE PLACED ON OTHER AREAS OF ROOF. PILE BALLAST ON GROUND, AT LOCATION ON SITE, TO BE DETERMINED OWNER.
- NEW JOISTS DO NOT NEED TO BE DESIGNED FOR UPLIFT FORCE.
- FABRICATE JOIST WITH ZERO CAMBER. PROVIDE SHIMS IN SPLICE CONNECTION(S) TO ADJUST NEW JOIST TO EXISTING DECK SURFACE.
- PLACEMENT OF BALLAST SHALL NOT EXCEED 12PSF.
- VERIFY STEEL LAYOUT AND FIT UP WITH ALL NEW ROOF TOP UNITS.
- DESIGN AND SUPPLY NEW JOIST WITH SEAT DEPTH OF 2". FIELD VERIFY THAT EXISTING JOIST SEATS ARE 2 1/2" DEEP. PROVIDE AND INSTALL SHIMS UNDER NEW JOIST SEATS TO PUSH JOIST UP TIGHT TO UNDERSIDE OF EXISTING ROOF DECK.

KEYED NOTES

- 3.402 SINGLE PLATE SHEAR CONNECTION WITH SLIP CRITICAL BOLTS.
- 3.501 NEW FRAMED ROOF OPENING. REFER TO DETAIL 6/S-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.503 INSTALL STRUT IN EXISTING JOIST AT SUPPORT POINT FOR ROOF TOP UNIT PER DETAIL 1/S-551. TYPICAL AT EVERY EXISTING JOIST UNDER ROOF TOP UNIT.
- 3.504 JOIST MANUFACTURER TO PROVIDE JOIST NODE IN NEW JOIST AT SUPPORT POINT FOR ROOF TOP UNIT. SUPPORT POINT OF ROOF TOP UNIT OCCURS AT EACH SIDE OF UNIT. TYPICAL AT EVERY JOIST UNDER ROOF TOP UNIT. COORDINATE ROOF TOP UNIT LOAD WITH MECHANICAL.
- 3.505 REMOVE BALLAST FROM THIS AREA BEFORE ADDING NEW JOISTS OR REINFORCING EXISTING FRAMING FOR AHU-1 AND MAU-12.
- 3.506 PARTITION SUPPORT FRAMING BELOW. SEE SHEET S-131A. MAKE NO CONNECTION BETWEEN THE PARTITION SUPPORT FRAMING AND THE ROOF STRUCTURE.
- 3.509 AT NEW 28K10 JOIST, DEMO POCKET IN EXISTING MASONRY WALL TO CREATE BEARING TO MATCH DETAIL 10/S-531.
- 3.510 MAKE NO CONNECTION BETWEEN THIS W24 BEAM AND THE PARTITION SUPPORT FRAMING BELOW. ATTACH SIGN TO BOTTOM OF W24 BEAM WITH 1" RAISED LETTERING THAT STATES "MAKE NO CONNECTION BETWEEN THIS W24 AND THE W12 BELOW. DO NOT INSTALL ANYTHING BETWEEN THE BEAMS." PAINT SIGN YELLOW WITH RED LETTERING.

TRUE PLAN NORTH NORTH
ROOF FRAMING PLAN - AREA A
1/8" = 1'-0"



**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
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SHEET CONTENTS
**ROOF FRAMING
PLAN - AREA A**

SHEET NO.:
S-151A



**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703**

ISSUED
04/08/21 BID SET
05/20/21 ADDENDUM #3

CONTRACT NO.: 8981
RFP NO.: 4503500-190896.03
DATE: APRIL 6, 2021
DESIGNED BY: DXC
DRAWN BY: NJB / MJE
CHECKED BY: DRM
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SHEET CONTENTS
ROOF FRAMING
PLAN - AREA C

SHEET NO.:

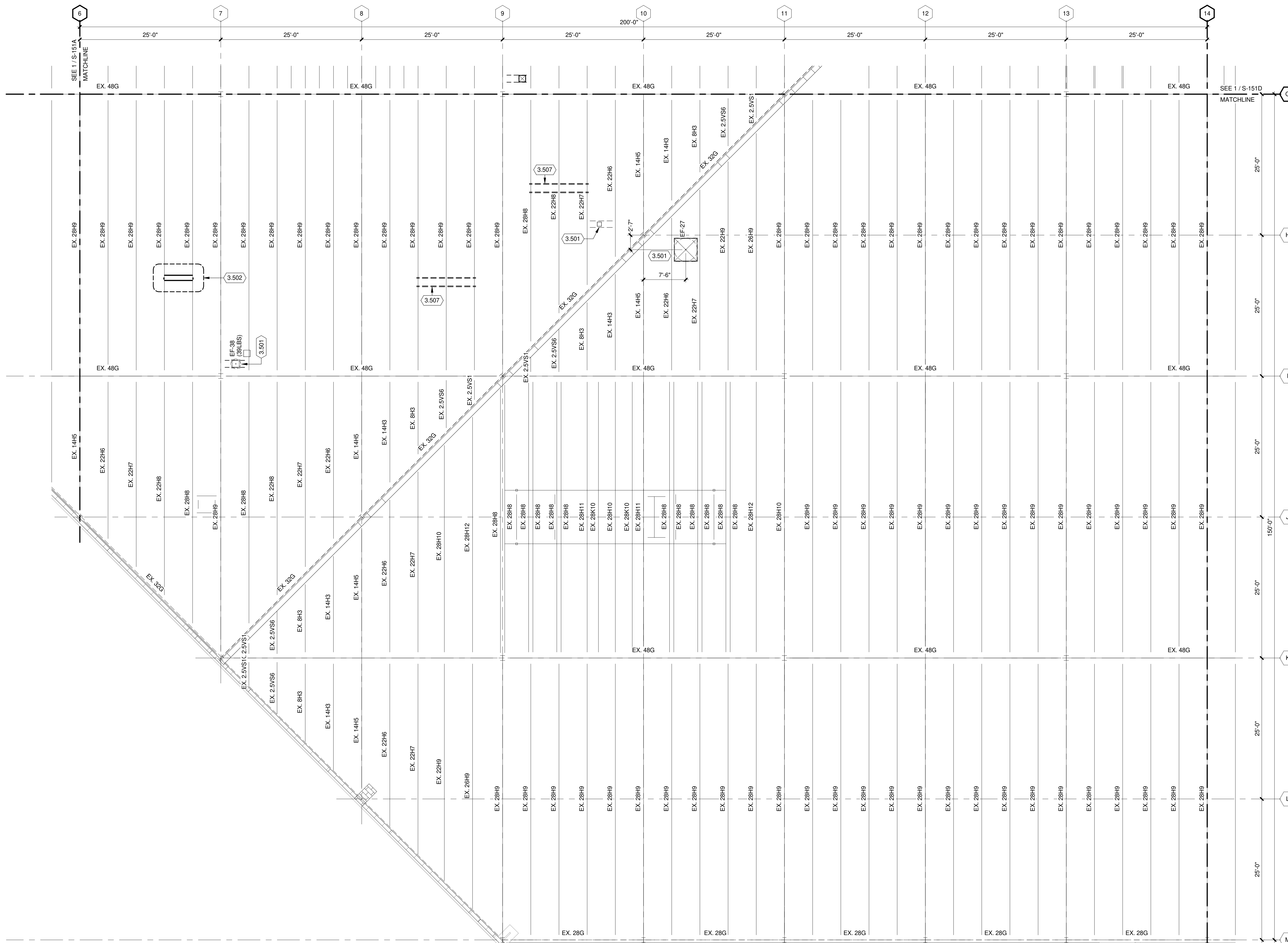
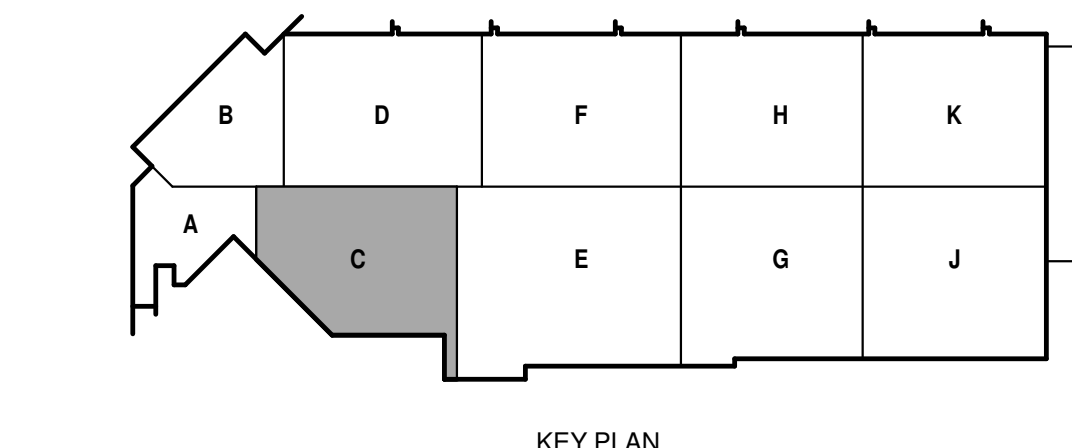
S-151C

**ROOF FRAMING
PLAN GENERAL NOTES:**

- REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN = ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
- REFER TO SHEET S-010 FOR ROOF LOADING PLAN AND SPECIAL JOIST LOADING REQUIREMENTS.
- REFER TO SHEETS S-541 AND S-551 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
- MINIMUM JOIST BEARING LENGTH REQUIREMENTS ARE AS FOLLOWS UNLESS NOTED OR DETAILED OTHERWISE:
 - A. AT MASONRY WALLS
 - "K" SERIES - MINIMUM 4"
 - "KCS" SERIES - MINIMUM 4"
 - B. AT STEEL BEAMS
 - "K" SERIES - MINIMUM 2 1/2"
 - "KCS" SERIES - MINIMUM 2 1/2"
- ALL NEW JOISTS SHALL BE DESIGNED AND SUPPLIED WITH AT LEAST ONE MOMENT SPLICE. CONTRACTOR SHALL PROVIDE ADDITIONAL MOMENT SPLICES TO INSTALL SISTER JOIST AMONG EXISTING UTILITIES OR OTHER OBSTRUCTIONS. MOMENT SPLICES SHALL BE DESIGNED AND STAMPED BY PROFESSIONAL ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REINSTALL ANYTHING IN THE WAY OF THE INSTALLATION OF NEW NEW JOISTS. MOMENT CONNECTIONS MUST BE SHOP FABRICATED.
- BRACE NEW JOISTS AT FIFTH POINTS PER DETAIL 10/S-551. NEW JOISTS SHALL BE DESIGNED FOR TOP CHORD BRACING AT THESE POINTS ONLY.
- REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST MUST BE DONE WITH NO LOAD ON ROOF. REMOVE BALLAST, SNOW, ICE AND WATER BEFORE REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST.
- CUT BRIDGING AND BRACING TO INSTALL NEW JOIST. REINSTALL BRIDGING AND BRACING TO ORIGINAL CONDITIONS OR SJI MINIMUM REQUIREMENTS WHICHEVER IS GREATER.
- BALLAST REMOVED MAY NOT BE PLACED ON OTHER AREAS OF ROOF. PILE BALLAST ON GROUND, AT LOCATION ON SITE, TO BE DETERMINED OWNER.
- NEW JOISTS DO NOT NEED TO BE DESIGNED FOR UPLIFT FORCE.
- FABRICATE JOIST WITH ZERO CAMBER. PROVIDE SHIMS IN SPLICE CONNECTION(S) TO ADJUST NEW JOIST TO EXISTING DECK SURFACE.
- PLACEMENT OF BALLAST SHALL NOT EXCEED 12PSF.
- VERIFY STEEL LAYOUT AND FIT UP WITH ALL NEW ROOF TOP UNITS.
- DESIGN AND SUPPLY NEW JOIST WITH SEAT DEPTH OF 2". FIELD VERIFY THAT EXISTING JOIST SEATS ARE 2 1/2" DEEP. PROVIDE AND INSTALL SHIMS UNDER NEW JOIST SEATS TO PUSH JOIST UP TIGHT TO UNDERSIDE OF EXISTING ROOF DECK.

KEYED NOTES

- 3.501 NEW FRAMED ROOF OPENING. REFER TO DETAIL 6/S-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.502 NEW SUPPORT FRAMING FOR DESTRATIFICATION FAN. REFER TO DETAIL ON SHEET S-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.507 HOSE REEL SUSPENSION FRAMING. SEE DETAIL 16/S-541.



TRUE PLAN
NORTH NORTH
1
ROOF FRAMING PLAN - AREA C
1/8" = 1'-0"

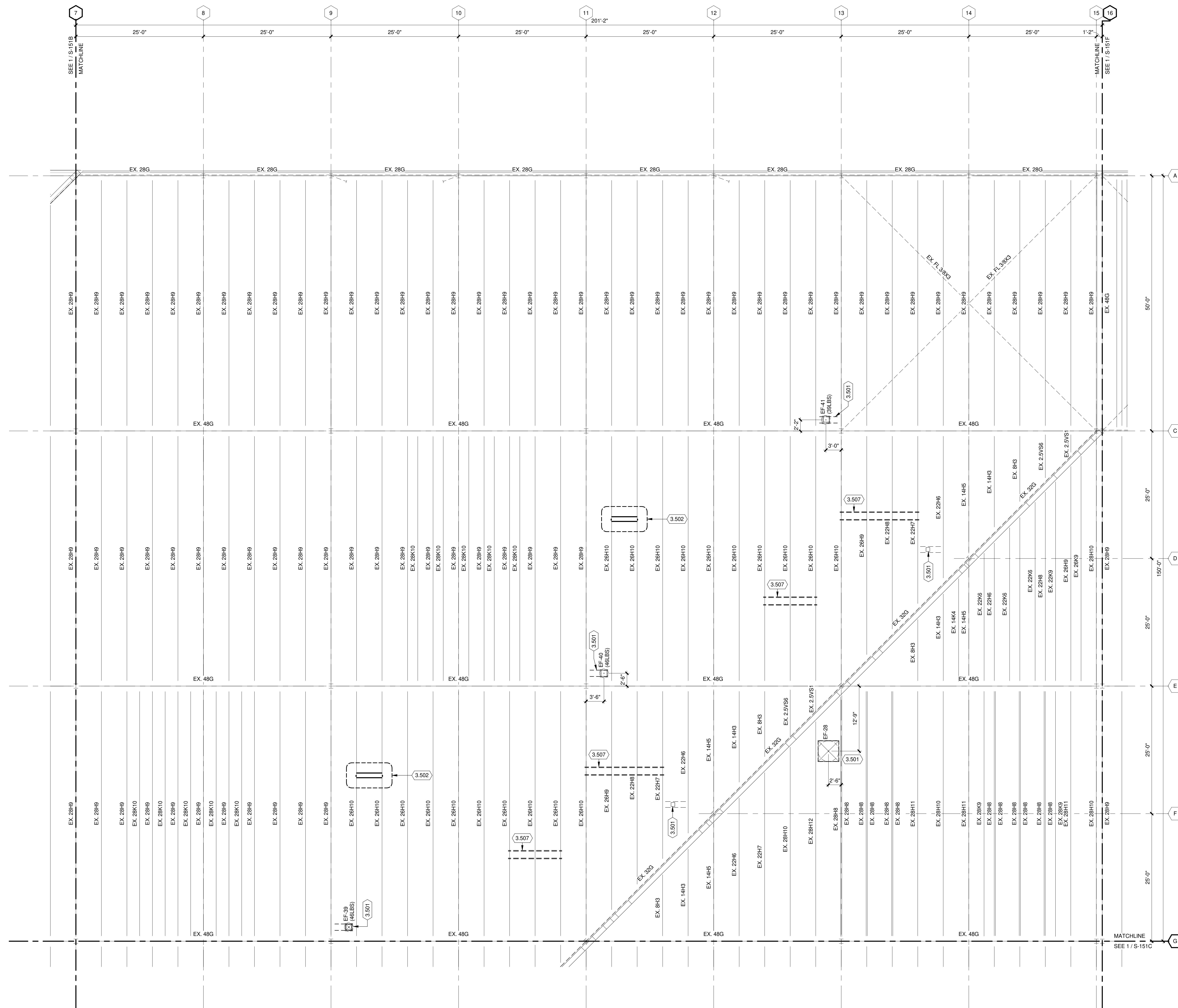
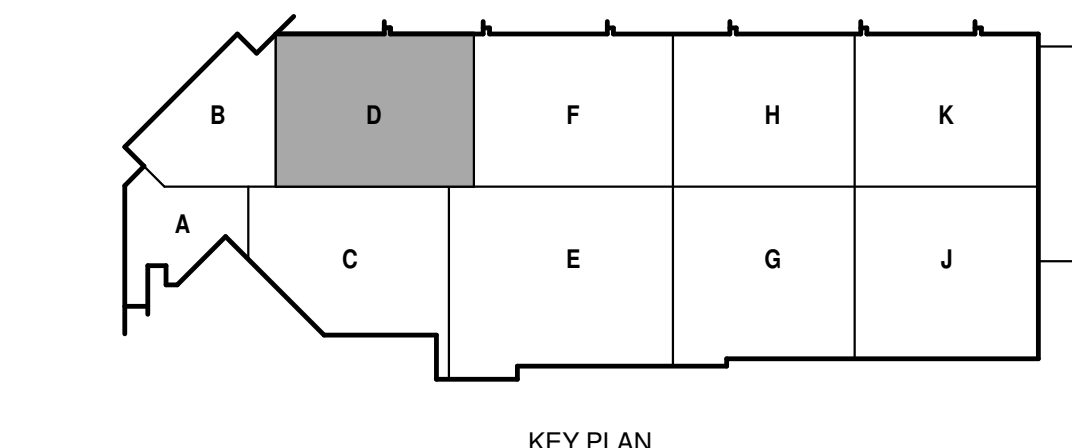


**ROOF FRAMING
PLAN GENERAL NOTES:**

- REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
- REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
- REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN - ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
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- REFER TO SHEET S-010 FOR ROOF LOADING PLAN AND SPECIAL JOIST LOADING REQUIREMENTS.
- REFER TO SHEETS S-541 AND S-551 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
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 - "KCS" SERIES - MINIMUM 4"
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- BRACE NEW JOISTS AT FIFTH POINTS PER DETAIL. 10x551 NEW JOISTS SHALL BE DESIGNED FOR TOP CHORD BRACING AT THESE POINTS ONLY.
- REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST MUST BE DONE WITH NO LOAD ON ROOF. REMOVE BALLAST, SNOW, ICE AND WATER BEFORE REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST.
- CUT BRIDGING AND BRACING TO INSTALL NEW JOIST. REINSTALL BRIDGING AND BRACING TO ORIGINAL CONDITIONS OR SJI MINIMUM REQUIREMENTS WHICHEVER IS GREATER.
- BALLAST REMOVED MAY NOT BE PLACED ON OTHER AREAS OF ROOF. PILE BALLAST ON GROUND, AT LOCATION ON SITE, TO BE DETERMINED OWNER.
- NEW JOISTS DO NOT NEED TO BE DESIGNED FOR UPLIFT FORCE.
- FABRICATE JOIST WITH ZERO CAMBER. PROVIDE SHIMS IN SPLICE CONNECTION(S) TO ADJUST NEW JOIST TO EXISTING DECK SURFACE.
- PLACEMENT OF BALLAST SHALL NOT EXCEED 12PSF.
- VERIFY STEEL LAYOUT AND FIT UP WITH ALL NEW ROOF TOP UNITS.
- DESIGN AND SUPPLY NEW JOIST WITH SEAT DEPTH OF 2". FIELD VERIFY THAT EXISTING JOIST SEATS ARE 2 1/2" DEEP. PROVIDE AND INSTALL SHIMS UNDER NEW JOIST SEATS TO PUSH JOIST UP TIGHT TO UNDERSIDE OF EXISTING ROOF DECK.

KEYED NOTES

- 3.501 NEW FRAMED ROOF OPENING. REFER TO DETAIL 603-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.502 NEW SUPPORT FRAMING FOR DESTRATIFICATION FAN. REFER TO DETAIL ON SHEET S-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.507 HOSE REEL SUSPENSION FRAMING. SEE DETAIL 16S-541.



TRUE PLAN
NORTH NORTH
1
ROOF FRAMING PLAN - AREA D
1/8" = 1'-0"



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SHEET CONTENTS
ROOF FRAMING
PLAN - AREA F

SHEET NO.:
S-151F

ROOF FRAMING PLAN GENERAL NOTES:

1. REFERENCE G-020 THROUGH G-039 SHEETS FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1 DIV 2 REQUIREMENTS.
2. REFERENCE SHEET G-101 PHASING PLAN FOR CONSTRUCTION PHASING/SEQUENCING AND SITE ACCESS.
3. REFERENCE G-SHEETS FOR EQUIPMENT COORDINATION AND EXCAVATION REQUIREMENTS.
4. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON CIVIL SITE PLAN - ELEVATION 100'-0" ON STRUCTURAL DRAWINGS.
5. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DESIGN.
6. REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLLOGY.
7. REFER TO SHEET S-010 FOR ROOF LOADING PLAN AND SPECIAL JOIST LOADING REQUIREMENTS.
8. REFER TO SHEETS S-541 AND S-551 FOR TYPICAL DETAILS NOT REFERENCED ON THIS SHEET.
9. MINIMUM JOIST BEARING LENGTH REQUIREMENTS ARE AS FOLLOWS UNLESS NOTED OR DETAILED OTHERWISE:
 - A. AT MASONRY WALLS
 - "K" SERIES - MINIMUM 4"
 - "KCS" SERIES - MINIMUM 4"
 - B. AT STEEL BEAMS
 - "K" SERIES - MINIMUM 2 1/2"
 - "KCS" SERIES - MINIMUM 2 1/2"
10. ALL NEW JOISTS SHALL BE DESIGNED AND SUPPLIED WITH AT LEAST ONE MOMENT SPLICE. CONTRACTOR SHALL PROVIDE ADDITIONAL MOMENT SPLICES TO INSTALL SISTER JOIST AMONG EXISTING UTILITIES OR OTHER OBSTRUCTIONS. MOMENT SPLICES SHALL BE DESIGNED AND STAMPED BY PROFESSIONAL ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REINSTALL ANYTHING IN THE WAY OF THE INSTALLATION OF NEW NEW JOISTS. MOMENT CONNECTIONS MUST BE SHOP FABRICATED.
11. BRACE NEW JOISTS AT FIFTH POINTS PER DETAIL. 10S-551. NEW JOISTS SHALL BE DESIGNED FOR TOP CHORD BRACING AT THESE POINTS ONLY.
12. REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST MUST BE DONE WITH NO LOAD ON ROOF. REMOVE BALLAST, SNOW, ICE AND WATER BEFORE REINFORCING JOIST GIRDERS AND INSTALLING SISTER JOIST.
13. CUT BRIDGING AND BRACING TO INSTALL NEW JOIST. REINSTALL BRIDGING AND BRACING TO ORIGINAL CONDITIONS OR SJI MINIMUM REQUIREMENTS WHICHEVER IS GREATER.
14. BALLAST REMOVED MAY NOT BE PLACED ON OTHER AREAS OF ROOF. PILE BALLAST ON GROUND, AT LOCATION ON SITE, TO BE DETERMINED OWNER.
15. NEW JOISTS DO NOT NEED TO BE DESIGNED FOR UPLIFT FORCE.
16. FABRICATE JOIST WITH ZERO CAMBER. PROVIDE SHIMS IN SPLICE CONNECTION(S) TO ADJUST NEW JOIST TO EXISTING DECK SURFACE.
17. PLACEMENT OF BALLAST SHALL NOT EXCEED 12PSF.
18. VERIFY STEEL LAYOUT AND FIT UP WITH ALL NEW ROOF TOP UNITS.
19. DESIGN AND SUPPLY NEW JOIST WITH SEAT DEPTH OF 2". FIELD VERIFY THAT EXISTING JOIST SEATS ARE 2 1/2" DEEP. PROVIDE AND INSTALL SHIMS UNDER NEW JOIST SEATS TO PUSH JOIST UP TIGHT TO UNDERSIDE OF EXISTING ROOF DECK.

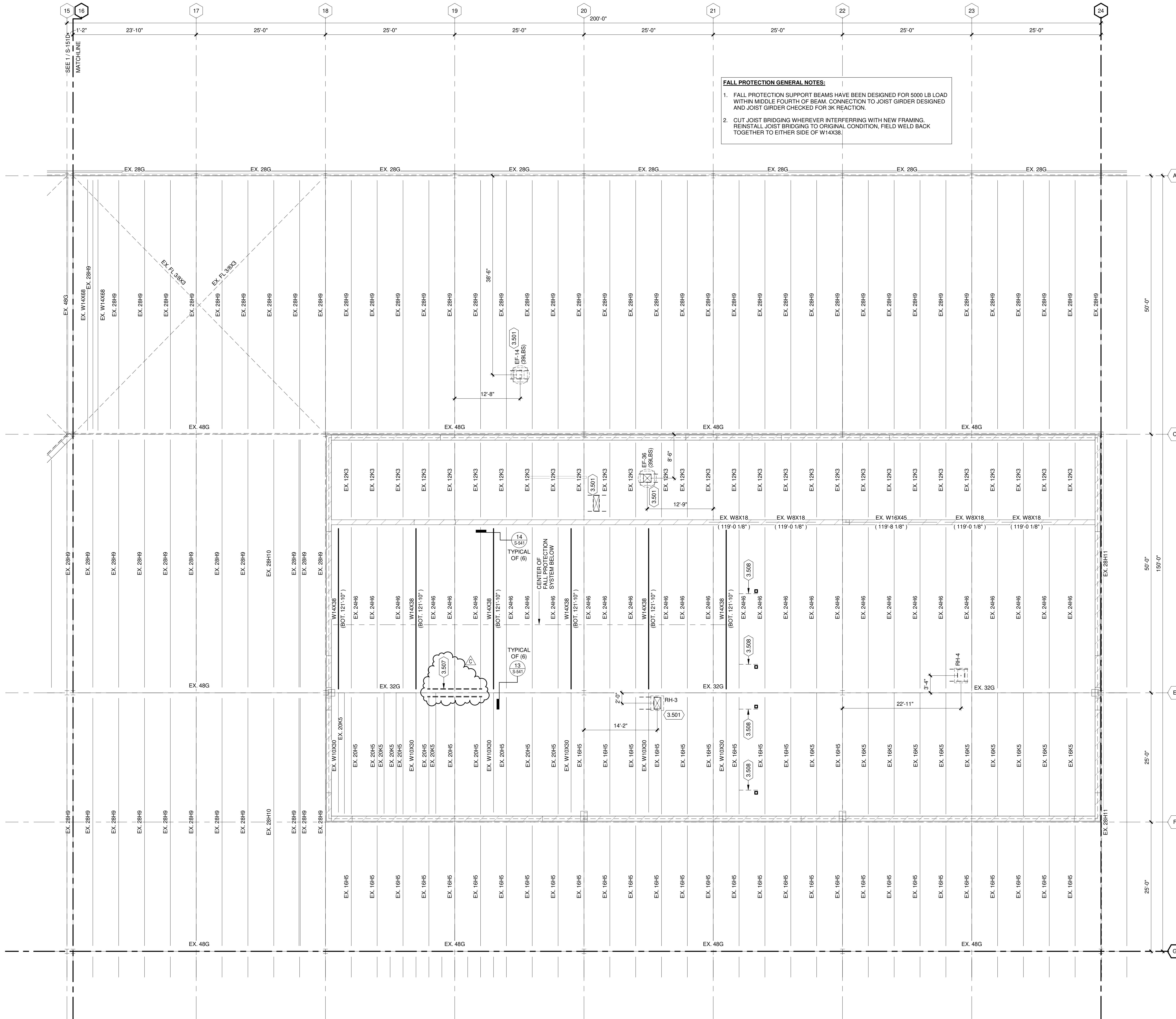
KEYED NOTES

- 3.501 NEW FRAMED ROOF OPENING. REFER TO DETAIL G-03-551. COORDINATE FINAL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER AND IN-FIELD CONDITIONS.
- 3.502 L2X2X3/16 BRACE TO TOP OF HSS JAMB COLUMN. ATTACH TO ROOF DECK WITH (12) #12 SCREWS, FIELD FILLET WELD TO HSS COLUMN. SEE SHEET S-151F FOR SIZE AND LOCATION OF JAMB COLUMN.

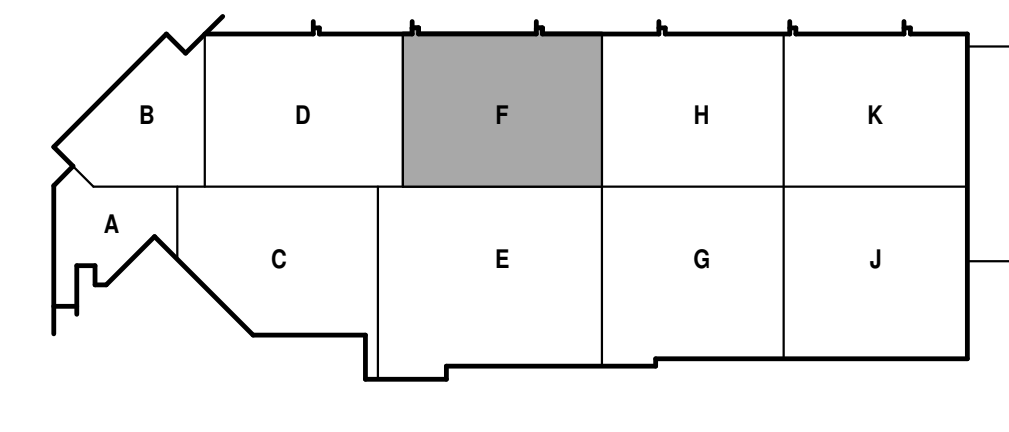
ALTERNATE NO. 1.
SEE SPECIFICATION 012300 - ALTERNATES AND DRAWING G131. ALL WORK ASSOCIATED WITH AREA F, FIRST FLOOR ONLY, AS IDENTIFIED PER DRAWING G131. THIS GENERALLY INCLUDES A BATHROOM/LOCKERROOM, A MAINTENANCE BAY, BODY SHOP, ADJACENT WORKSHOPS AND ASSOCIATED WORK.

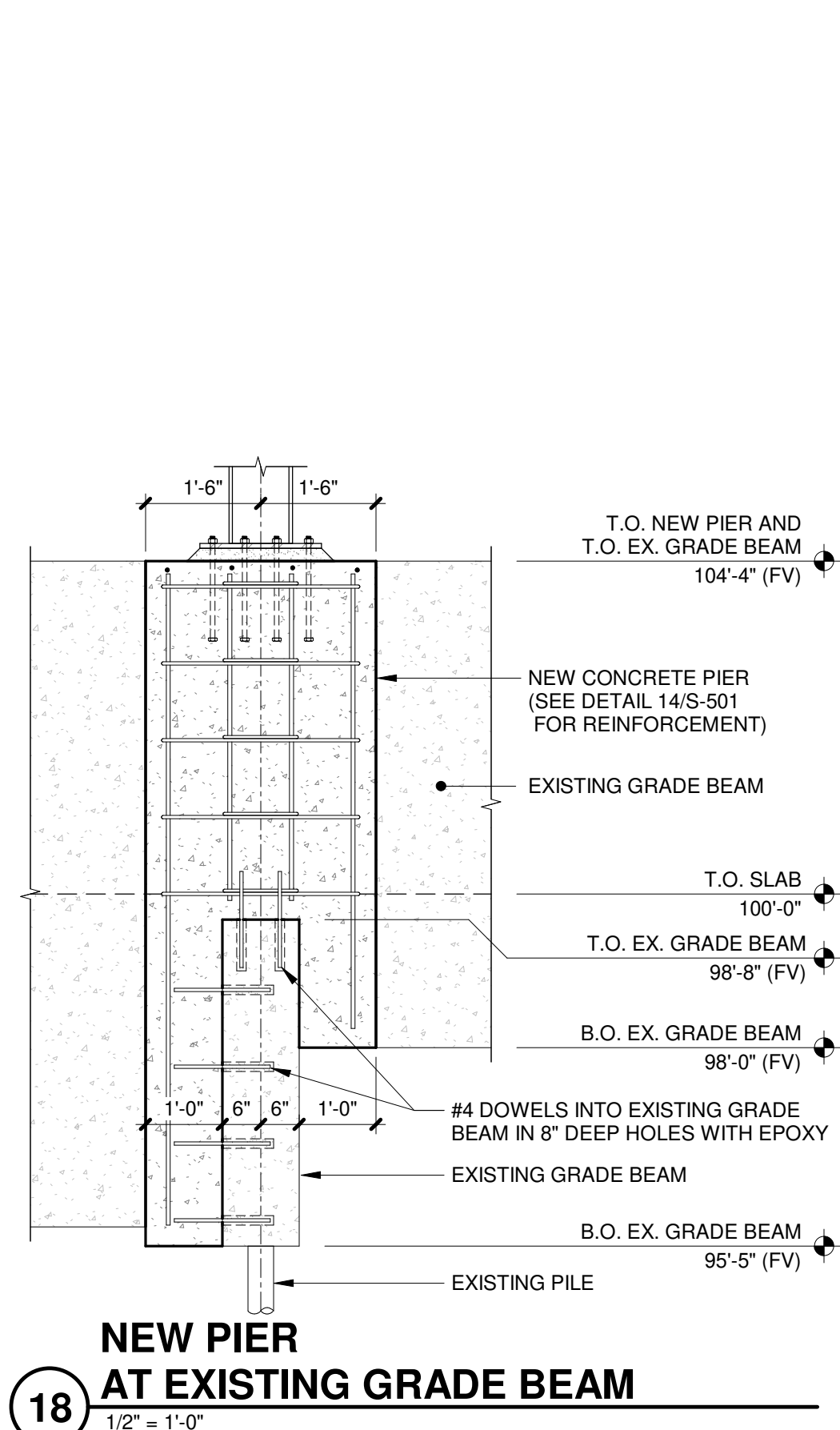
FALL PROTECTION GENERAL NOTES:

1. FALL PROTECTION SUPPORT BEAMS HAVE BEEN DESIGNED FOR 5000 LB LOAD WITHIN MIDDLE FOURTH OF BEAM. CONNECTION TO JOIST GIRDER DESIGNED AND JOIST GIRDER CHECKED FOR 3K REACTION.
2. CUT JOIST BRIDGING WHEREVER INTERFERING WITH NEW FRAMING. REINSTALL JOIST BRIDGING TO ORIGINAL CONDITION, FIELD WELD BACK TOGETHER TO EITHER SIDE OF W14X38.

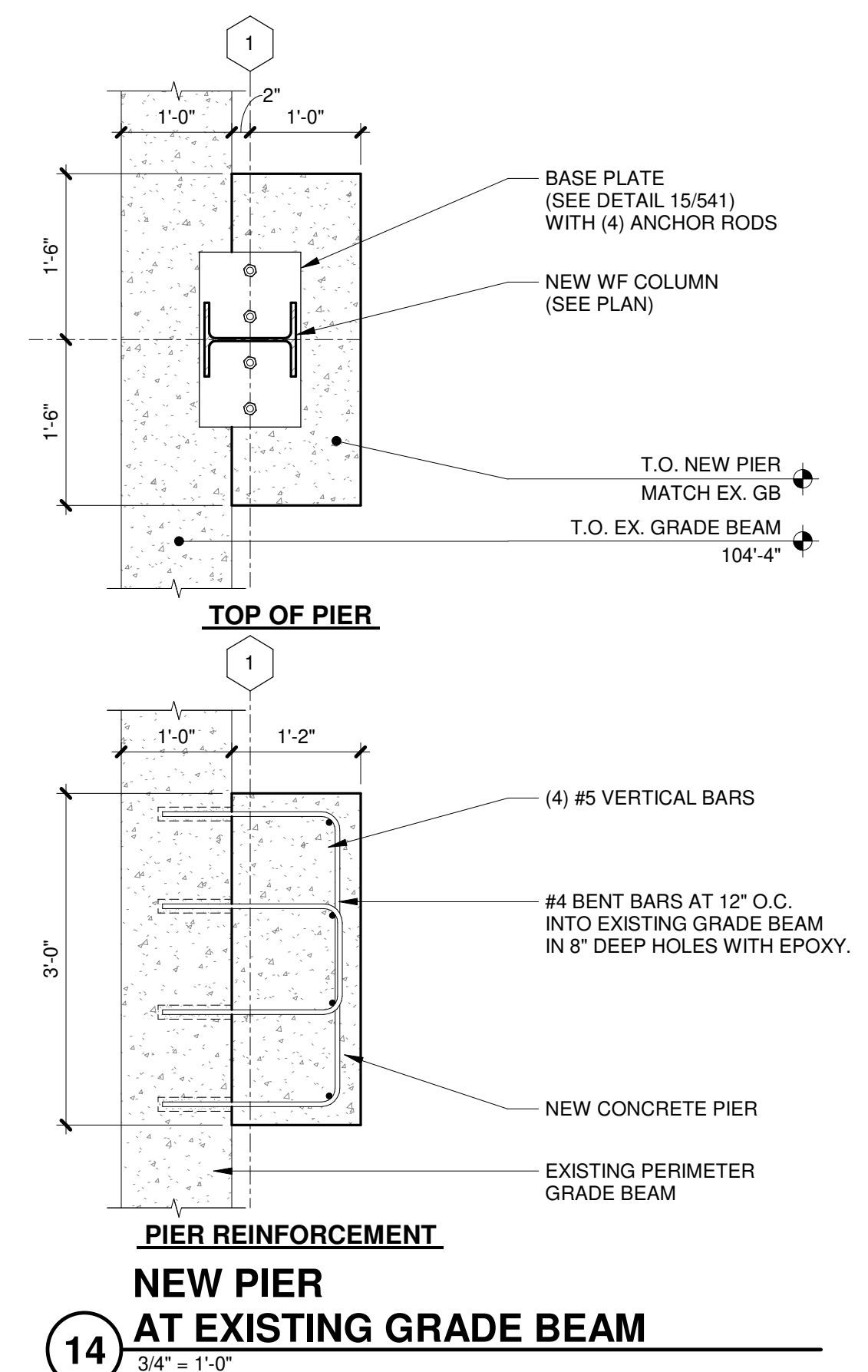


TRUE PLAN NORTH NORTH
1
ROOF FRAMING PLAN - AREA F
1/8" = 1'-0"

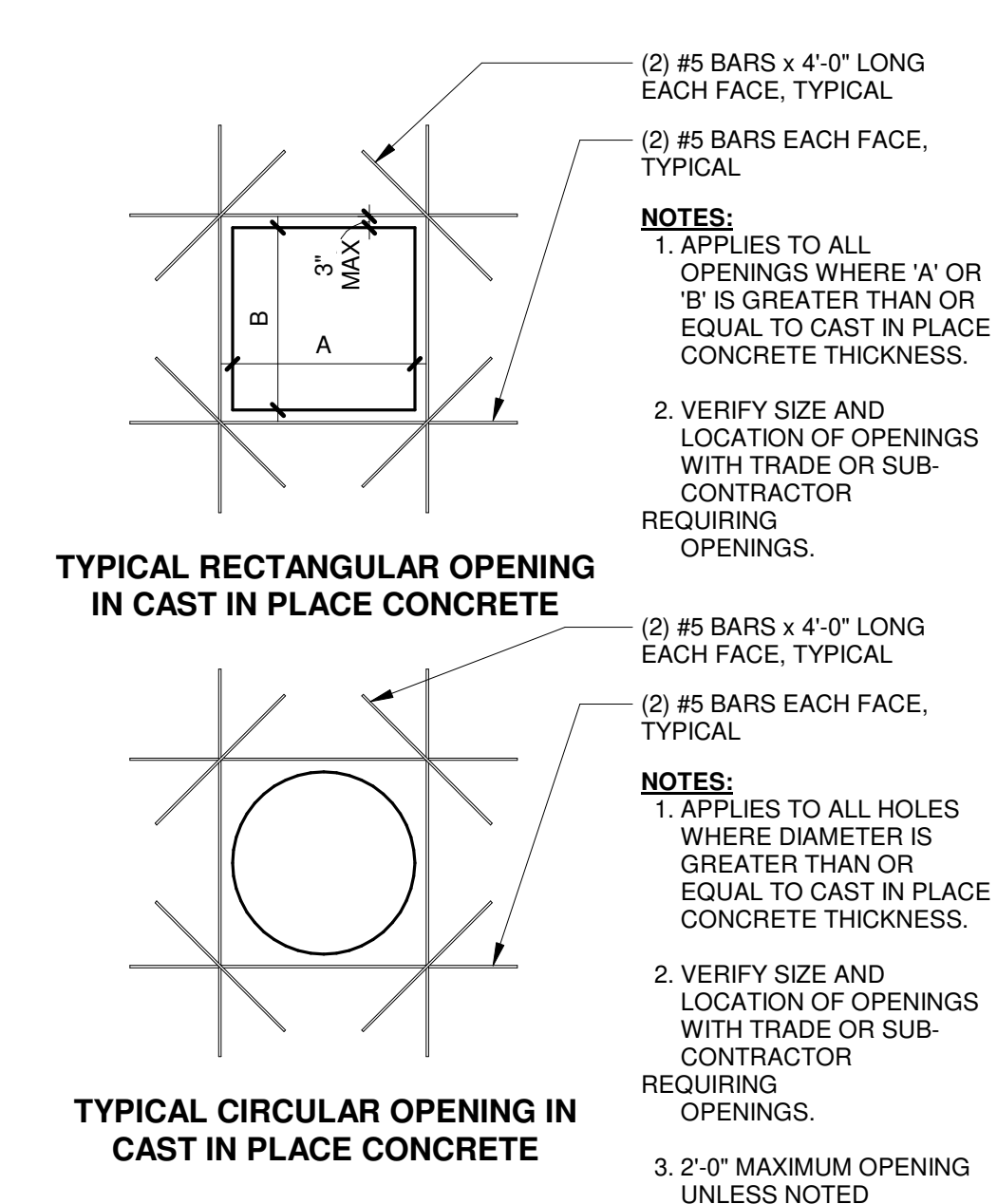




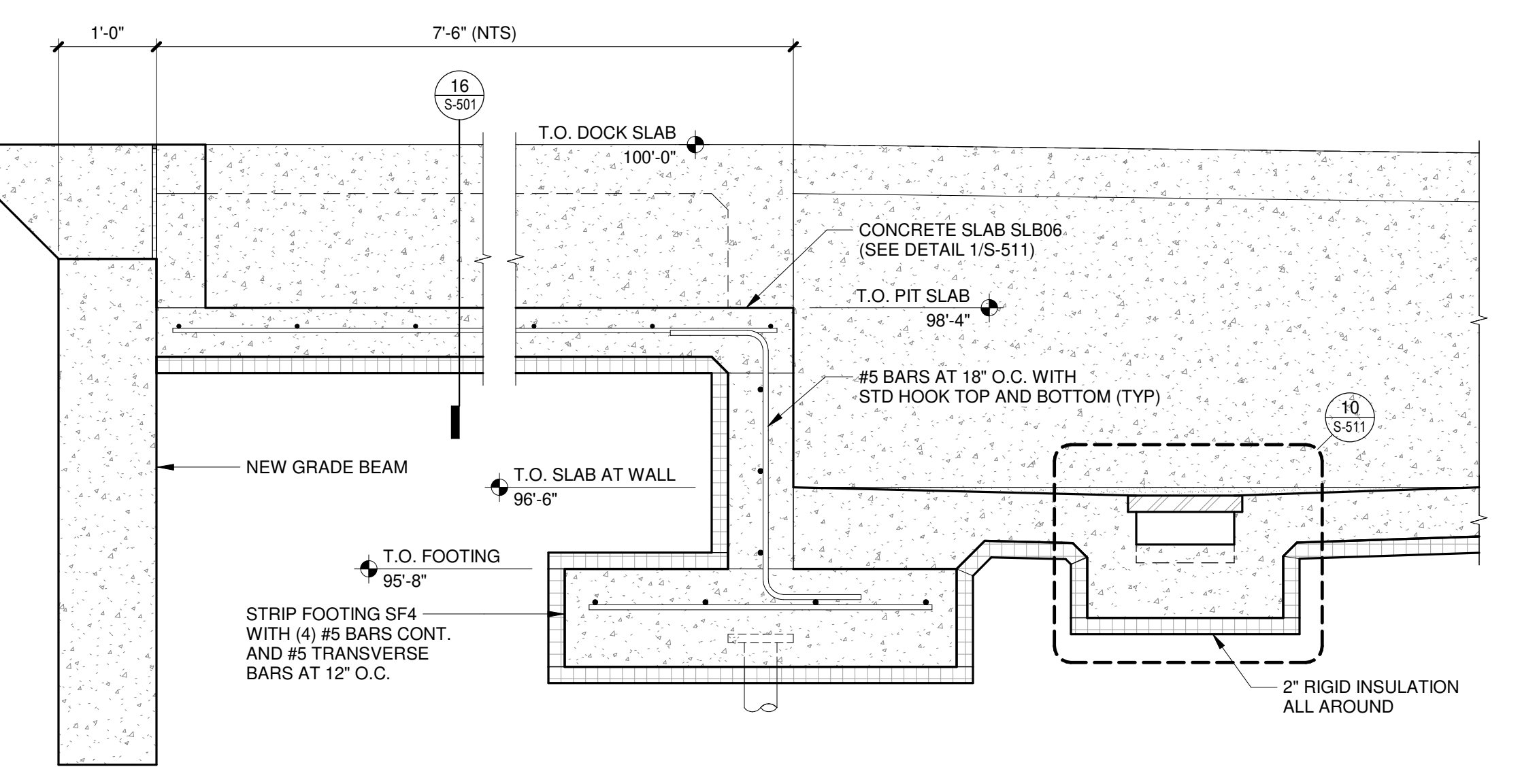
18 NEW PIER AT EXISTING GRADE BEAM
1/2" = 1'-0"



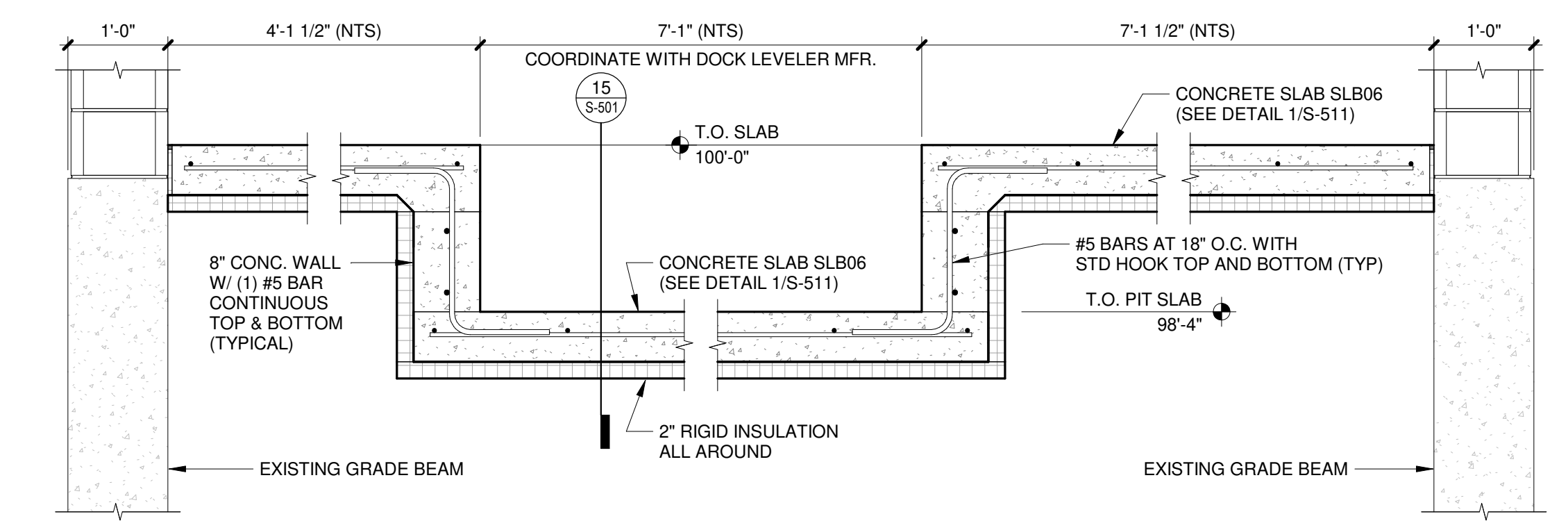
14 PIER REINFORCEMENT NEW PIER AT EXISTING GRADE BEAM
3/4" = 1'-0"



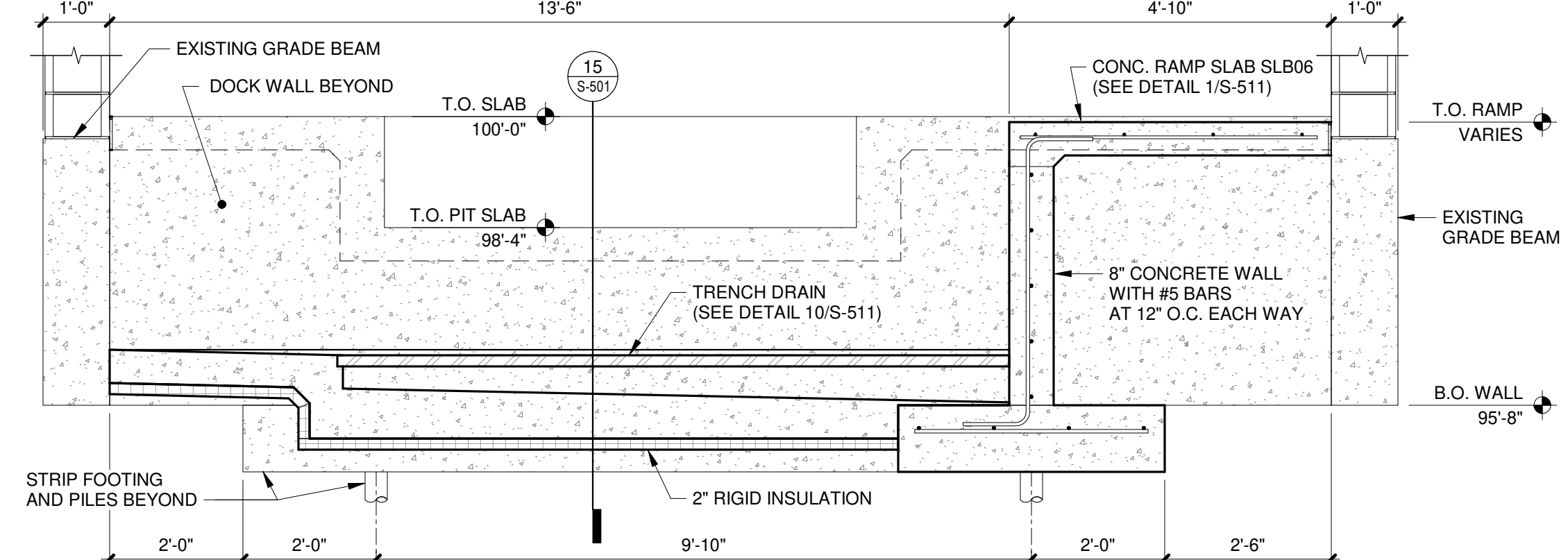
13 TYPICAL CONCRETE PENETRATION REINFORCEMENT
NO SCALE



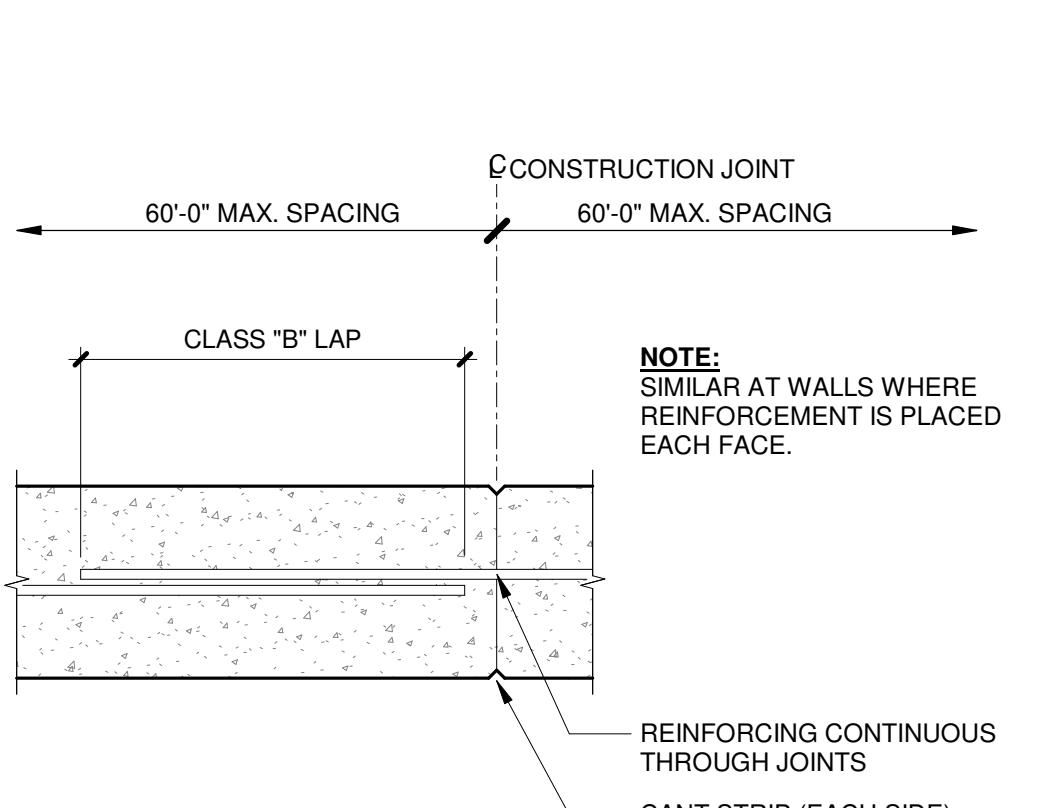
15 FOUNDATION SECTION - DOCK LEVELER
3/4" = 1'-0"



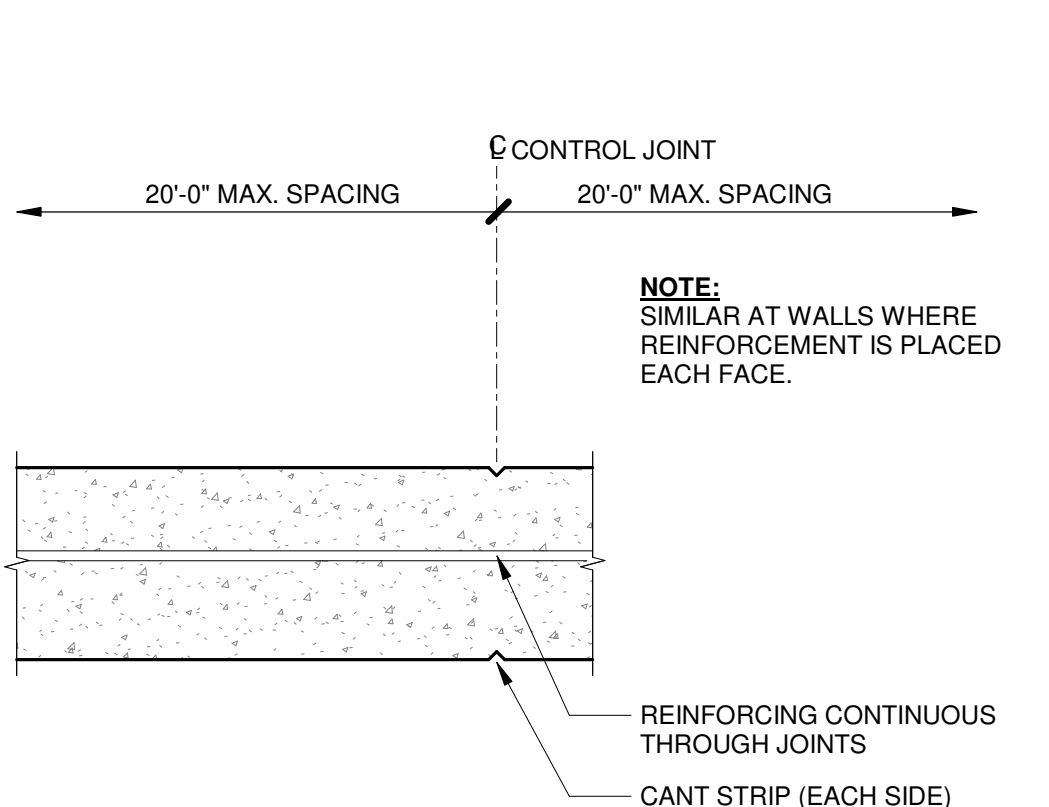
16 FOUNDATION SECTION - DOCK LEVELER
3/4" = 1'-0"



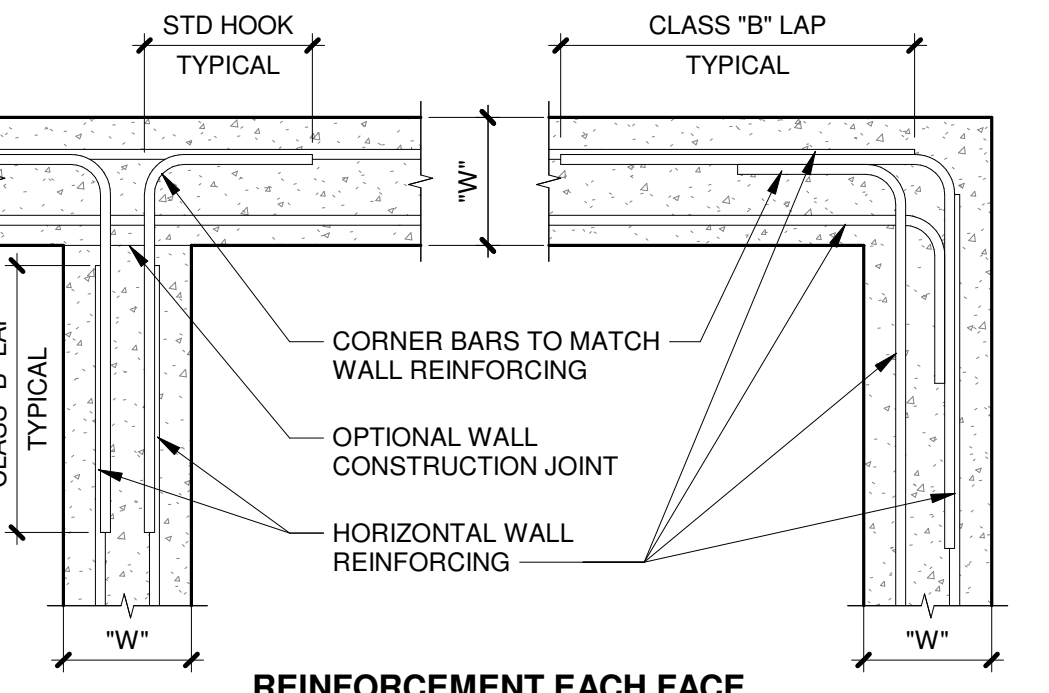
17 FOUNDATION SECTION - DOCK
1/2" = 1'-0"



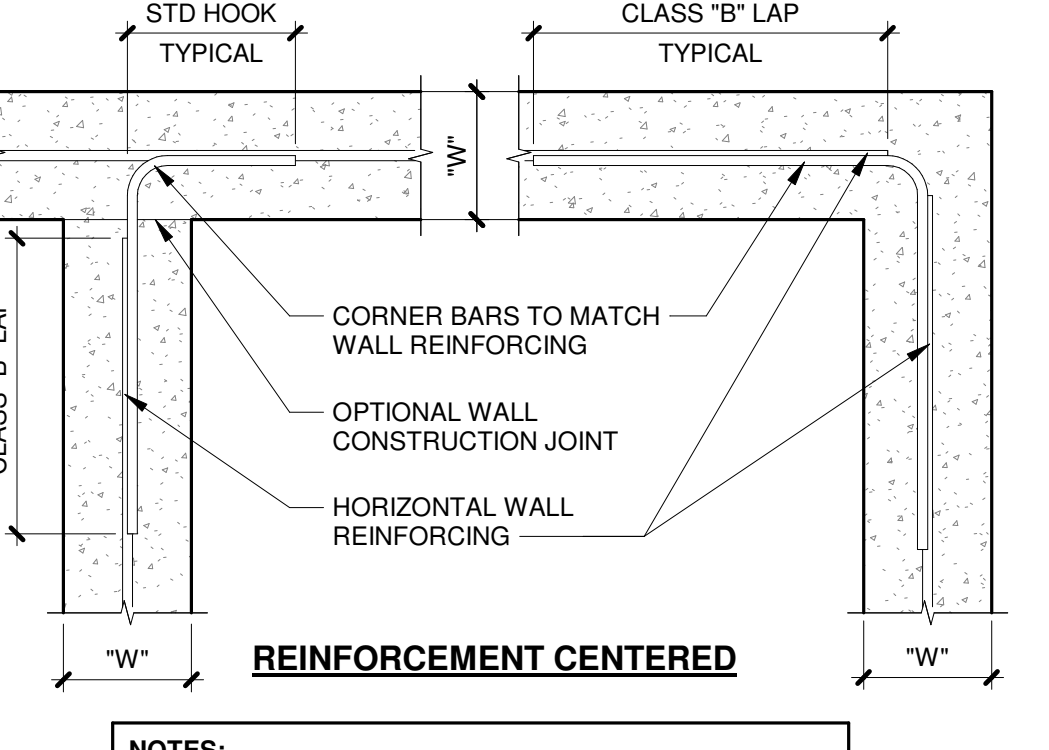
9 TYPICAL FOUNDATION AND CONCRETE WALL CONST. JOINT
NO SCALE



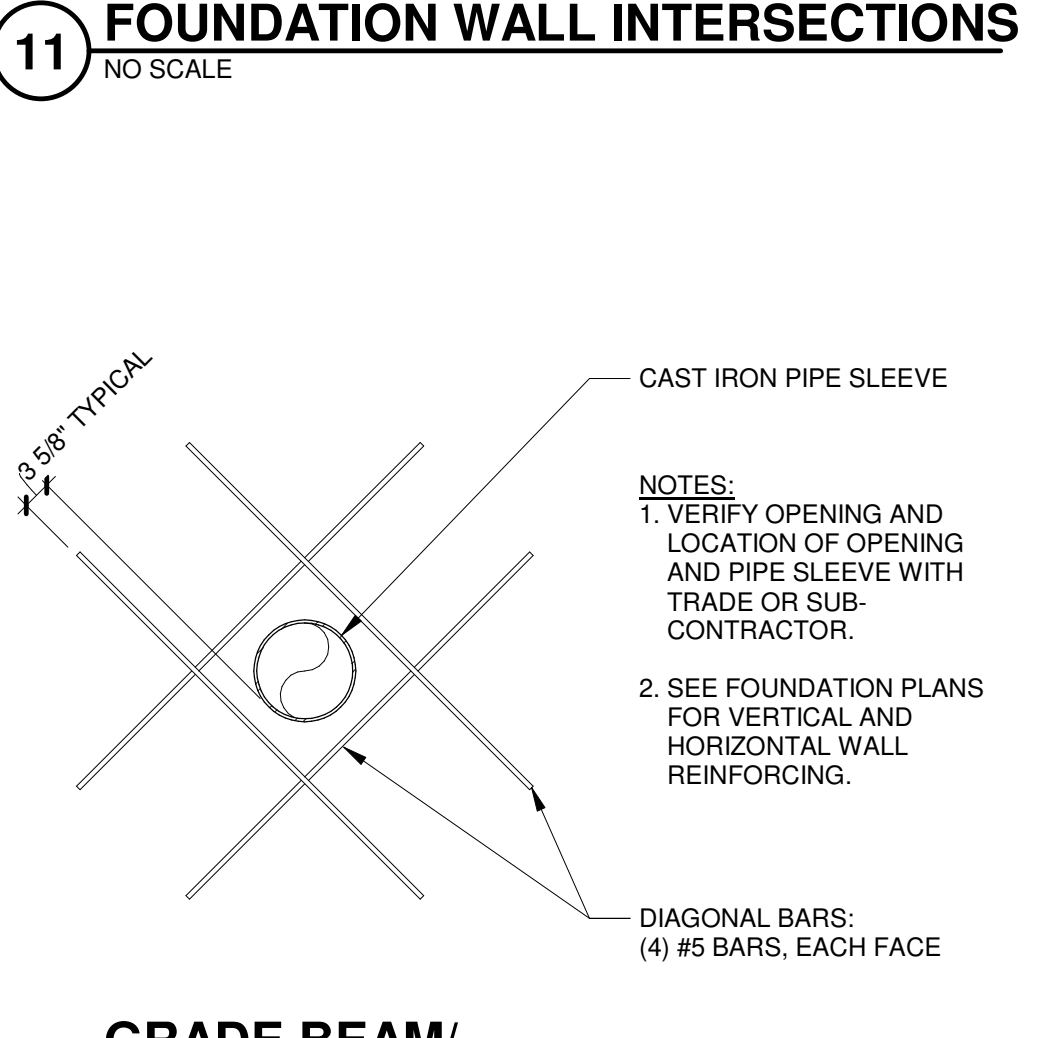
10 TYPICAL FOUNDATION AND CONCRETE WALL CONTROL JOINT
NO SCALE



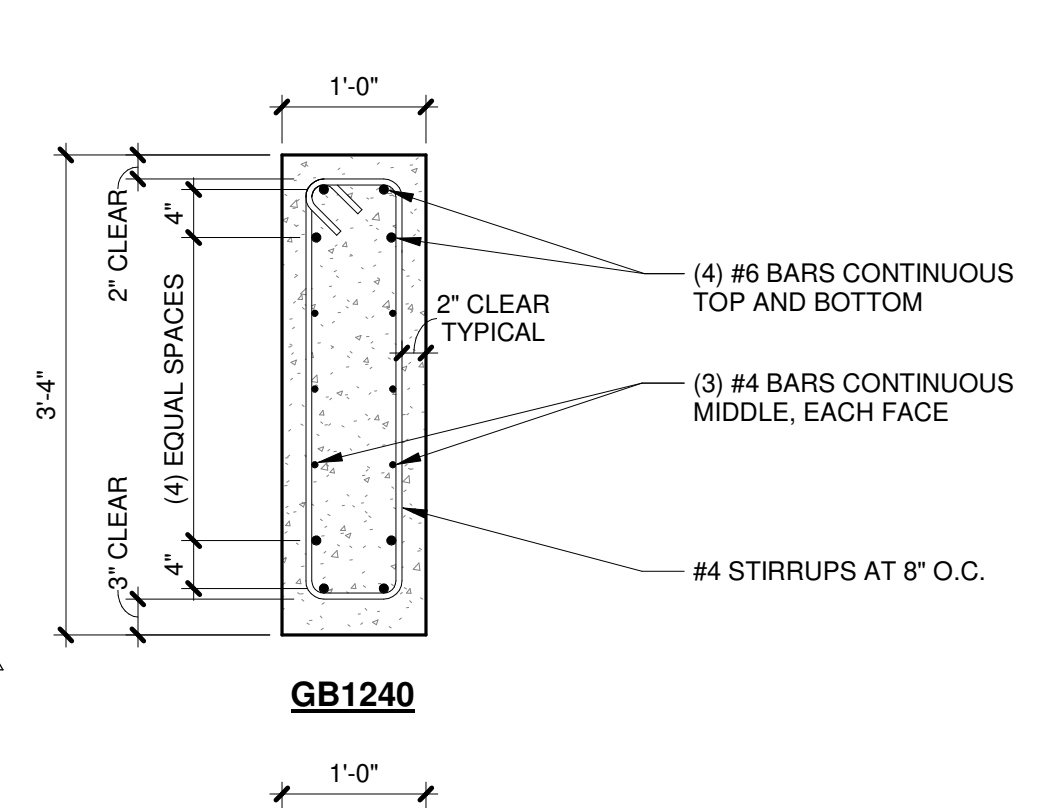
6 TYPICAL GRADE BEAMS
3/4" = 1'-0"



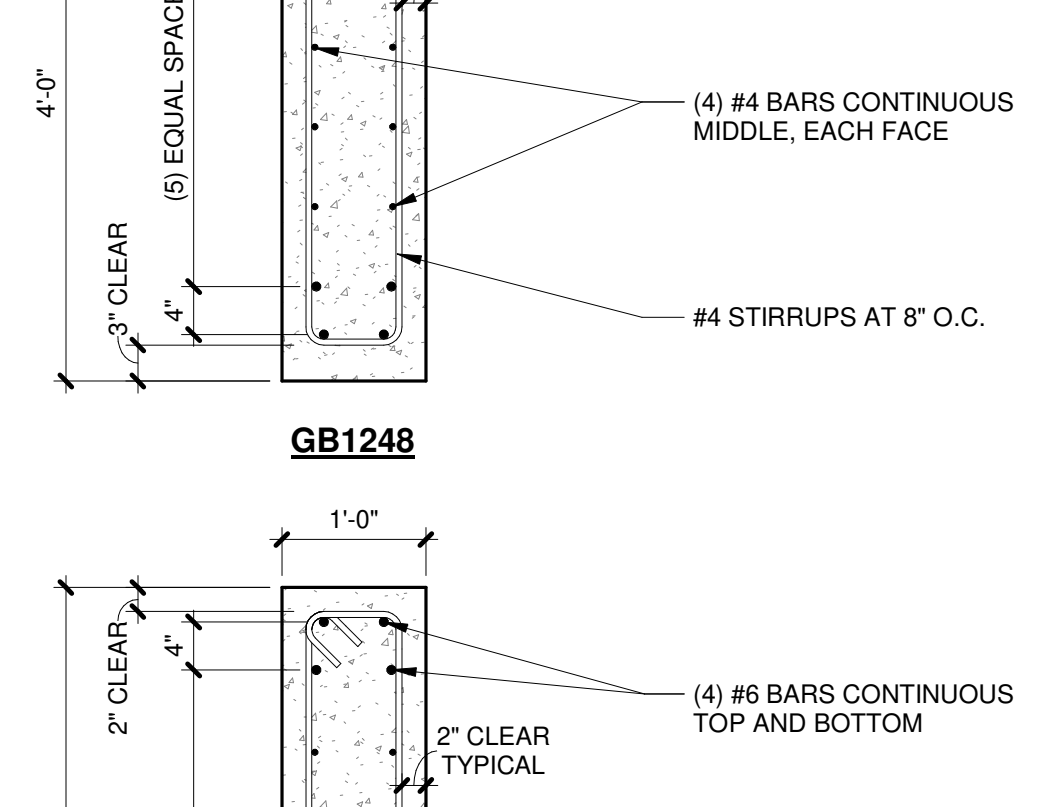
11 TYPICAL FOUNDATION WALL INTERSECTIONS
NO SCALE



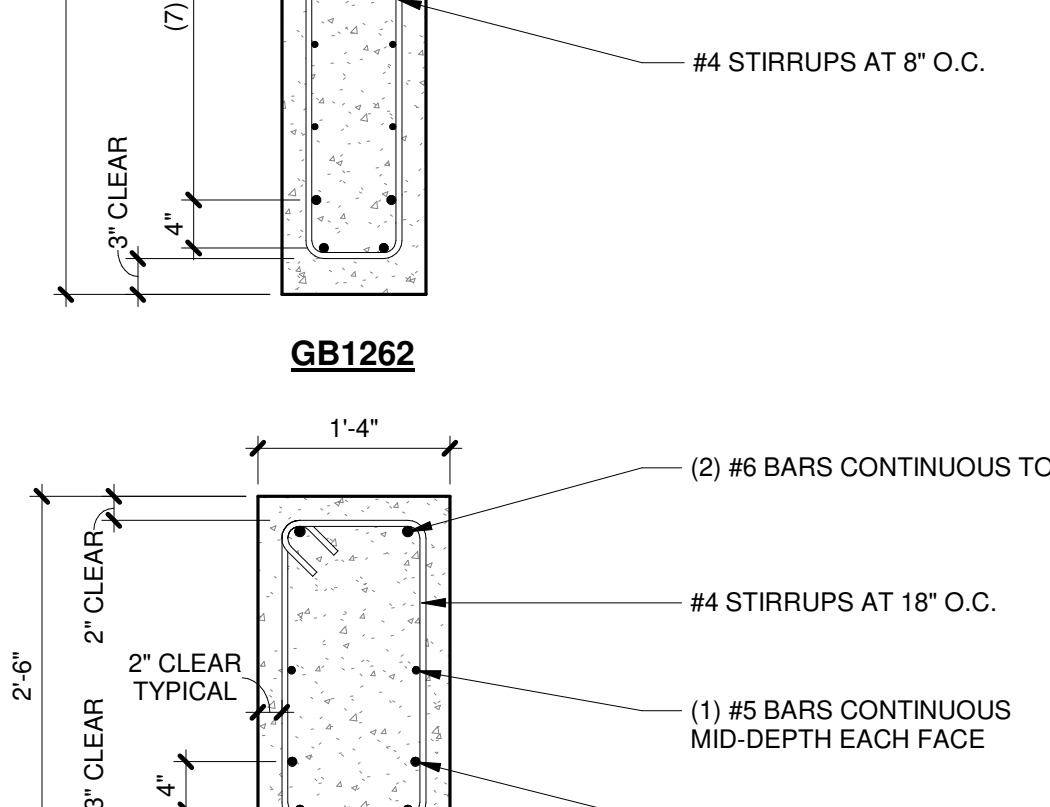
12 GRADE BEAM/FOUNDATION WALL PENETRATION
NO SCALE



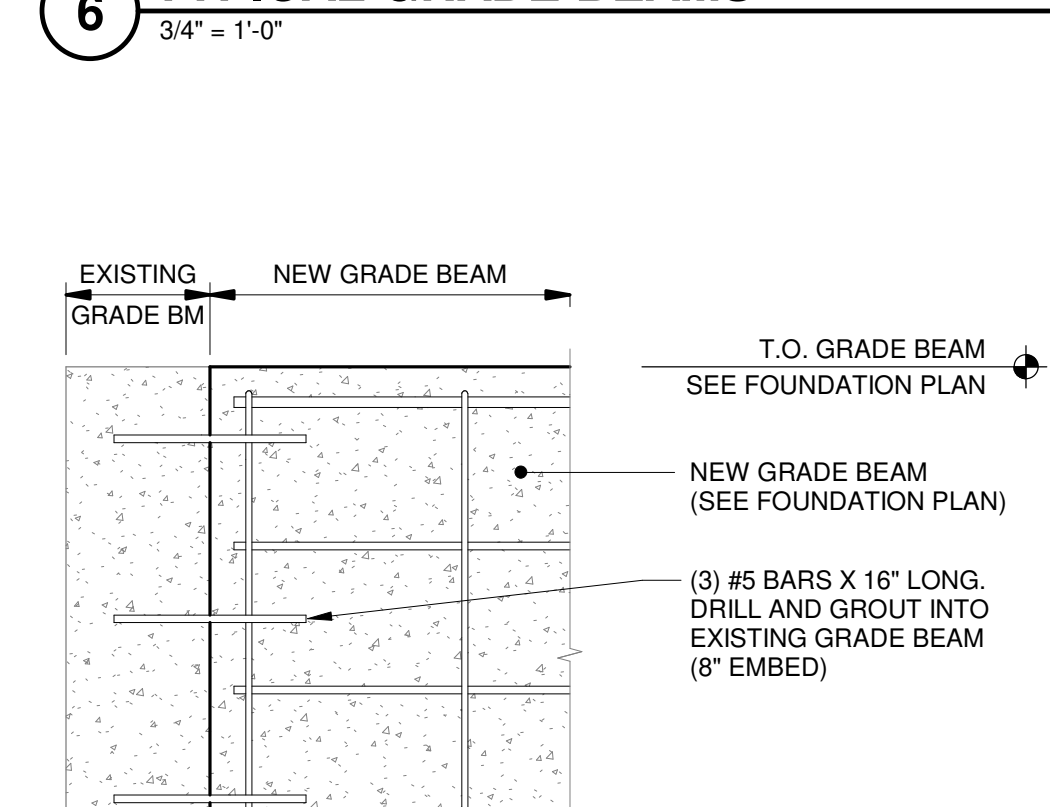
GB1240



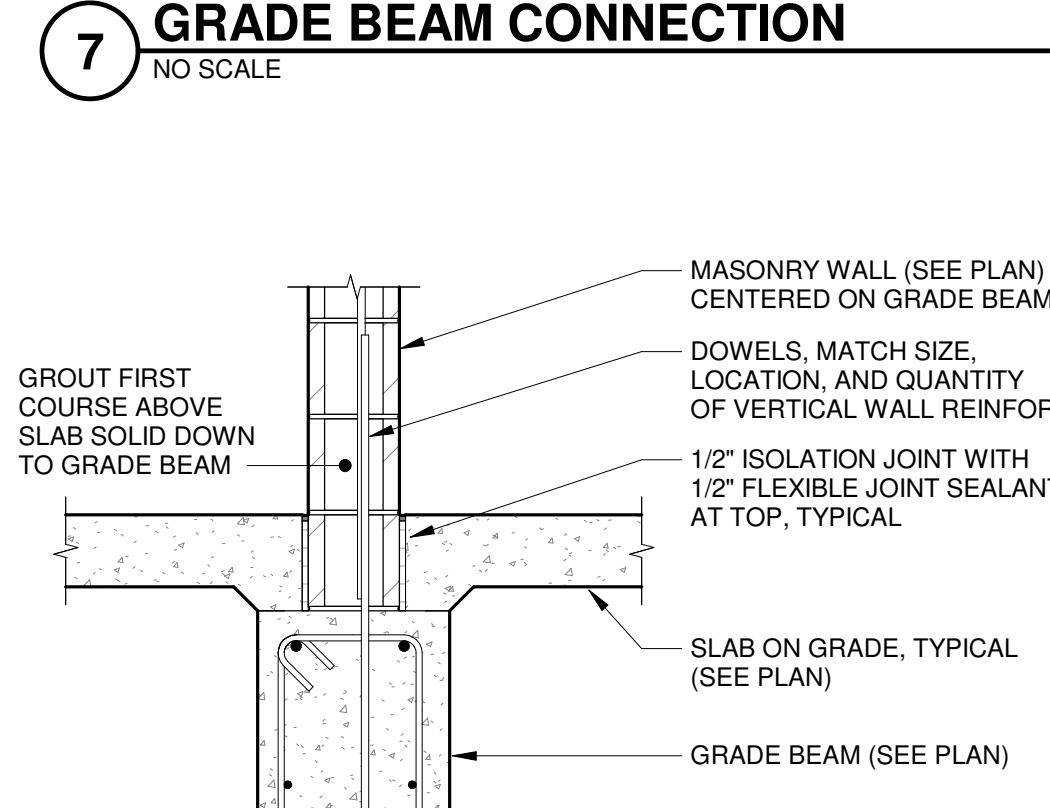
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GB1262



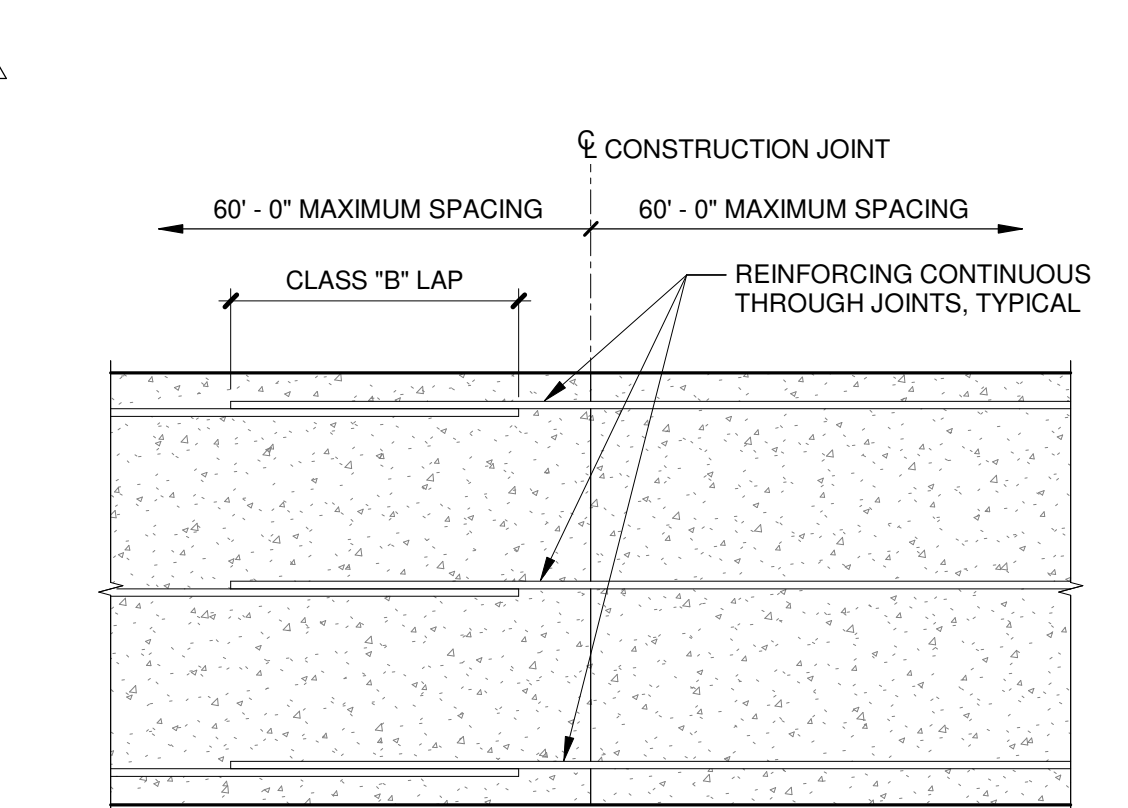
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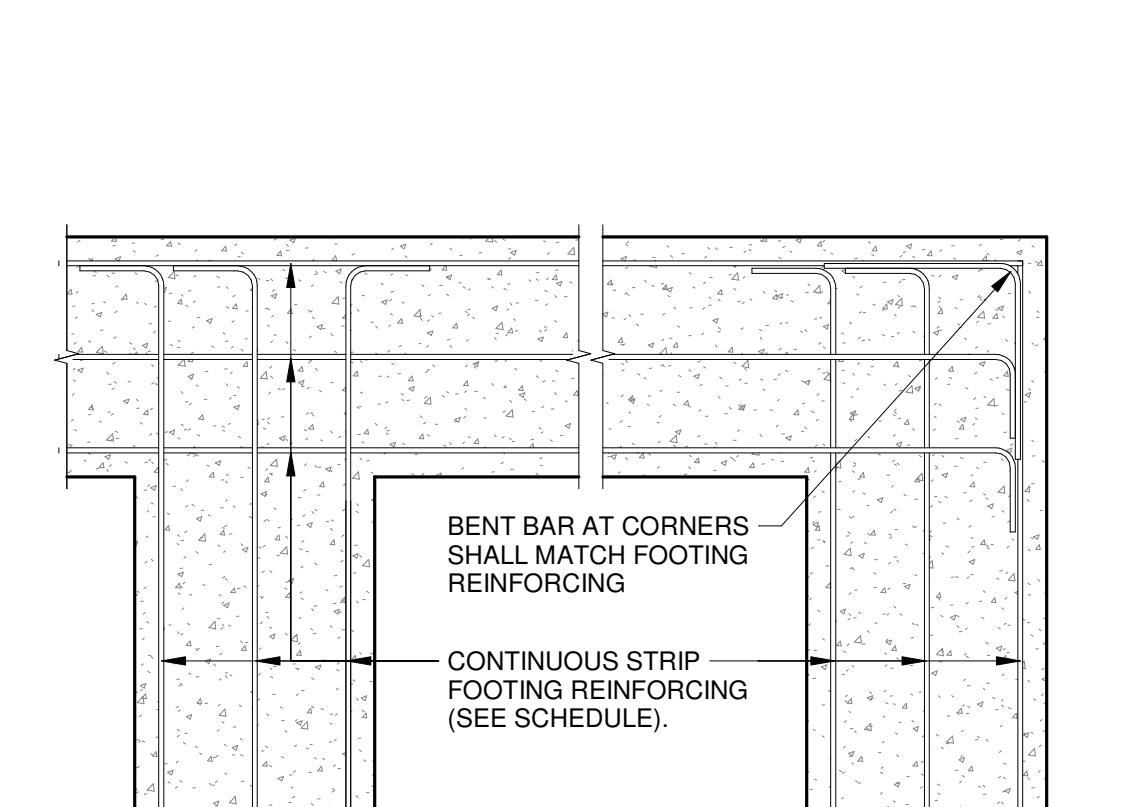
7 TYPICAL NEW TO EXISTING GRADE BEAM CONNECTION
NO SCALE



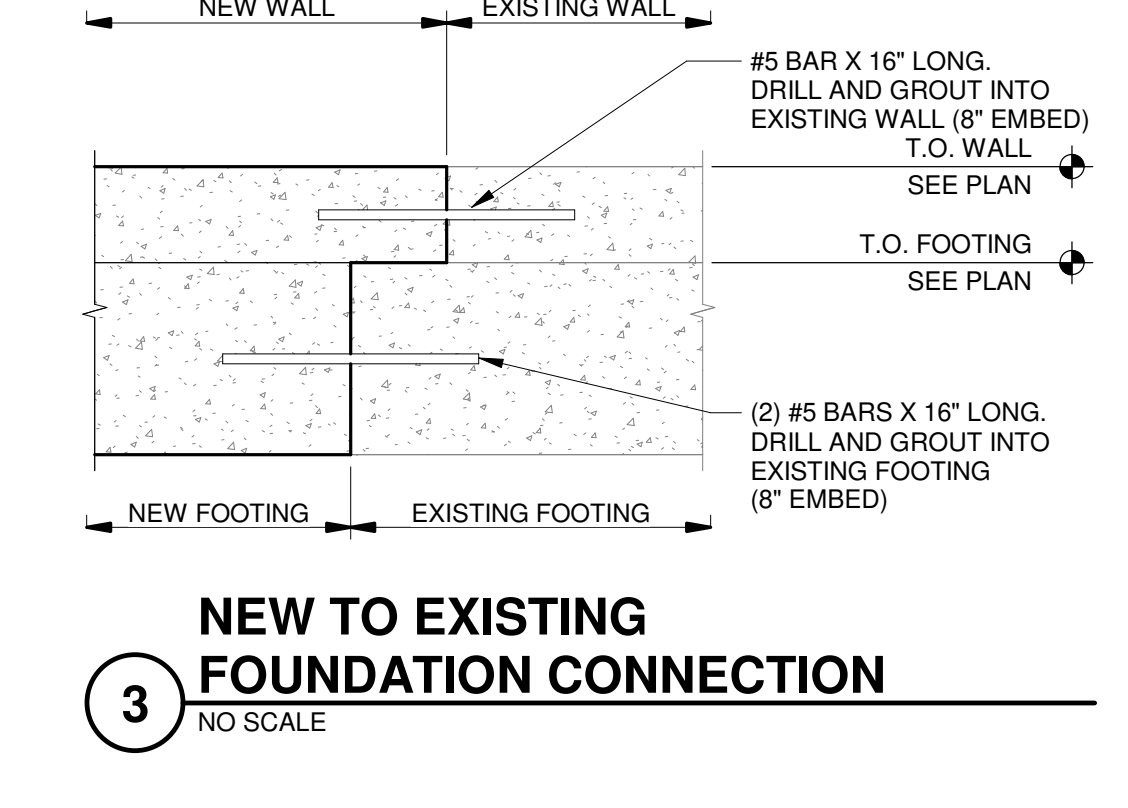
8 TYPICAL MASONRY WALL AT GRADE BEAM
3/4" = 1'-0"



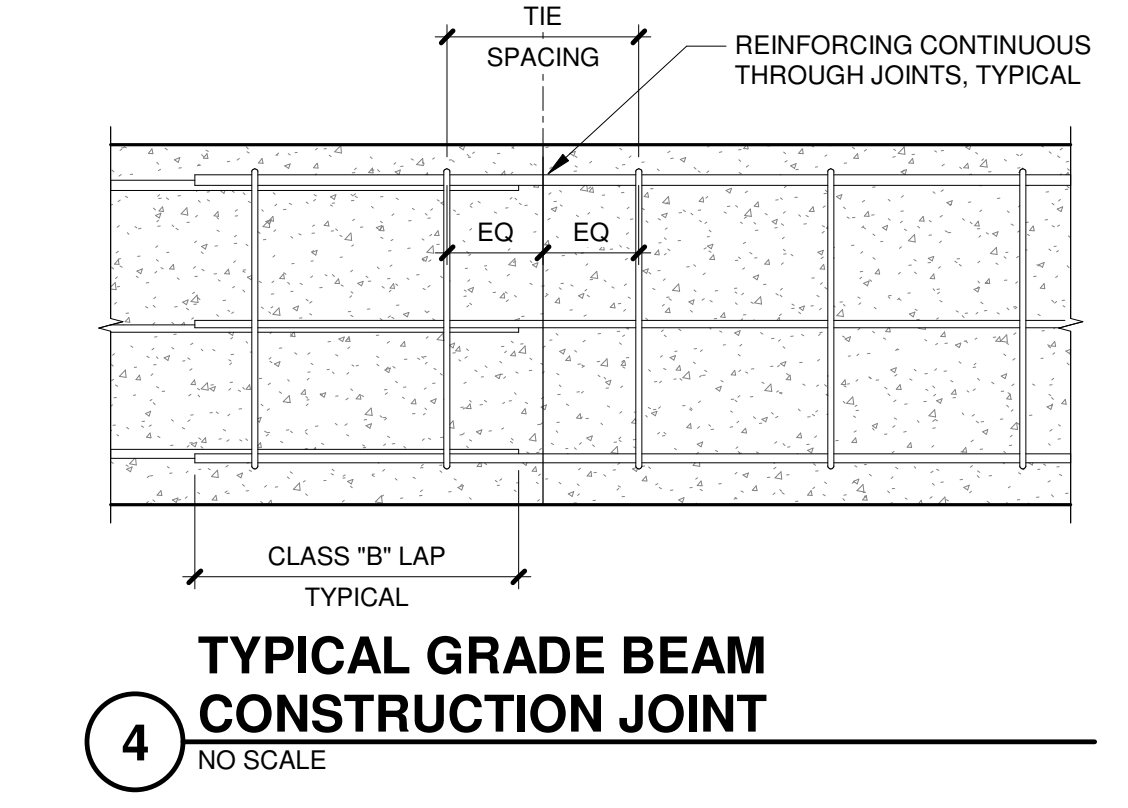
1 TYPICAL FOOTING CONSTRUCTION JOINT
NO SCALE



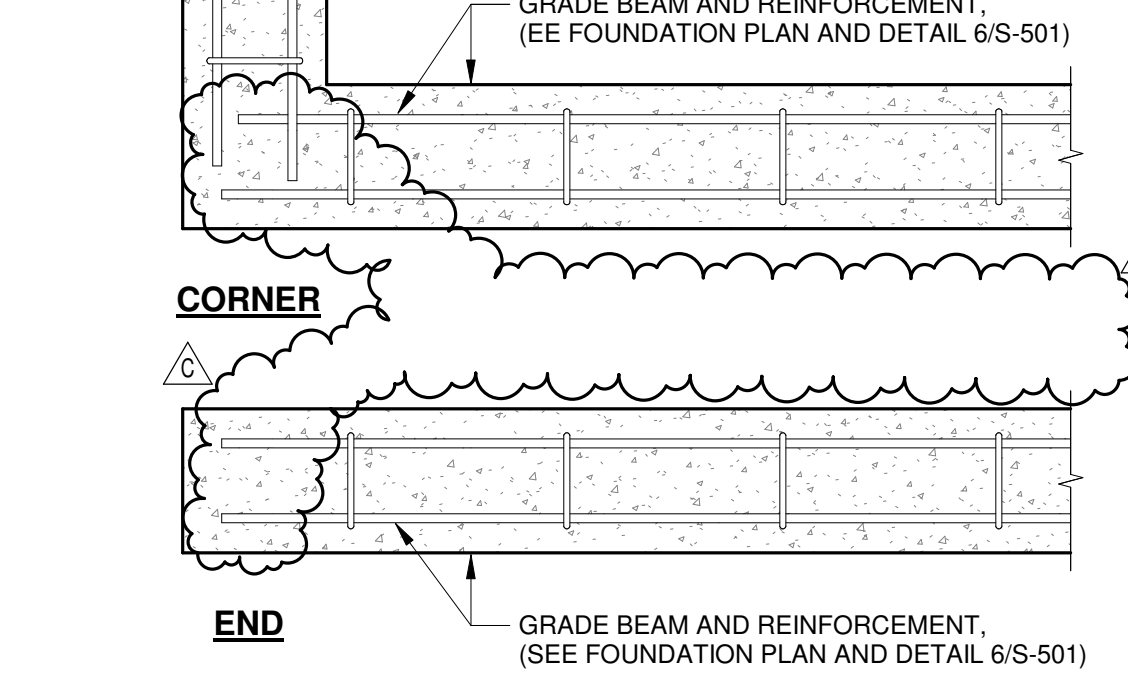
2 TYPICAL FOOTING INTERSECTIONS
NO SCALE



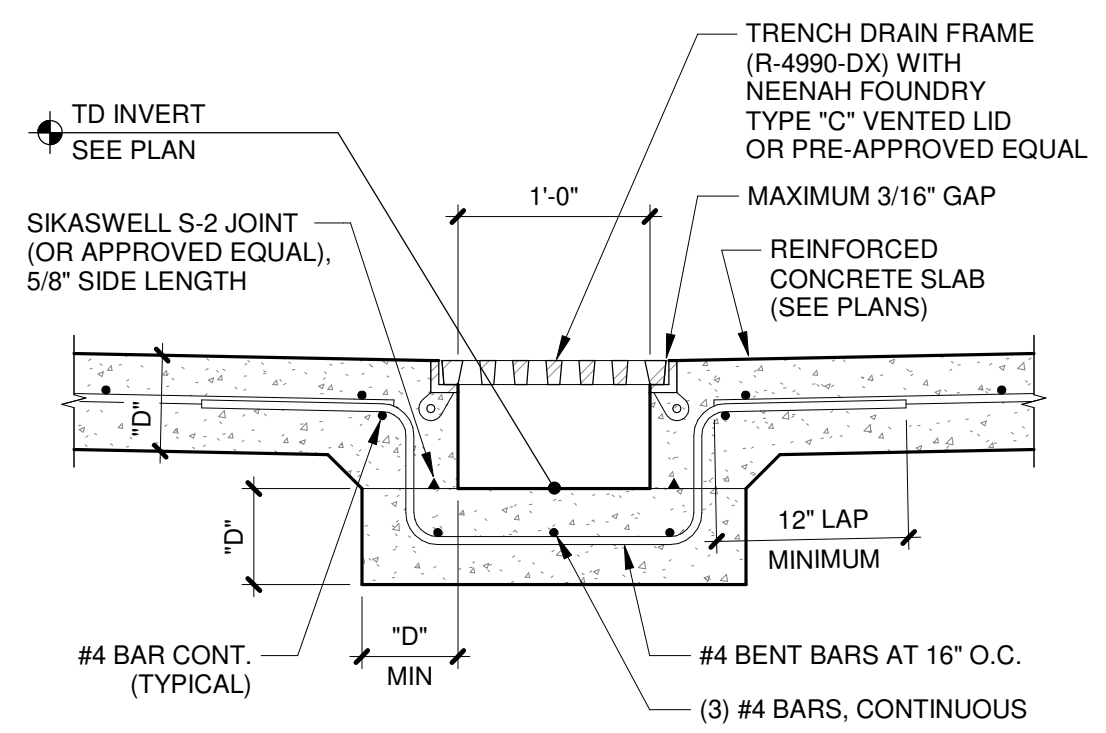
3 NEW TO EXISTING FOUNDATION CONNECTION
NO SCALE



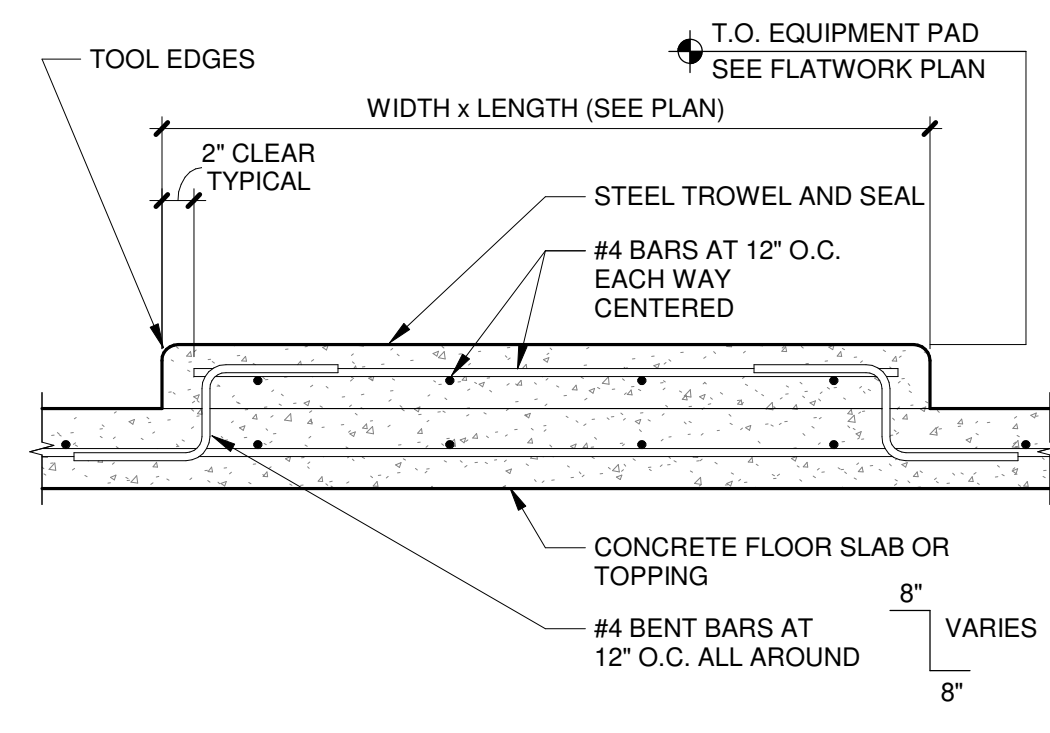
4 TYPICAL GRADE BEAM CONSTRUCTION JOINT
NO SCALE



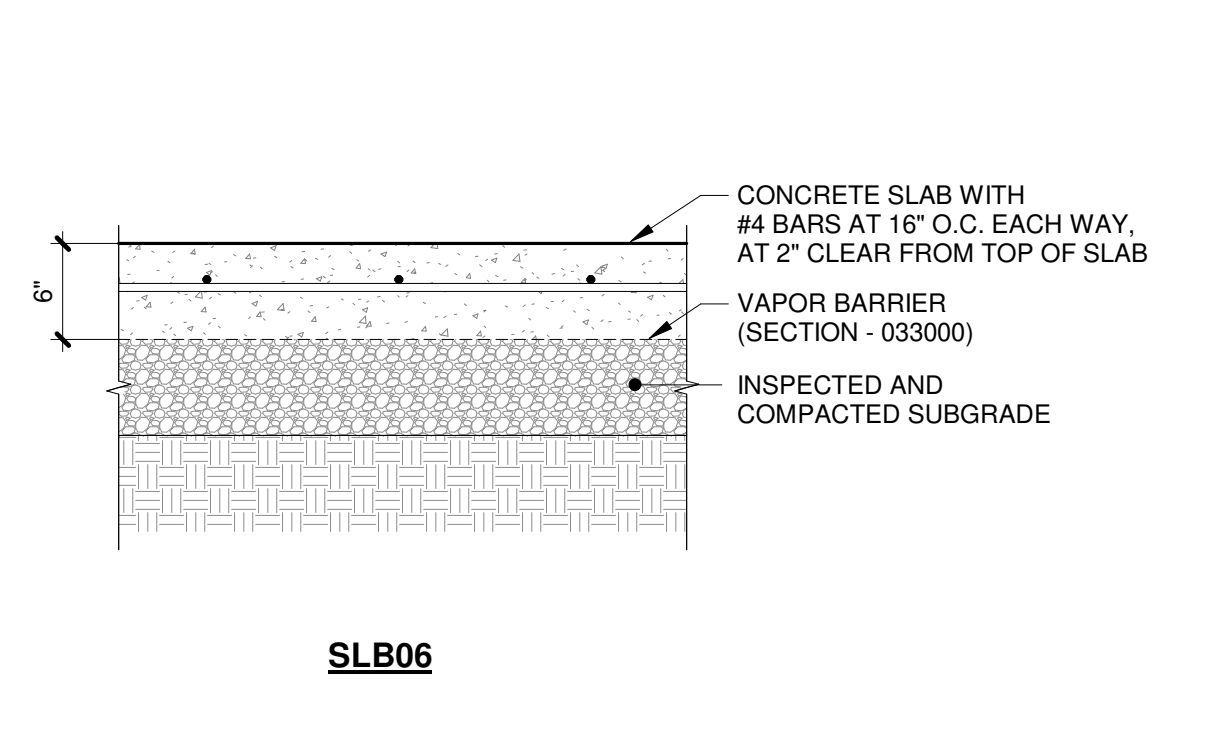
5 TYPICAL GRADE BEAM CORNER/END
NO SCALE



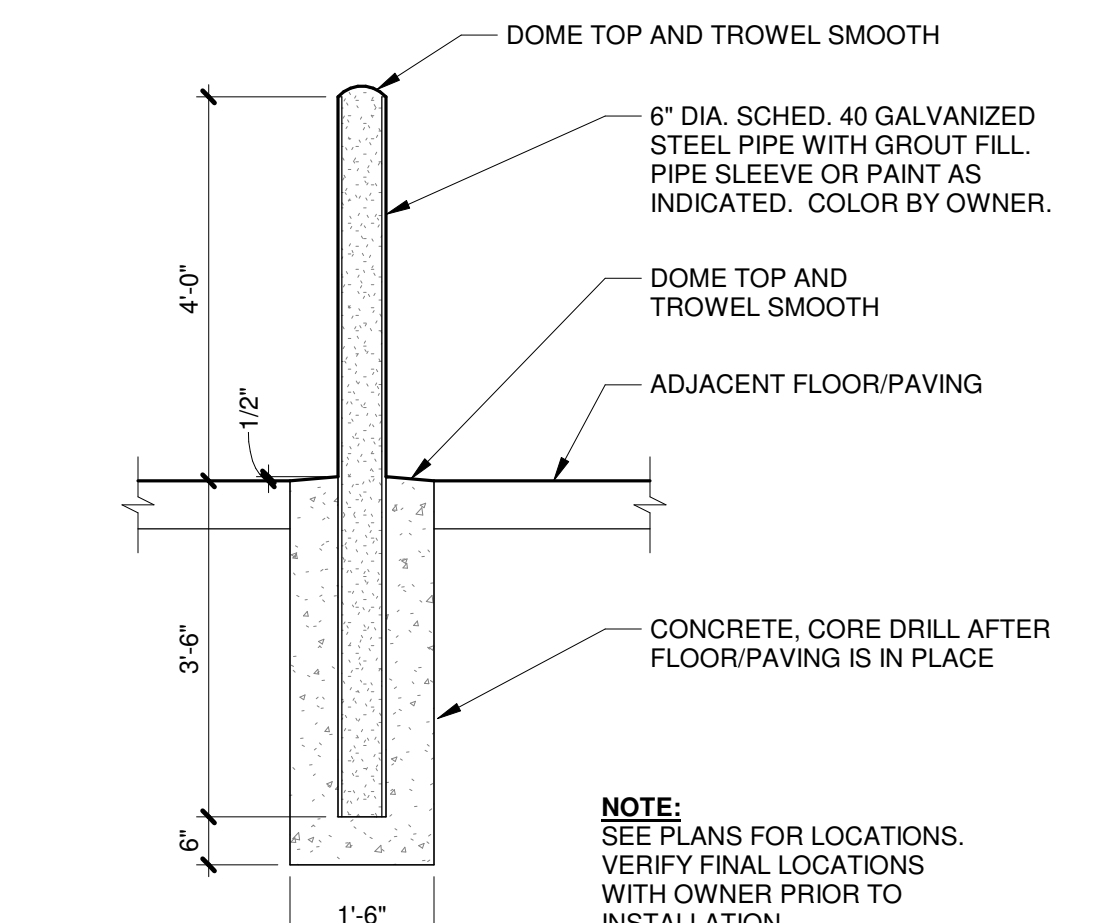
10 CONCRETE TRENCH DRAIN
NO SCALE



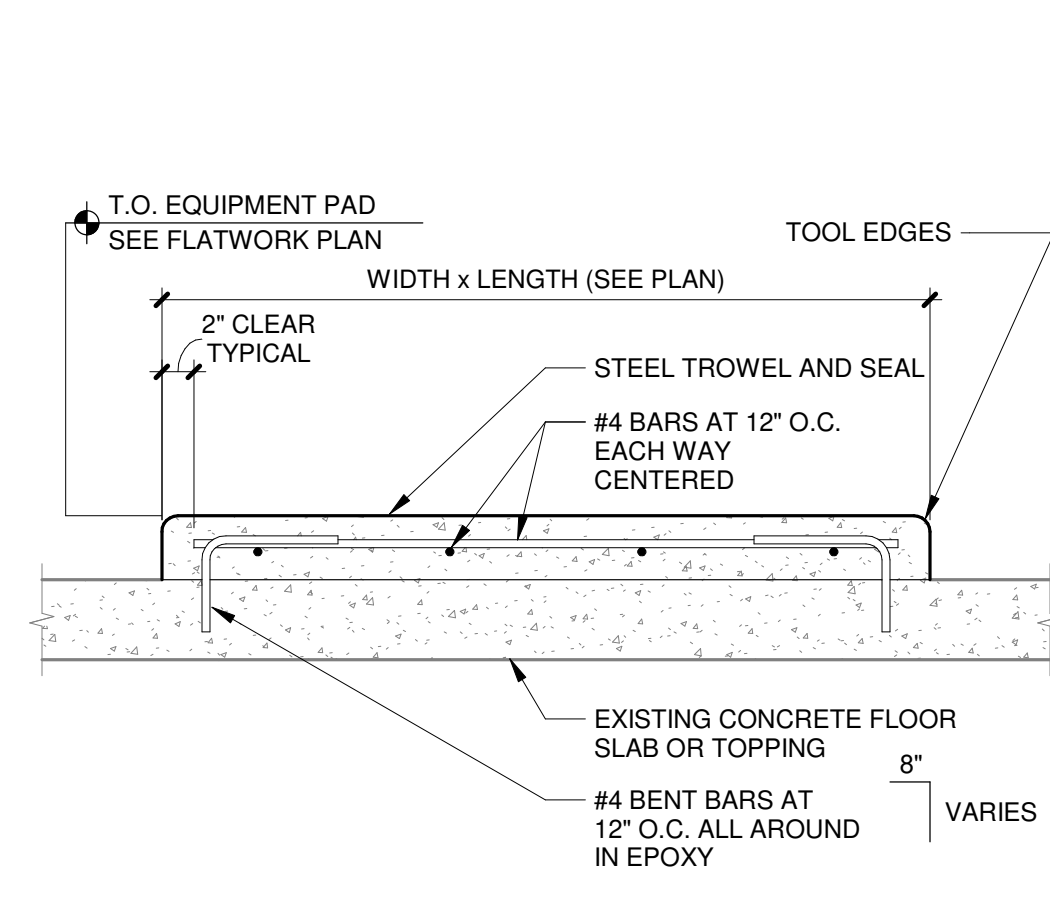
5 EQUIPMENT PADS
NO SCALE



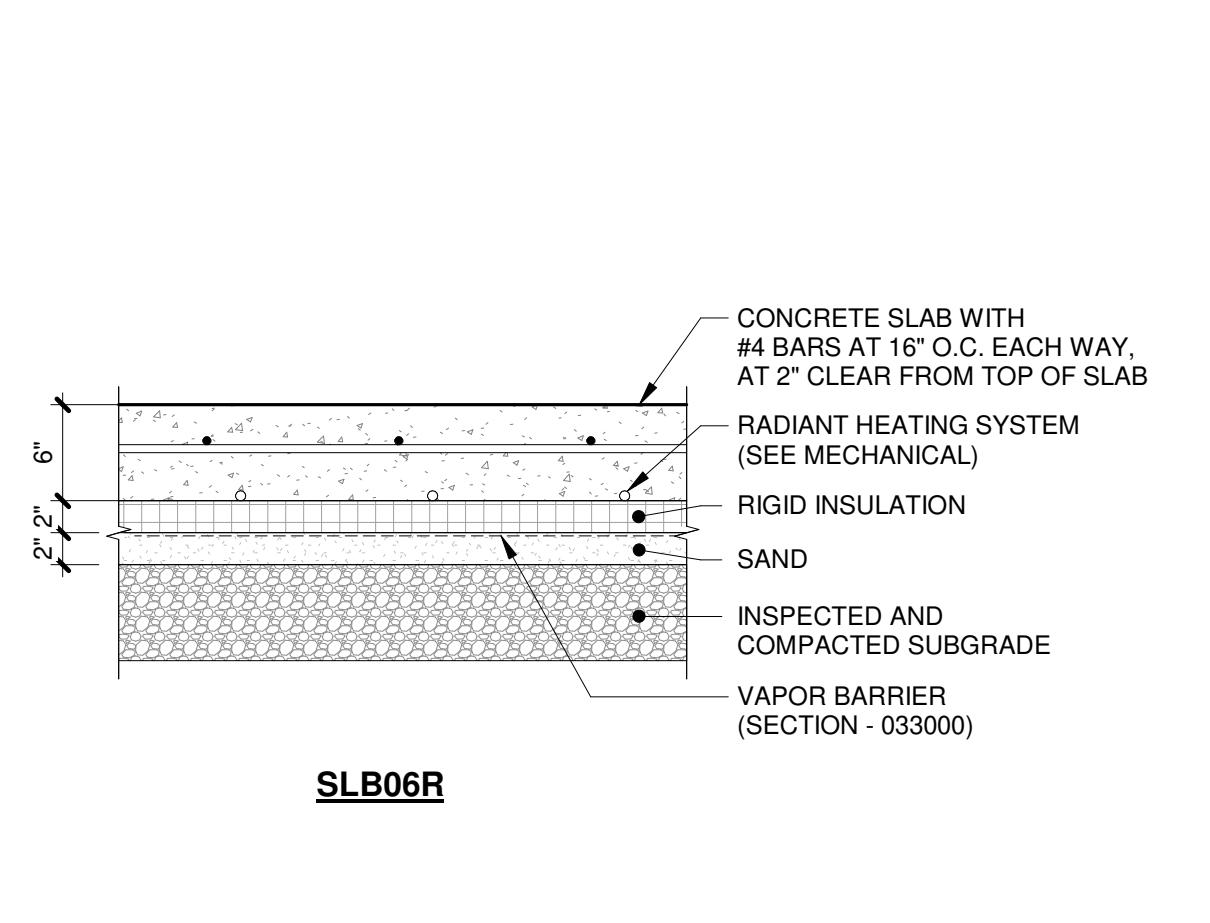
SLB06



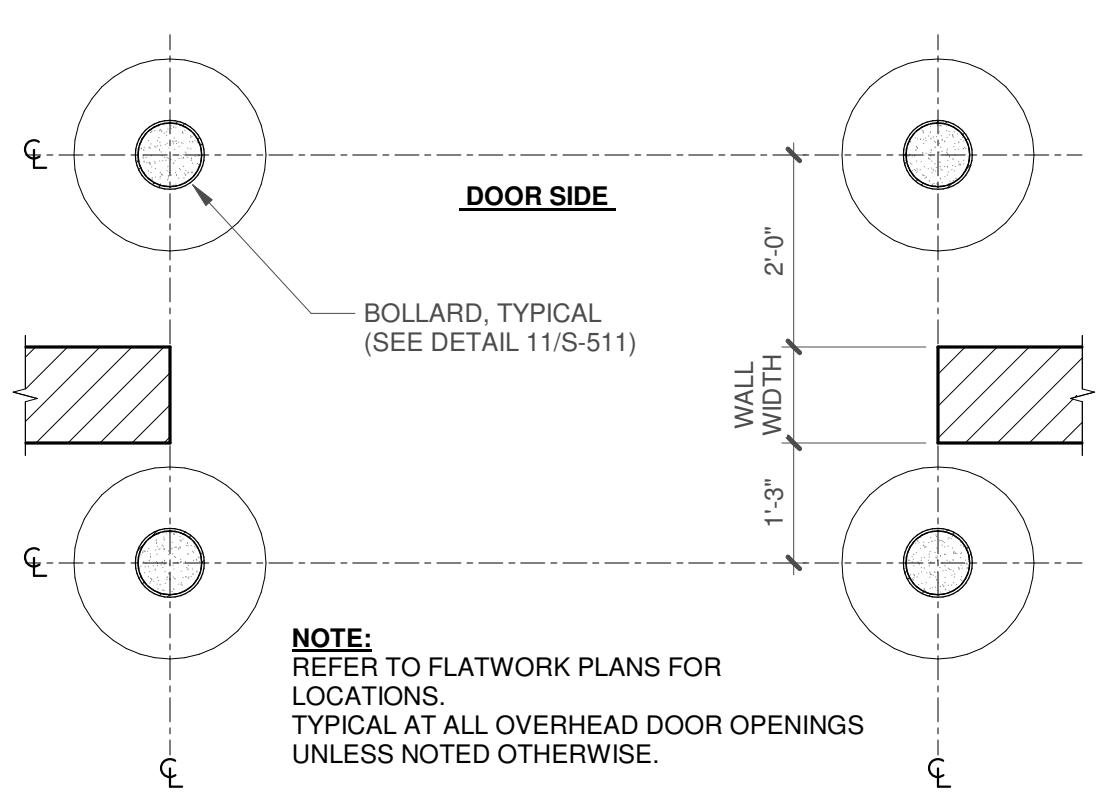
11 6" DIAMETER GALVANIZED BOLLARD POST
1/2" = 1'-0"



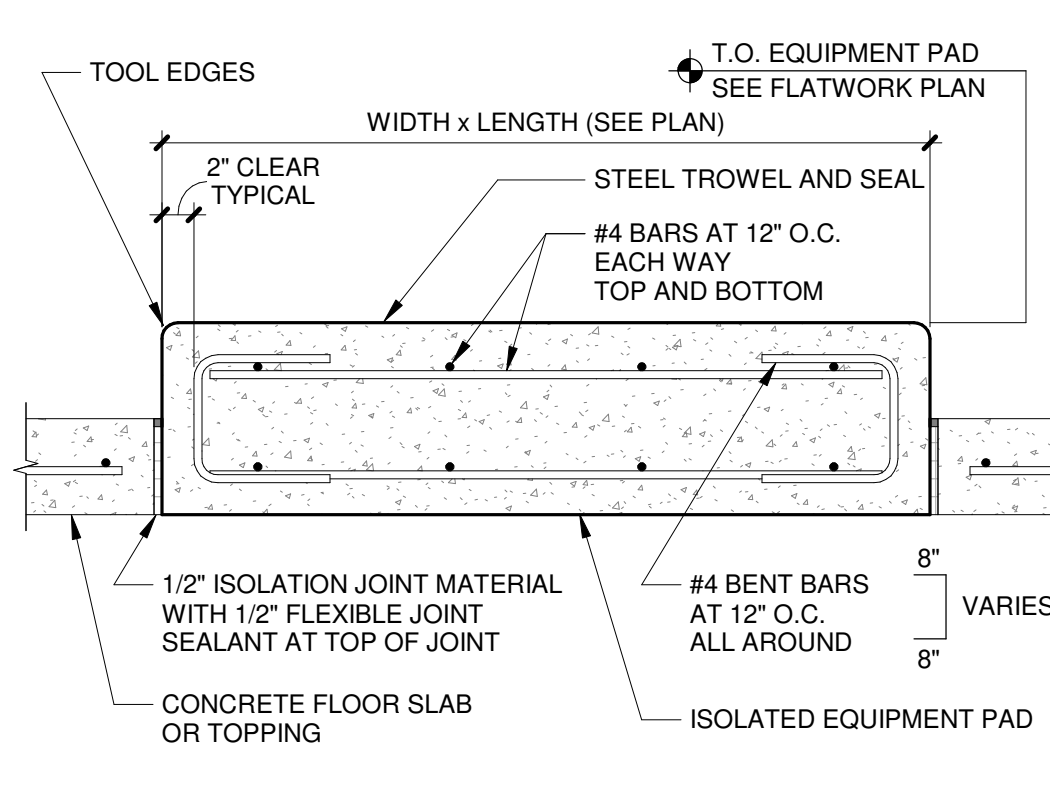
6 EQUIPMENT PADS AT EXISTING
NO SCALE



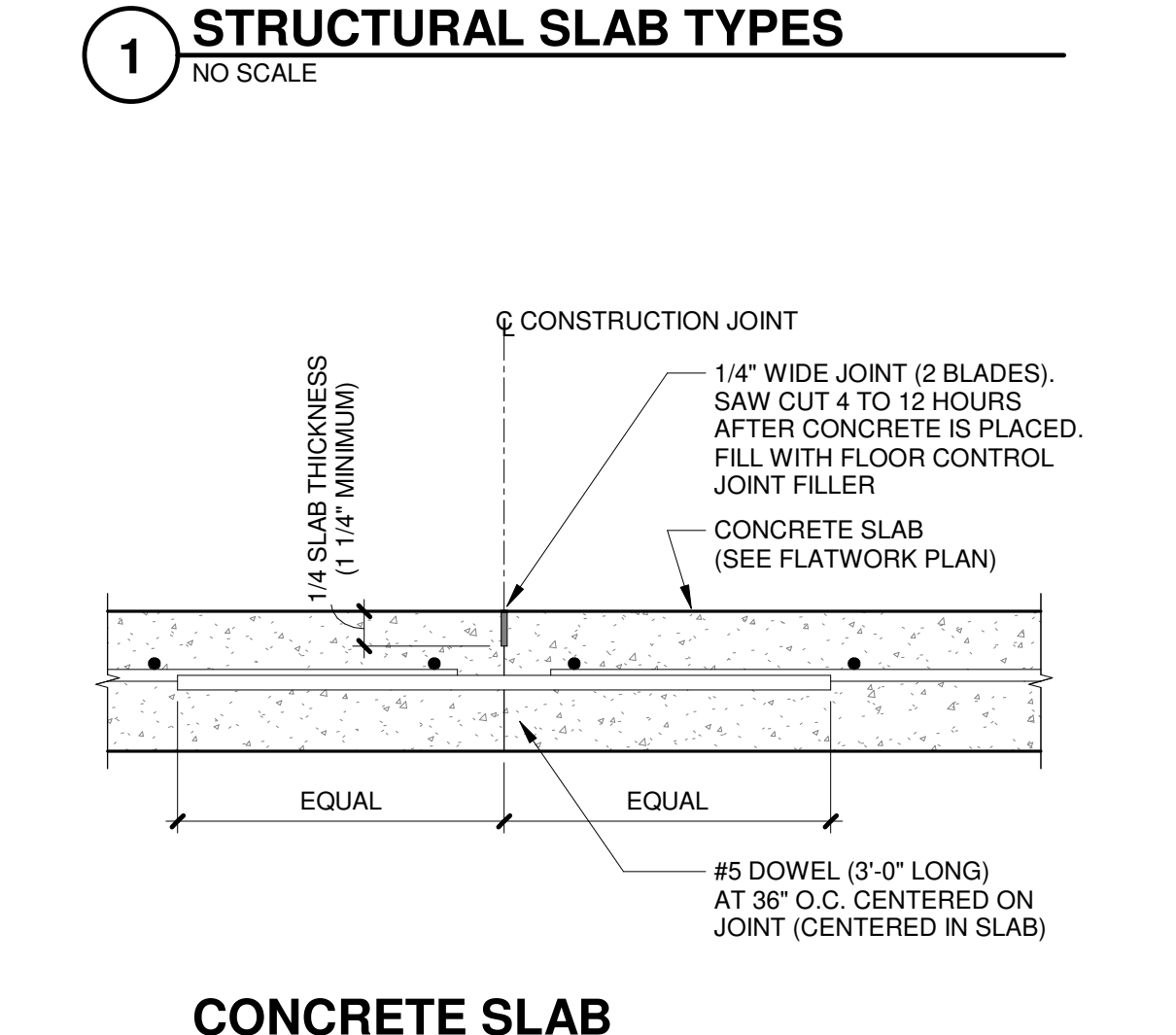
SLB06R



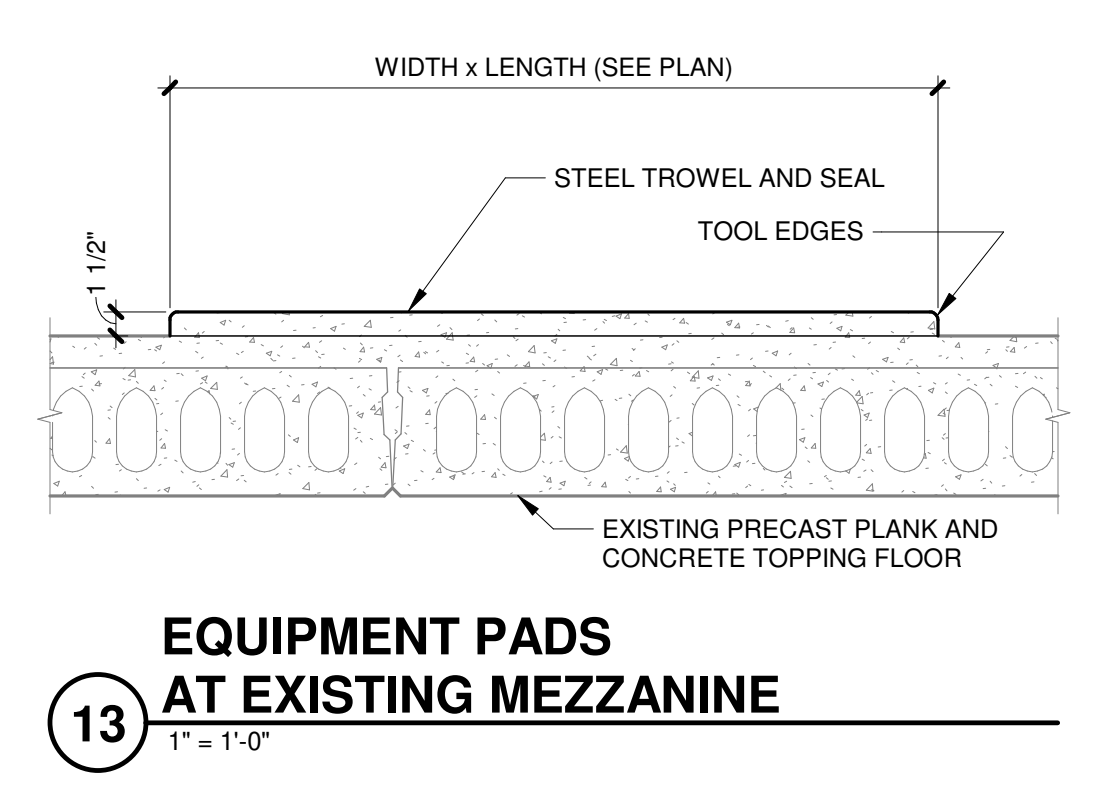
12 BOLLARD LOCATION PLAN
1/2" = 1'-0"



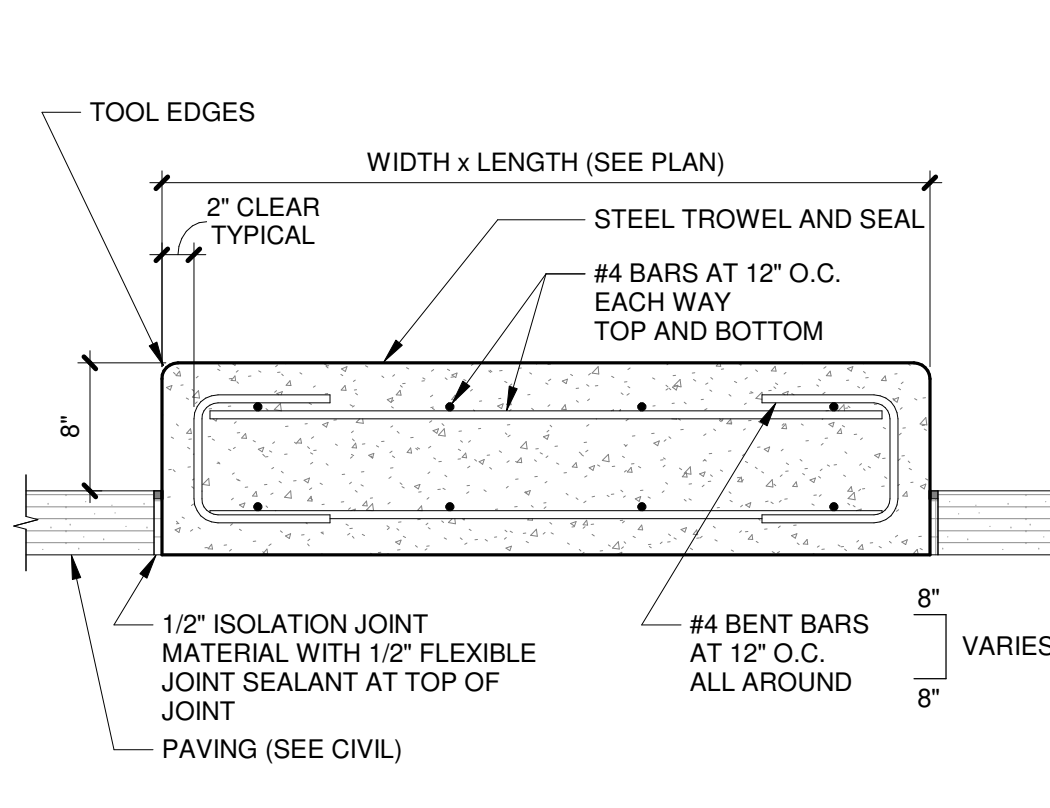
7 ISOLATED EQUIPMENT PADS
NO SCALE



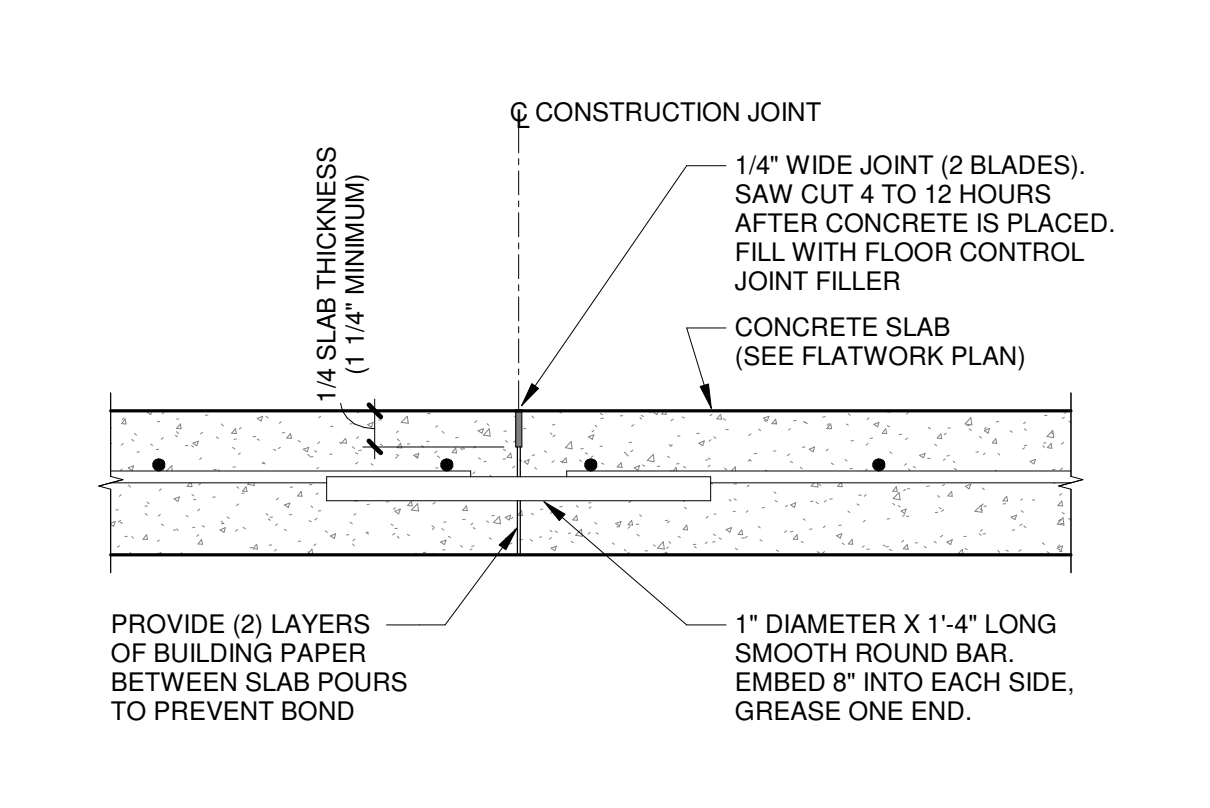
1 STRUCTURAL SLAB TYPES
NO SCALE



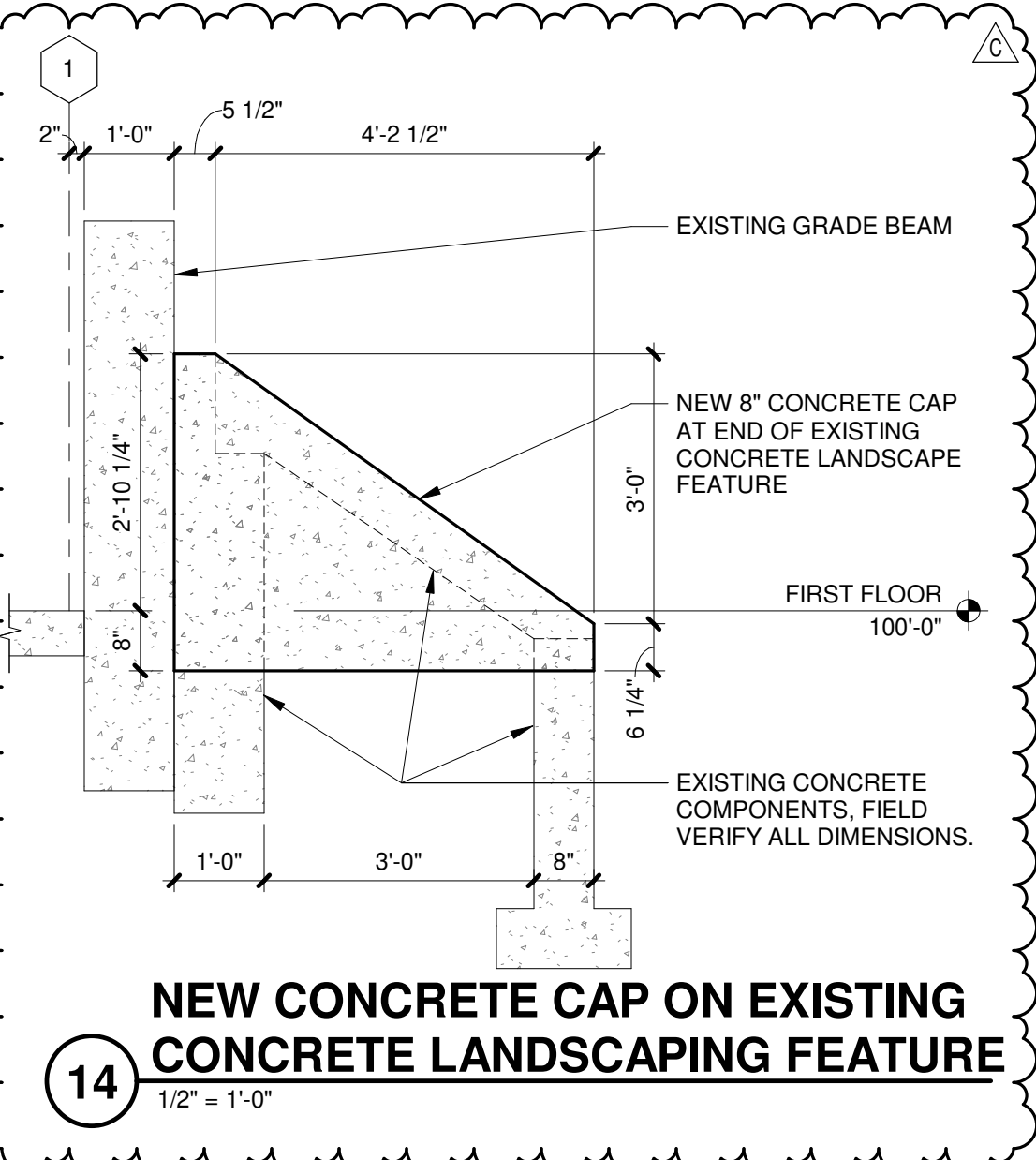
13 EQUIPMENT PADS AT EXISTING MEZZANINE
1" = 1'-0"



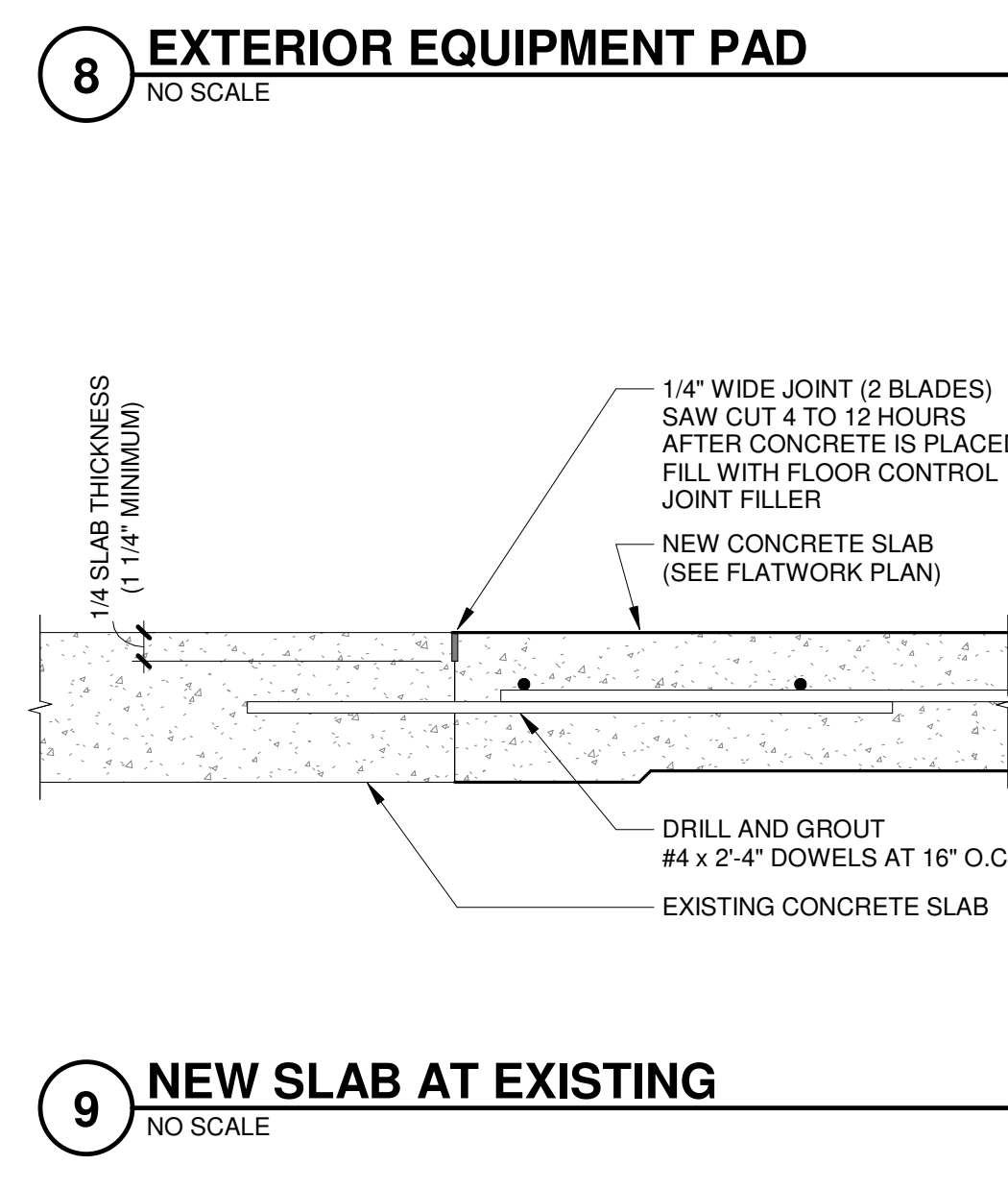
8 EXTERIOR EQUIPMENT PAD
NO SCALE



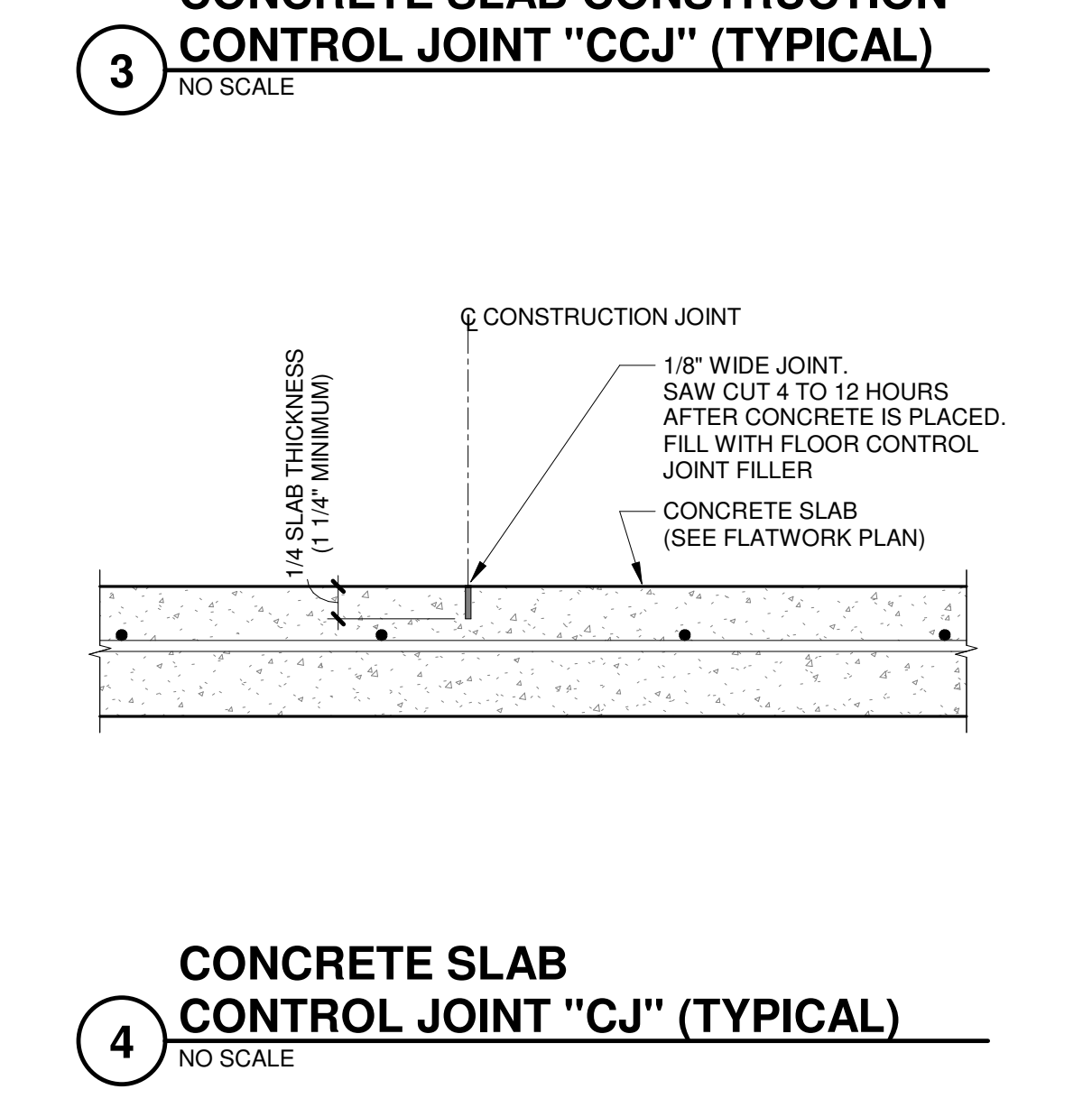
2 CONCRETE SLAB CONSTRUCTION JOINT (TYPICAL)
NO SCALE



14 NEW CONCRETE CAP ON EXISTING CONCRETE LANDSCAPING FEATURE
1/2" = 1'-0"



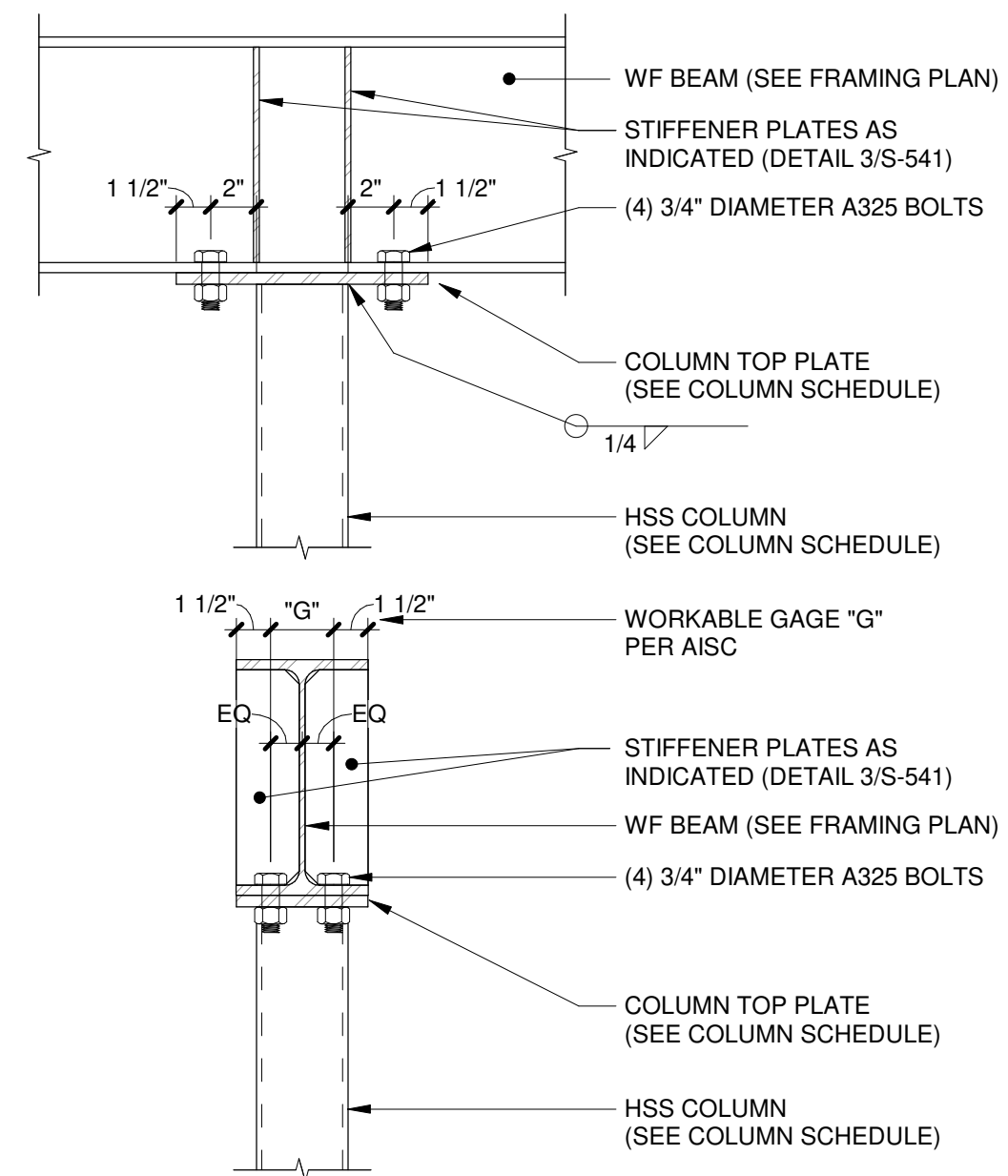
9 NEW SLAB AT EXISTING
NO SCALE



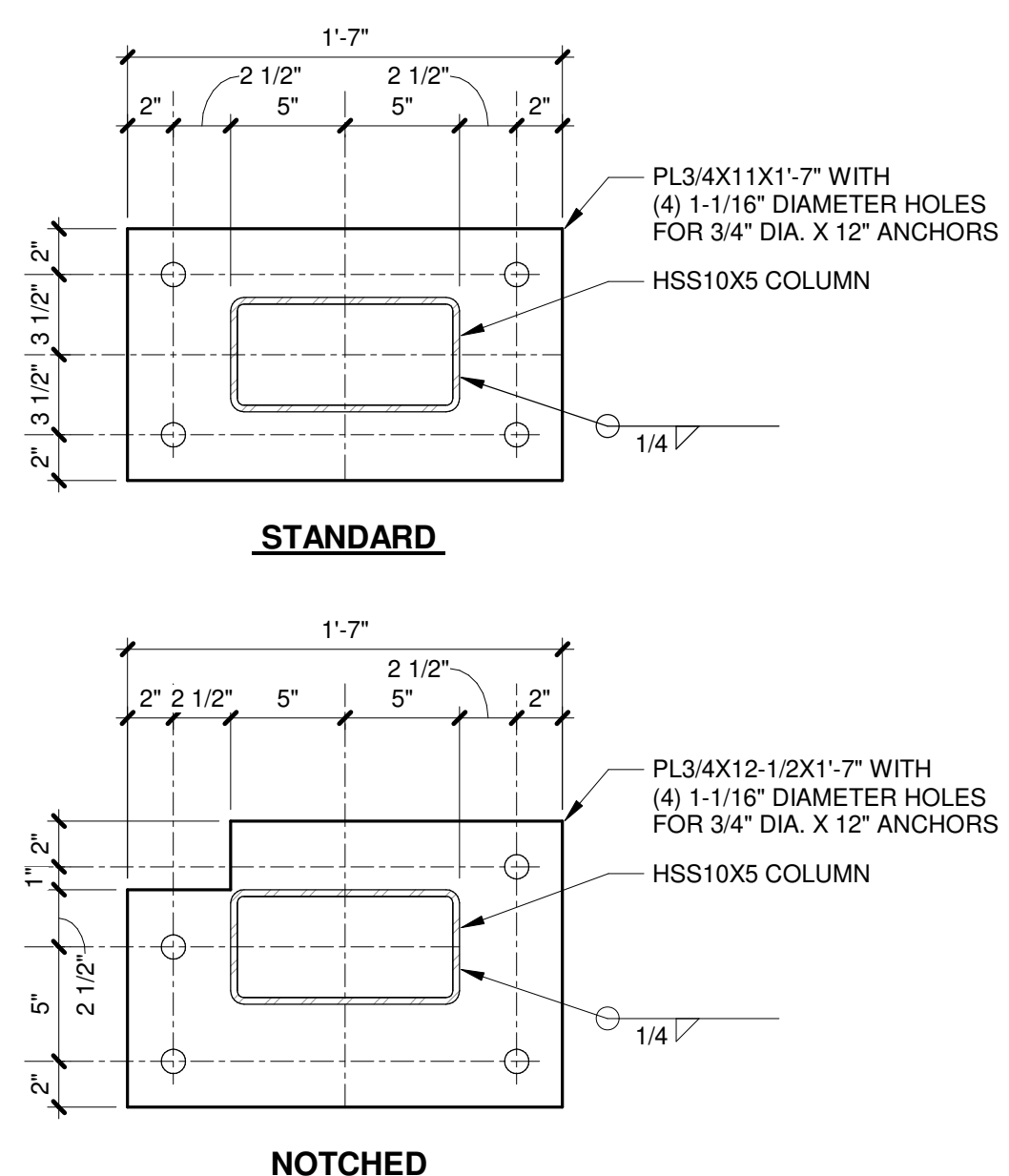
3 CONCRETE SLAB CONSTRUCTION CONTROL JOINT 'CCJ' (TYPICAL)
NO SCALE



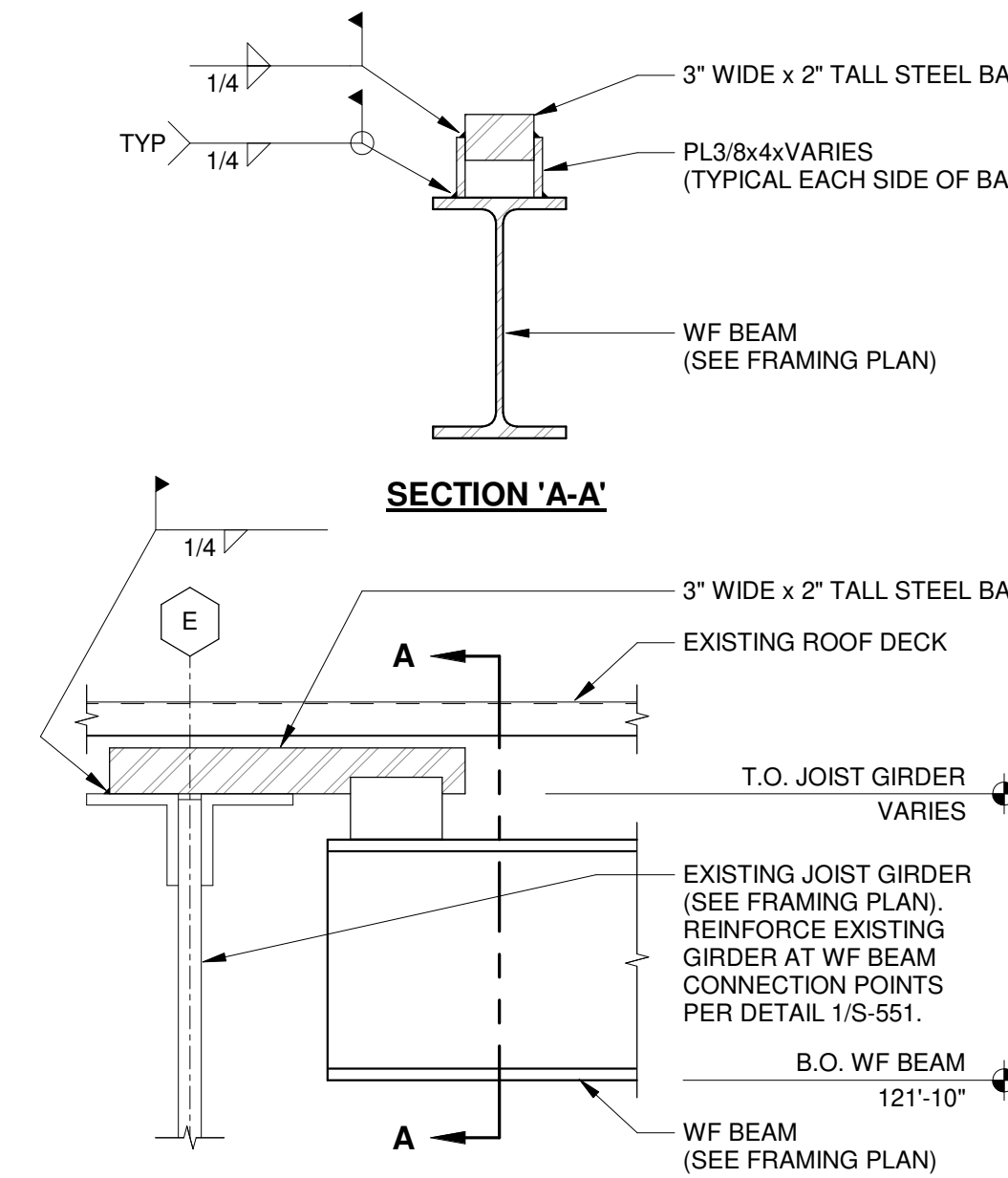
4 CONCRETE SLAB CONTROL JOINT 'CJ' (TYPICAL)
NO SCALE



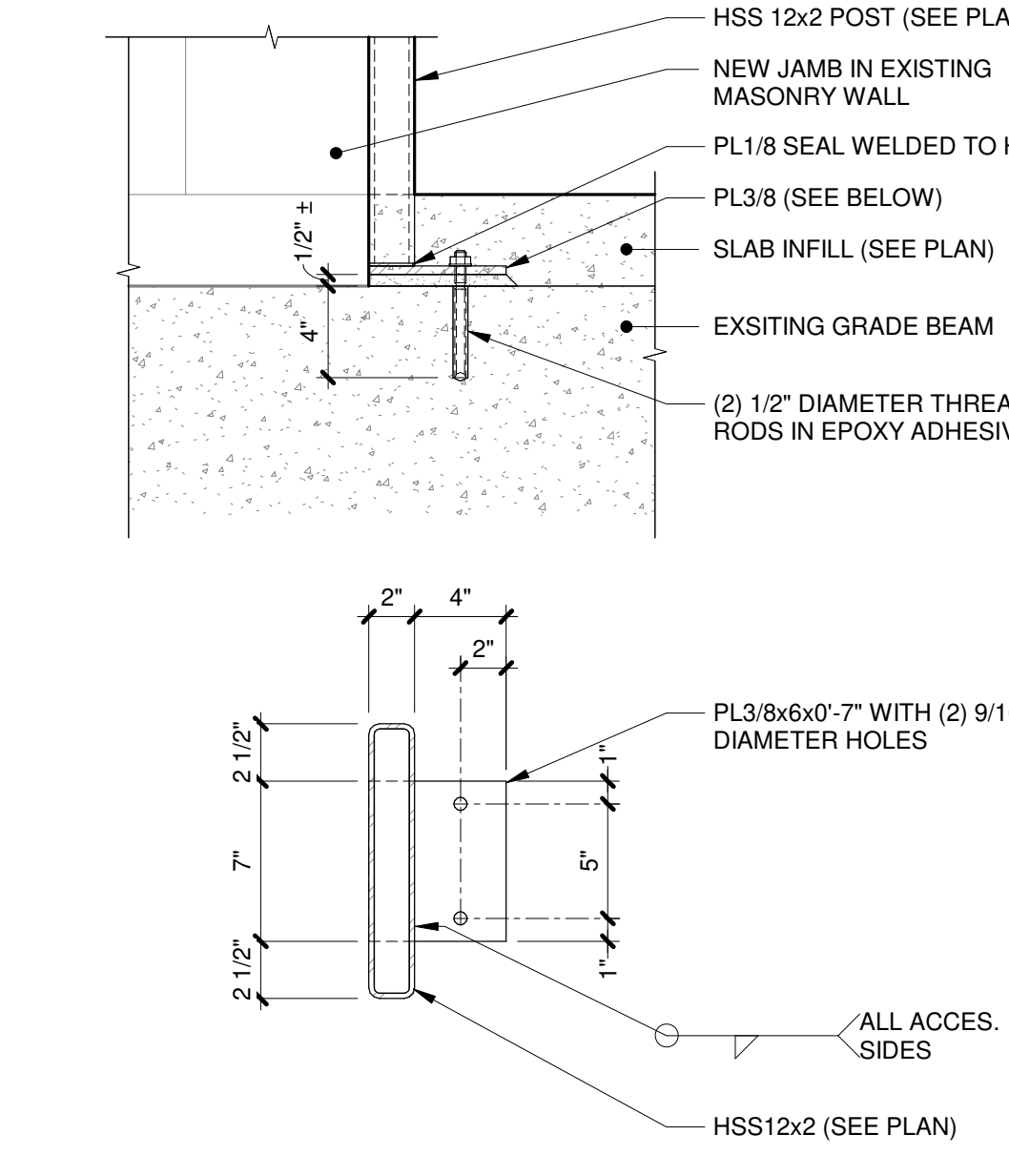
20 TYPICAL WF BEAM OVER HSS COLUMN
1 1/2" = 1'-0"



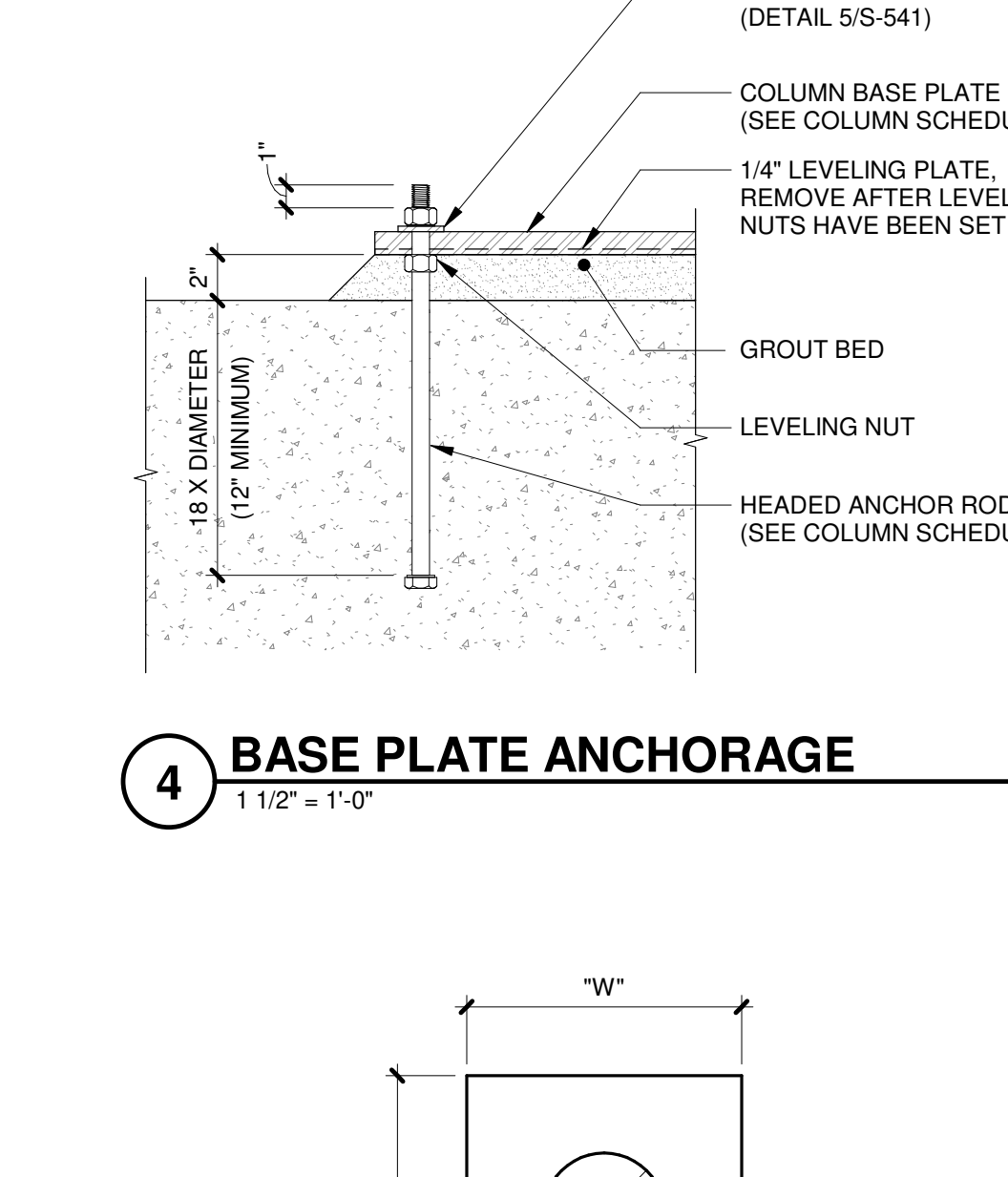
17 CANOPY COLUMN BASE PLATES
1 1/2" = 1'-0"



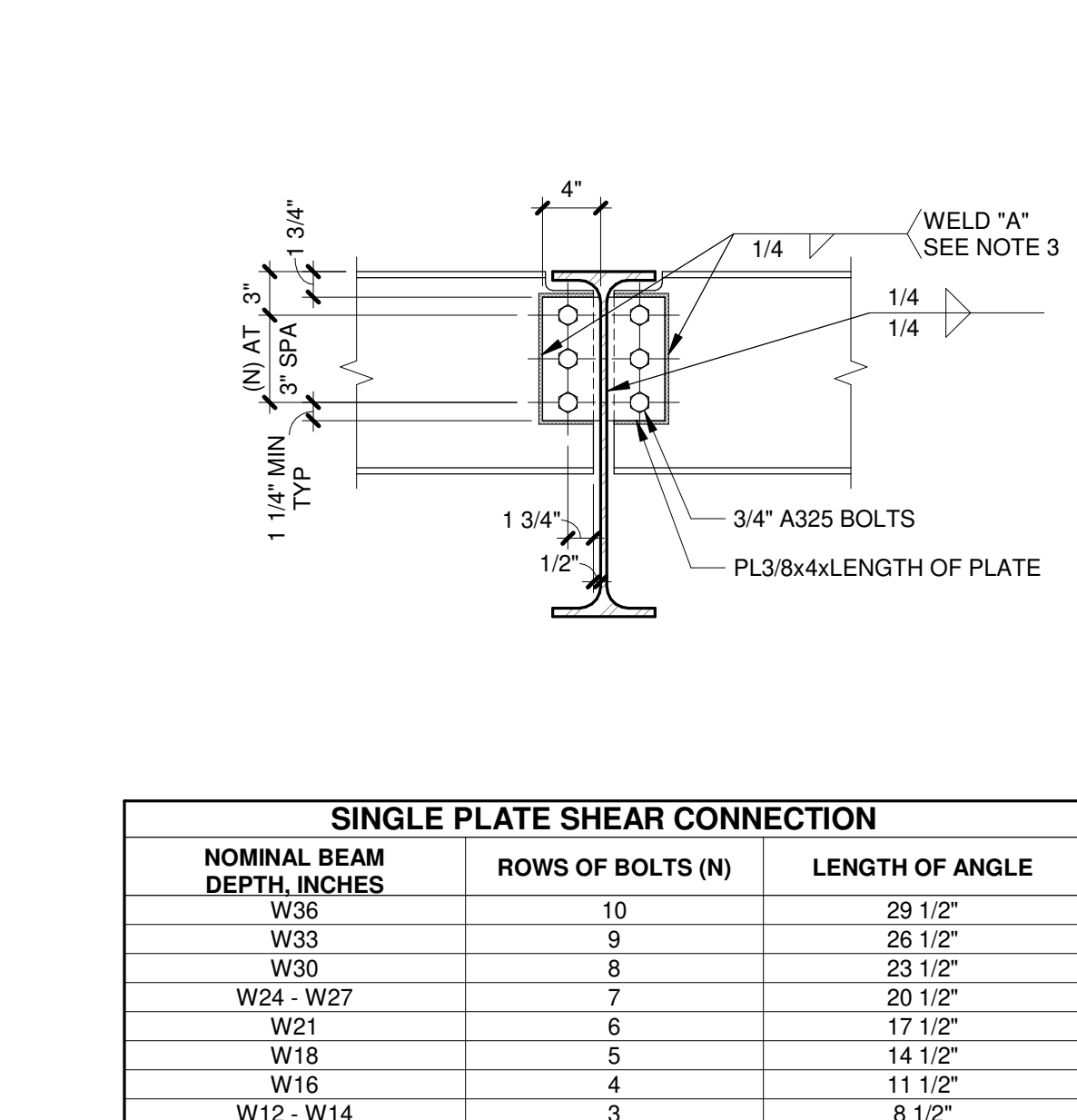
13 FALL PROTECTION SUPPORT FRAMING AT GIRDER
1 1/2" = 1'-0"



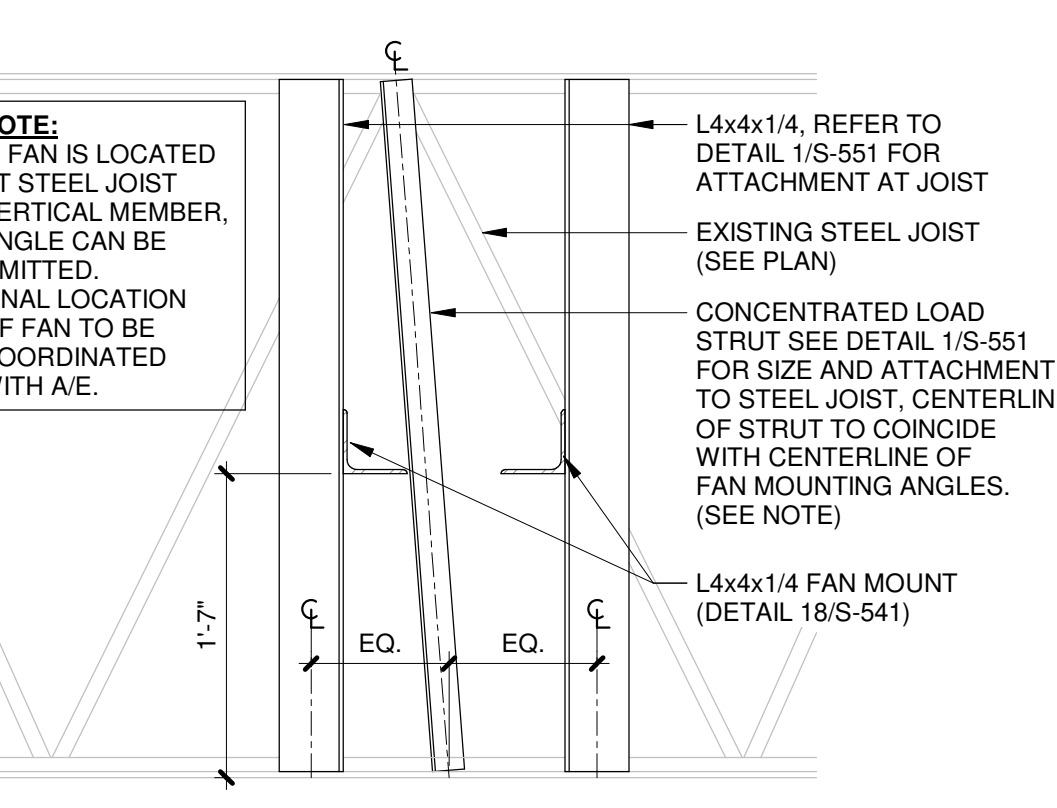
9 HSS 12x2 BASE PLATE
1 1/2" = 1'-0"



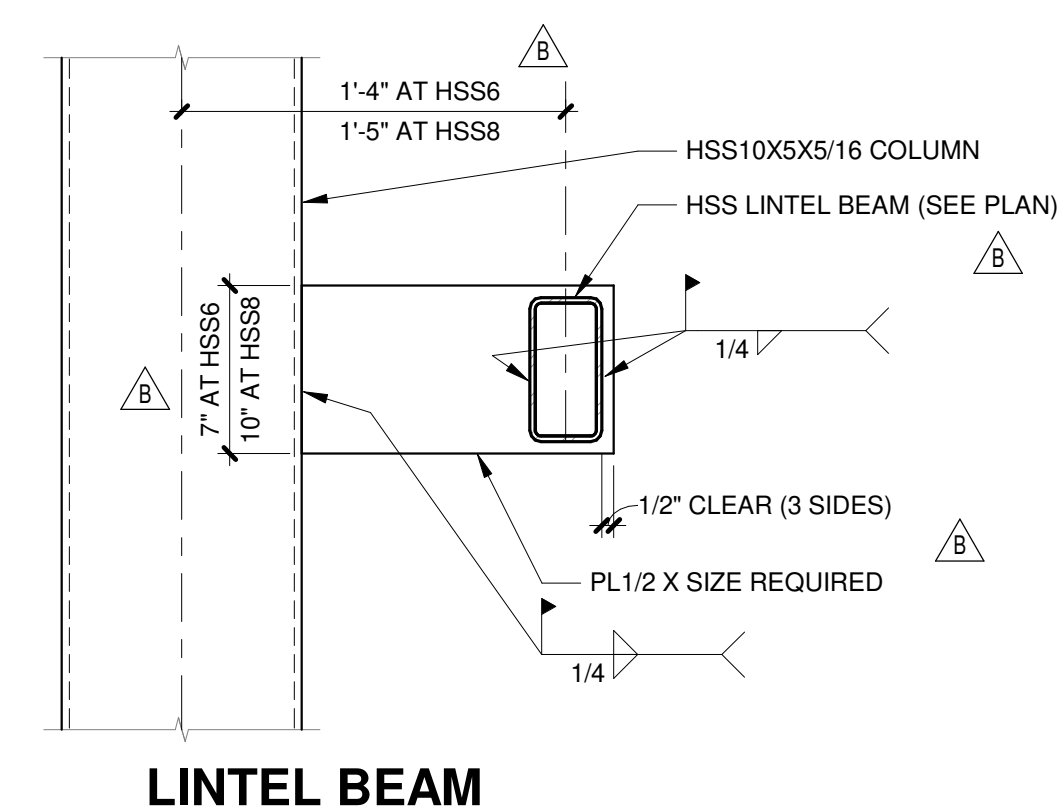
4 BASE PLATE ANCHORAGE
1 1/2" = 1'-0"



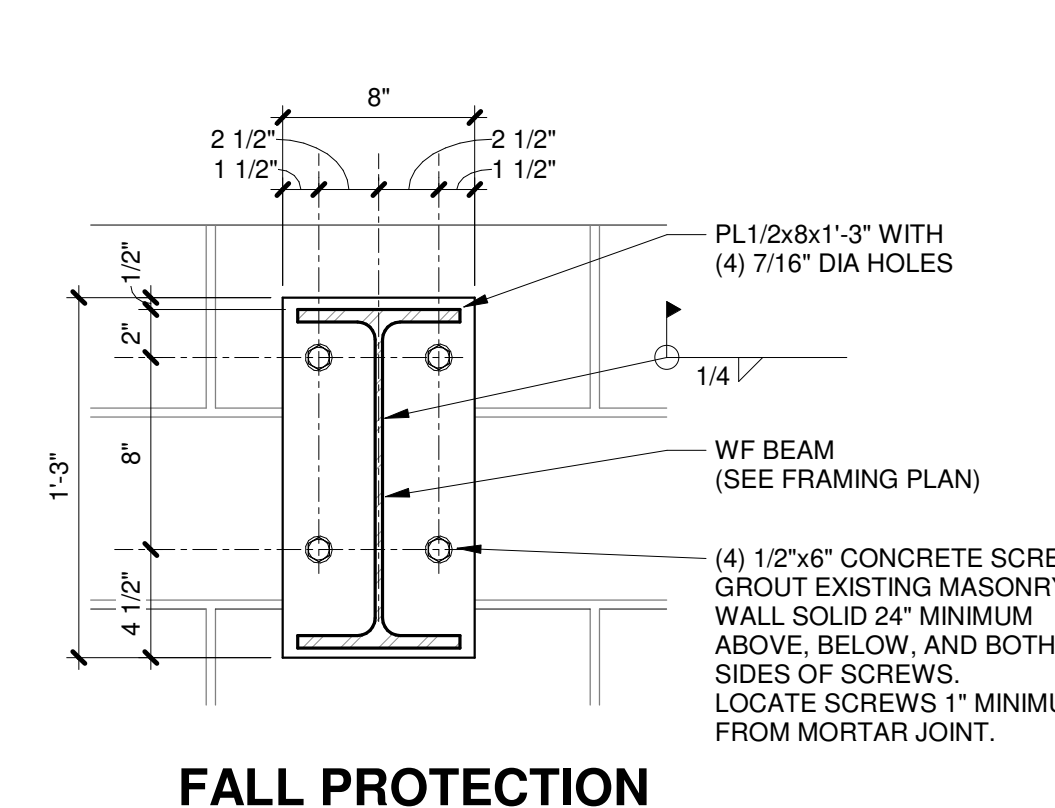
3 TYPICAL WF STIFFENER PLATE
1 1/2" = 1'-0"



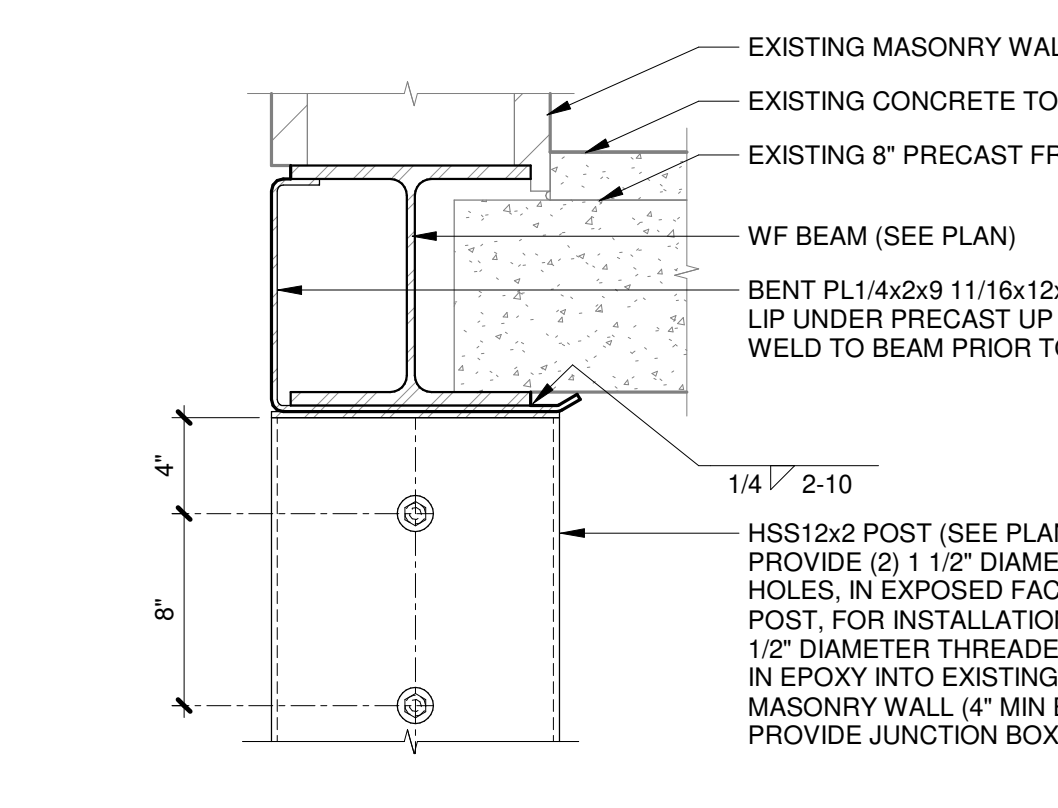
21 "NESTED" FAN CONNECTION
1" = 1'-0"



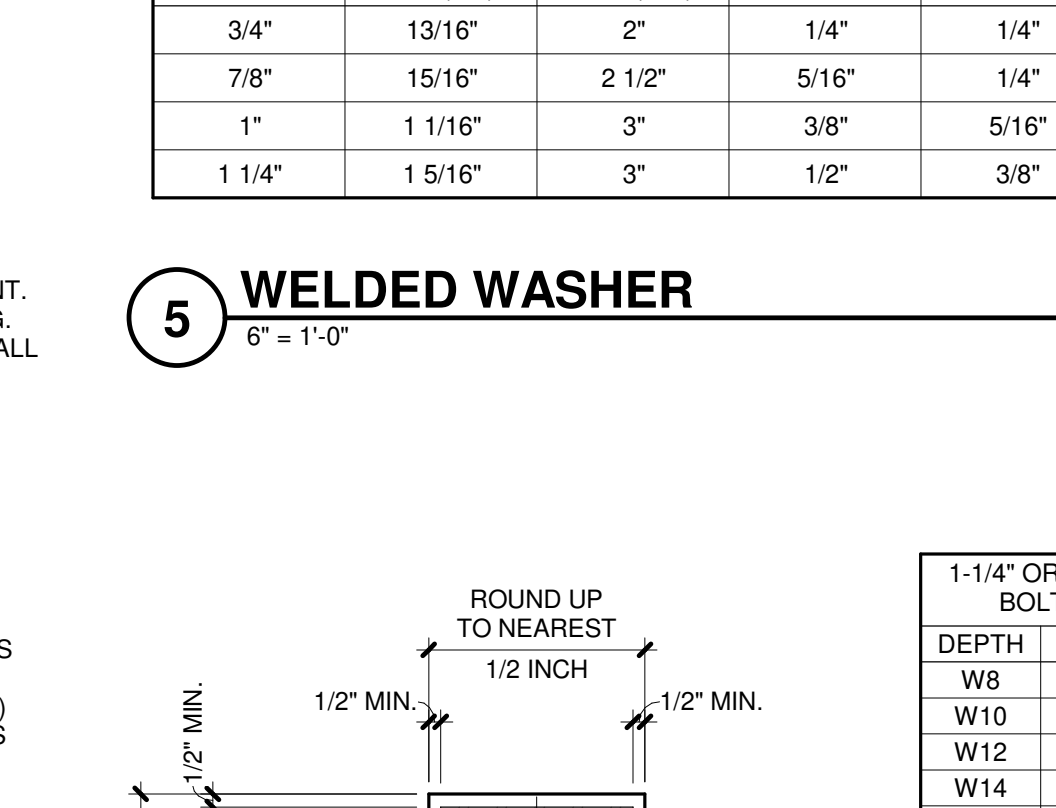
18 LINTEL BEAM CONNECTIONS TO COLUMN
1 1/2" = 1'-0"



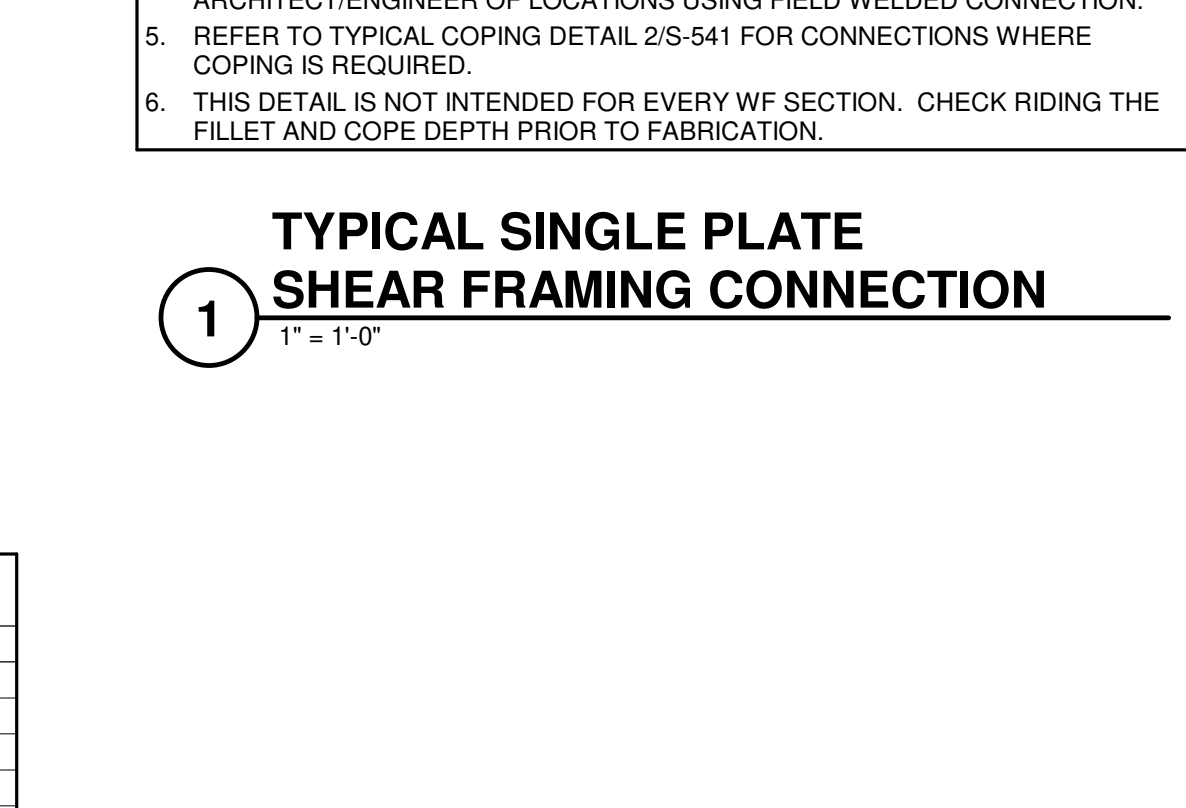
14 FALL PROTECTION SUPPORT FRAMING AT MASONRY
1 1/2" = 1'-0"



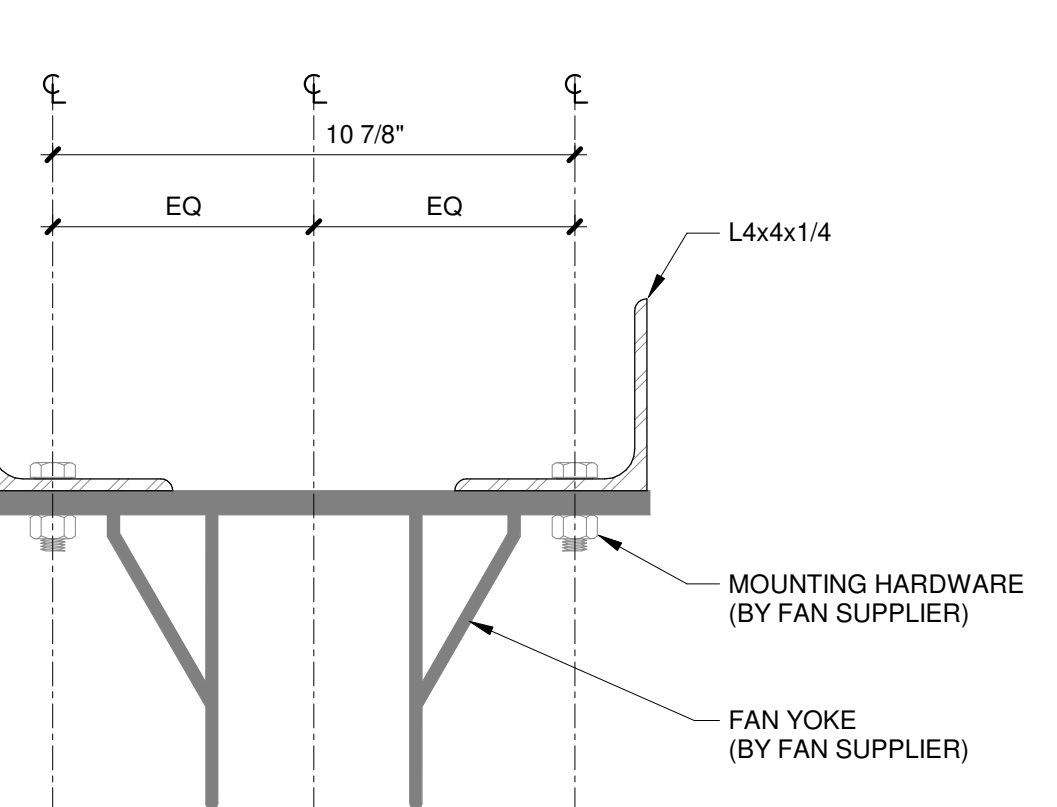
10 W10 AT EXISTING PRECAST
1 1/2" = 1'-0"



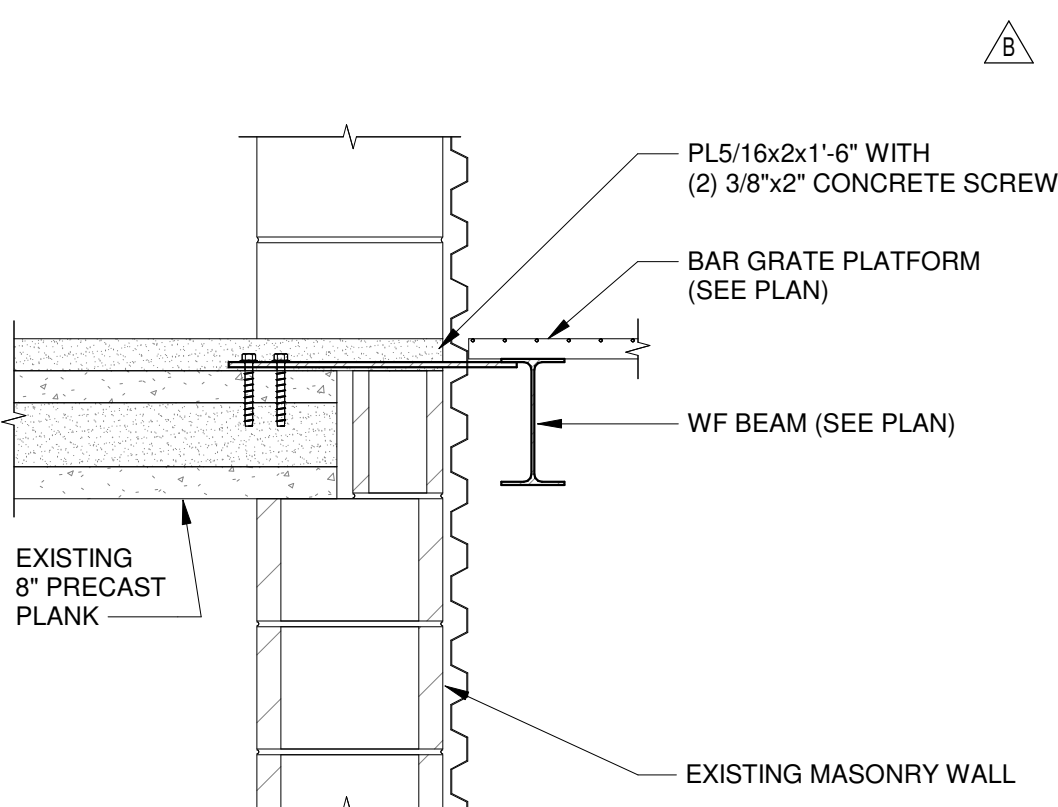
5 WELDED WASHER
6" = 1'-0"



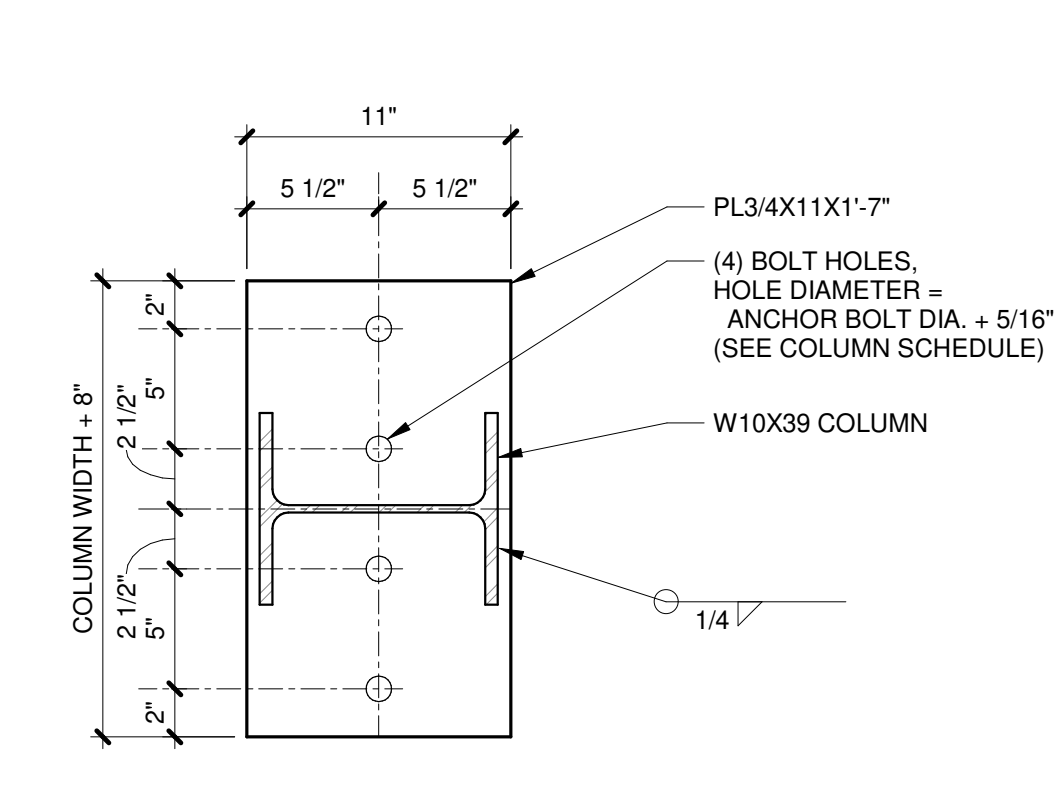
1 SINGLE PLATE SHEAR CONNECTION
1" = 1'-0"



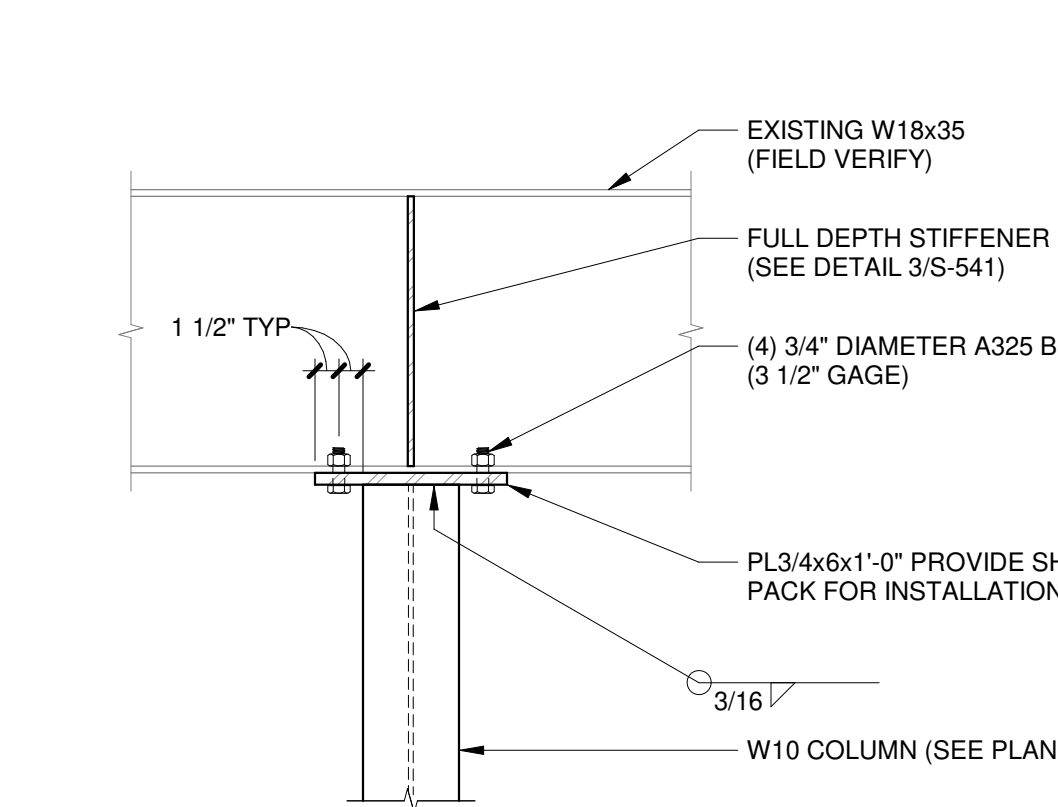
22 FAN YOKE TO ANGLE CONNECTION
3" = 1'-0"



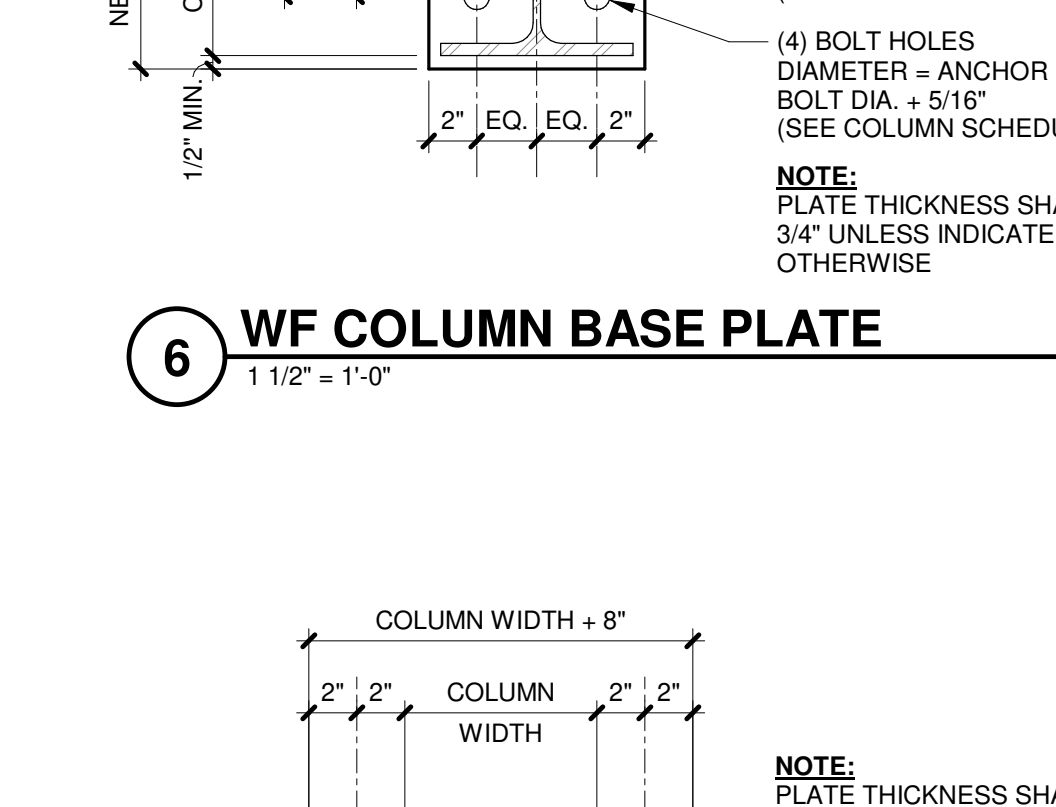
19 PLATFORM FRAMING CONNECTION
1" = 1'-0"



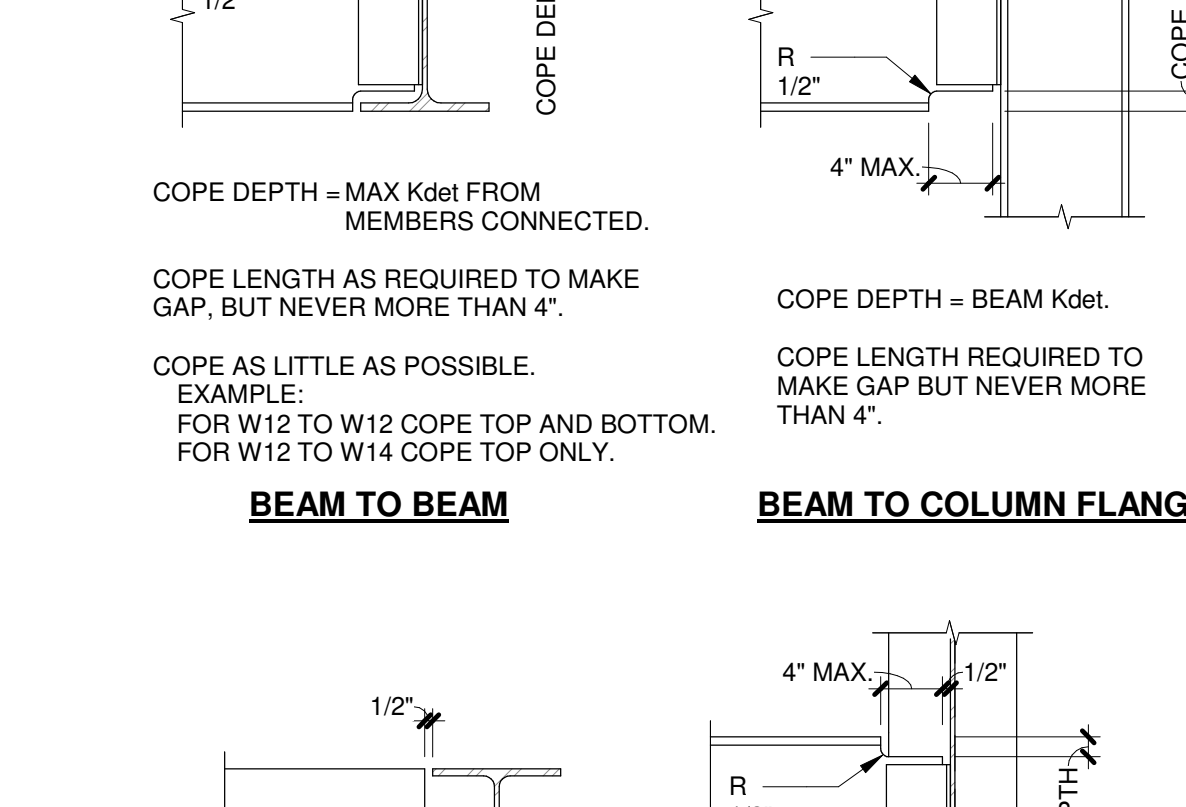
15 W10x39 BASE PLATE
1 1/2" = 1'-0"



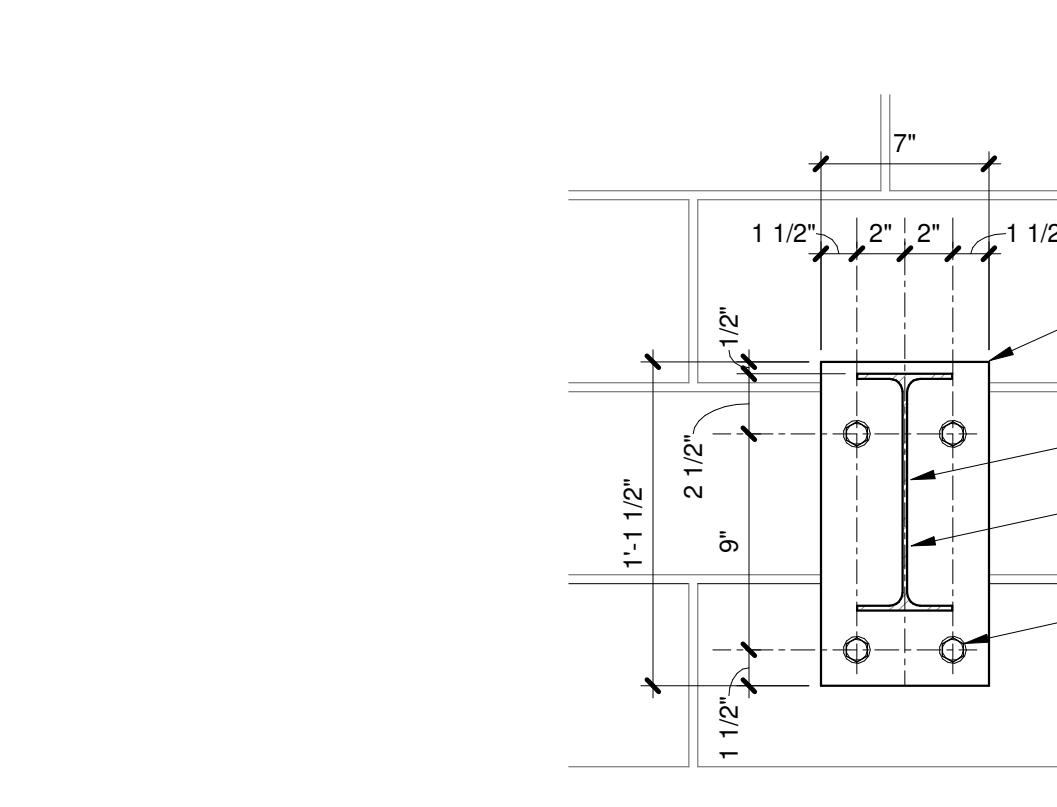
11 W10 AT EXISTING W18x35
1" = 1'-0"



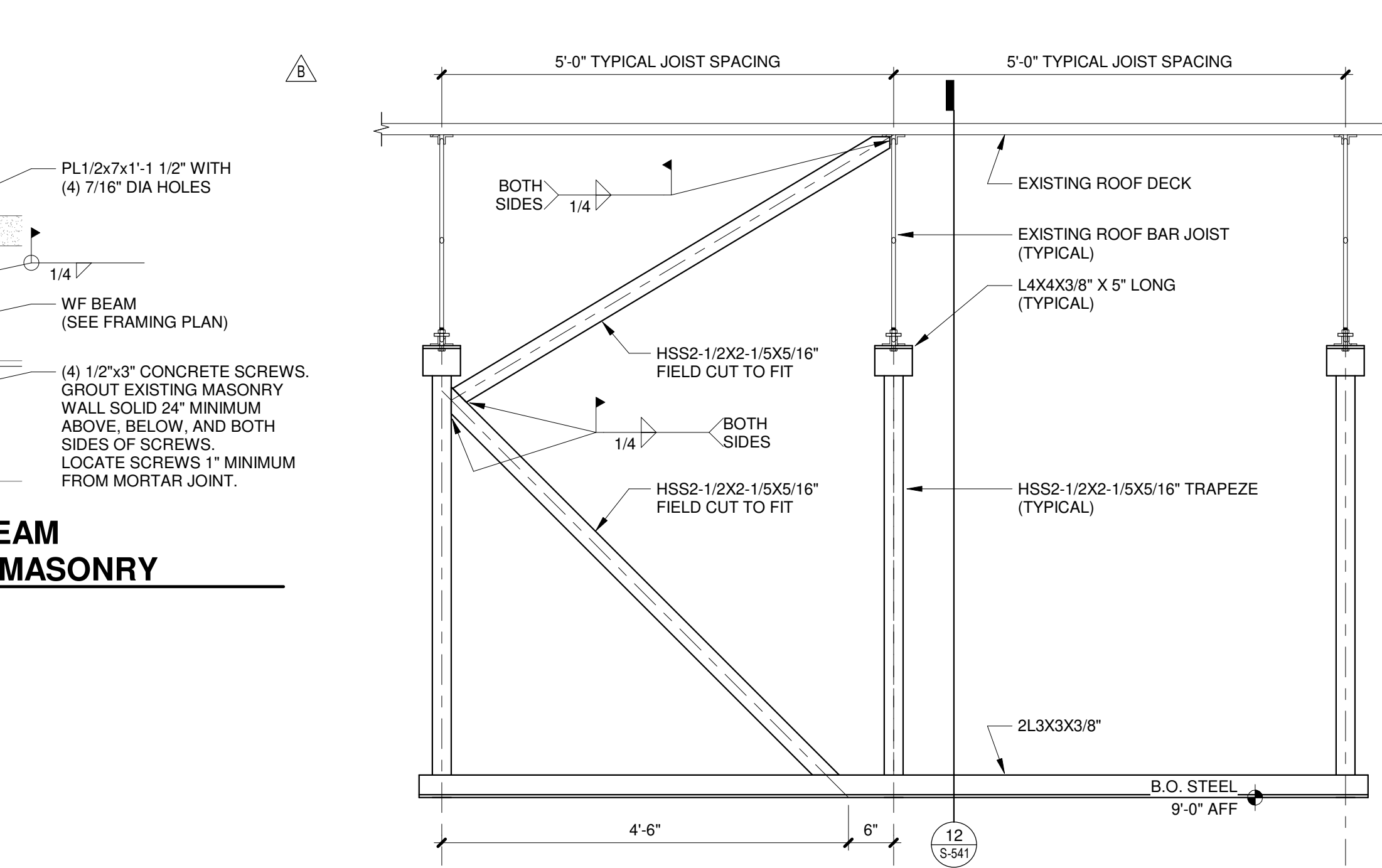
6 WF COLUMN BASE PLATE
1 1/2" = 1'-0"



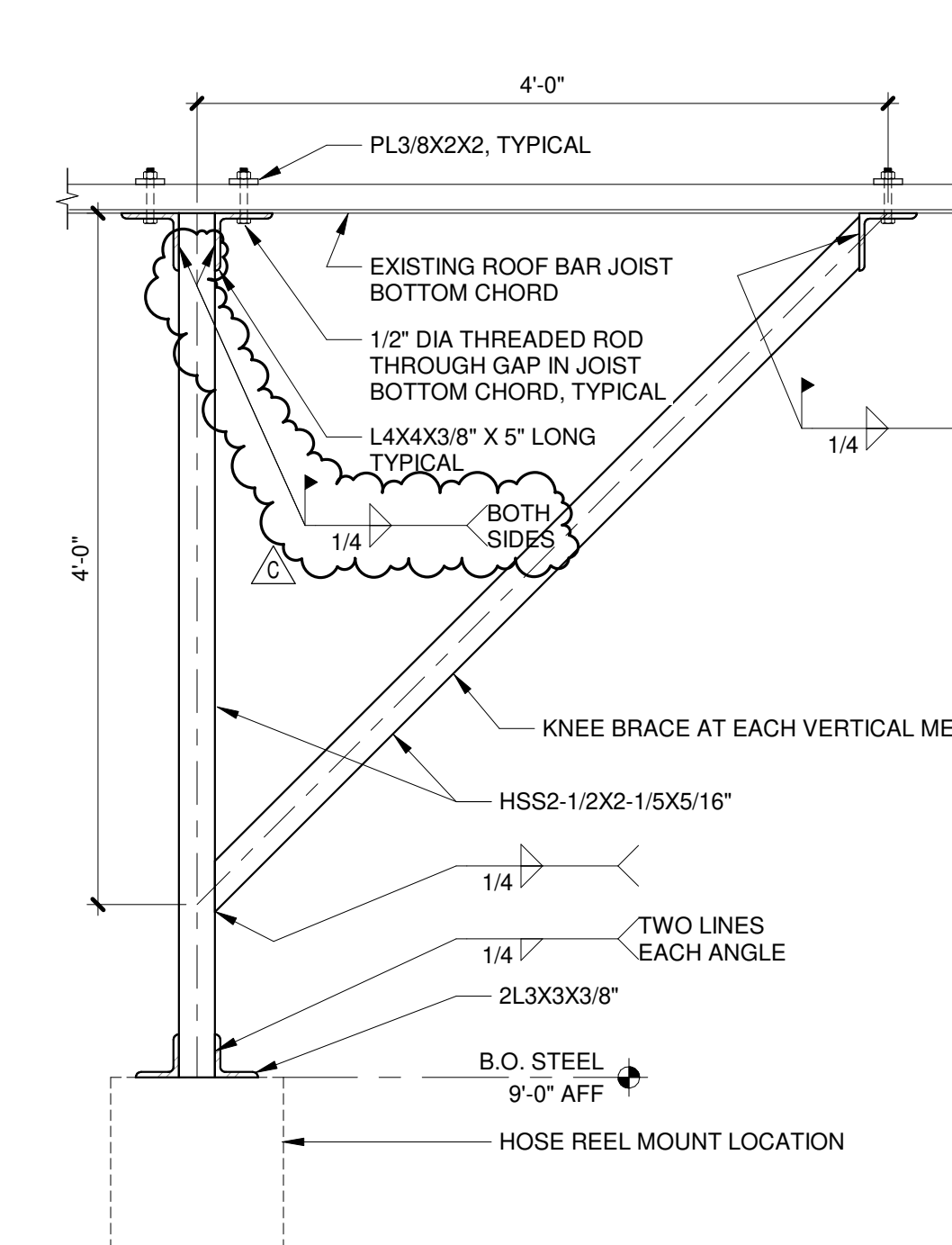
2 TYPICAL COPING DETAIL
1" = 1'-0"



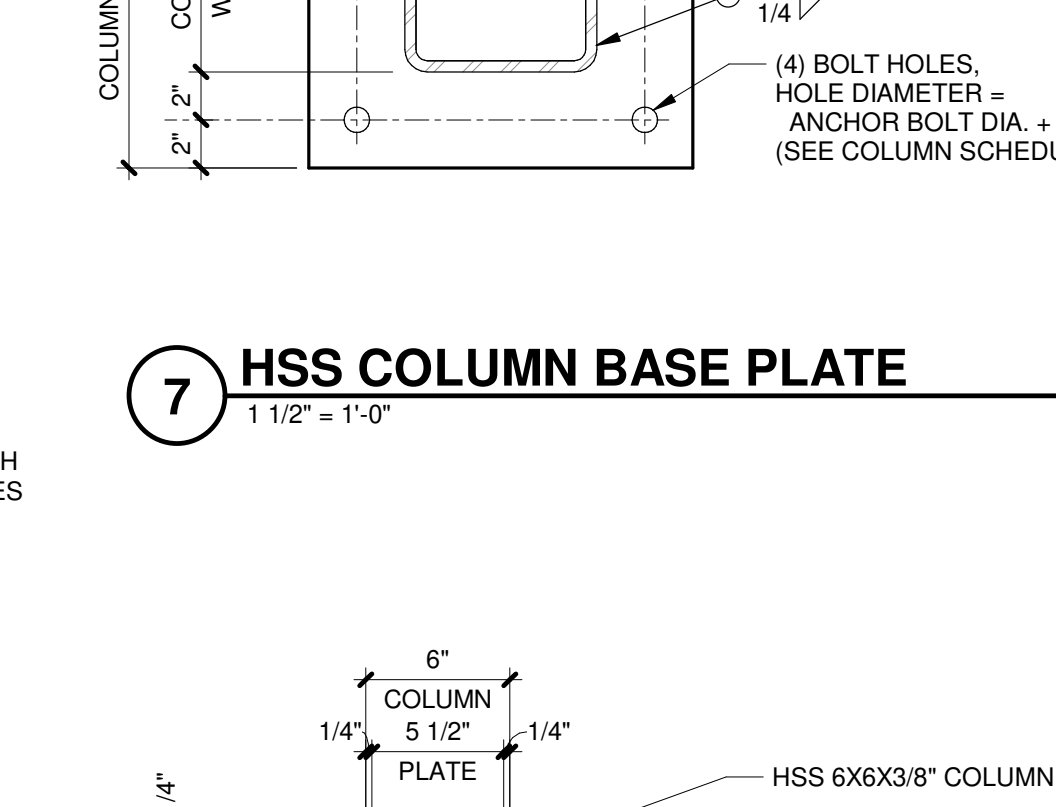
23 PLATFORM WF BEAM CONNECTION AT MASONRY
1 1/2" = 1'-0"



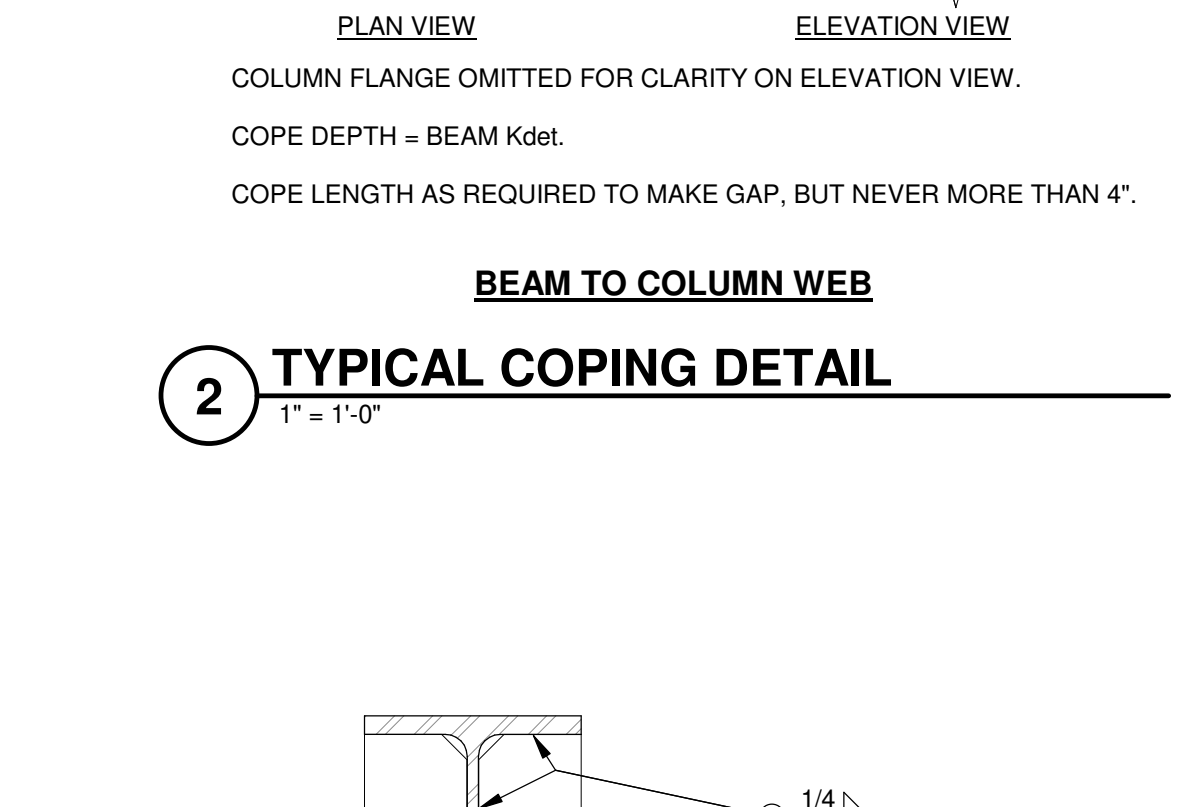
16 TRAPEZE FRAMING BRACE
3/4" = 1'-0"



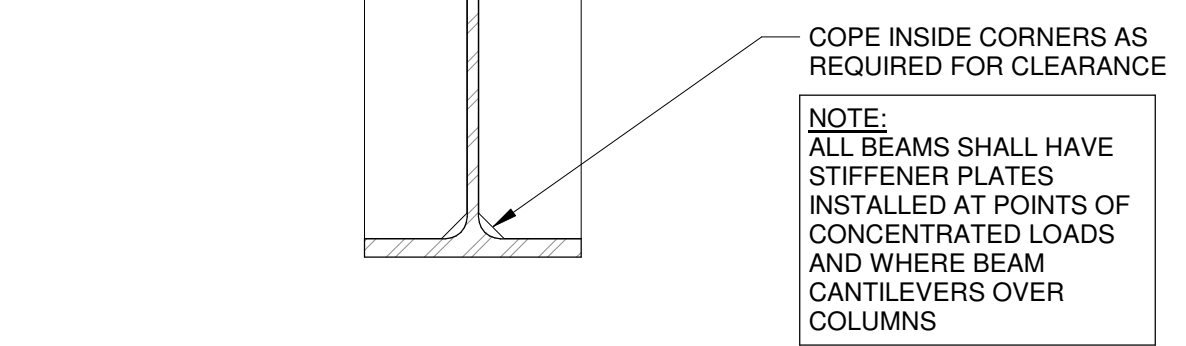
12 TRAPEZE FRAMING
1" = 1'-0"



7 HSS COLUMN BASE PLATE
1 1/2" = 1'-0"



8 HSS POST BASE PLATE
1 1/2" = 1'-0"



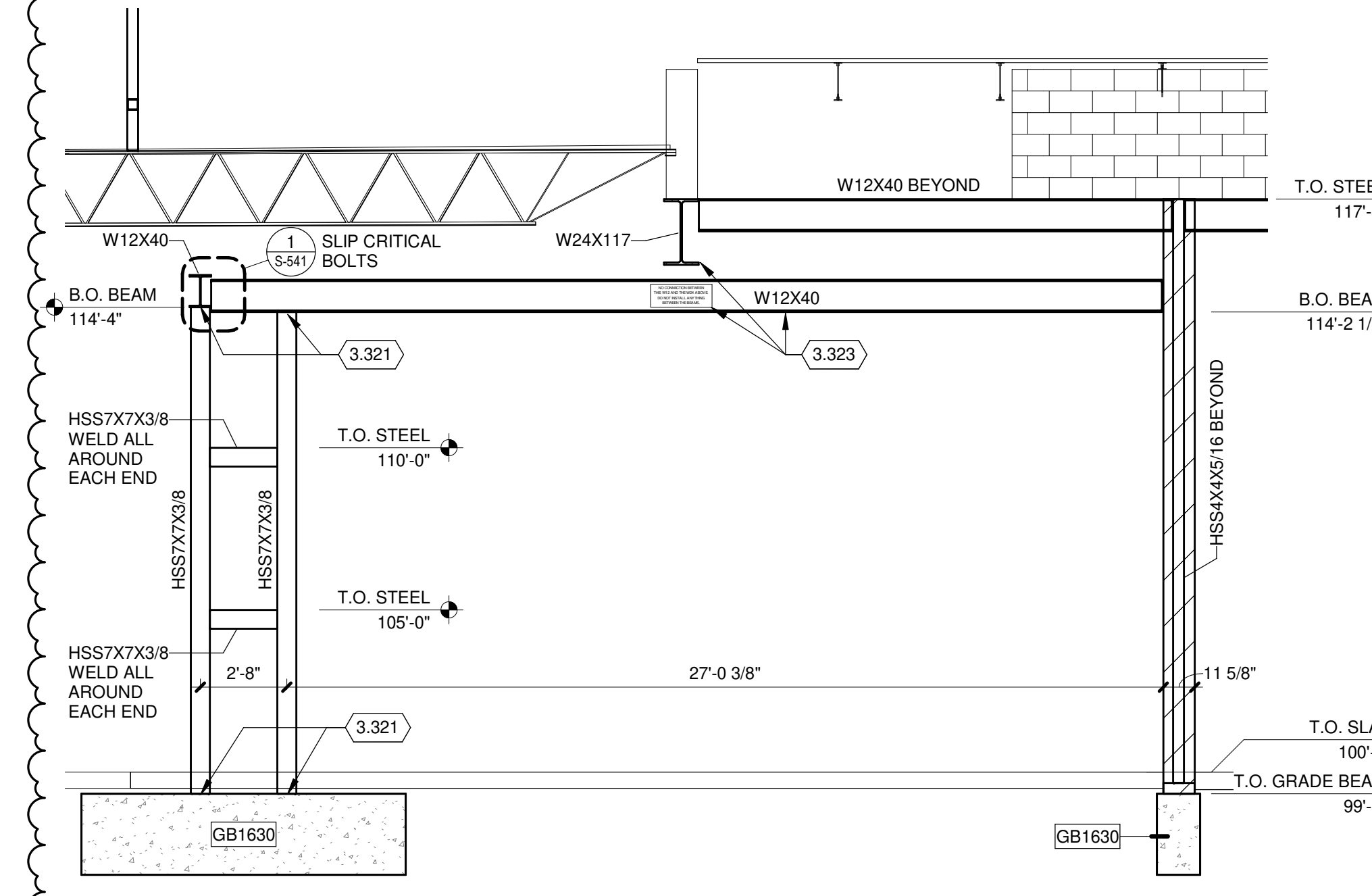
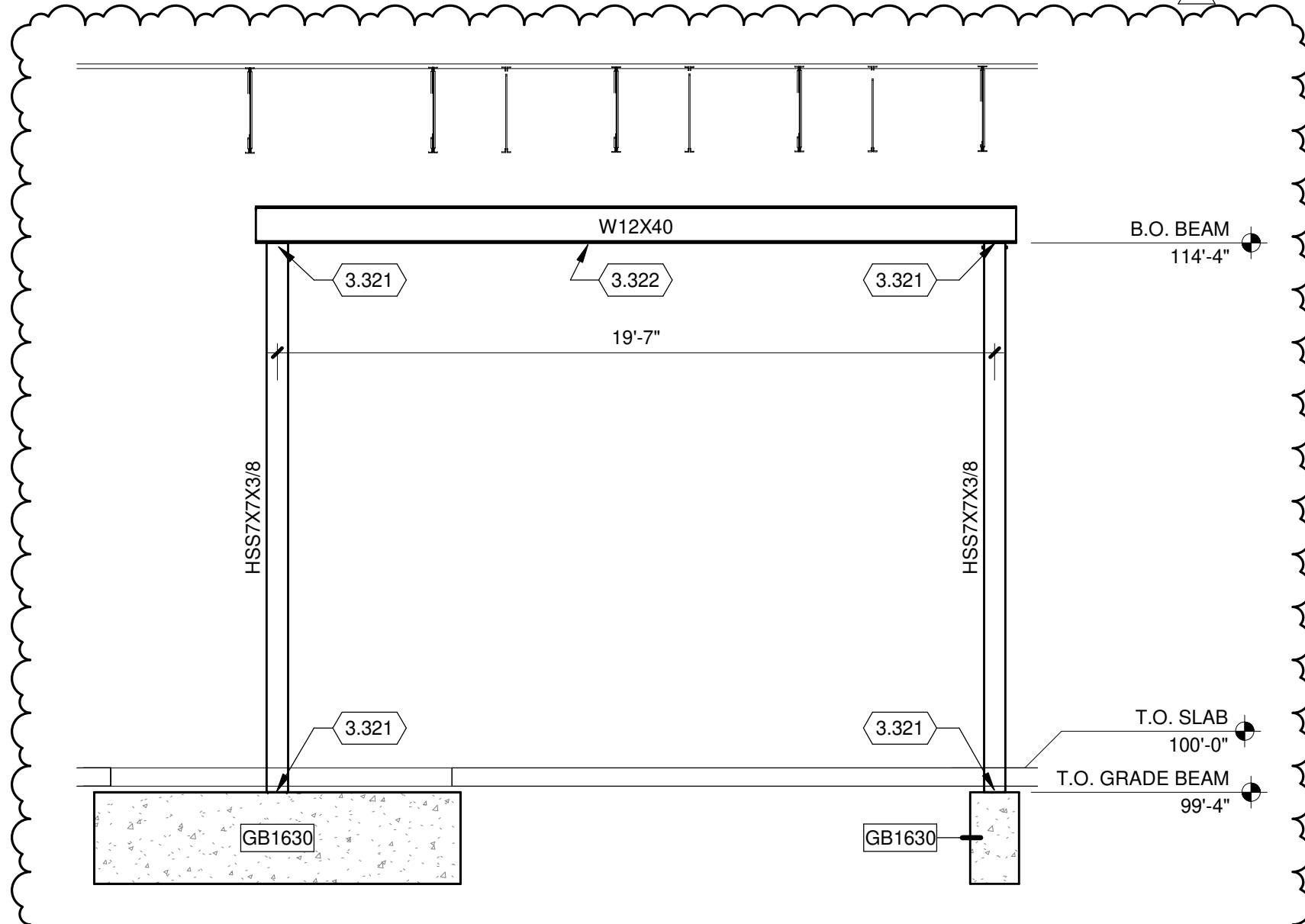
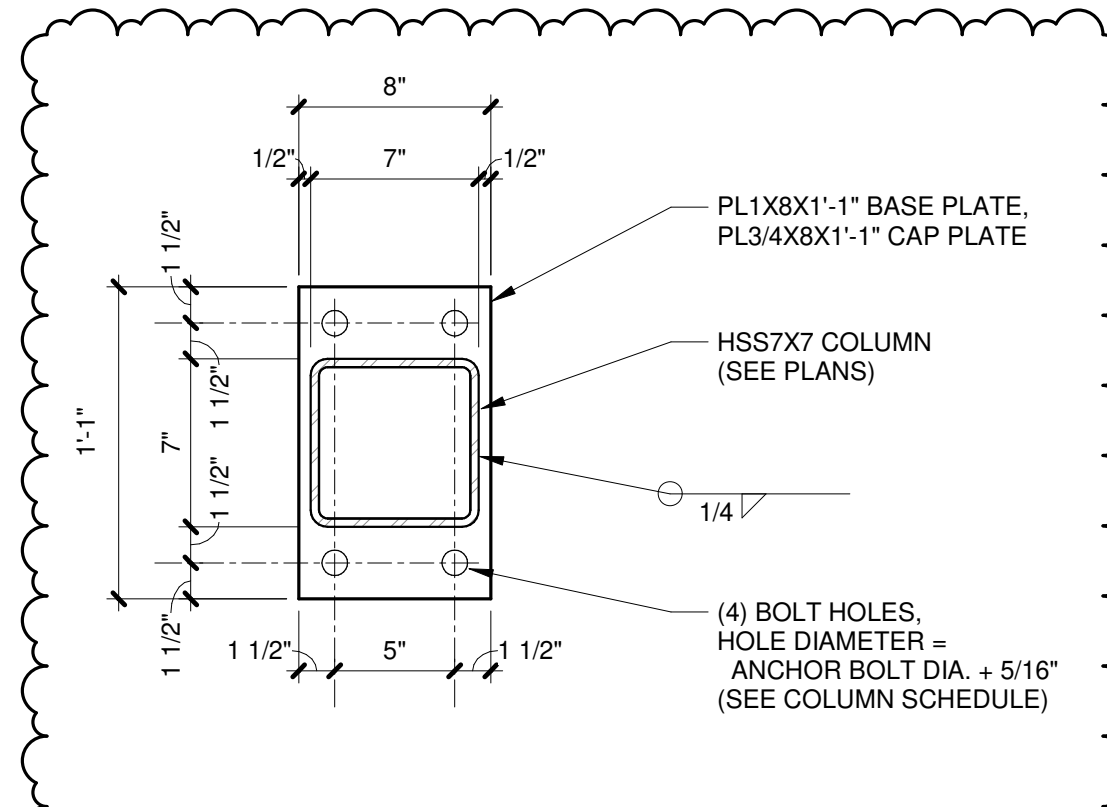
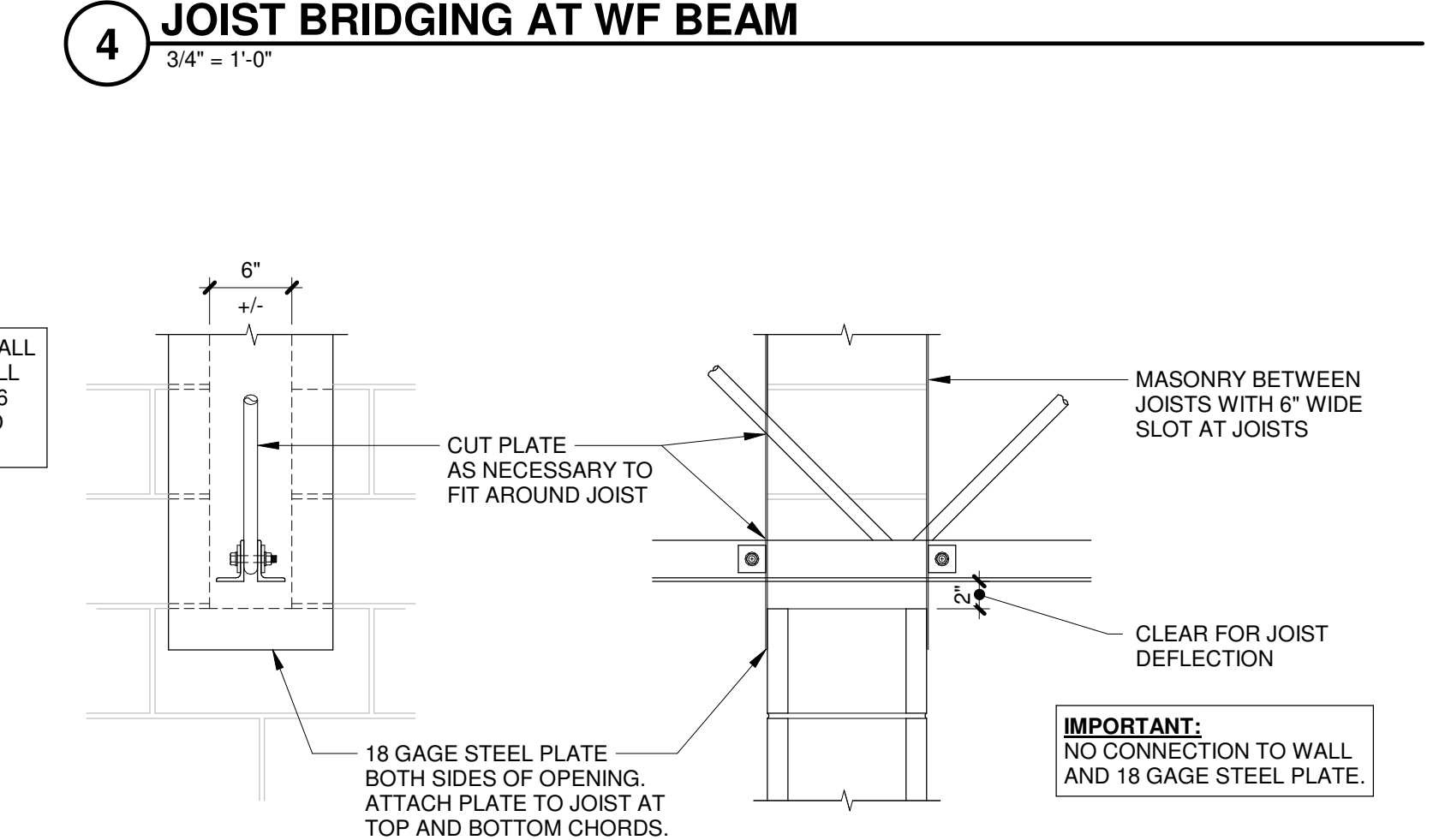
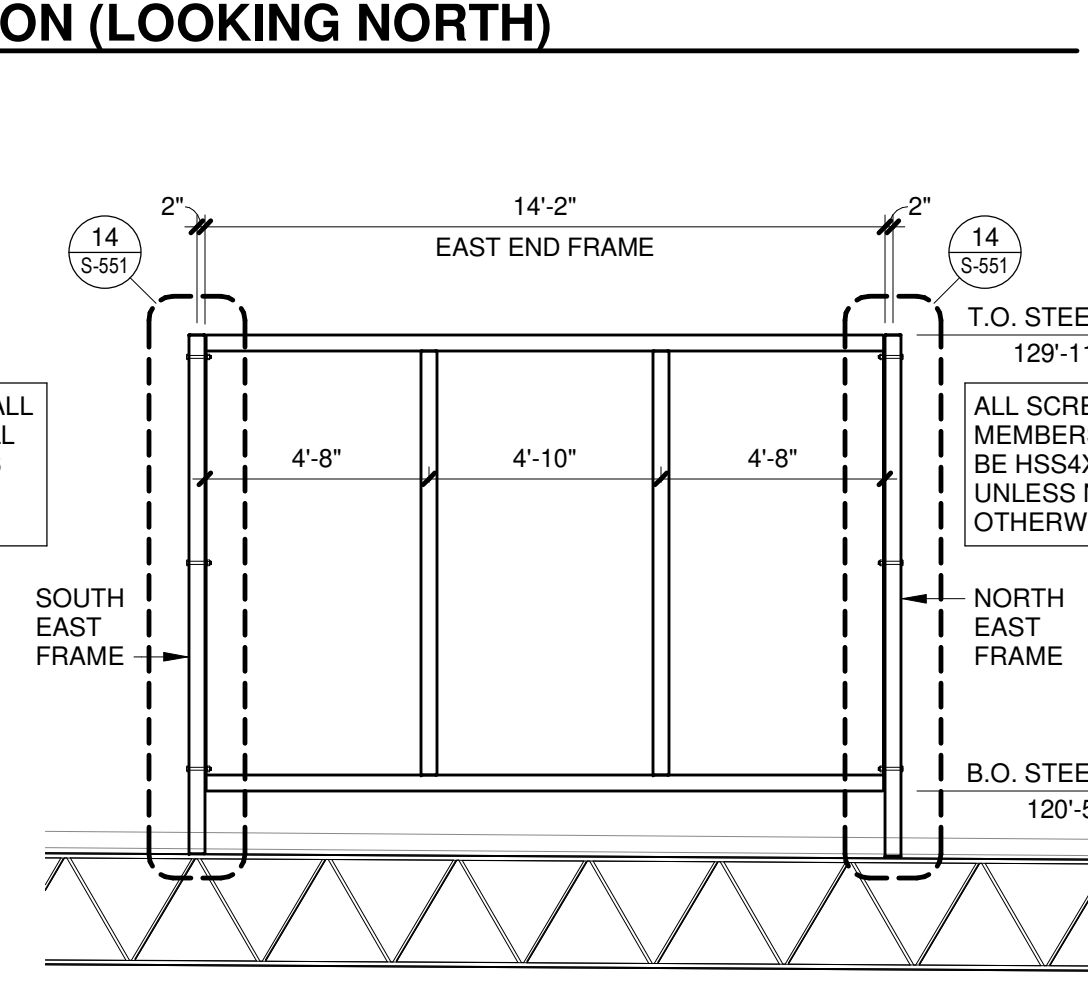
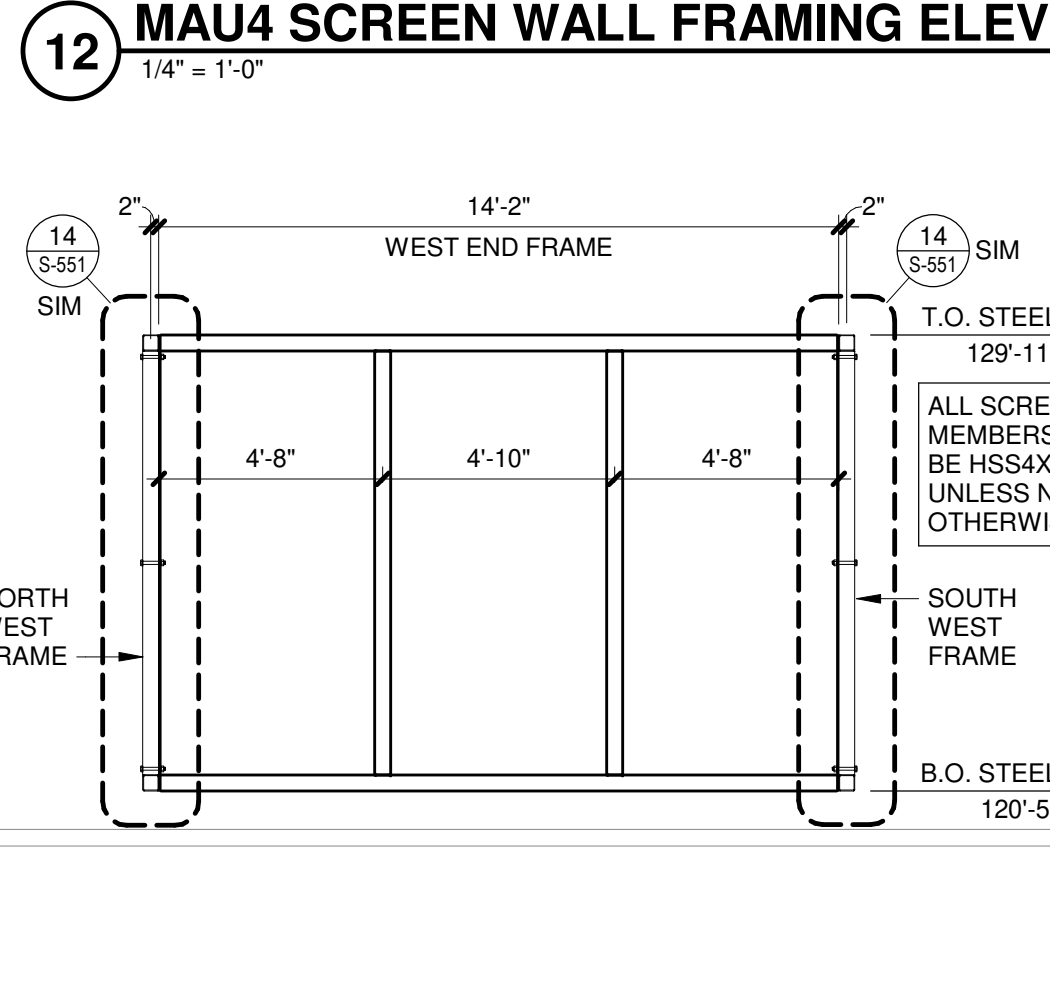
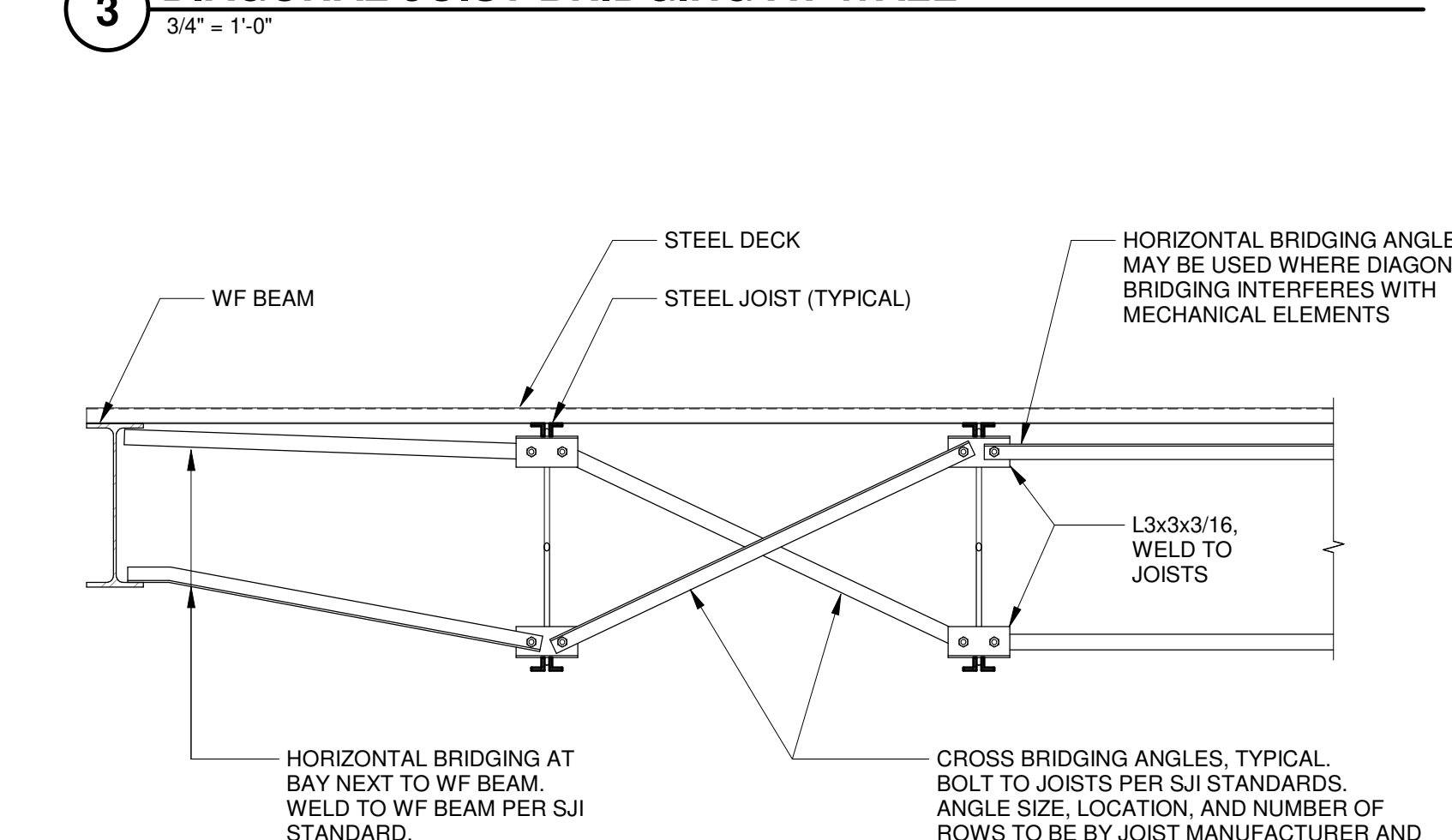
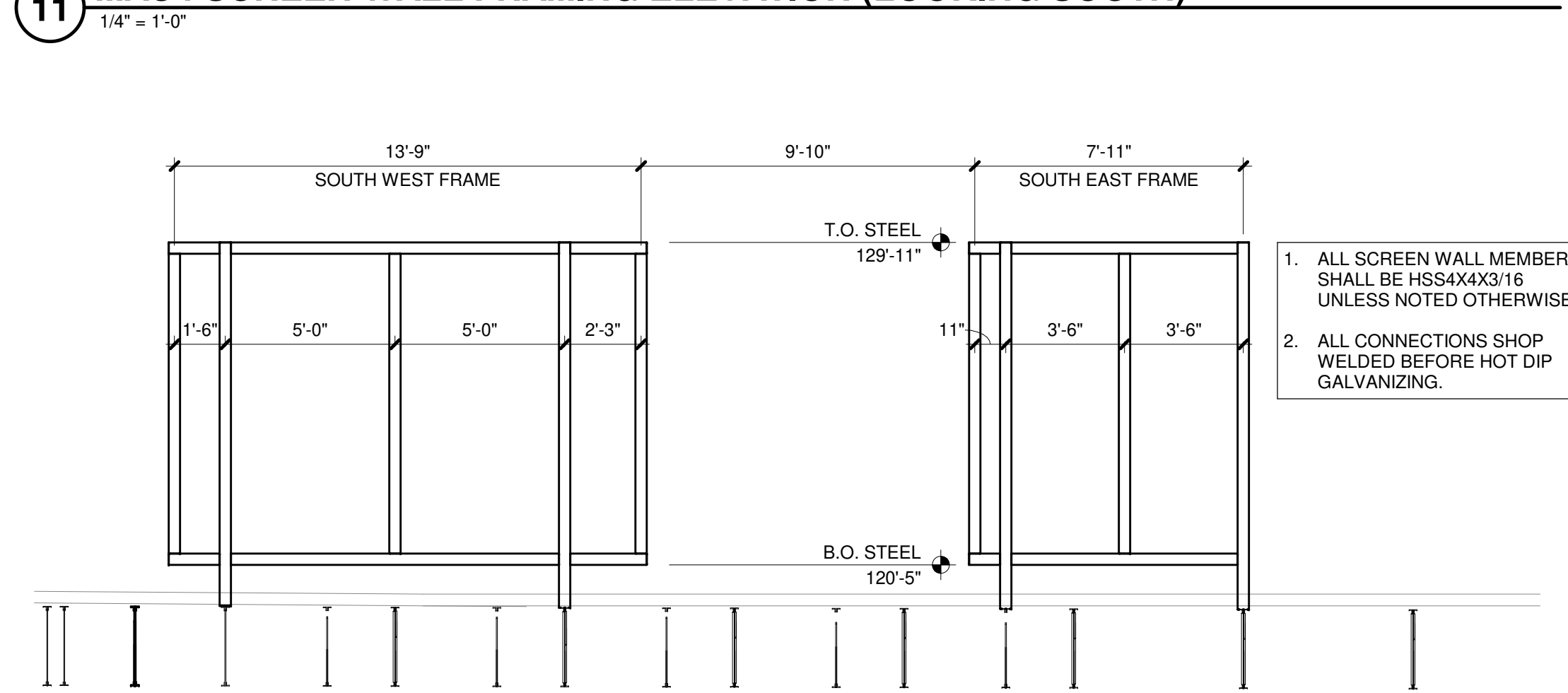
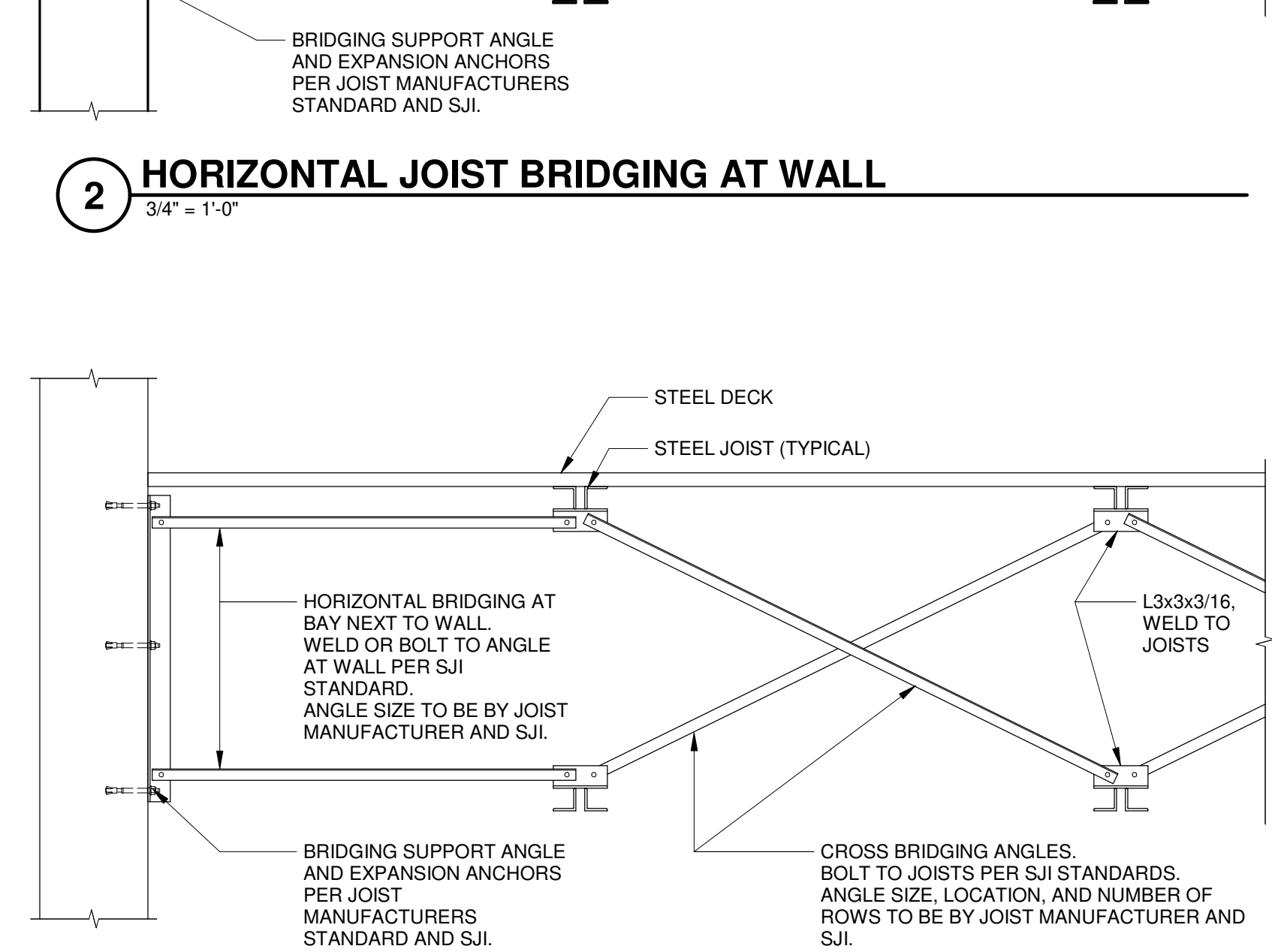
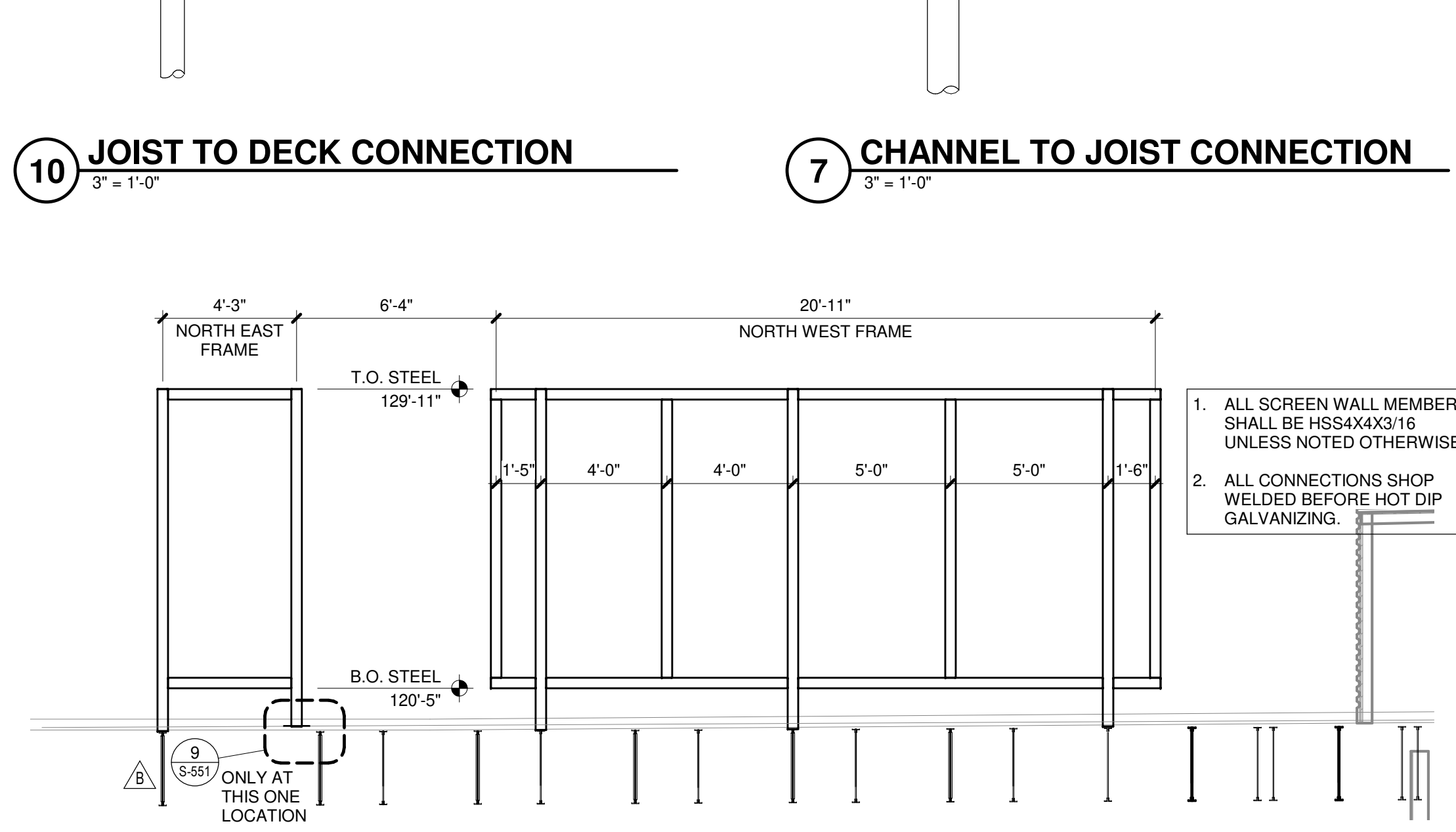
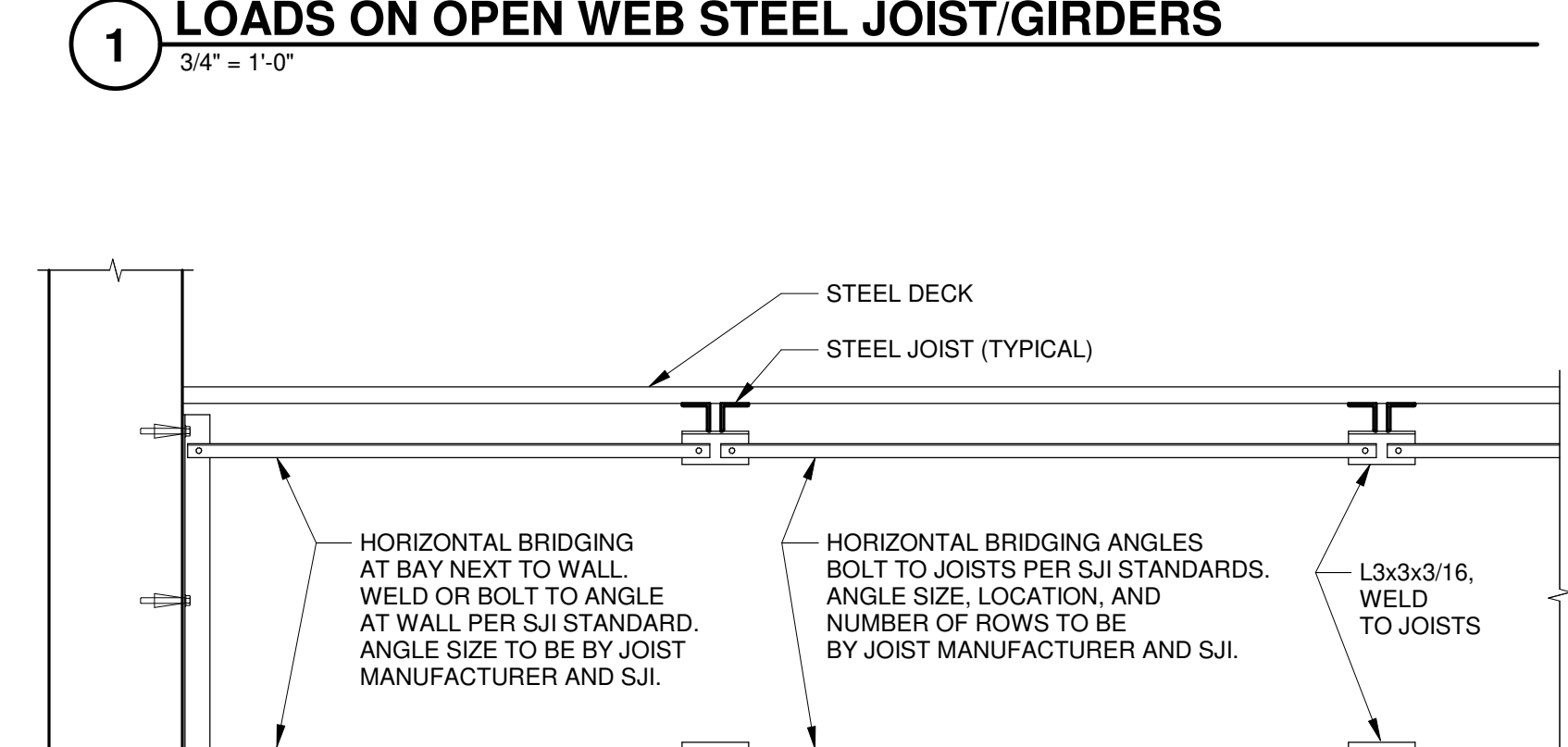
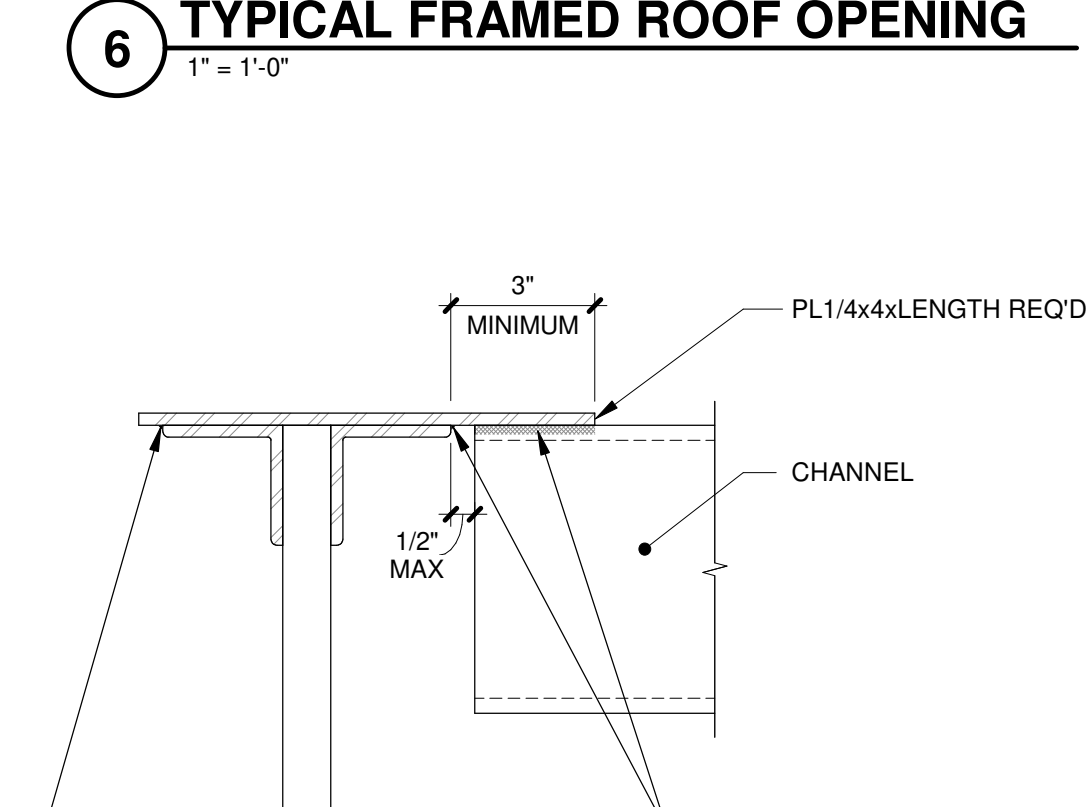
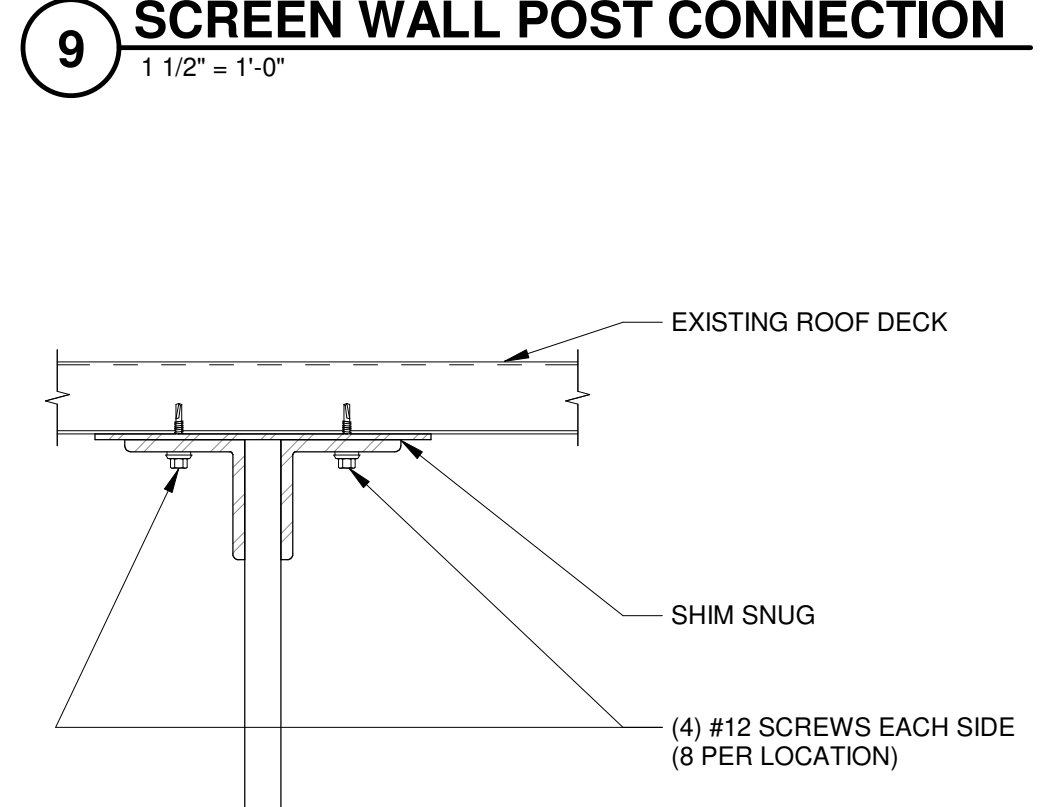
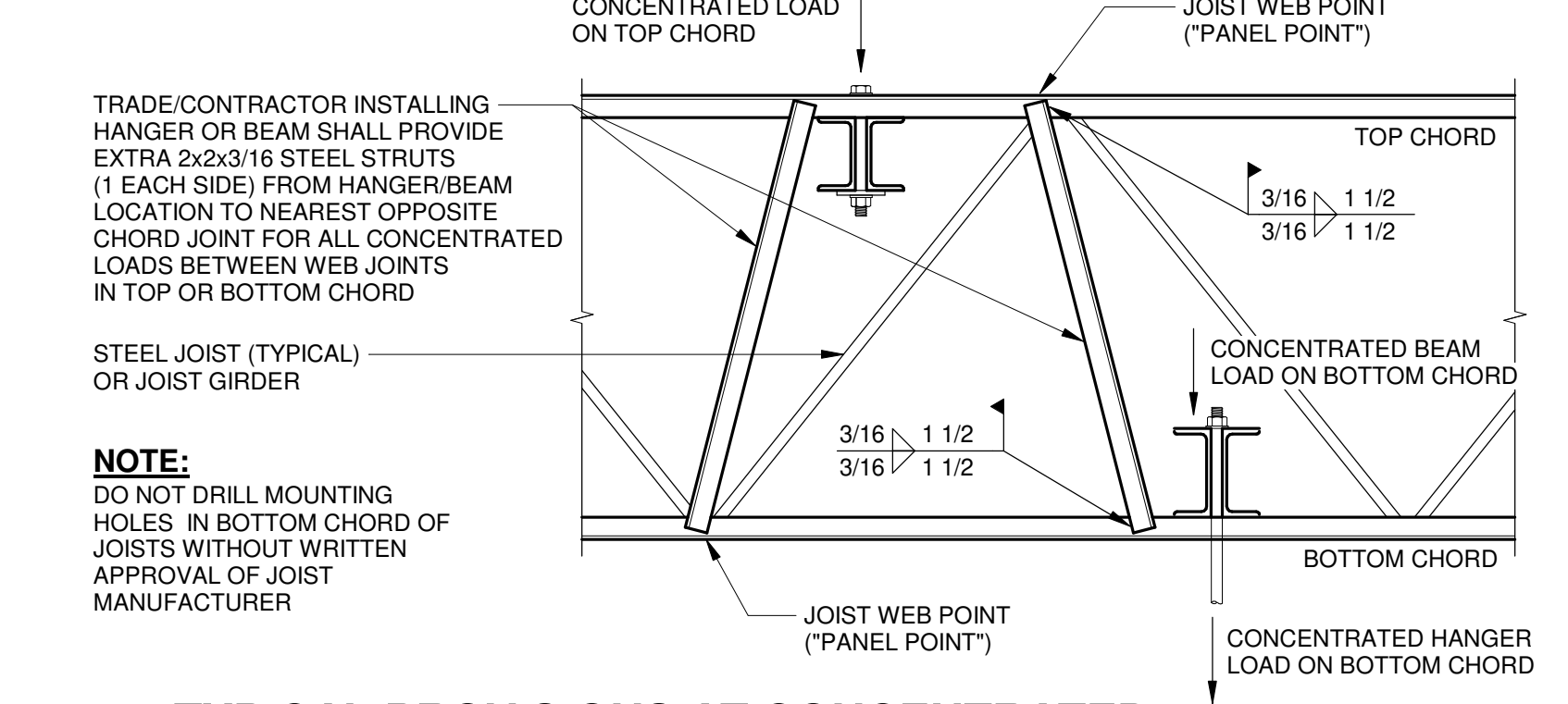
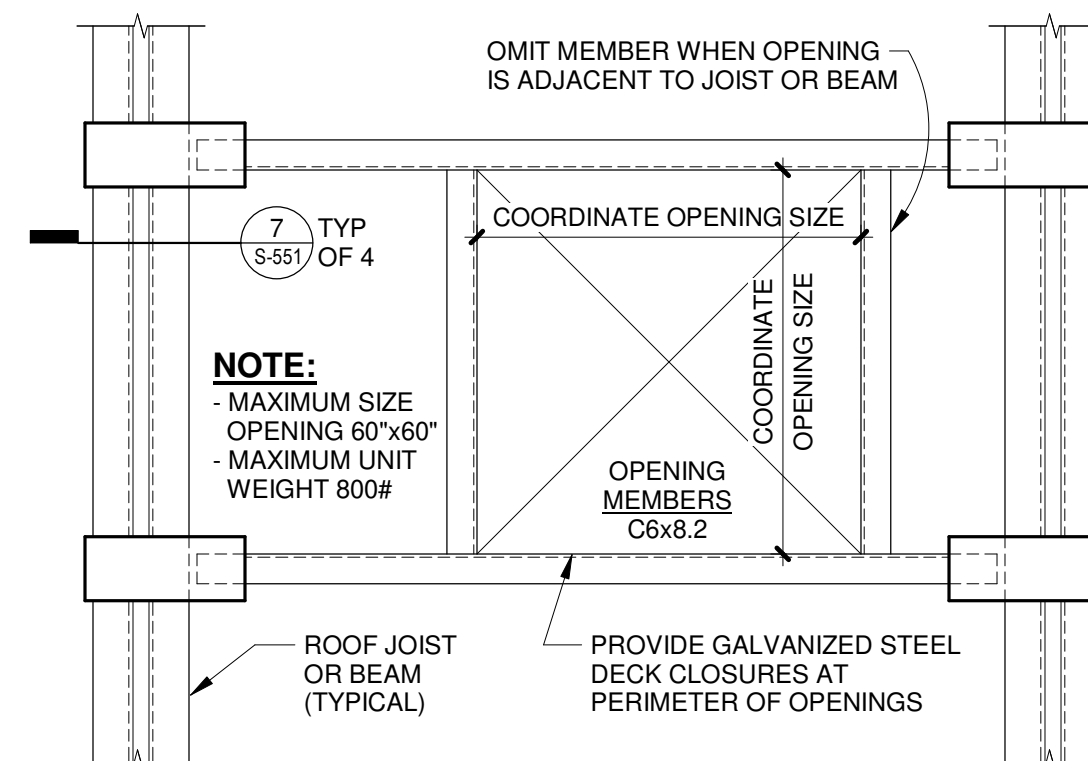
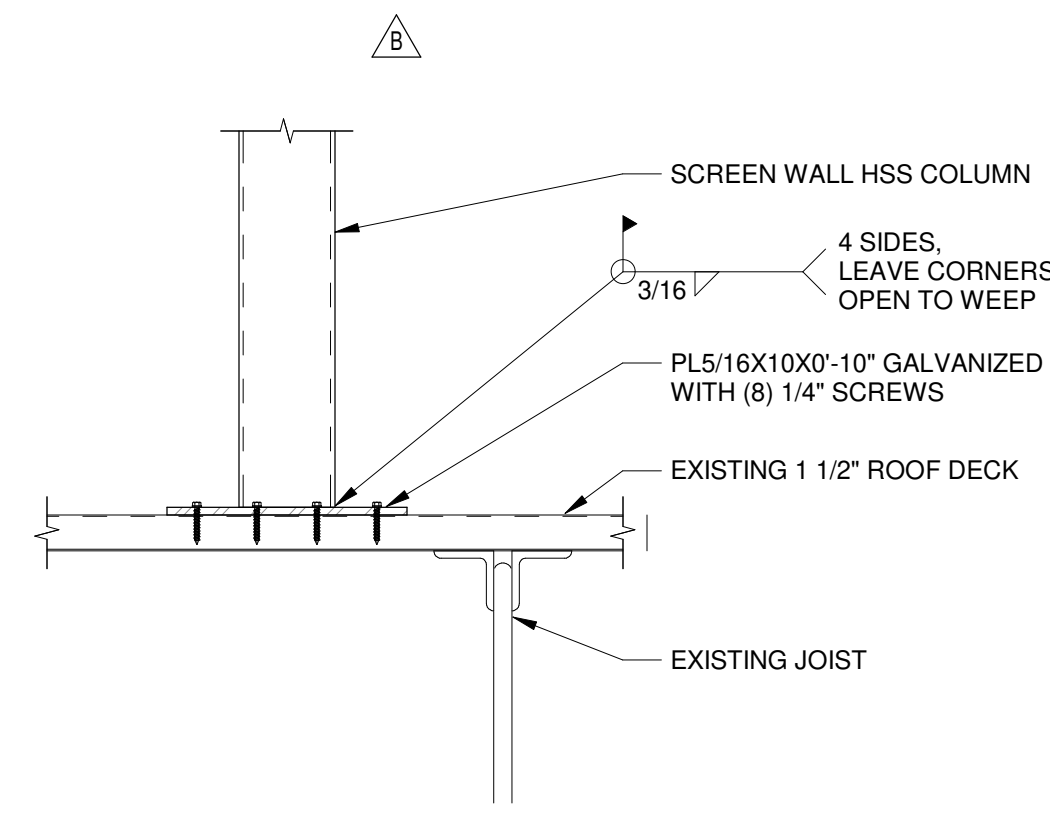
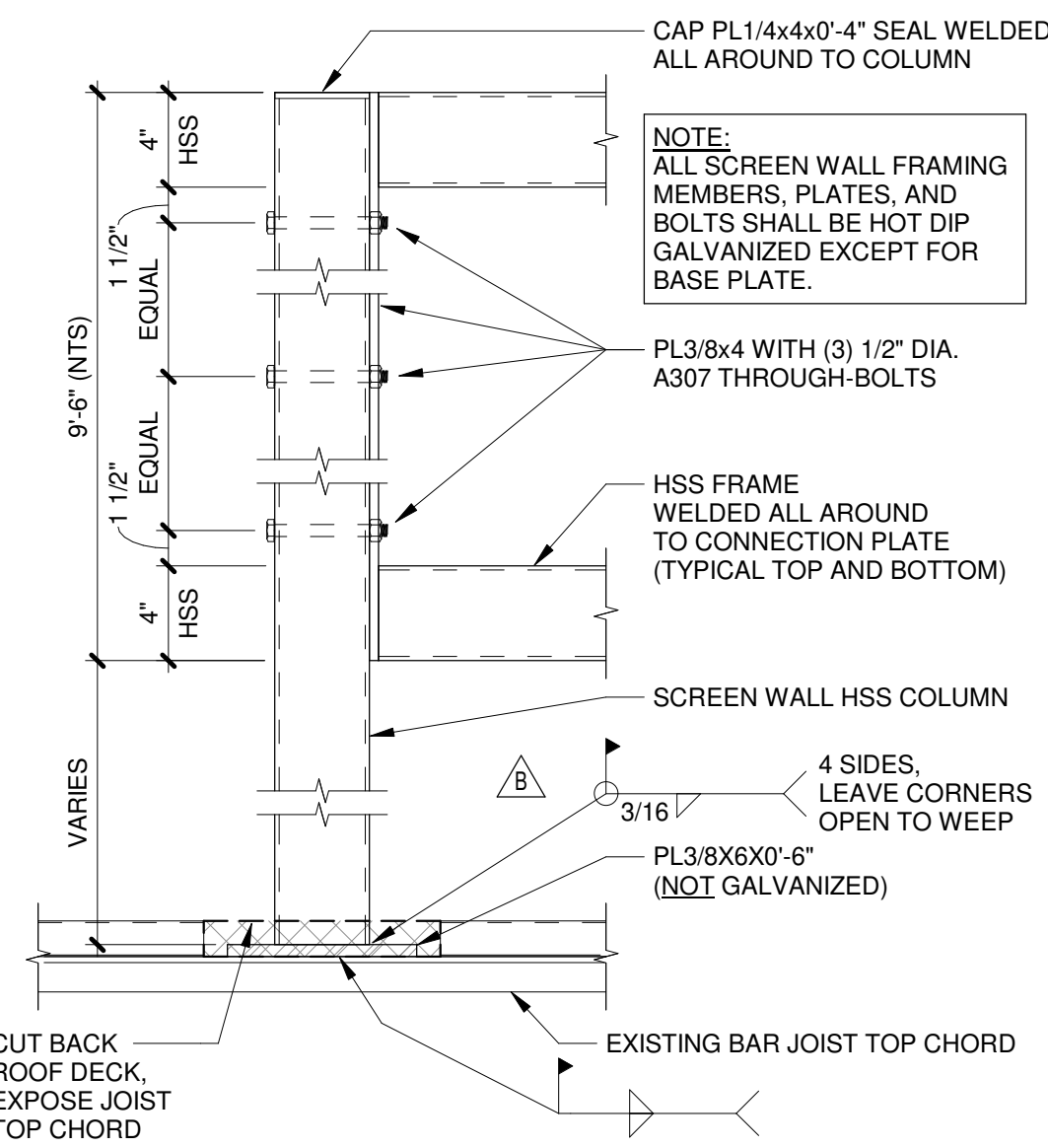
3 TYPICAL WF STIFFENER PLATE
1 1/2" = 1'-0"

SINGLE PLATE SHEAR CONNECTION

NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS (N)	LENGTH OF ANGLE
W36	10	29 1/2"
W33	9	26 1/2"
W30	8	23 1/2"
W24 - W27	7	20 1/2"
W21	6	17 1/2"
W18	5	14 1/2"
W16	4	11 1/2"
W12 - W14	3	8 1/2"
W8 - W10	2	5 1/2"

SINGLE PLATE SHEAR CONNECTION NOTES

- ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OR NOTED OTHERWISE.
- STANDARD HOLES OR HORIZONTAL SHORT SLOT HOLES MAY BE UTILIZED AT CONTRACTORS OPTION IN EITHER THE CONNECTION ANGLE OR THE FRAMING MEMBERS.
- WELD "A" MAY BE USED IN LIEU OF "A" SIDE BOLTS AT CONTRACTORS OPTION. WELD SHALL BE ON ALL 3 SIDES.
- FOR MISS-ALIGNED BOLT HOLES, PROVIDE FIELD WELDS. NOTIFY THE ARCHITECT/ENGINEER OF LOCATIONS USING FIELD WELDED CONNECTION.
- REFER TO TYPICAL COPING DETAIL 2/S-541 FOR CONNECTIONS WHERE COPING IS REQUIRED.
- THIS DETAIL IS NOT INTENDED FOR EVERY WF SECTION. CHECK RIDING THE FILLET AND COPE DEPTH PRIOR TO FABRICATION.



KEYED NOTES

3.321 HSS7X7X3/8 COLUMN, SEE DETAIL 18/S-551 FOR BASE/CAP PLATE.

3.322 MAKE NO CONNECTION BETWEEN THE W12 PARTITION SUPPORT FRAMING AND THE ROOF STRUCTURE.

3.323 MAKE NO CONNECTION BETWEEN THE W12 PARTITION SUPPORT FRAMING AND THE W24 BEAM ABOVE. ATTACH SIGNS TO BOTH SIDES OF W12 BEAM AT MIDPOINT OF BEAM. SIGNS SHALL HAVE 1" RAISED LETTERING THAT STATES "NO CONNECTION BETWEEN THIS W12 AND THE W24 ABOVE. DO NOT INSTALL ANYTHING BETWEEN THE BEAMS." PAINT SIGN YELLOW WITH RED LETTERING.



**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703**

ISSUED
04/08/21 BID SET
C 05/20/21 ADDENDUM #3

CONTRACT NO.: 8981
M&H NO.: 4503500-1908996.03
DATE: APRIL 8, 2021
DESIGNED BY: SZK
DRAWN BY: NJD, DJM
CHECKED BY: RCL, REK
50 NOT SCALE DRAWINGS

SHEET CONTENTS
FIRST FLOOR PLAN -
AREA A

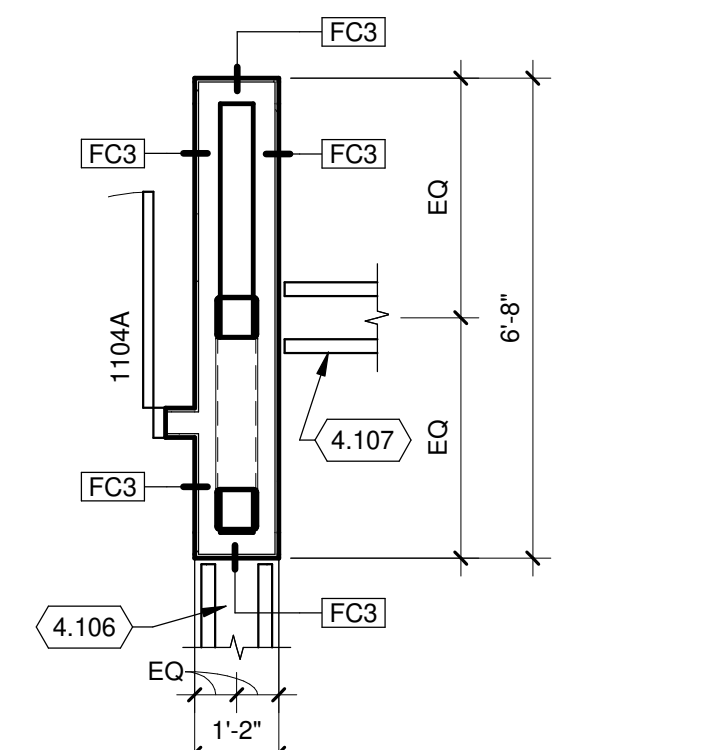
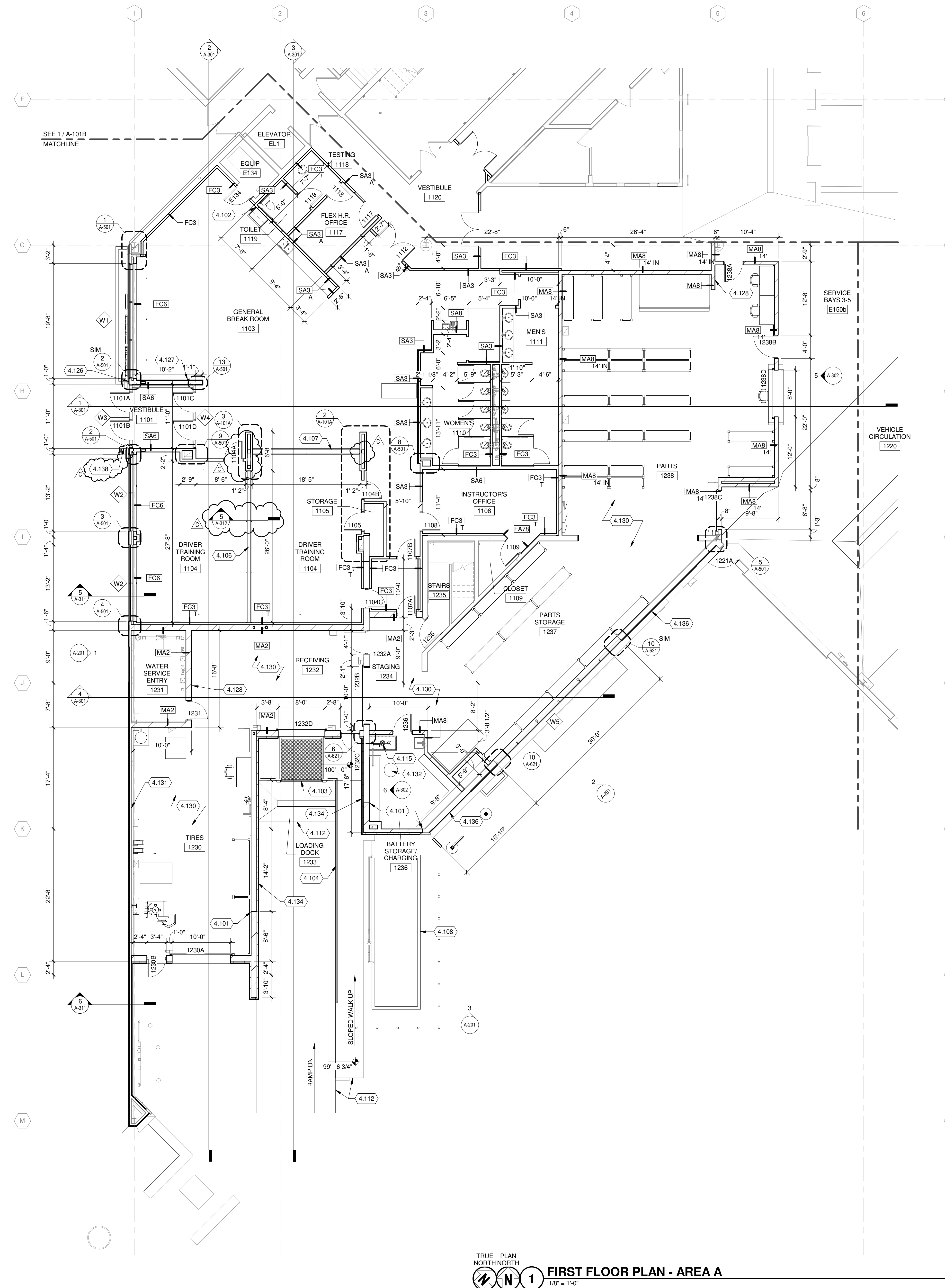
SHEET NO.:

FLOOR PLAN GENERAL NOTES:

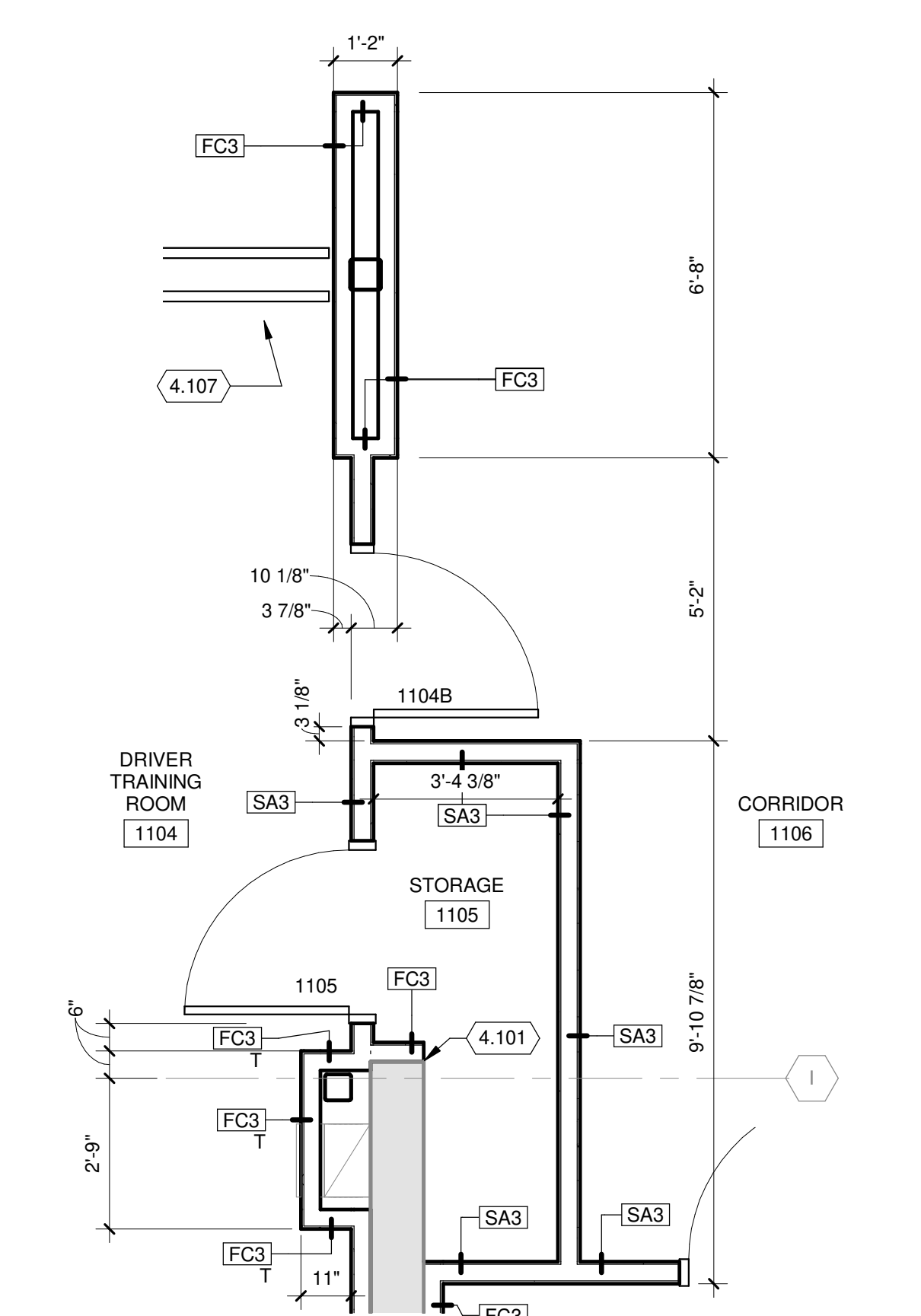
- SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON SITE PLAN = 100'-0" ON ARCHITECTURAL DRAWINGS.
- FIELD VERIFY DIMENSIONS, BRING DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
- INTERIOR DIMENSIONS ARE FROM FINISH FACE OF WALLS (I.E. GYPSUM WALLBOARD OR CMU), UNLESS NOTED OTHERWISE.
- FINISH FLOOR ELEVATIONS ARE TO THE TOP OF CONCRETE, UNLESS NOTED OTHERWISE.
- REFERENCE SHEET G-020 THROUGH G-030 FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1, DIV 2 REQUIREMENTS.
- GENERAL CONTRACTOR SHALL PATCH AND REPAIR EXISTING CONSTRUCTION (WALLS, DOORS, CEILINGS, FLOORS, ETC.) AS REQUIRED FROM DEMOLITION OR CONSTRUCTION TO ALLOW FOR THE PREP WORK AND NEW OR COMPLETION OF EXISTING FINISHES. REPAIRS OR REPLACEMENTS MUST BE DURABLE, SEAMLESS, AND MATCH THE EXISTING MATERIAL.
- GENERAL CONTRACTOR SHALL PATCH FLOOR AND WALL PENETRATIONS CAUSED BY DEMOLITION OF MECHANICAL, ELECTRICAL, TECHNOLOGY, AND PLUMBING, INCLUDING BUT NOT LIMITED TO PIPING AND CONDUIT RUNS, IN A MANNER THAT IS CONSISTENT WITH THE EXISTING FLOOR AND WALL CONSTRUCTION AND FINISH. PENETRATIONS SHALL MEET REQUIRED FIRE RATINGS.
- COORDINATE THE INSTALLATION OF OWNER-SUPPLIED EQUIPMENT. REFERENCE PLANS, SPECS, AND INTERIOR ELEVATIONS FOR SPECIFIC EQUIPMENT AND ITS INSTALLATION REQUIREMENTS.
- GENERAL CONTRACTOR SHALL PROVIDE BLOCKING, STIFFENERS, BRACINGS, BACKING PLATES, SUPPORTING BRACKETS, AND NECESSARY SELECTIVE DEMOLITION REQUIRED FOR THE PROPER INSTALLATION OF ALL CASEWORK, TOILET ROOM ACCESSORIES, TOILET PARTITIONS AND MISCELLANEOUS EQUIPMENT.
- EXISTING AND INFILL CONCRETE SUB FLOOR SHALL BE MADE LEVEL, PLUMB AND IN SOUND CONDITION AS REQUIRED FOR THE INSTALLATION OF FINAL FLOOR FINISHES. TYPICAL. PROVIDE ARDEX OR EQUAL LEVELING CONCRETE TO PROVIDE A SMOOTH WALKABLE AREA.
- RECESSED CABINETS, PANELS, BOXES, ETC. LOCATED IN FIRE RATED PARTITIONS SHALL BE INSTALLED IN A MANNER WHICH MAINTAINS THE FIRE RATED CONSTRUCTION.
- SEE ENLARGED PLANS FOR NOTES, DIMENSIONS, AND WALL TYPES WITHIN THE DETAIL CALLOUT BOUNDARIES.
- REFERENCE SHEET A-002 FOR INTERIOR PARTITION TYPES. INTERIOR PARTITION TAGS NOTED ENCOMPASS THE ENTIRE LENGTH OF WALL SHOWN TO CORNERS OF ROOM, OVER AND AROUND DOORWAYS SHOWN.
- REFERENCE SHEET H-100'S FOR FURNITURE LAYOUTS AND COORDINATION REQUIREMENTS.
- REFERENCE SHEET G-100'S FOR EQUIPMENT LAYOUTS AND COORDINATION REQUIREMENTS.
- REFERENCE SHEET G-101 FOR CONSTRUCTION STAGING AND SEQUENCING PHASING REQUIREMENTS.

KEYED NOTES

- ALIGN FACE OF WALL WITH EXISTING
- ALIGN STUD FACE WITH FACE OF EXISTING CMU WALL
- PROVIDE DOCK LEVELER
- PROVIDE GUARDRAIL AT LOADING DOCK AREA - SEE DETAIL 16/A-501
- VERTICAL LIFT MOVABLE PARTITION - 26'-0"W X 11'-6"H
- VERTICAL LIFT MOVABLE PARTITION - 18'-5"W X 11'-6"H
- ELECTRICAL GENERATOR AND PAD - SEE ELECTRICAL
- SLOPED LOADING DOCK AREA PAVEMENT, TRENCH DRAIN AND SIDEWALK - SEE STRUCTURAL
- EYE AND SHOWER WASH, SEE PLUMBING DRAWINGS
- PROVIDE FIRE DEPARTMENT ACCESS KNOX BOX
- PROVIDE FIRE EXTINGUISHER AND RECESSED FE CABINET
- PROVIDE FIRE EXTINGUISHER
- PROVIDE MAINTENANCE PAINT PREPARATION WITH HIGH PRESSURE CRYOGENIC LIQUID-NITROGEN JET CLEANING FOR REMOVAL OF EXHAUST SOOT AT EXISTING WALLS, CEILINGS, AND COMPONENTS THAT ARE LEFT EXPOSED OR REQUIRING PAINT.
- REINSTALL SALVAGED INTERIOR METAL WALL PANELS
- CONTAINMENT PIT CAP - REF STRUCTURAL
- PROVIDE METAL WALL PANEL (MWP2) ON 3" Z FURRING WITH 2" RIGID INSULATION AND 1" AIR SPACE, AND A FLUID APPLIED MEMBRANE AIR BARRIER OVER EXISTING CMU
- PROVIDE METAL WALL PANEL (MWP1) AS NOTED ON 9/16" HAT CHANNEL ATTACHED TO EXISTING CMU WALL
- PROVIDE CONCRETE END TIED INTO EXISTING LANDSCAPE RETAINING WALL. SEE STRUCTURAL

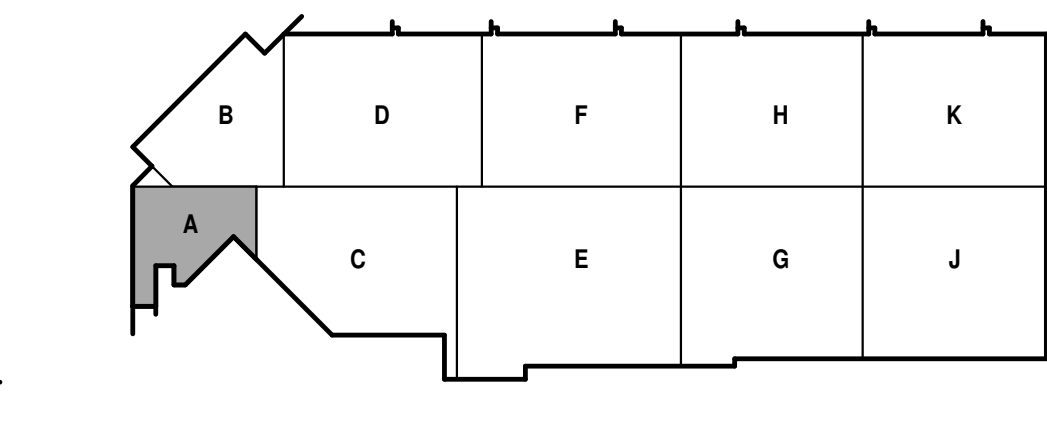


TRUE PLAN NORTH NORTH
3
3/8" = 1'-0"



TRUE PLAN NORTH NORTH
2
3/8" = 1'-0"

TRUE PLAN NORTH NORTH
1
1/8" = 1'-0"



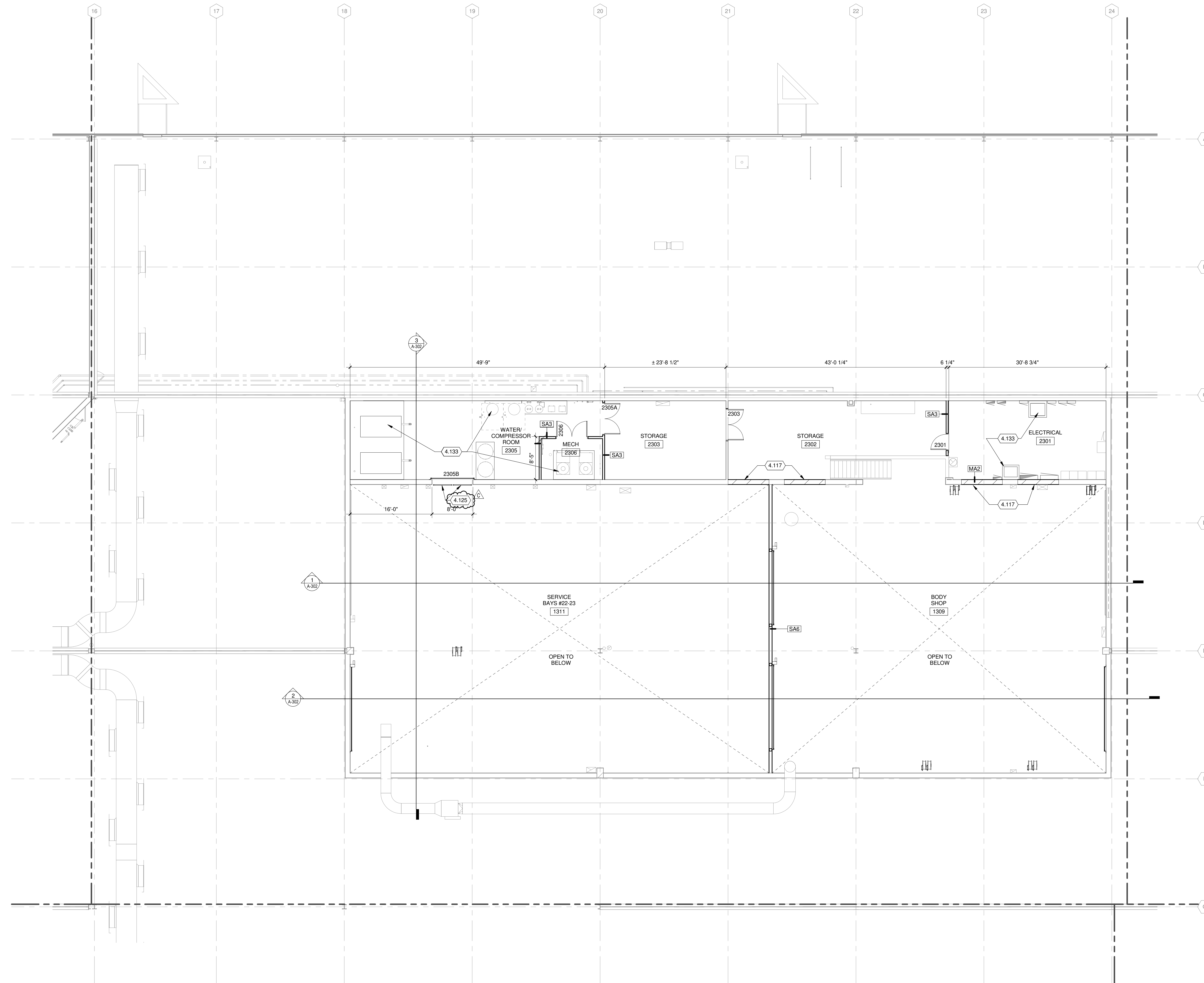


FLOOR PLAN GENERAL NOTES:

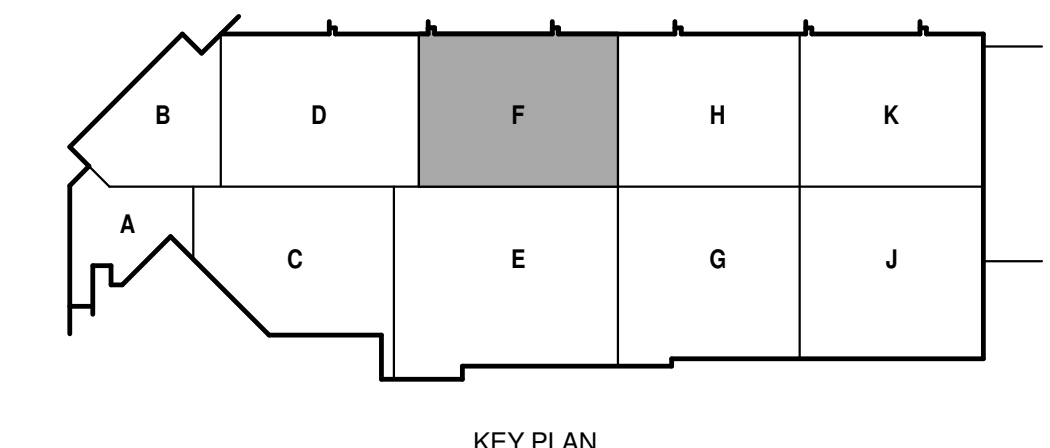
1. SITE DATUM OF FINISHED FIRST FLOOR INDICATED ON SITE PLAN = 100'-0" ON ARCHITECTURAL DRAWINGS.
2. FIELD VERIFY DIMENSIONS, BRING DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISION.
3. INTERIOR DIMENSIONS ARE FROM FINISH FACE OF WALLS (I.E. GYPSUM WALLBOARD OR CMU), UNLESS NOTED OTHERWISE.
4. FINISH FLOOR ELEVATIONS ARE TO THE TOP OF CONCRETE, UNLESS NOTED OTHERWISE.
5. REFERENCE SHEET G-020 THROUGH G-030 FOR LIFE SAFETY CODE, WALL/FLOOR RATINGS, AND CLASS 1, DIV 2 REQUIREMENTS.
6. GENERAL CONTRACTOR SHALL PATCH AND REPAIR EXISTING CONSTRUCTION (WALLS, DOORS, CEILINGS, FLOORS, ETC.) AS REQUIRED FROM DEMOLITION OR CONSTRUCTION TO ALLOW FOR THE PREP WORK AND NEW OR COMPLETION OF EXISTING FINISHES. REPAIRS OR REPLACEMENTS MUST BE DURABLE, SEAMLESS, AND MATCH THE EXISTING MATERIAL.
7. GENERAL CONTRACTOR SHALL PATCH FLOOR AND WALL PENETRATIONS CAUSED BY DEMOLITION OF MECHANICAL, ELECTRICAL, TECHNOLOGY, AND PLUMBING, INCLUDING BUT NOT LIMITED TO PIPING AND CONDUIT RUNS, IN A MANNER THAT IS CONSISTENT WITH THE EXISTING FLOOR AND WALL CONSTRUCTION AND FINISH. PENETRATIONS SHALL MEET REQUIRED FIRE RATINGS.
8. COORDINATE THE INSTALLATION OF OWNER-SUPPLIED EQUIPMENT. REFERENCE PLANS, SPECS, AND INTERIOR ELEVATIONS FOR SPECIFIC EQUIPMENT AND ITS INSTALLATION REQUIREMENTS.
9. GENERAL CONTRACTOR SHALL PROVIDE BLOCKING, STIFFENERS, BRACINGS, BACKING PLATES, SUPPORTING BRACKETS, AND NECESSARY SELECTIVE DEMOLITION REQUIRED FOR THE PROPER INSTALLATION OF ALL CASEWORK, TOILET ROOM ACCESSORIES, TOILET PARTITIONS AND MISCELLANEOUS EQUIPMENT.
10. EXISTING AND INFILL CONCRETE SUB FLOOR SHALL BE MADE LEVEL, PLUMB AND IN SOUND CONDITION AS REQUIRED FOR THE INSTALLATION OF FINAL FLOOR FINISHES, TYPICAL. PROVIDE ARDEX OR EQUAL LEVELING CONCRETE TO PROVIDE A SMOOTH WALKABLE AREA.
11. RECESSED CABINETS, PANELS, BOXES, ETC. LOCATED IN FIRE-RATED PARTITIONS SHALL BE INSTALLED IN A MANNER WHICH MAINTAINS THE FIRE RATED CONSTRUCTION.
12. SEE ENLARGED PLANS FOR NOTES, DIMENSIONS, AND WALL TYPES WITHIN THE DETAIL CALLOUT BOUNDARIES.
13. REFERENCE SHEET A-002 FOR INTERIOR PARTITION TYPES. INTERIOR PARTITION TAGS NOTED ENCOMPASS THE ENTIRE LENGTH OF WALL SHOWN TO CORNERS OF ROOM, OVER AND AROUND DOORWAYS SHOWN.
14. REFERENCE SHEET I-100'S FOR FURNITURE LAYOUTS AND COORDINATION REQUIREMENTS.
15. REFERENCE SHEET G-100'S FOR EQUIPMENT LAYOUTS AND COORDINATION REQUIREMENTS.
16. REFERENCE G-101 FOR CONSTRUCTION STAGING AND SEQUENCING PHASING REQUIREMENTS.

KEYED NOTES

- 4.117 INFILL WALL OPENING TO MATCH ADJACENT FACES AND PAINT BOTH SIDES
- 4.120 NEW EQUIPMENT PAD, SEE STRUCTURAL DRAWINGS
- 4.124 PROVIDE STEEL GRATING PLATFORM WITH REMOVABLE RAILINGS
- 4.125 REMOVABLE RAILING, SEE DETAIL 14 & 17/A-501
- 4.133 MEP EQUIPMENT, TYP



TRUE PLAN NORTH NORTH
1
SECOND FLOOR PLAN - AREA F
1/8" = 1'-0"



ISSUED
04/08/21 BID SET
C 05/20/21 ADDENDUM #3

CONTRACT NO.: 8981
M&H NO.: 4503500-190896.03
DATE: APRIL 8, 2021
DESIGNED BY: SZK
DRAWN BY: NJD, DJM
CHECKED BY: RCL, REK
DO NOT SCALE DRAWINGS

SHEET CONTENTS
SECOND FLOOR
PLAN - AREA F

SHEET NO.:
A-102F



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METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS
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 MADISON, WI 53703

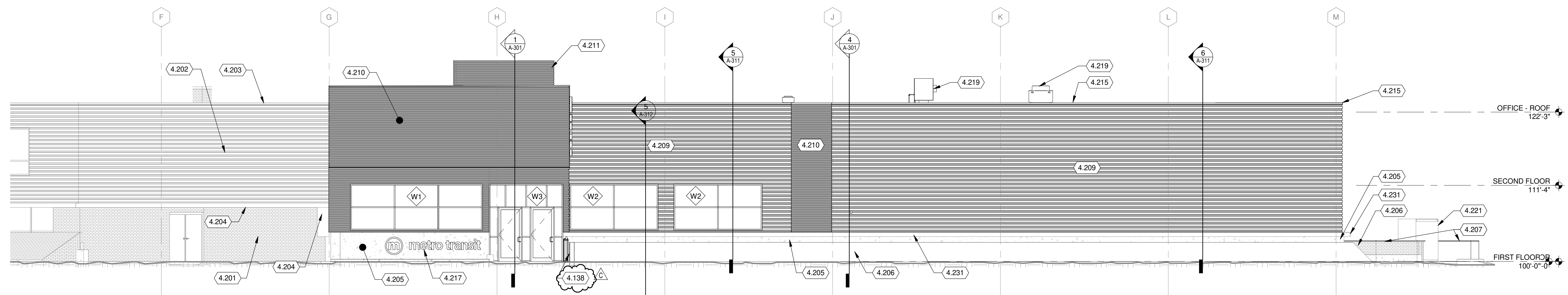
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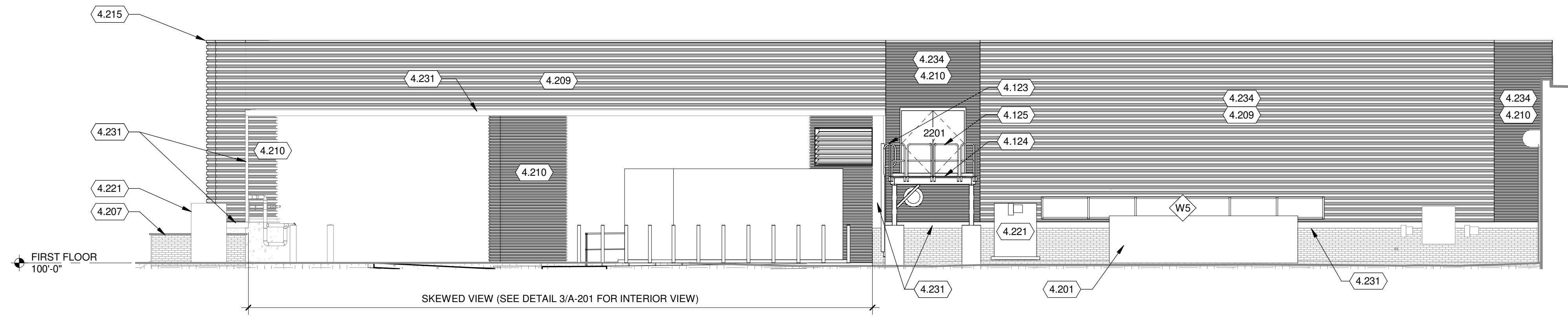
SHEET CONTENTS
EXTERIOR ELEVATIONS

SHEET NO.:

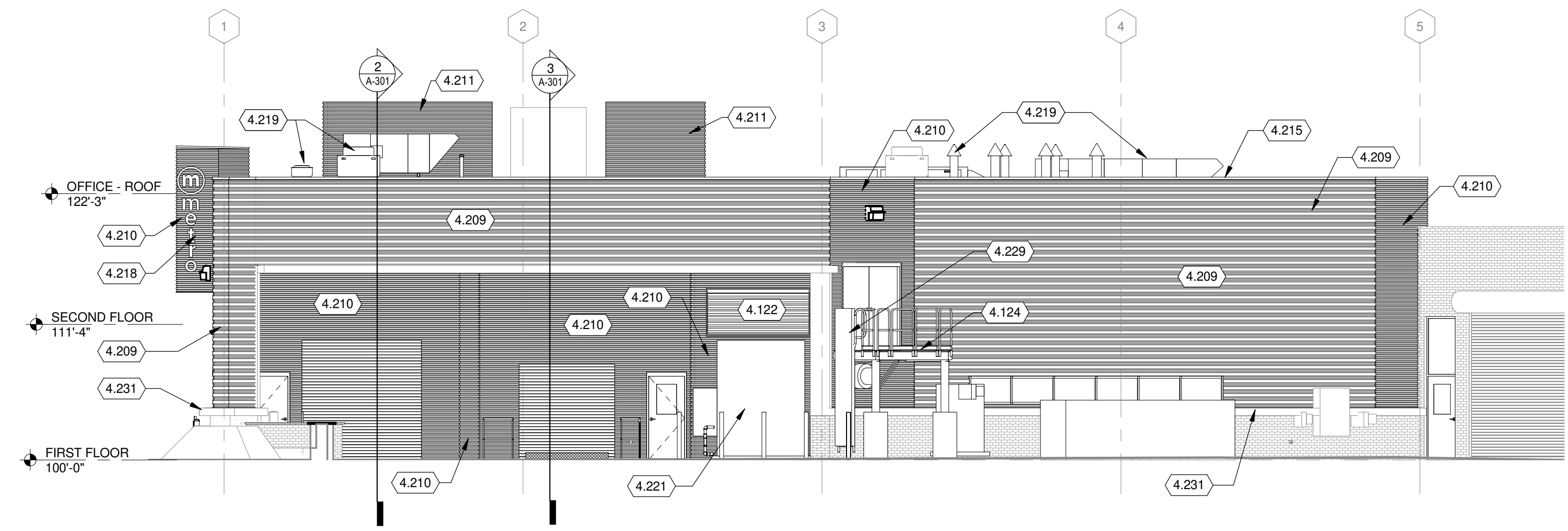
A-201



1 WEST BUILDING ELEVATION
1/8" = 1'-0"



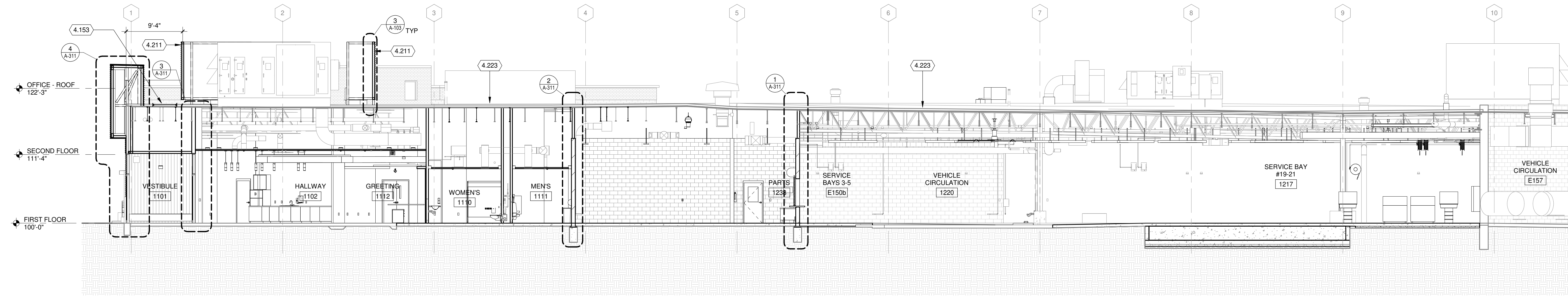
2 SOUTHEAST BUILDING ELEVATION
1/8" = 1'-0"



3 SOUTH BUILDING ELEVATION
1/8" = 1'-0"

KEYED NOTES

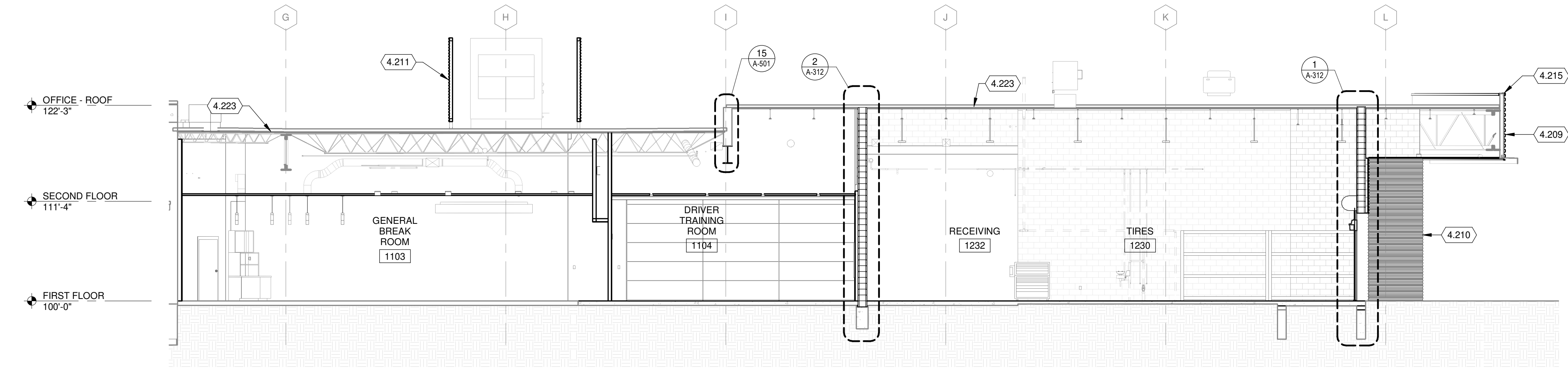
- 4.122 PROVIDE MECHANICAL LOUVER IN EXISTING OPENING. SEE MECHANICAL DRAWINGS
- 4.123 EGRESS LADDER WITH LADDER GUARD. PROVIDE LOCKING MECHANISM AT THE TOP PLATFORM
- 4.124 PROVIDE STEEL GRATING PLATFORM WITH REMOVABLE RAILINGS
- 4.125 REMOVABLE RAILING. SEE DETAIL 14 & 17A-501
- 4.138 PROVIDE CONCRETE END TIED INTO EXISTING LANDSCAPE RETAINING WALL. SEE STRUCTURAL
- 4.201 EXISTING BRICK, TO REMAIN
- 4.202 EXISTING METAL WALL PANEL TO REMAIN
- 4.203 EXISTING METAL WALL CAP TO REMAIN
- 4.204 EXISTING STEEL PLATE TO REMAIN
- 4.205 EXISTING CONCRETE GRADE BEAM TO REMAIN
- 4.206 EXISTING SLOPED CONCRETE, TO REMAIN
- 4.207 EXISTING SCREEN WALLS, TO REMAIN
- 4.209 METAL PANEL (MWP-1)
- 4.210 METAL PANEL (MWP-2)
- 4.211 SCREENWALL, METAL PANEL (MWP-3)
- 4.215 PREFINISHED METAL CAP, COLOR TO MATCH MWP-2
- 4.217 HORIZONTAL SIGNAGE LOCATION BY OTHERS
- 4.218 VERTICAL SIGNAGE LOCATION BY OTHERS
- 4.219 MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS
- 4.221 ELECTRICAL EQUIPMENT. SEE ELECTRICAL DRAWINGS
- 4.229 STEEL LADDER WITH COVER AND RELEASE AT TOP SIDE.
- 4.231 EXISTING STEEL PLATE TO REMAIN, PAINT METRO BLUE, TYP
- 4.234 METAL WALL PANEL AS NOTED ON 9/16" HAT CHANNEL ATTACHED TO EXISTING CMU WALL



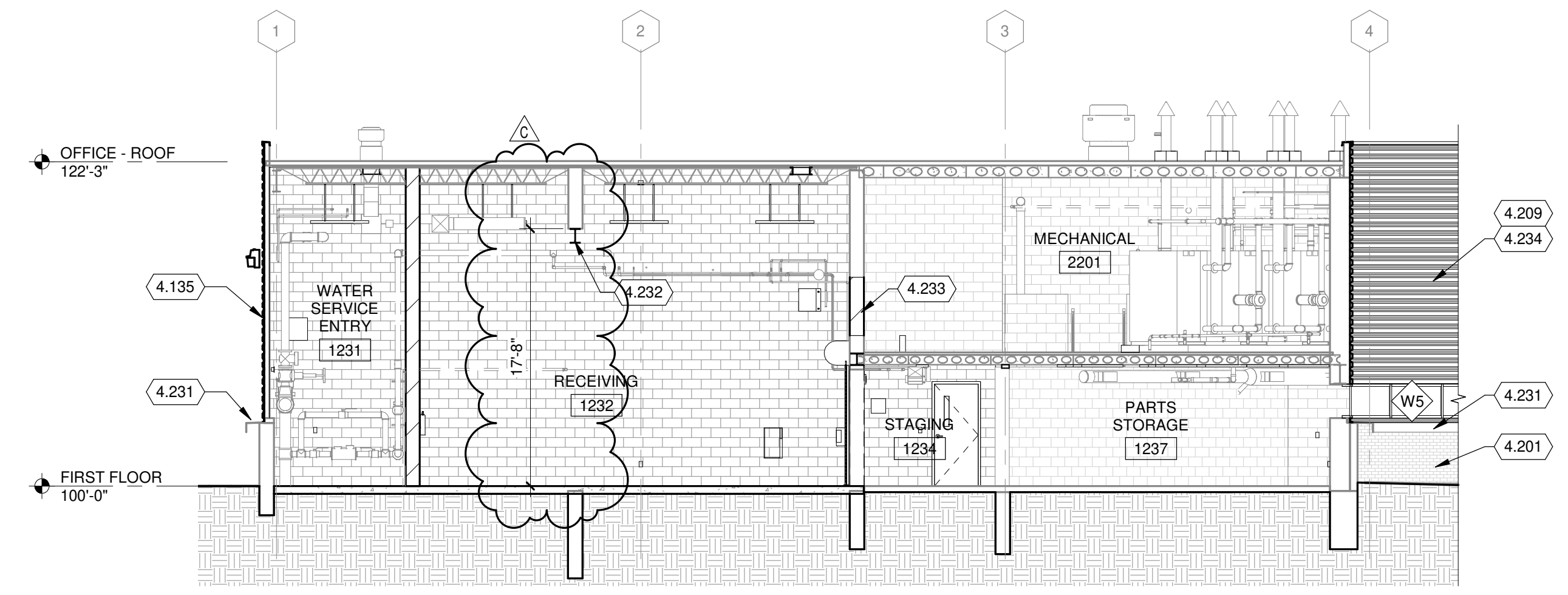
1 BUILDING SECTION
1/8" = 1'-0"

KEYED NOTES

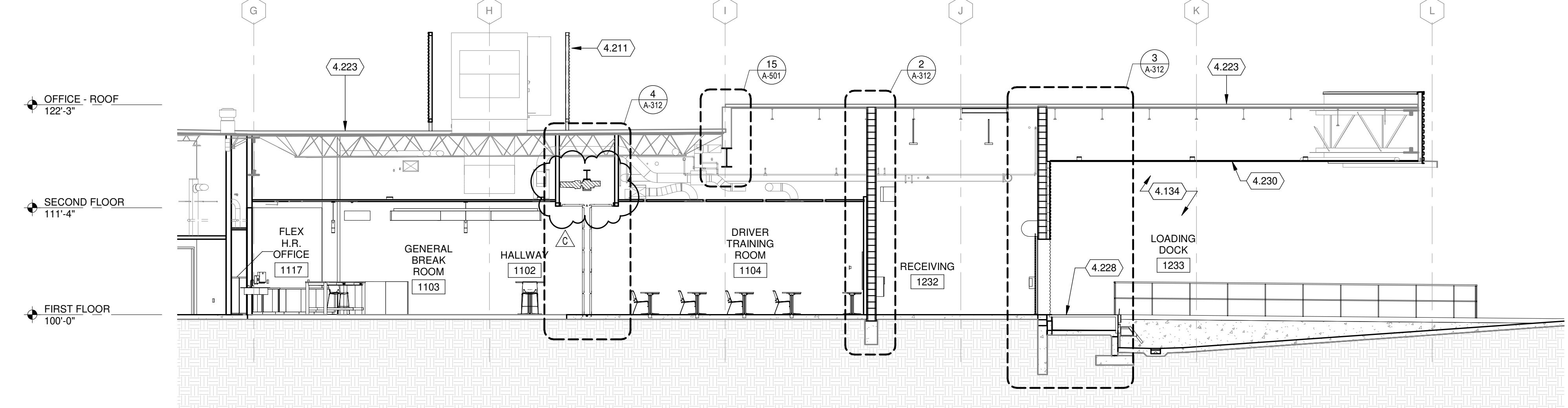
- 4.134 PROVIDE METAL WALL PANEL (MWP2) ON 3" Z FURRING WITH 2" RIGID INSULATION AND 1" AIR SPACE, AND A FLUID APPLIED MEMBRANE AIR BARRIER OVER EXISTING CMU
- 4.135 PROVIDE METAL WALL PANEL (MWP1) OVER FLUID-APPLIED MEMBRANE AIR BARRIER ON 5/8" GYP, SHEATHING OVER EXISTING 3 5/8" STUD, FILL ENTIRE CAVITY WITH INSULATION, VAPOR BARRIER, 5/8" GYP, SD
- 4.153 INFILL AND PATCH ROOF TO MAINTAIN EXISTING WARRANTY
- 4.201 EXISTING BRICK, TO REMAIN
- 4.209 METAL PANEL (MWP-1)
- 4.210 METAL PANEL (MWP-2)
- 4.211 SCREENWALL, METAL PANEL (MWP-3)
- 4.215 PREFINISHED METAL CAP, COLOR TO MATCH MWP-2
- 4.223 EXISTING ROOFING TO REMAIN - PATCH NEW PENETRATIONS TO MECHANICAL, TYP
- 4.228 DOCK LEVELER
- 4.230 METAL SOFFIT (MWP4) ON EXISTING FRAMING - INSTALL (4) REPLACEMENT 12X12 LOUVER VENTS
- 4.231 EXISTING STEEL PLATE TO REMAIN, PAINT METRO BLUE, TYP
- 4.232 STEEL BEAM AT CMU WALL REMOVAL - REF STRUCTURAL
- 4.233 INFILL WALL OPENING WITH CMU TO MATCH EXISTING WIDTH
- 4.234 METAL WALL PANEL AS NOTED ON 9/16" HAT CHANNEL ATTACHED TO EXISTING CMU WALL



2 BUILDING SECTION
1/8" = 1'-0"



4 BUILDING SECTION
1/8" = 1'-0"



3 BUILDING SECTION
1/8" = 1'-0"



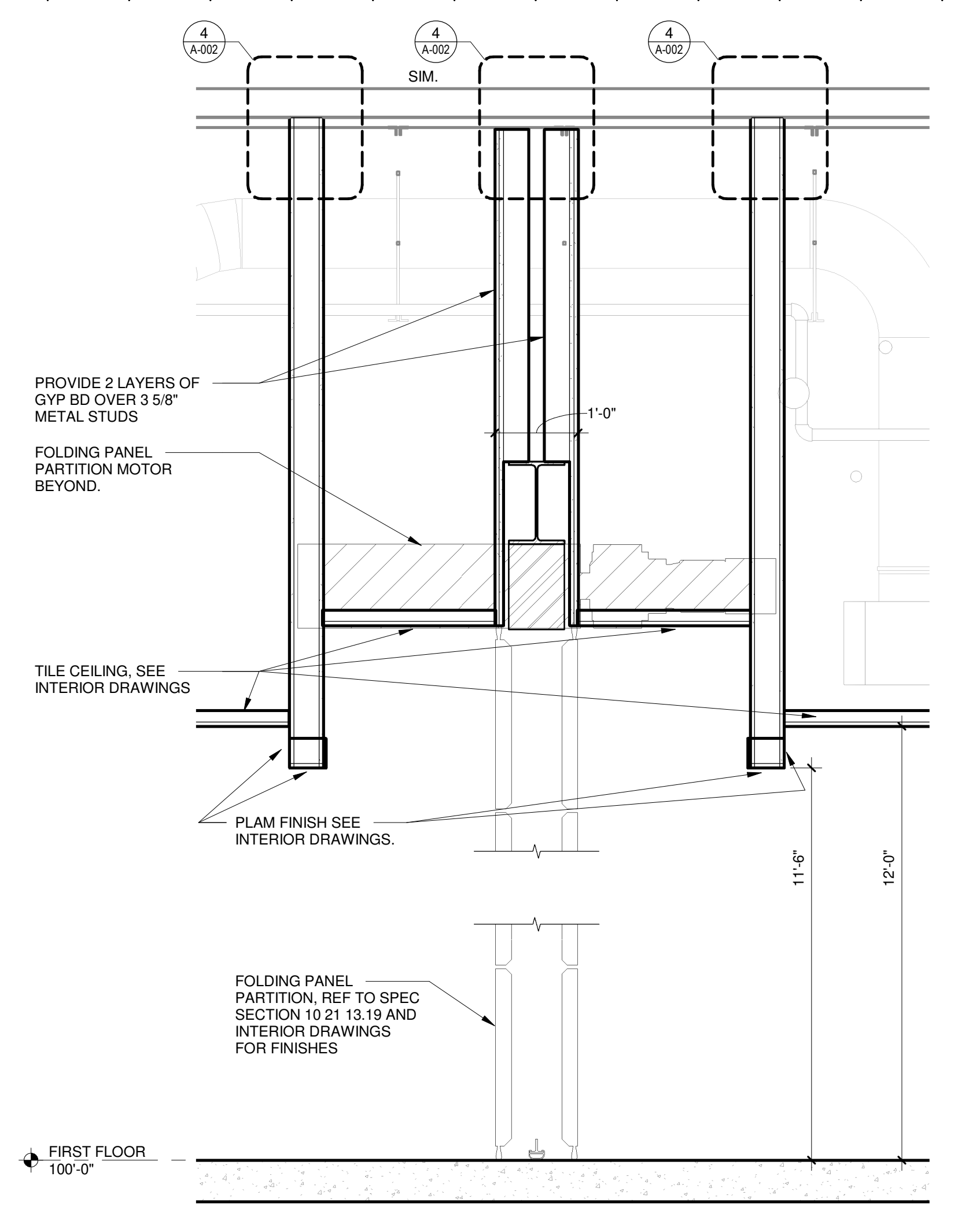
**CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703**

ISSUED
04/08/21 BID SET
C 05/20/21 ADDENDUM #3

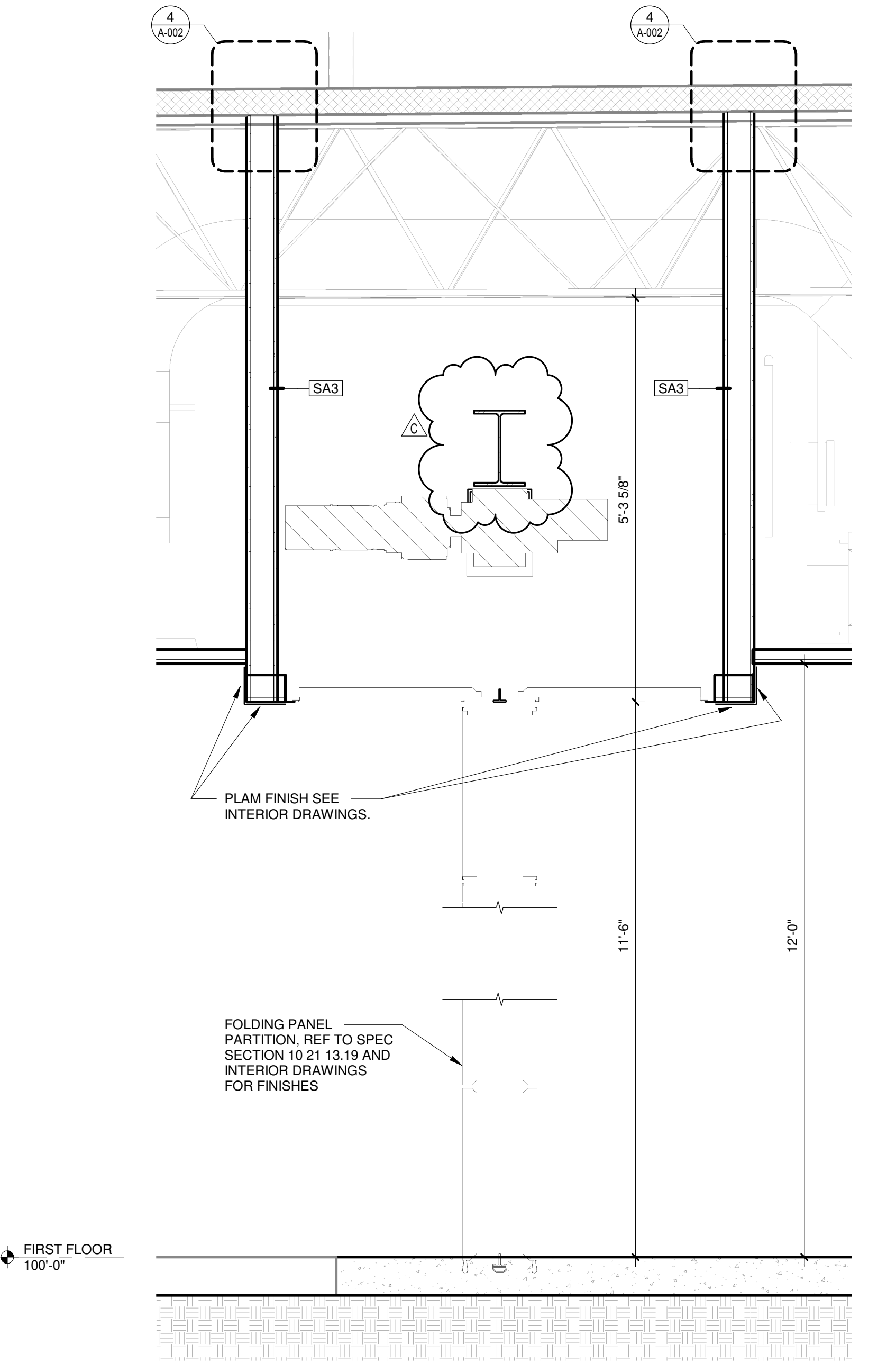
CONTRACT NO.: 8981
M&H NO.: 4503500-190896.03
DATE: APRIL 8, 2021
DESIGNED BY: SZK
DRAWN BY: NJD, DJM
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SHEET CONTENTS
WALL SECTIONS

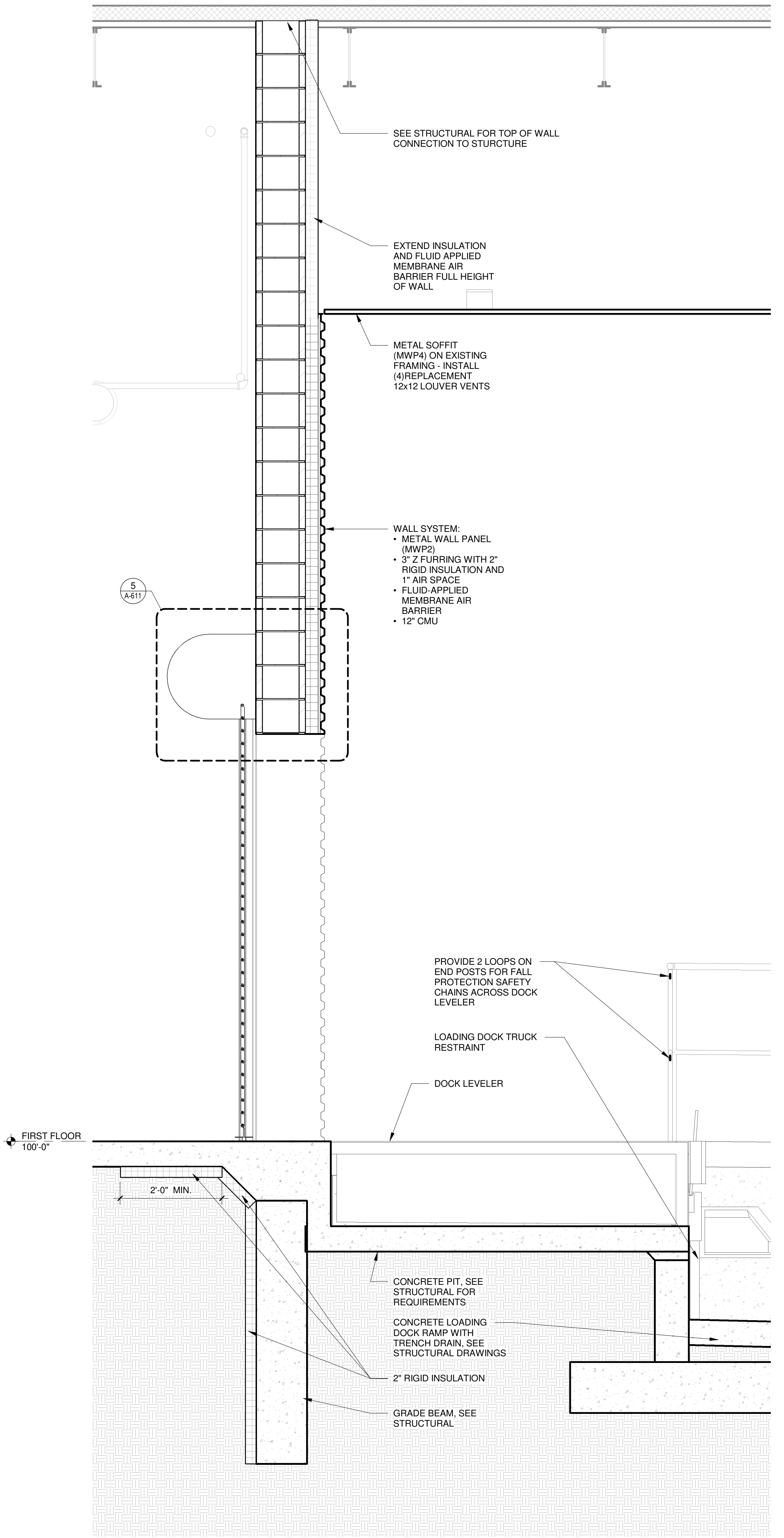
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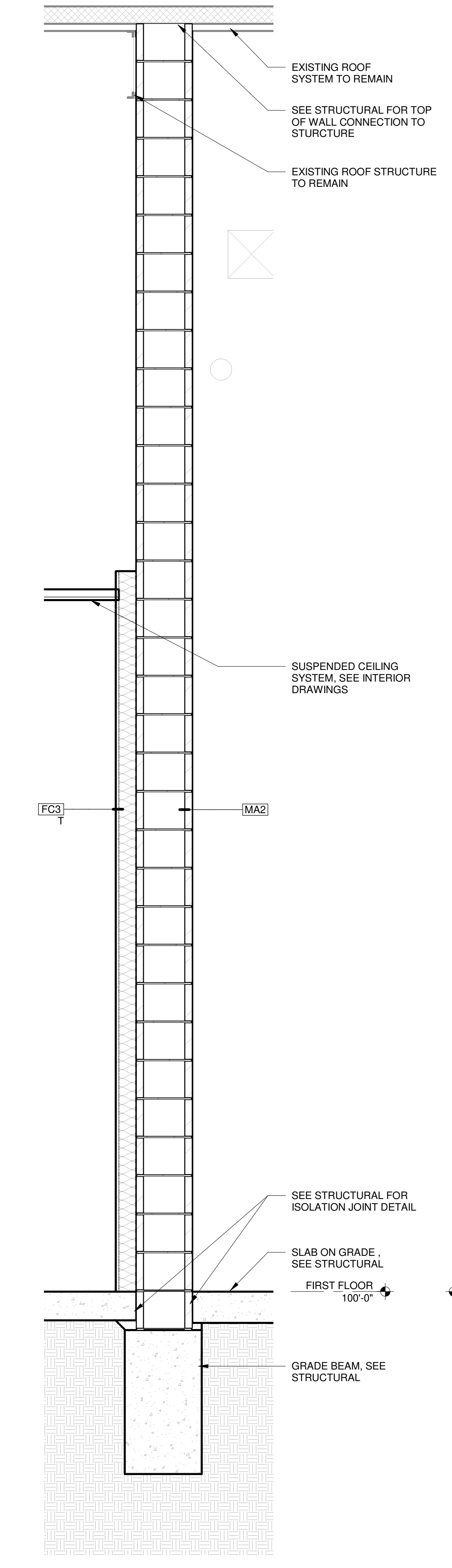
5 WALL SECTION
3/4" = 1'-0"



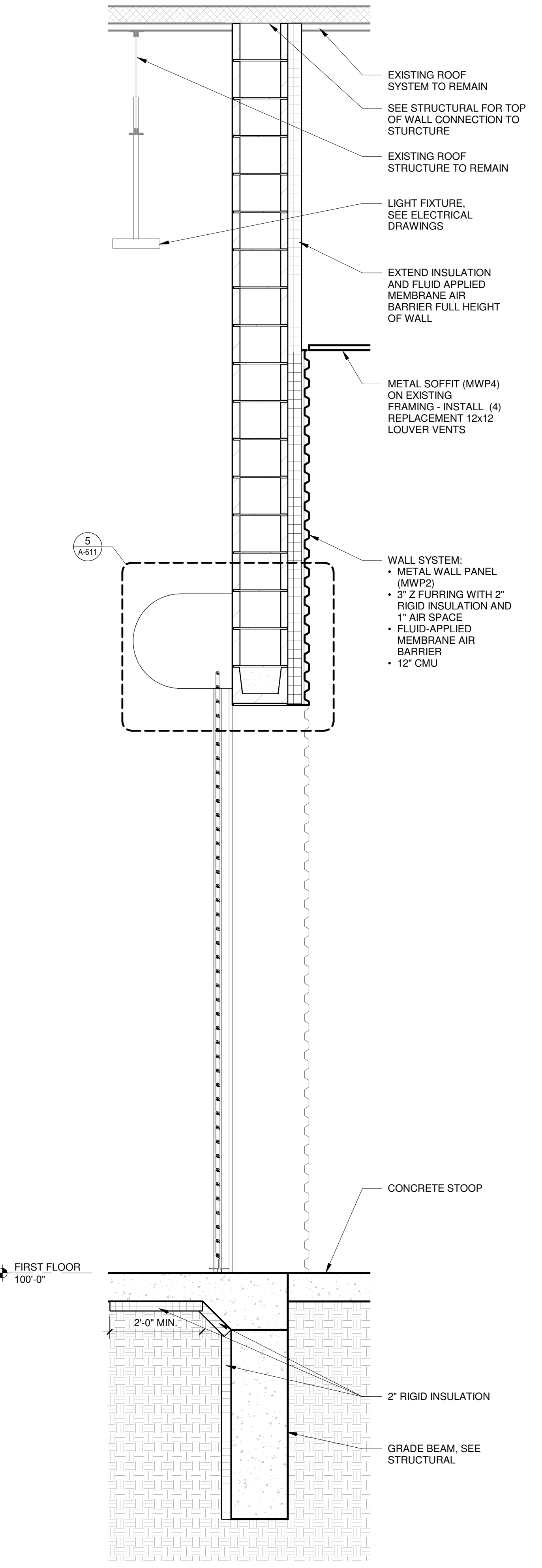
4 WALL SECTION
3/4" = 1'-0"



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

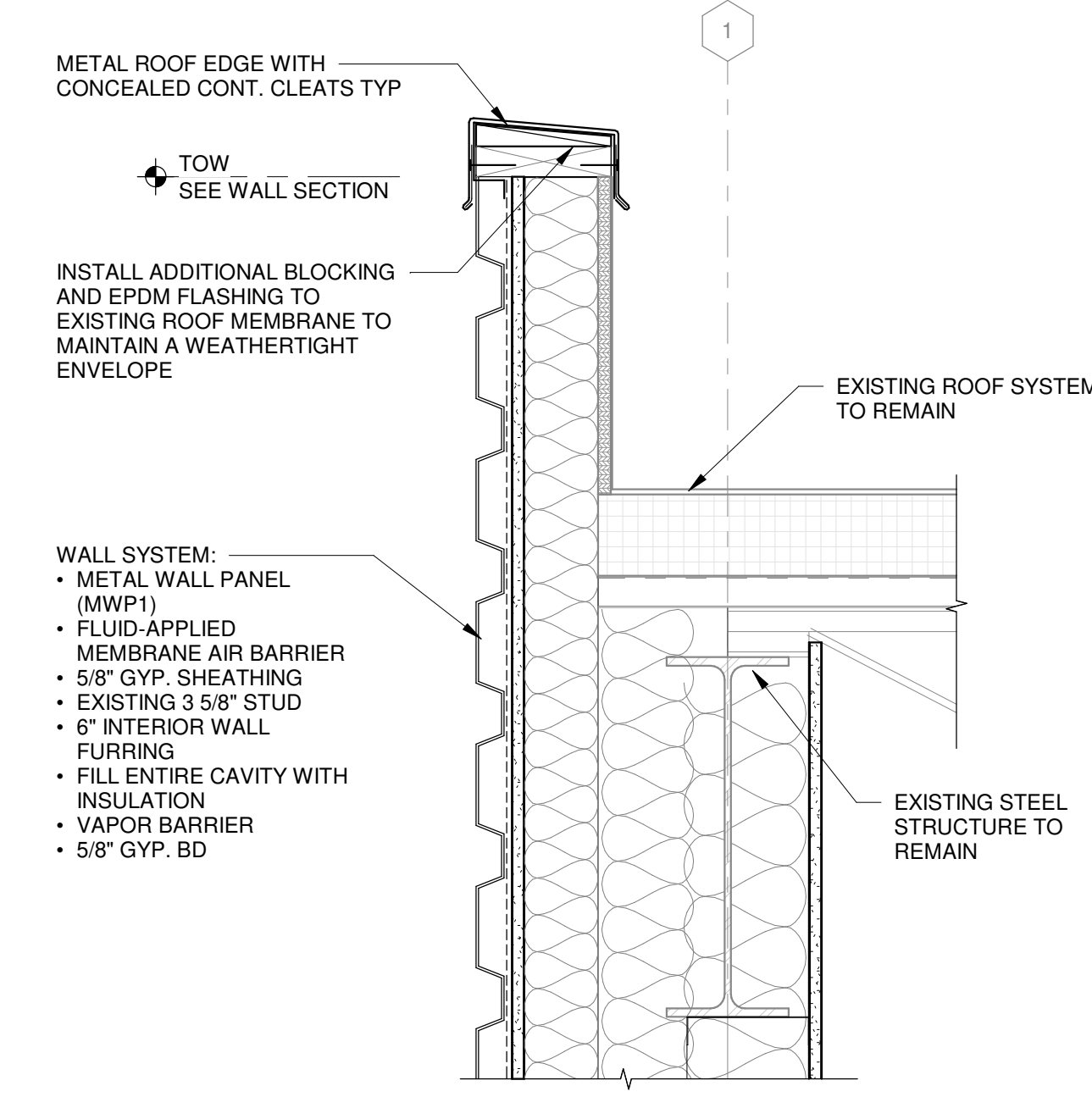


2 WALL SECTION
3/4" = 1'-0"

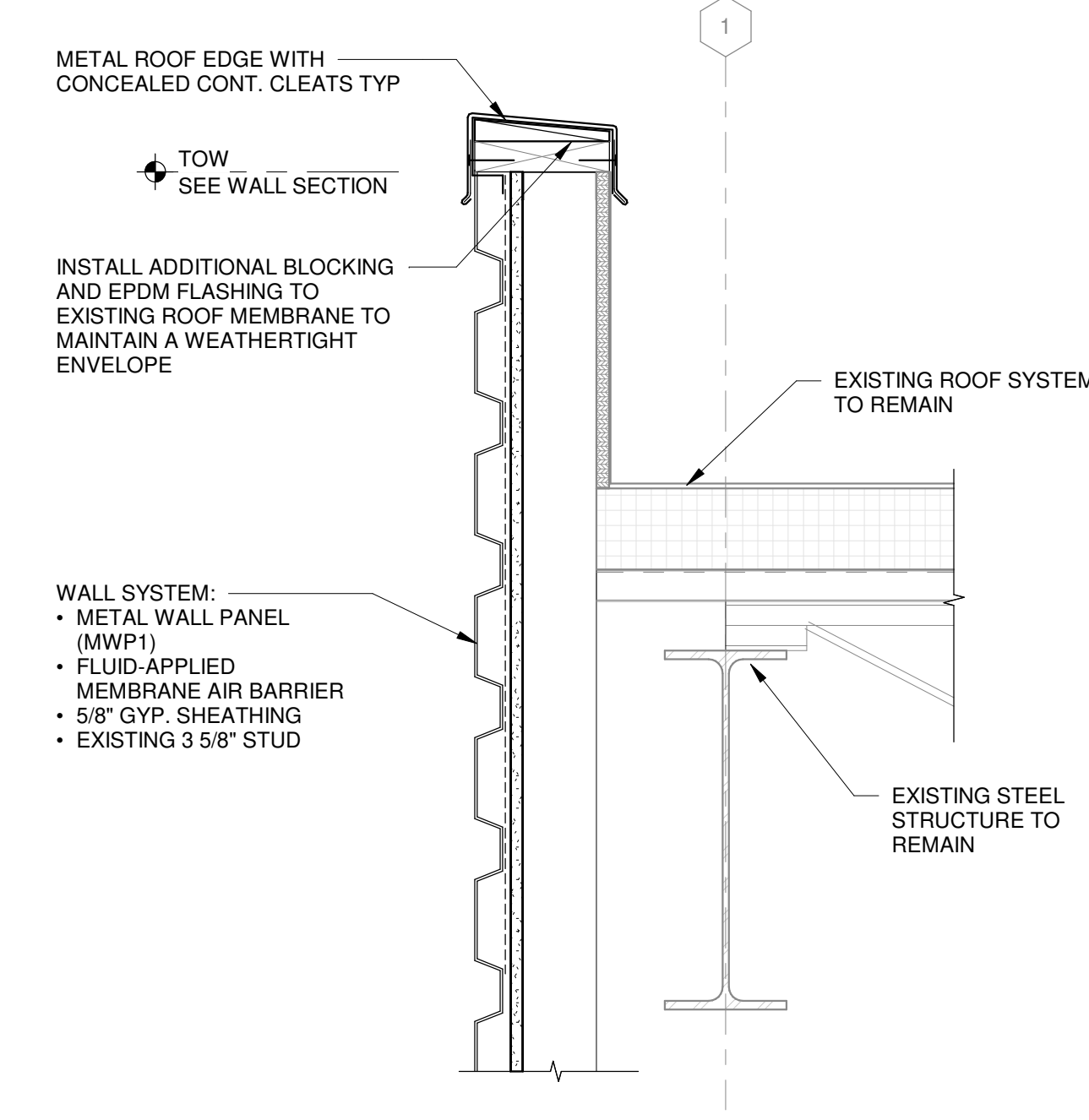


1 WALL SECTION
3/4" = 1'-0"

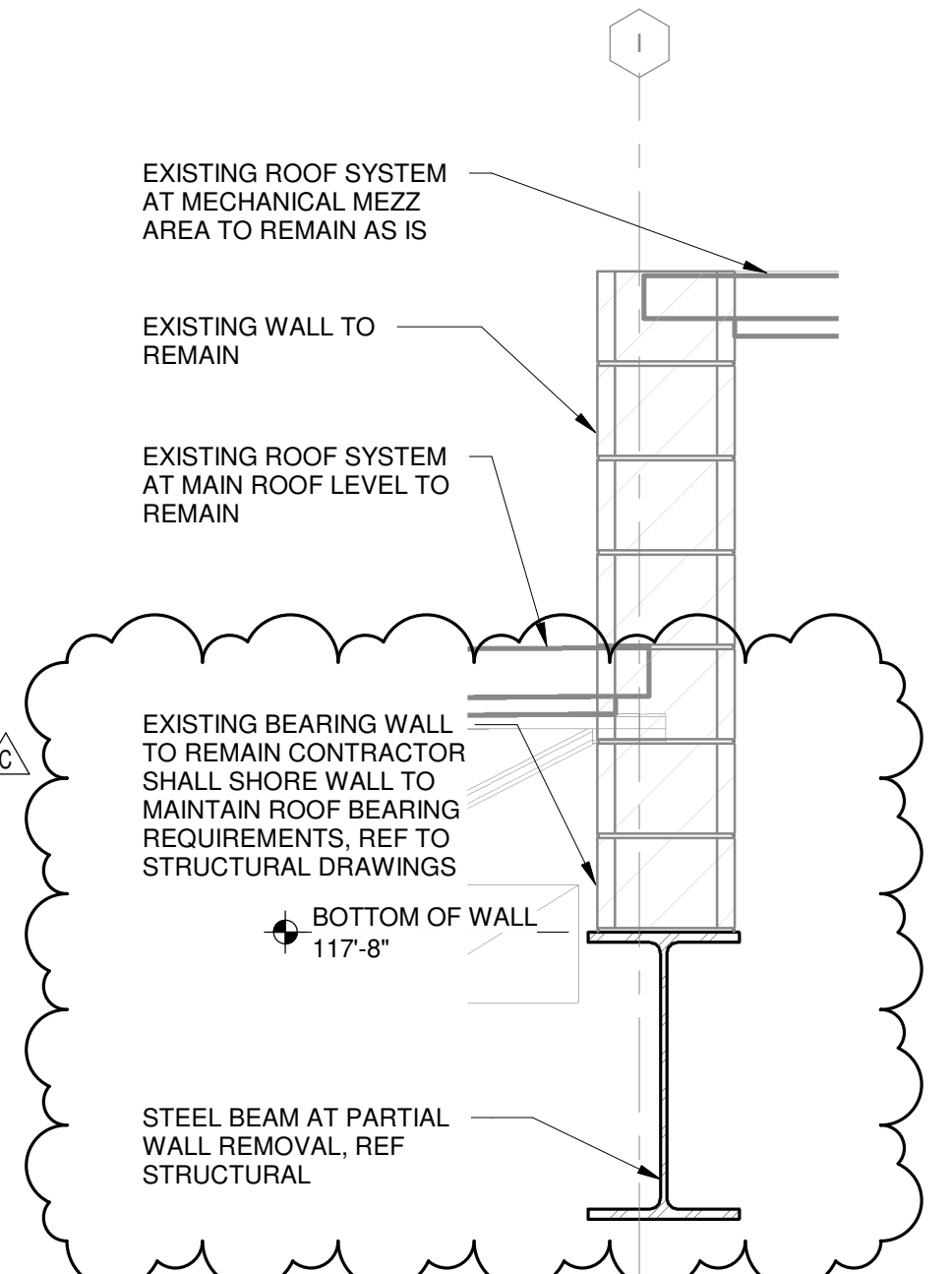
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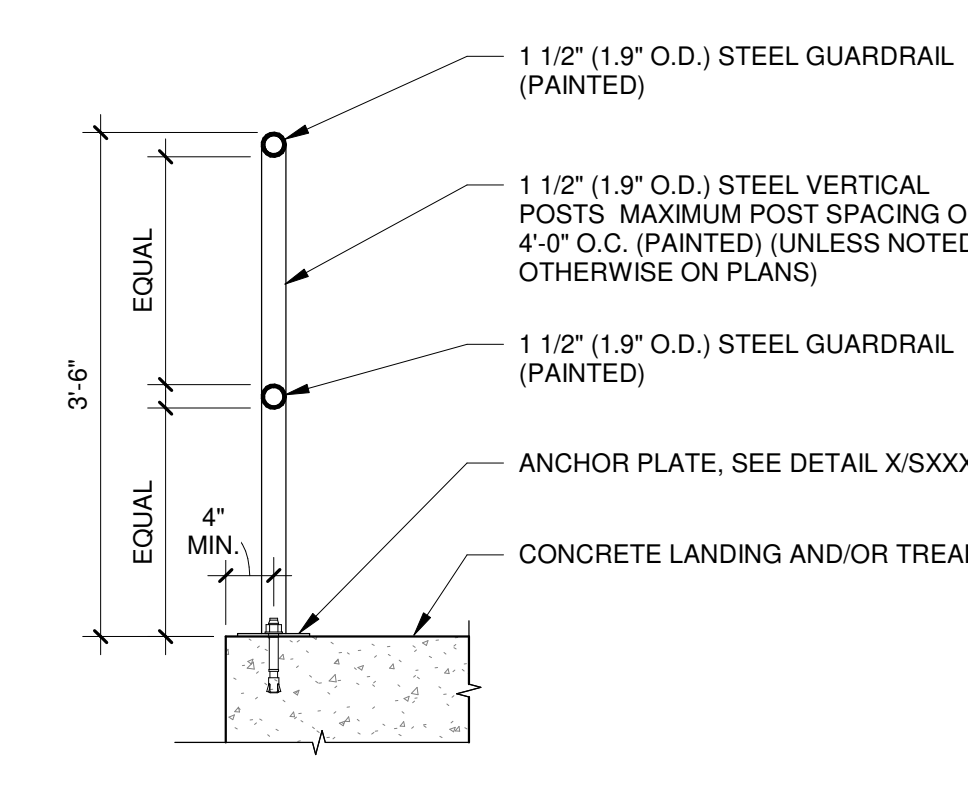
19 PARAPET DETAIL
1 1/2" = 1'-0"



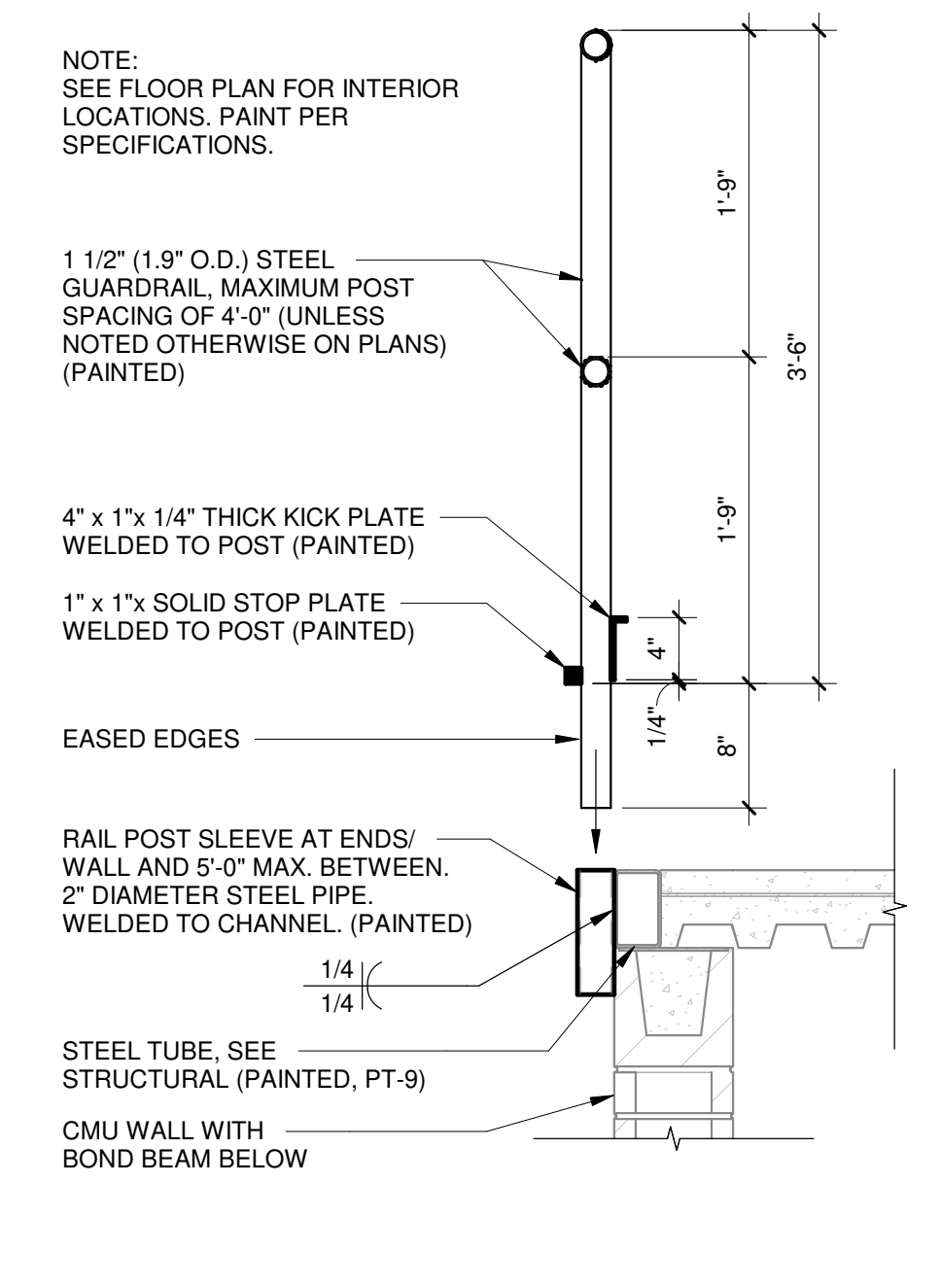
20 PARAPET DETAIL
1 1/2" = 1'-0"



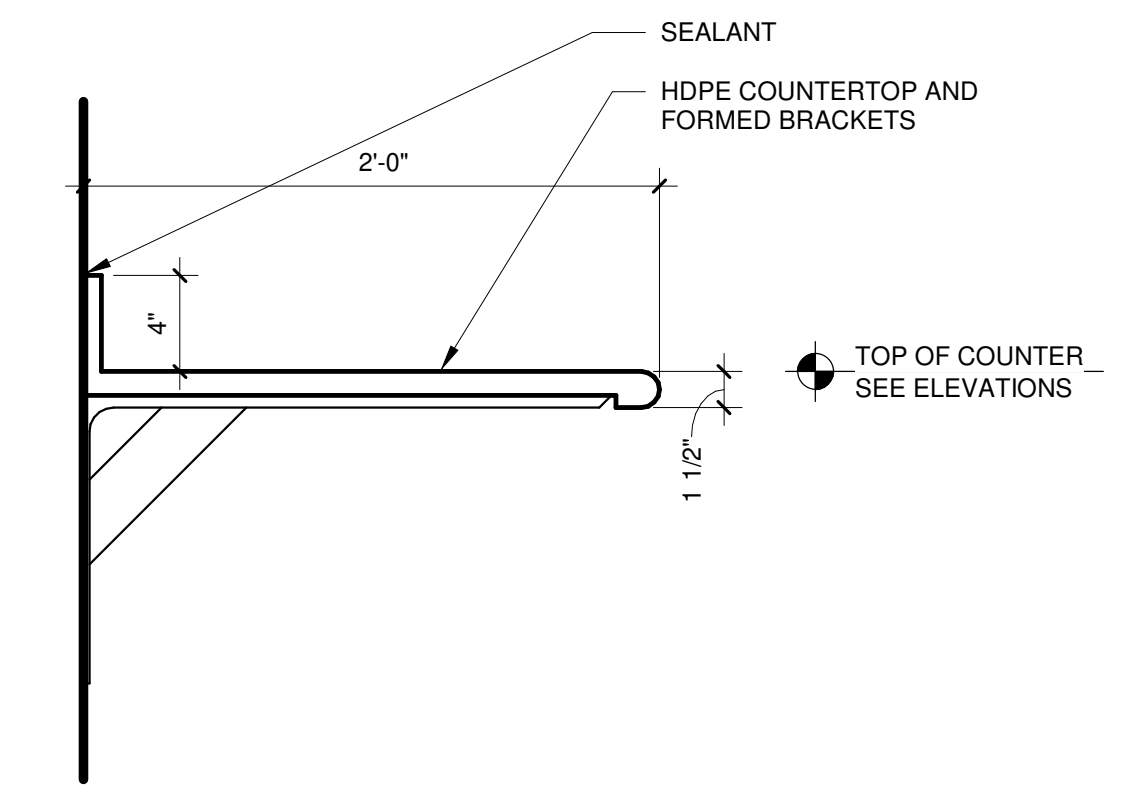
15 PARTIAL WALL SECTION
3/4" = 1'-0"



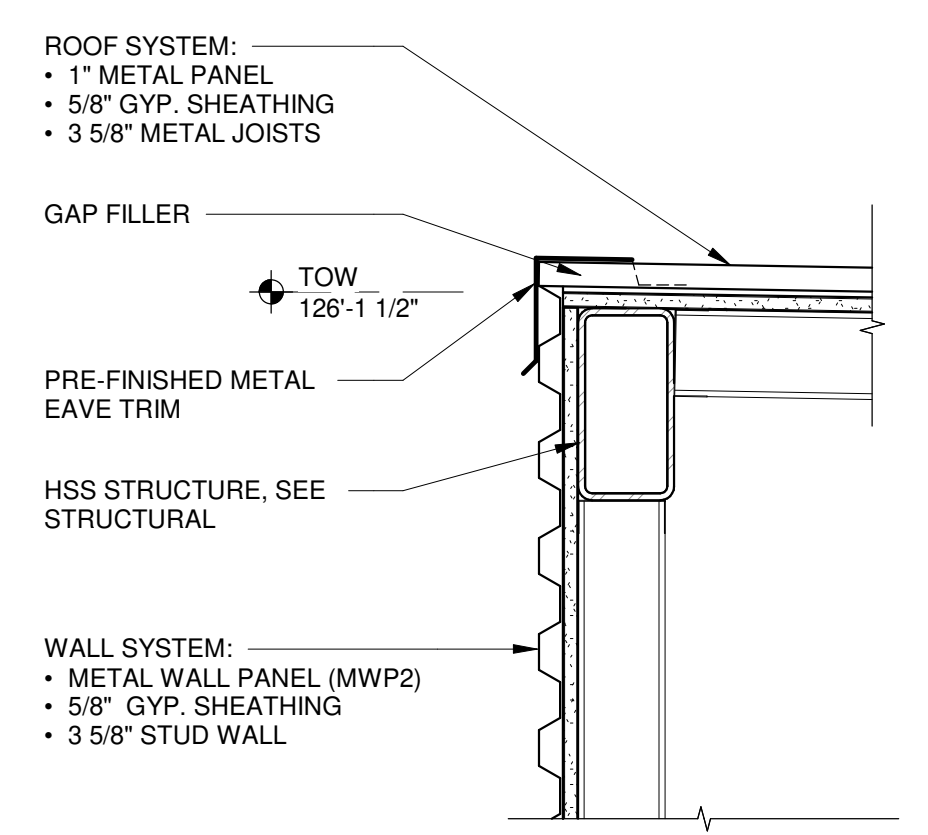
16 GUARDRAIL SECTION - 2 RAIL
3/4" = 1'-0"



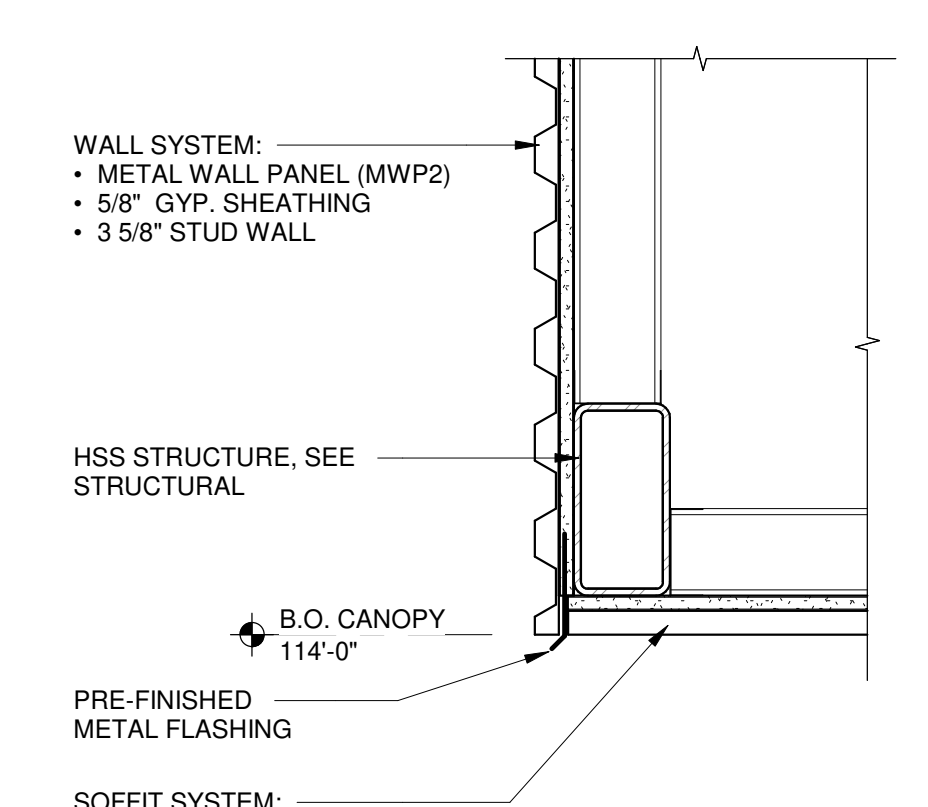
17 REMOVABLE RAILING
1" = 1'-0"



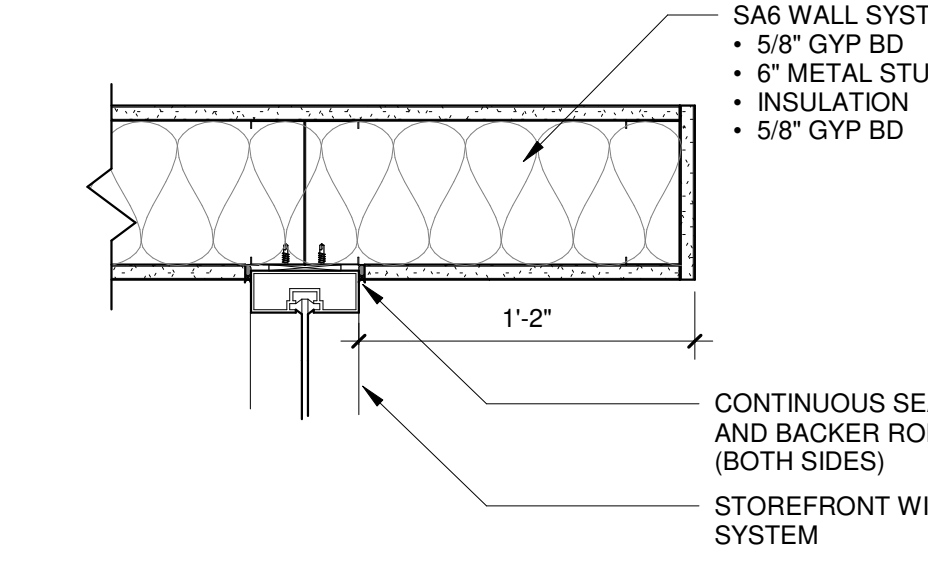
18 COUNTERTOP DETAIL
1 1/2" = 1'-0"



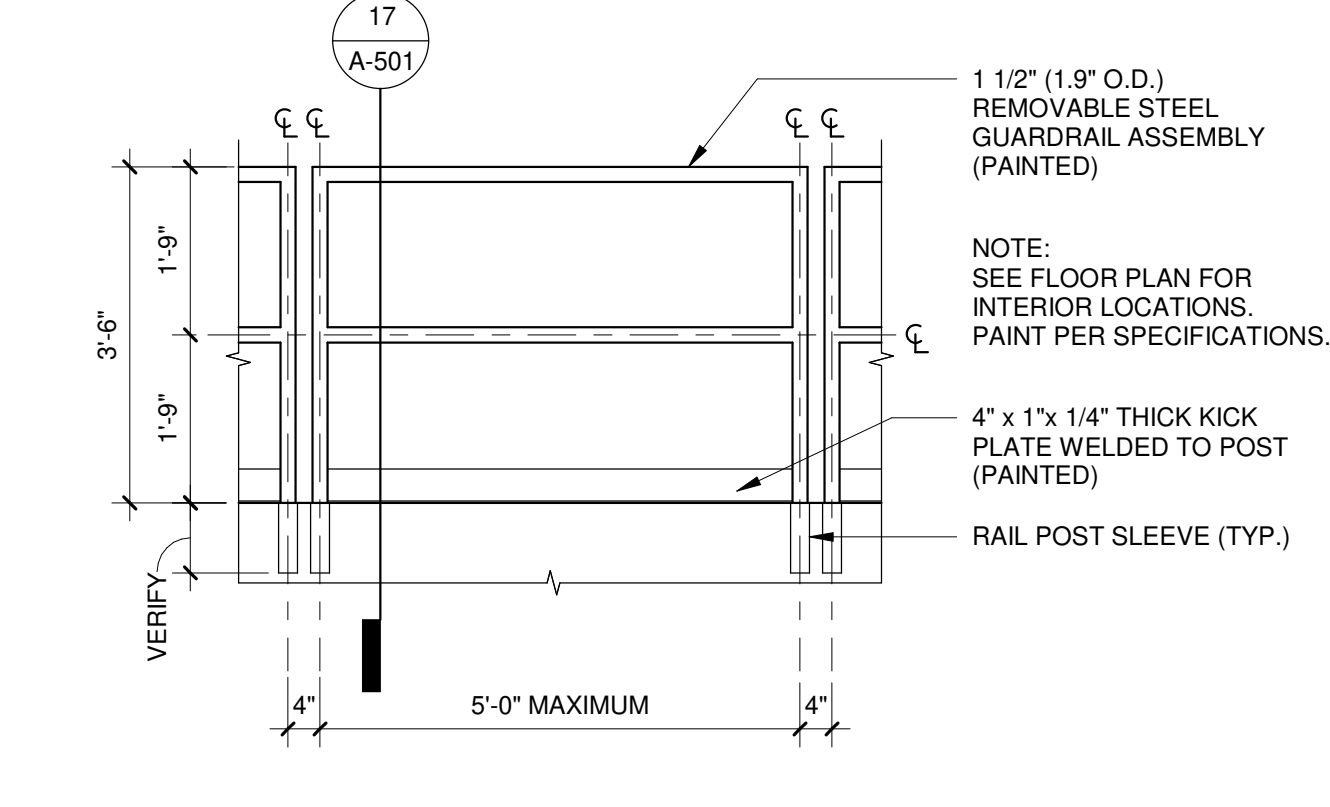
10 OVERHANG ON EXISTING WALL DETAIL
1 1/2" = 1'-0"



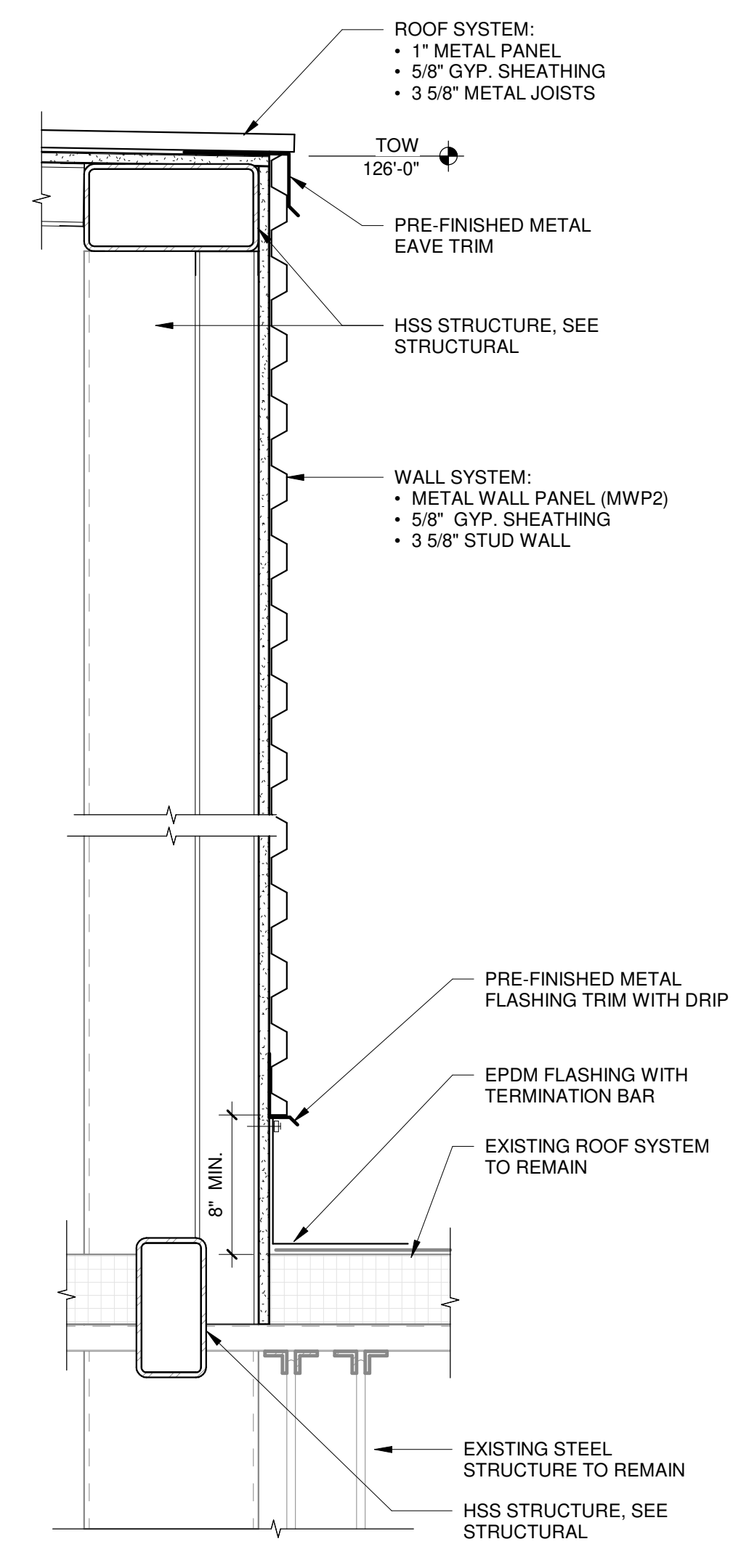
11 OVERHANG ON EXISTING WALL DETAIL
1 1/2" = 1'-0"



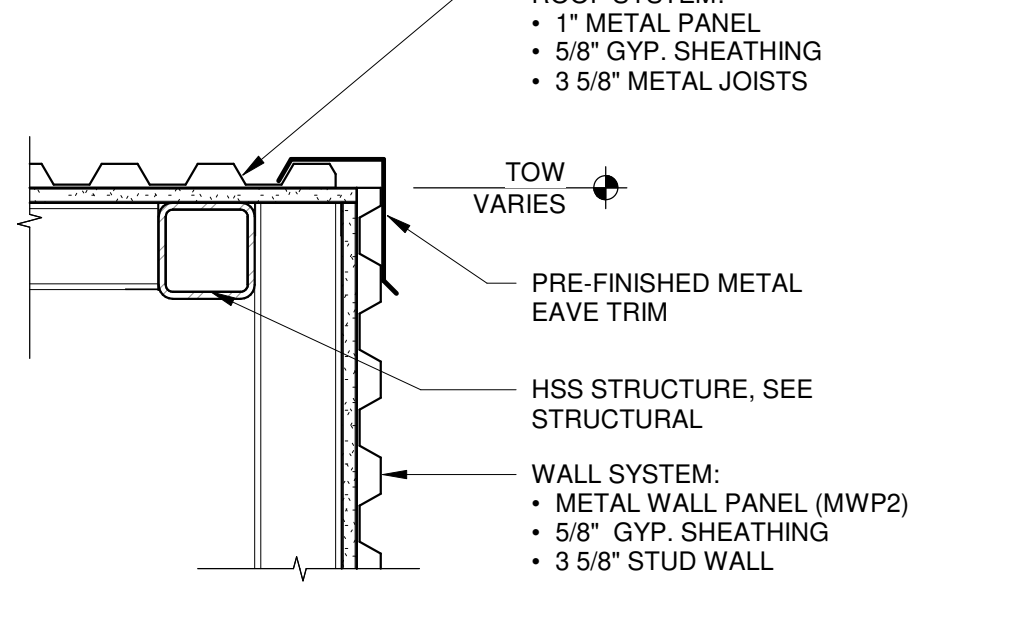
13 ENLARGED DETAIL PLAN
1 1/2" = 1'-0"



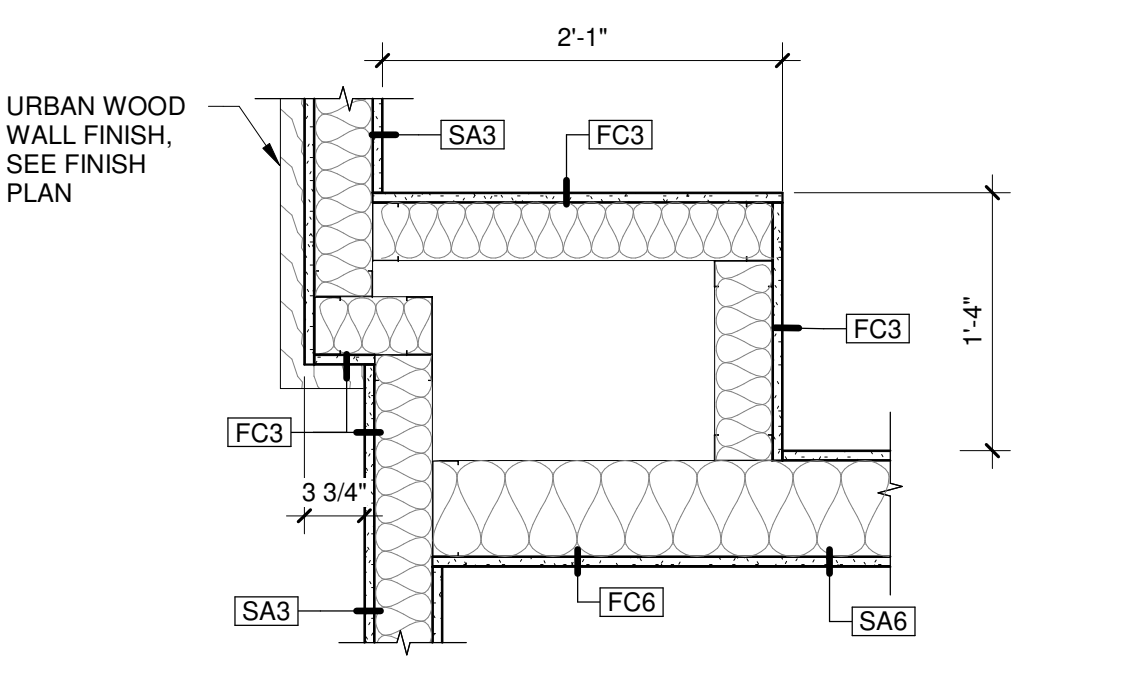
14 REMOVABLE GUARDRAIL ELEVATION
1/2" = 1'-0"



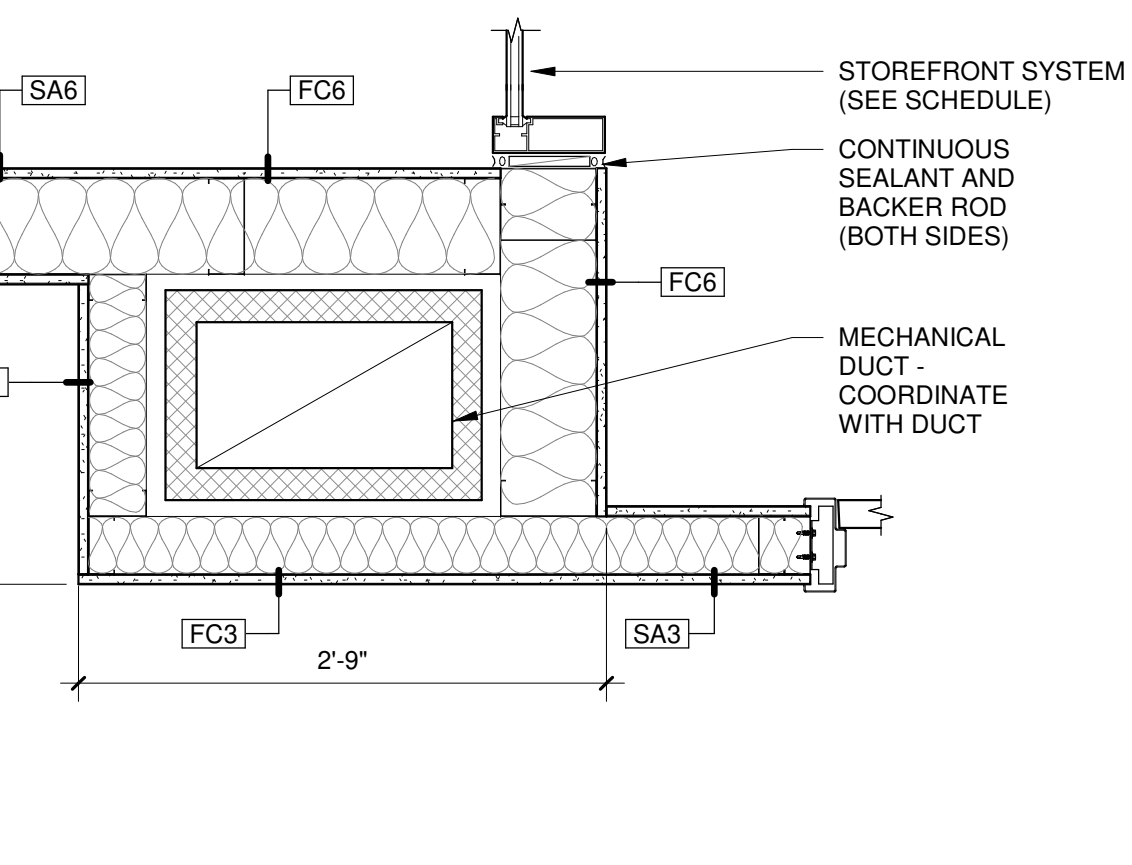
6 OVERHANG ON EXISTING WALL DETAIL
1 1/2" = 1'-0"



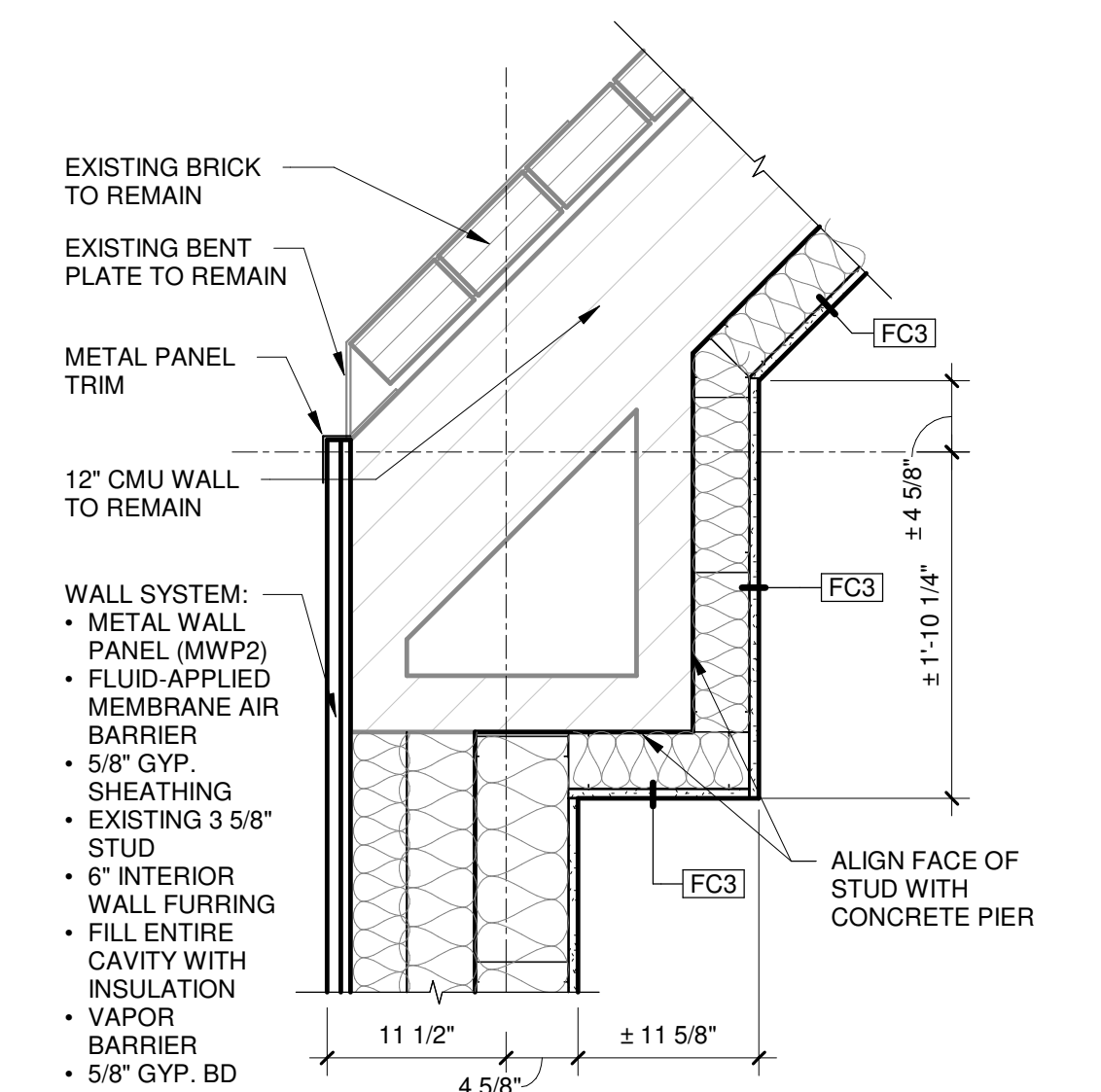
7 OVERHANG ON EXISTING WALL DETAIL
1 1/2" = 1'-0"



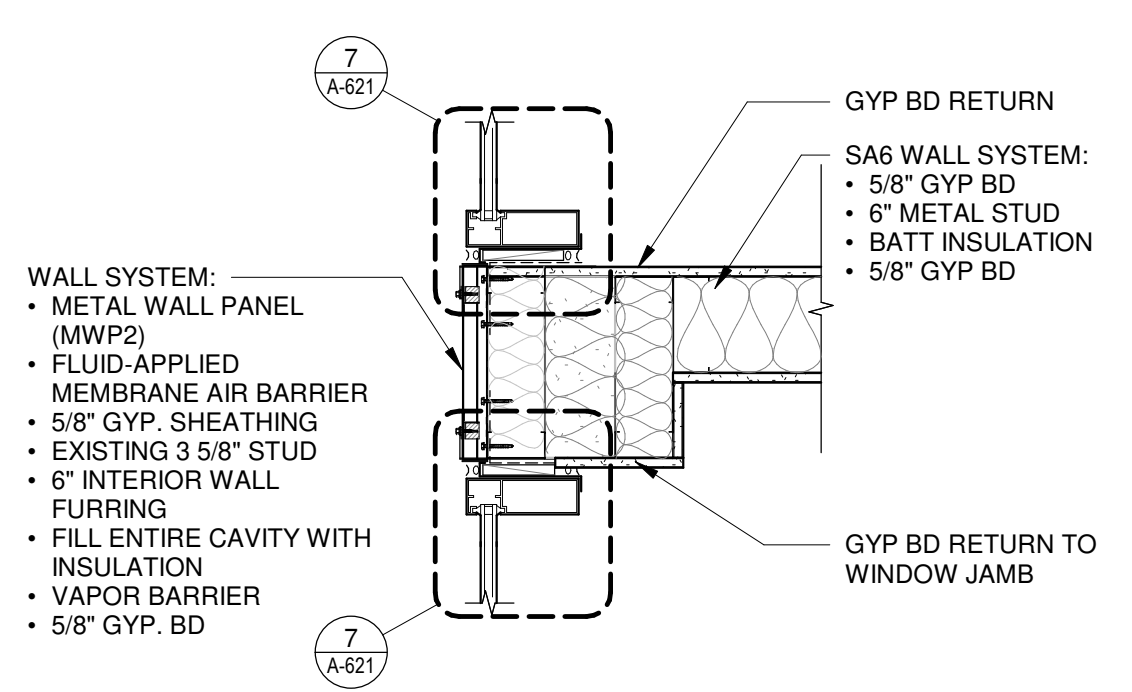
8 ENLARGED DETAIL PLAN
1" = 1'-0"



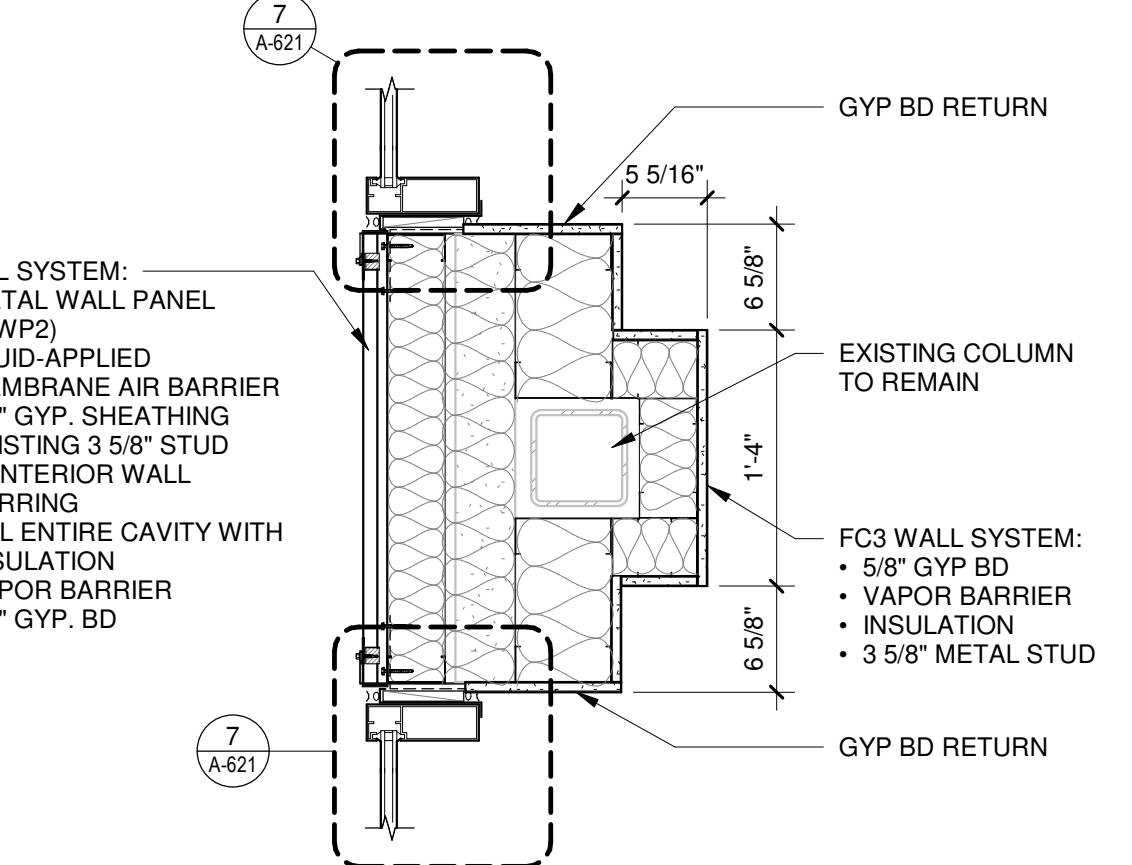
9 ENLARGED DETAIL PLAN
1" = 1'-0"



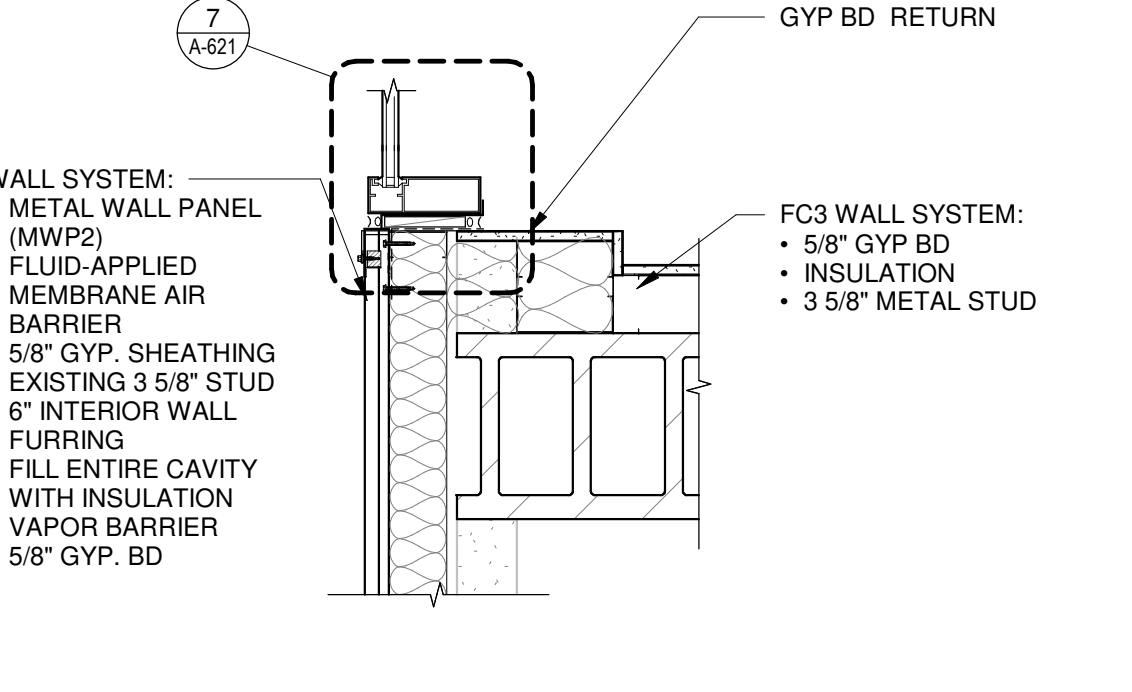
1 ENLARGED PLAN DETAIL
1" = 1'-0"



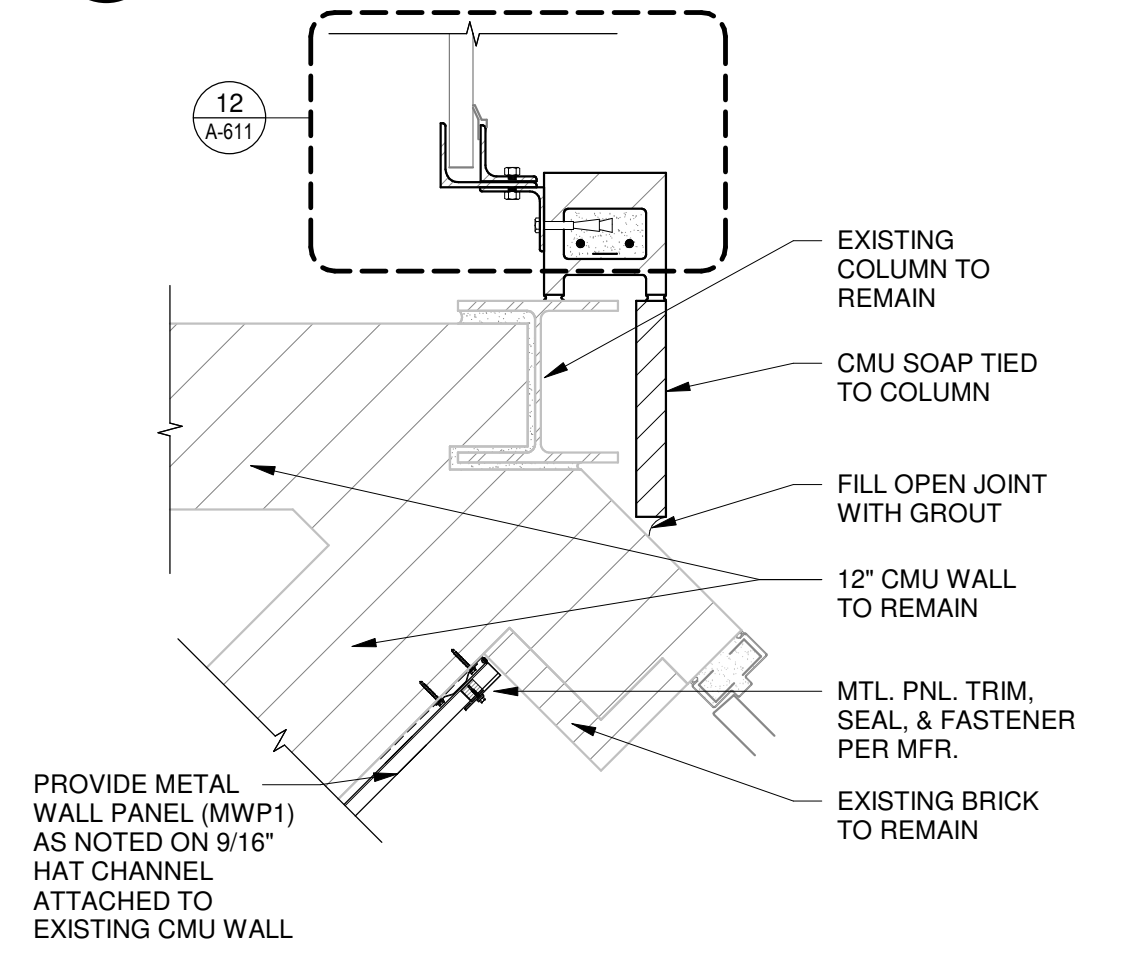
2 ENLARGED DETAIL PLAN
1" = 1'-0"



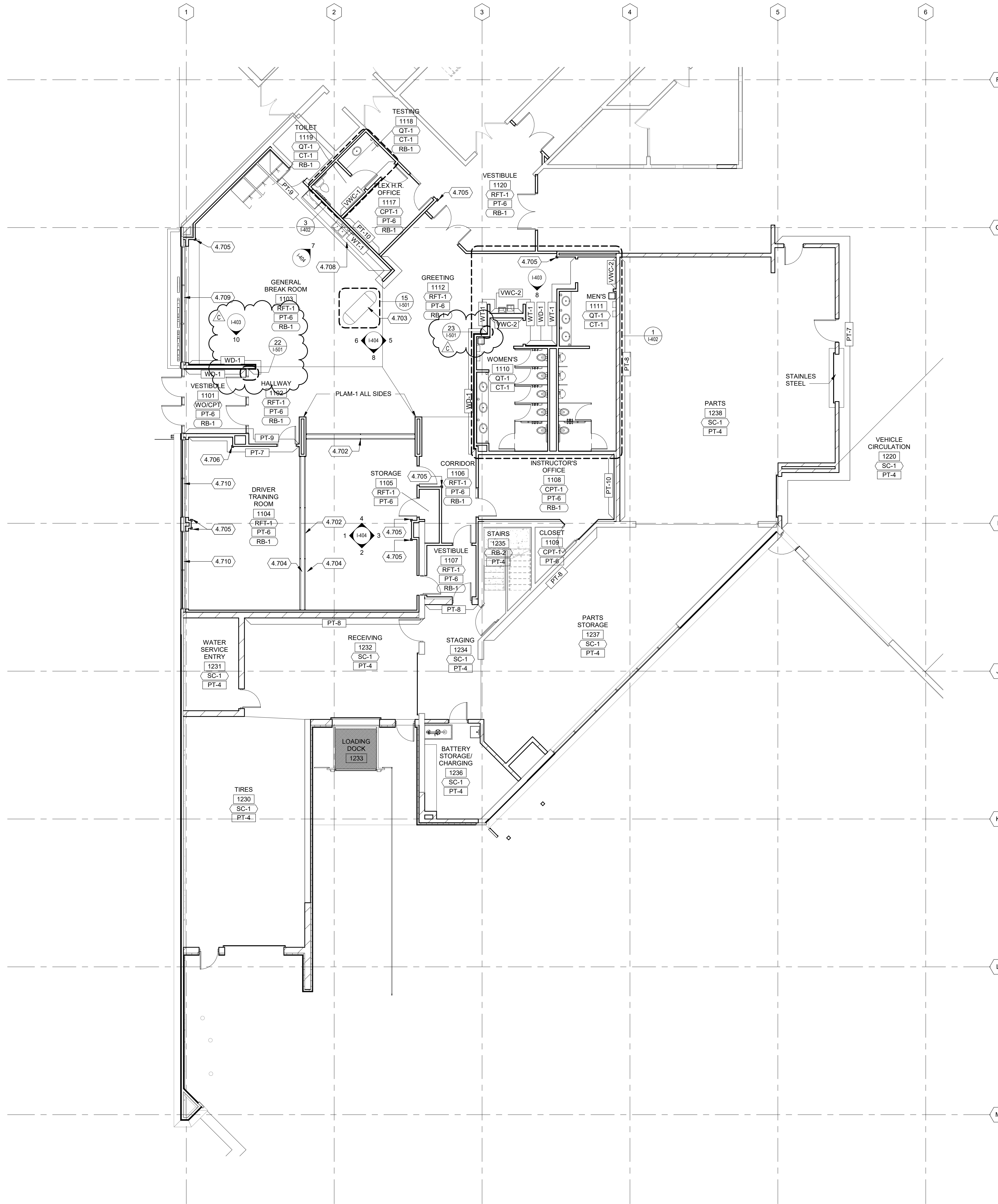
3 ENLARGED DETAIL PLAN
1" = 1'-0"



4 ENLARGED DETAIL PLAN
1" = 1'-0"



5 ENLARGED DETAIL PLAN
1" = 1'-0"



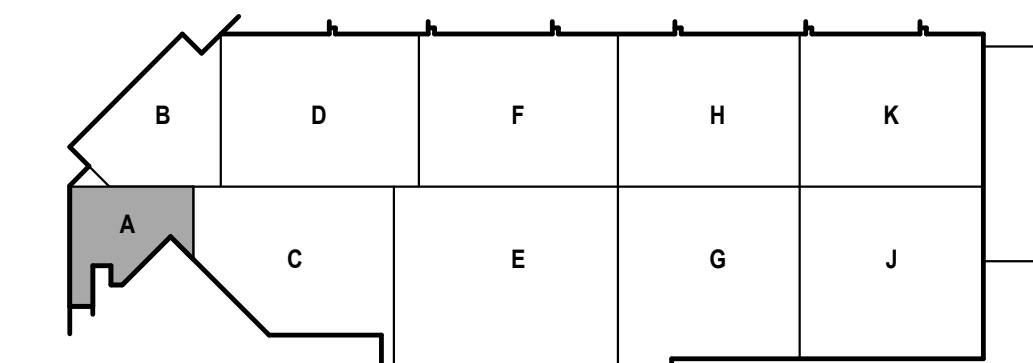
1 FIRST FLOOR FINISH PLAN - AREA A
1/8" = 1'-0"

ROOM FINISH GENERAL NOTES:

1. REFER TO FINISH SCHEDULE, SHEET I-601 FOR MATERIAL SELECTION AND COLOR.
2. REFER TO SHEET I-601 FOR "INTERIORS FINISH" ABBREVIATIONS.
3. REFER TO ROOM FINISH SCHEDULE, SHEET I-601 FOR ALL ROOM FINISHES NOT NOTED ON PLAN.
4. ALL FLOORING TRANSITIONS SHALL BE CENTERED UNDER DOOR IN CLOSED POSITION U.N.O. REFER TO SHEET I-401 FOR FLOORING PATTERN PLAN AND FLOORING TRANSITIONS. REFER TO SHEET I-501 FOR TYPICAL TRANSITION DETAILS.
5. ALL METAL LINEAR DIFFUSERS SHALL BE PAINTED TO MATCH SURROUNDING WALL SURFACE, U.N.O.
6. ALL SHOP PRIMED ACCESS PANELS SHALL BE PAINTED TO MATCH ADJACENT SURFACE.
7. ALL PRECAST CEILING SHALL BE PAINTED TO MATCH ADJACENT SURFACE.
8. ALL CONCRETE FLOORS NOT TO RECEIVE ADDITIONAL FINISH SHALL BE SEALED, U.N.O.

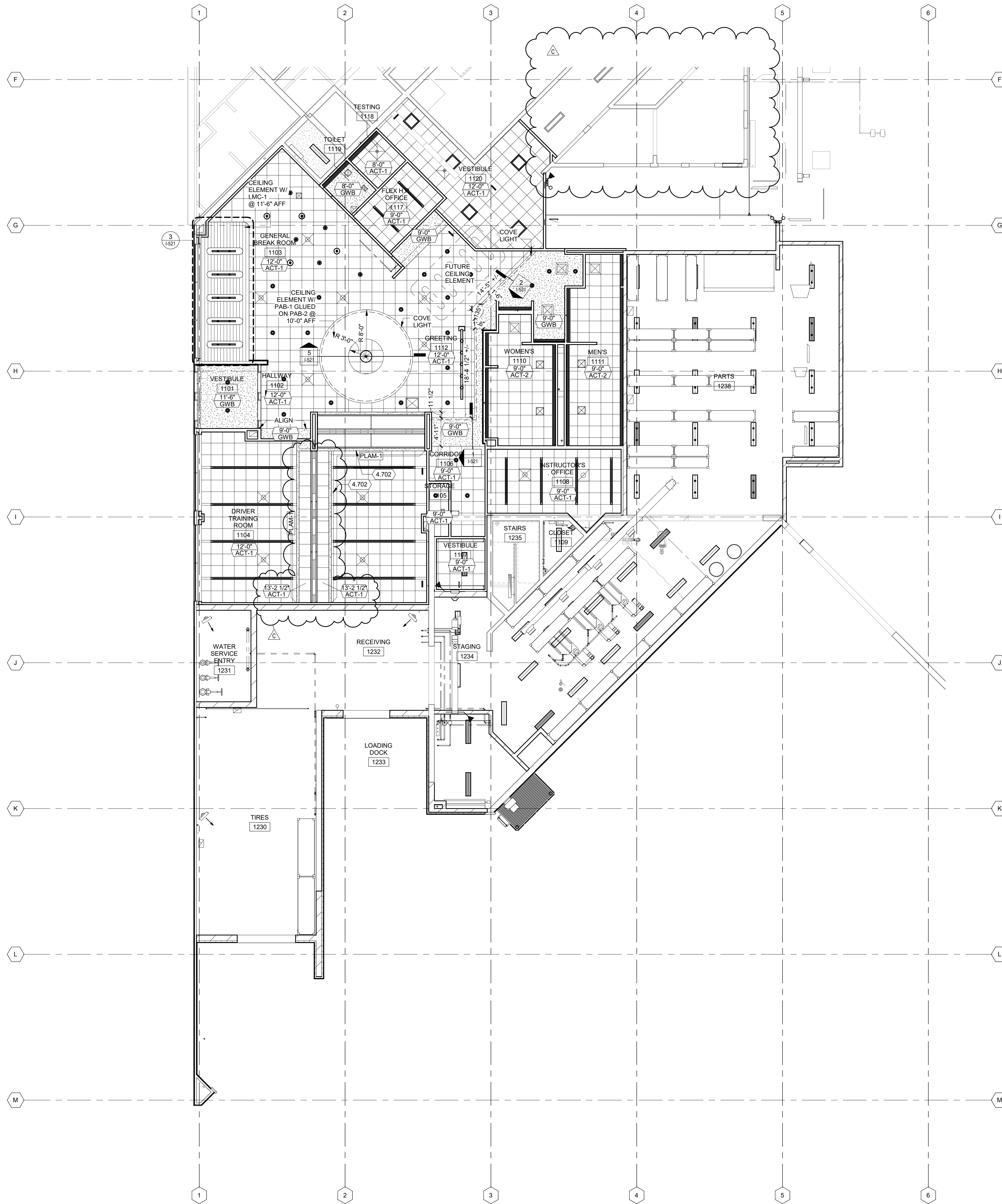
KEYED NOTES

- 4.702 EXPOSED SIDES OF BULKHEADS AND EXPOSED END OF HEADER TO BE PLAM-1, SEE SHEET 4/A-312 FOR OPERABLE VERTICAL PARTITION DETAIL.
- 4.703 CUSTOM MOBILE TRASH CASEWORK - SEE I-501 FOR MORE INFORMATION.
- 4.704 SEE SIM. ELEVATION 4/I-404 FOR VERTICAL OPERABLE PARTITION PANEL FINISHES.
- 4.705 CG-1: REFER TO FINISH SCHEDULE, SHEET I-601, FOR MATERIAL SELECTION AND COLOR.
- 4.706 CG-2: REFER TO FINISH SCHEDULE, SHEET I-601, FOR MATERIAL SELECTION AND COLOR.
- 4.708 2" GROMMET AT EACH ROUGH IN LOCATION.
- 4.709 MANUAL DOUBLE ROLLER WSHD-1.
- 4.710 POWERED DOUBLE ROLLER WSHD-1 AND WSHD-2.



KEY PLAN





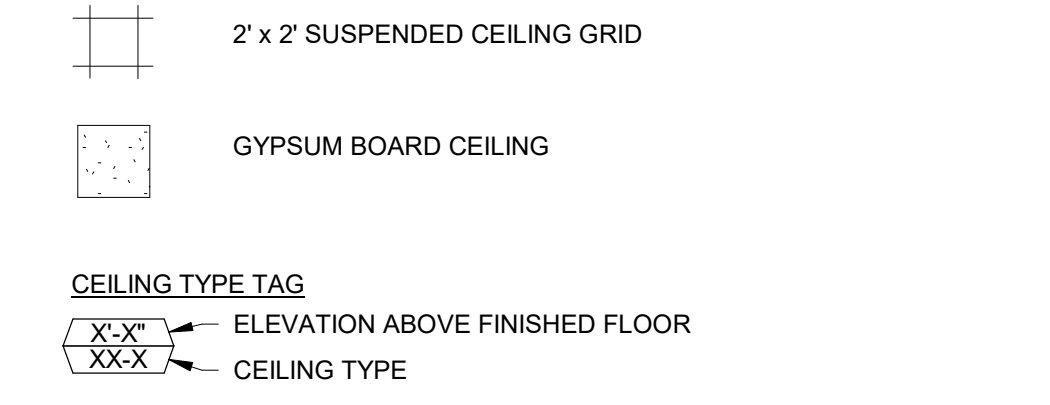
CEILING PLAN GENERAL NOTES:

1. REFLECTED CEILING PLAN IS FOR LAYOUT PURPOSES ONLY. COORDINATE FINAL LOCATION WITH MECHANICAL LOCATIONS.
2. ELECTRICIAN TO PROVIDE ALL REQUIRED OUTLETS.
3. SEE ROOM FINISH SCHEDULE ON I-601 FOR FLOOR, WALL AND CEILING FINISHES AND ROOM HEIGHTS.
4. FIELD VERIFY ALL DIMENSIONS. BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT FOR FINAL DECISION.
5. ALL RECESSED LIGHTS, SPRINKLERS, FIRE DETECTION EQUIPMENT, OCCUPANCY SENSORS, ETC. SHALL BE CENTERED IN THE TILES UNLESS NOTED OTHERWISE.
6. CENTER ALL CEILING GRIDS IN SPACE UNLESS NOTED OTHERWISE.
7. ALL METAL LINEAR DIFFUSERS SHALL BE PAINTED TO MATCH SURROUNDING WALL OR CEILING CURFACE.
8. REFER TO SHEET I-601 FOR CEILING PAINT COLOR.
9. REFER TO ELECTRICAL FOR LIGHT FIXTURE LEGEND.
10. REFER TO SHEET I-521 FOR REFLECTED CEILING DETAILS.

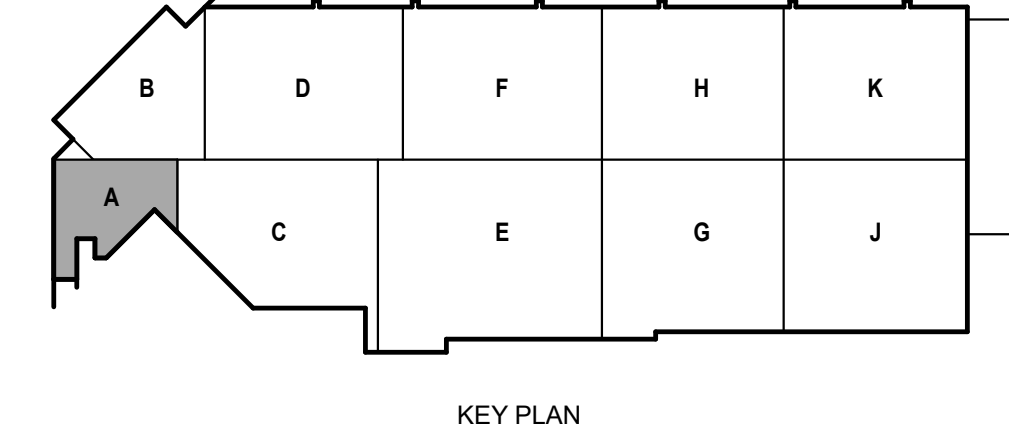
KEYED NOTES

- 4.702 EXPOSED SIDES OF BULKHEADS AND EXPOSED END OF HEADER TO BE PLAM-1. SEE SHEET 4/A-312 FOR OPERABLE VERTICAL PARTITION DETAIL.

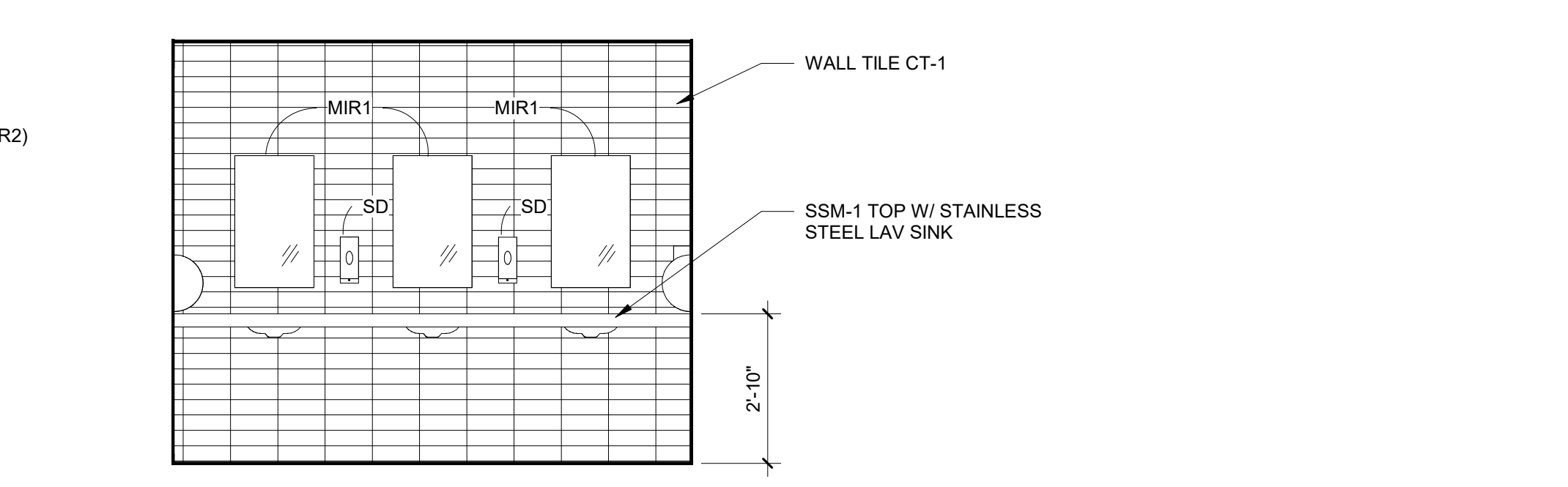
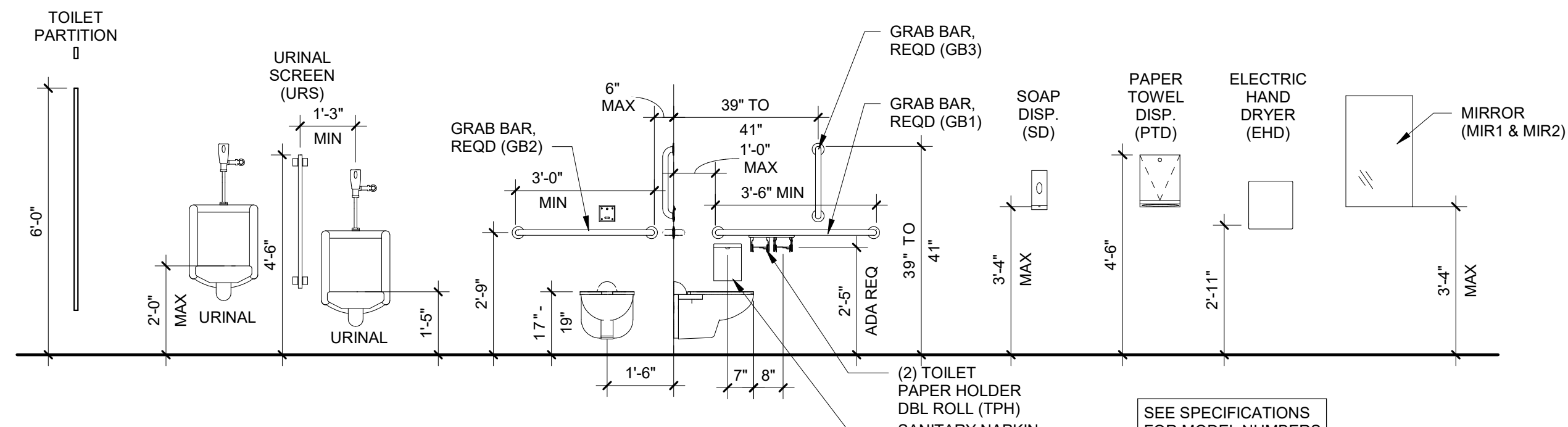
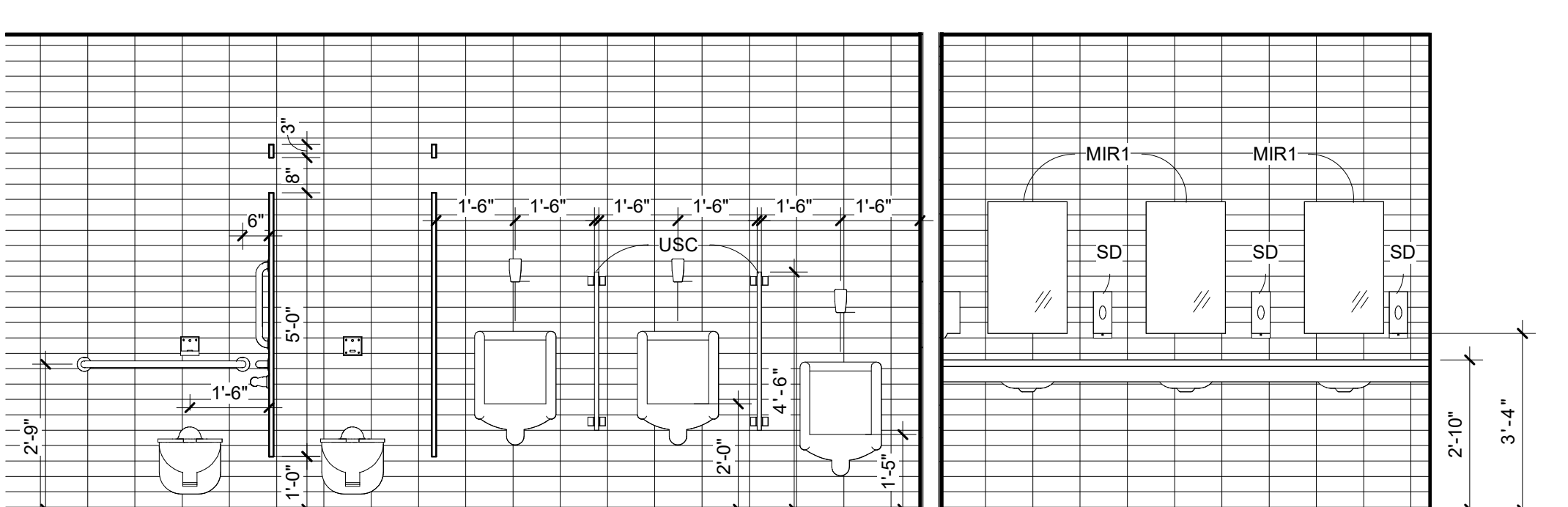
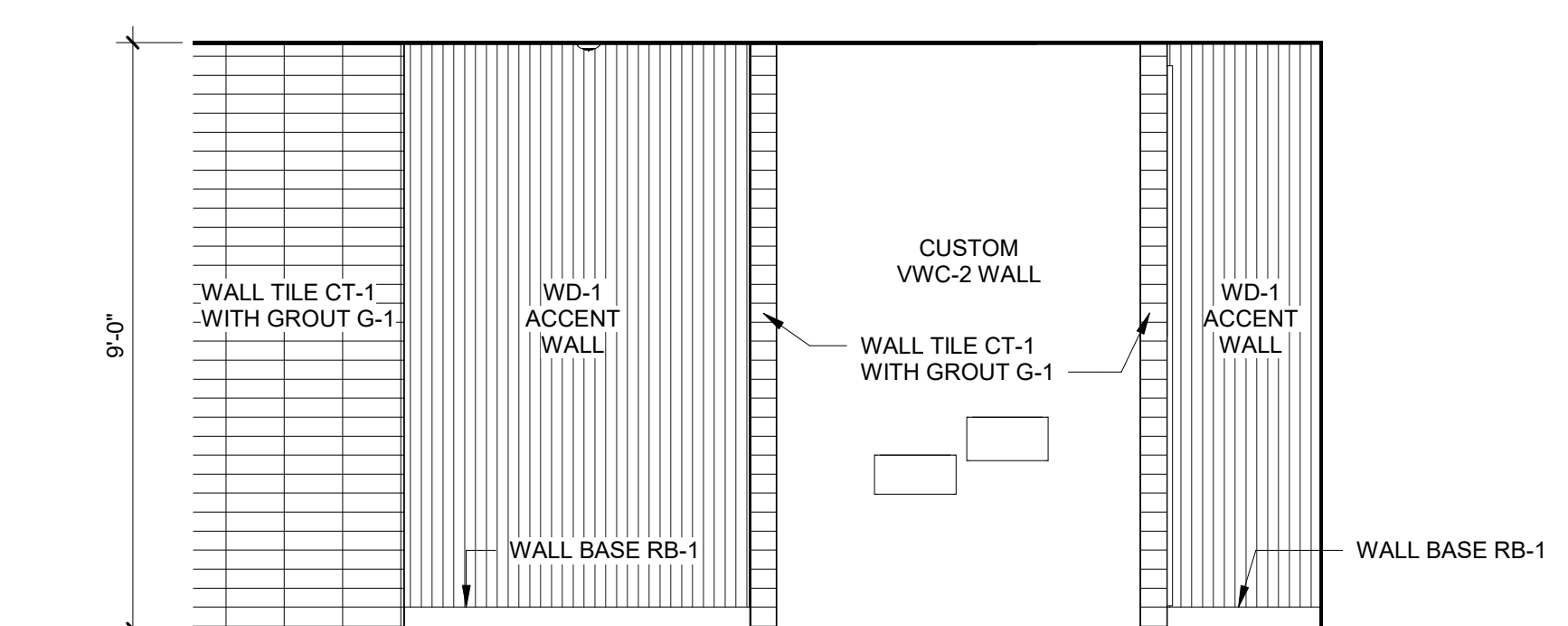
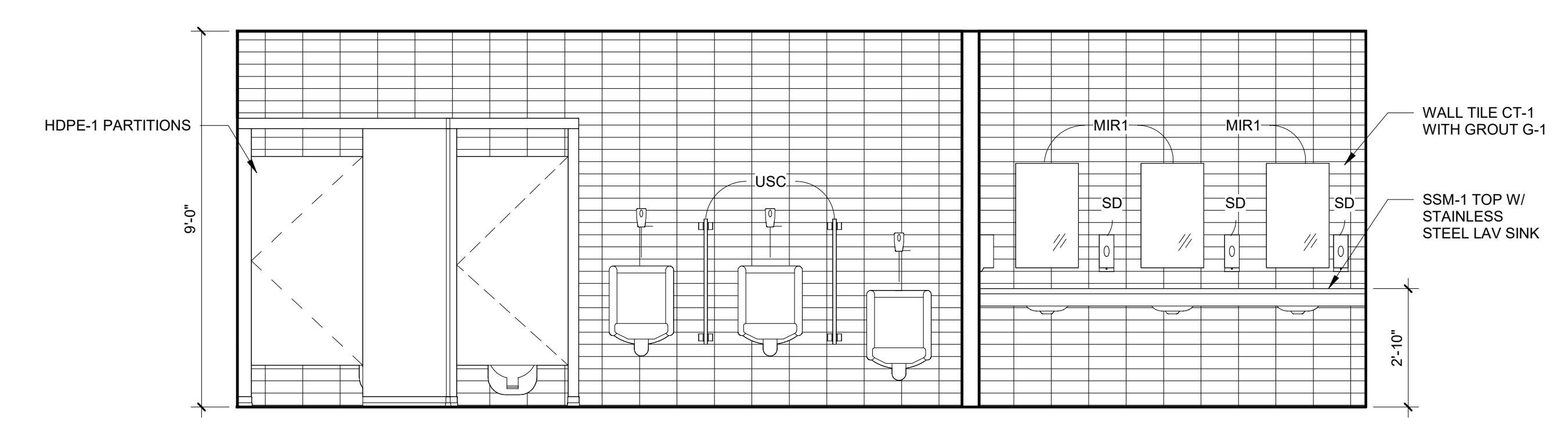
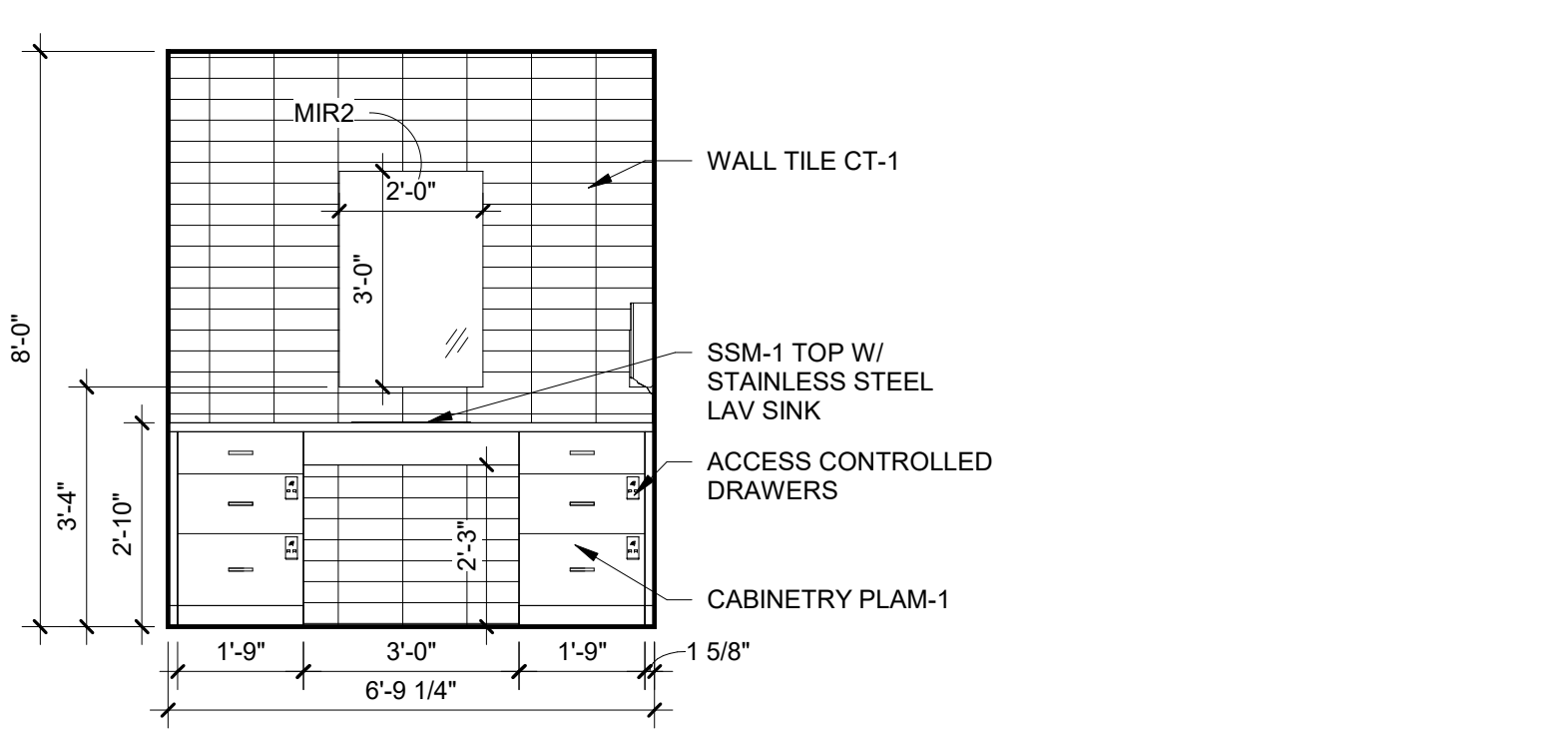
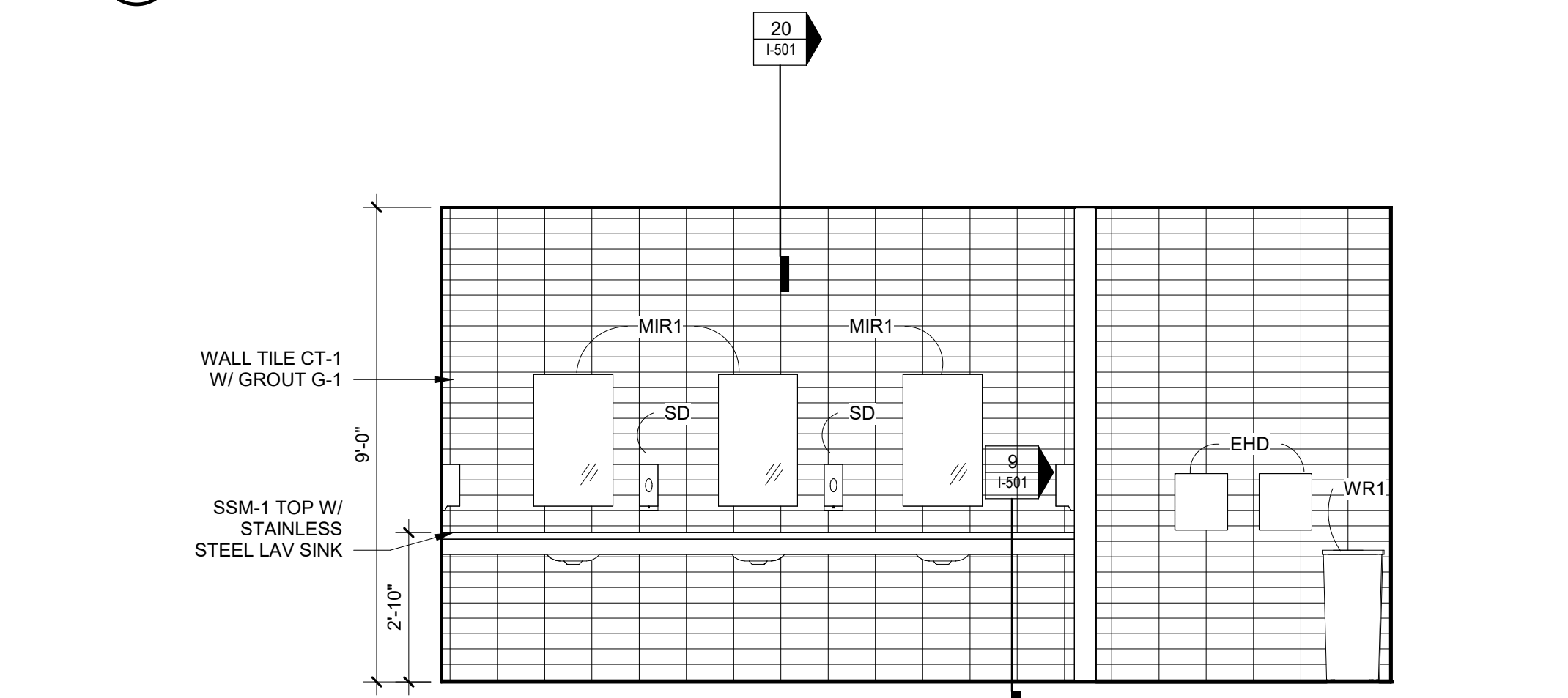
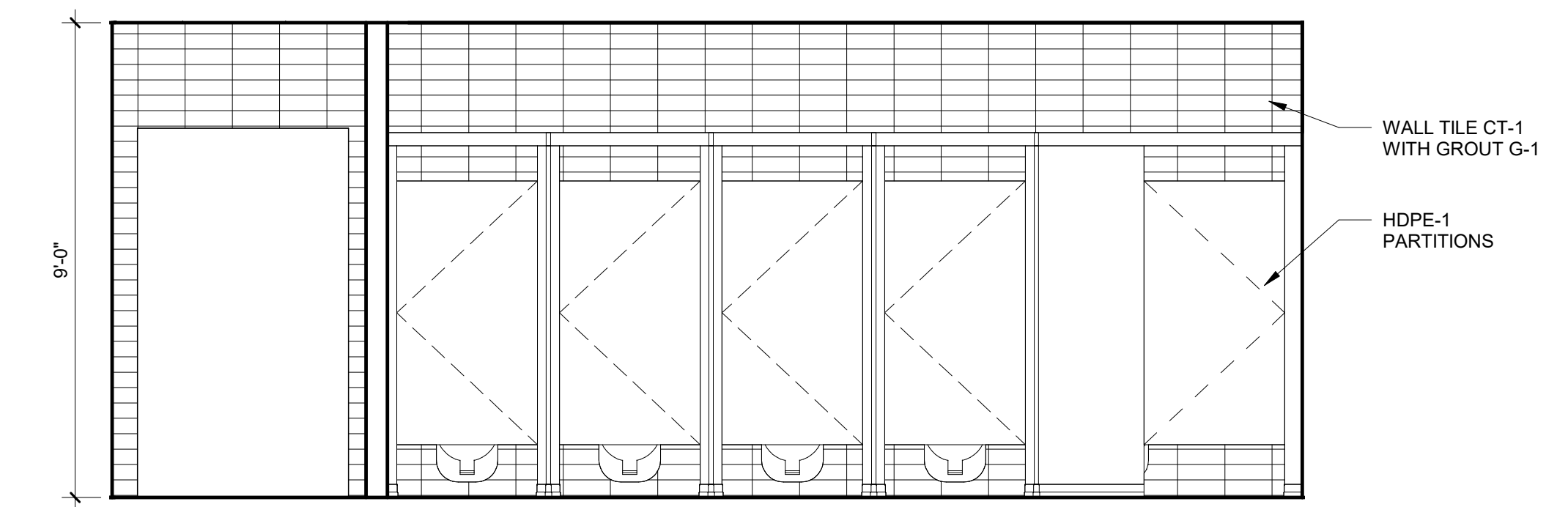
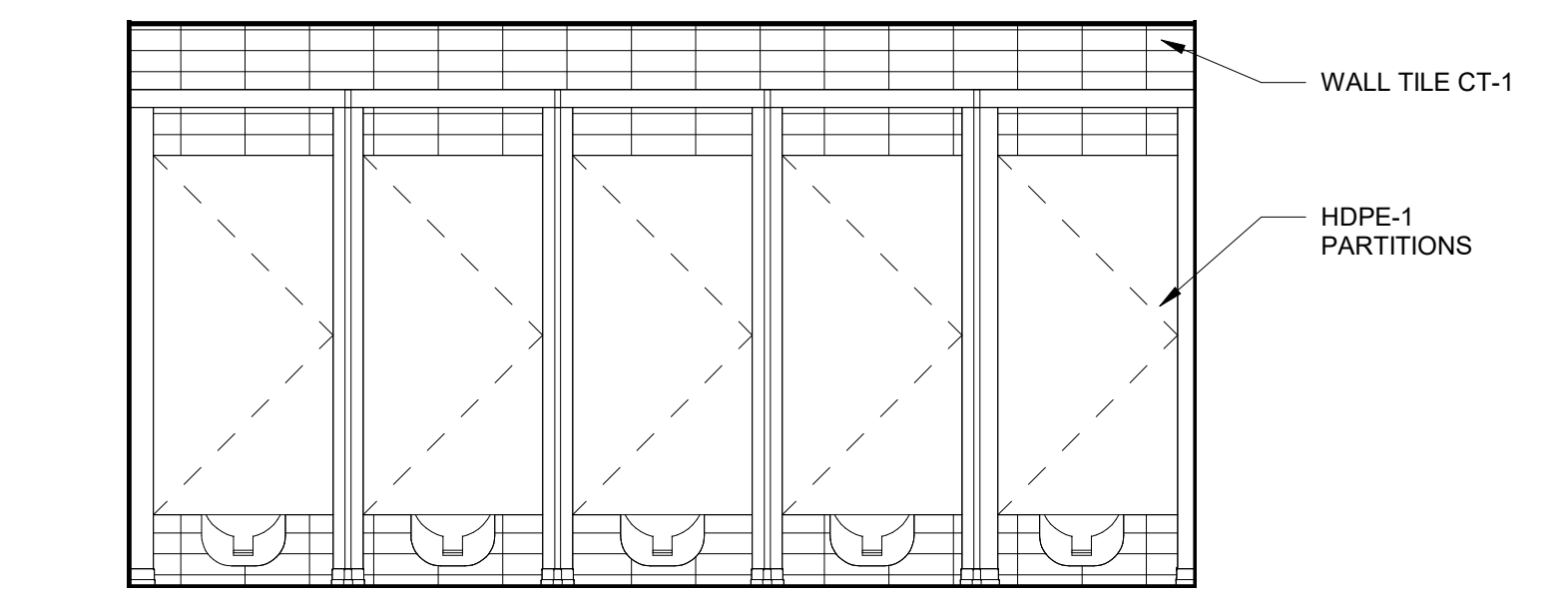
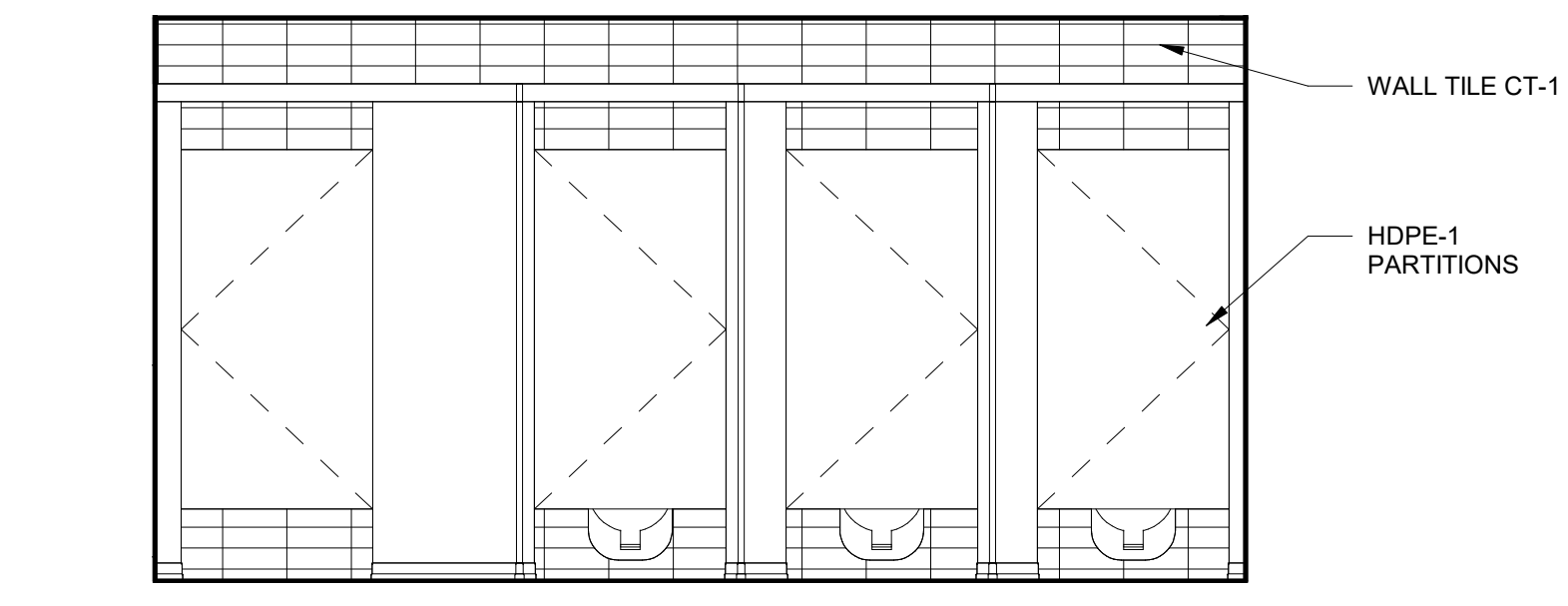
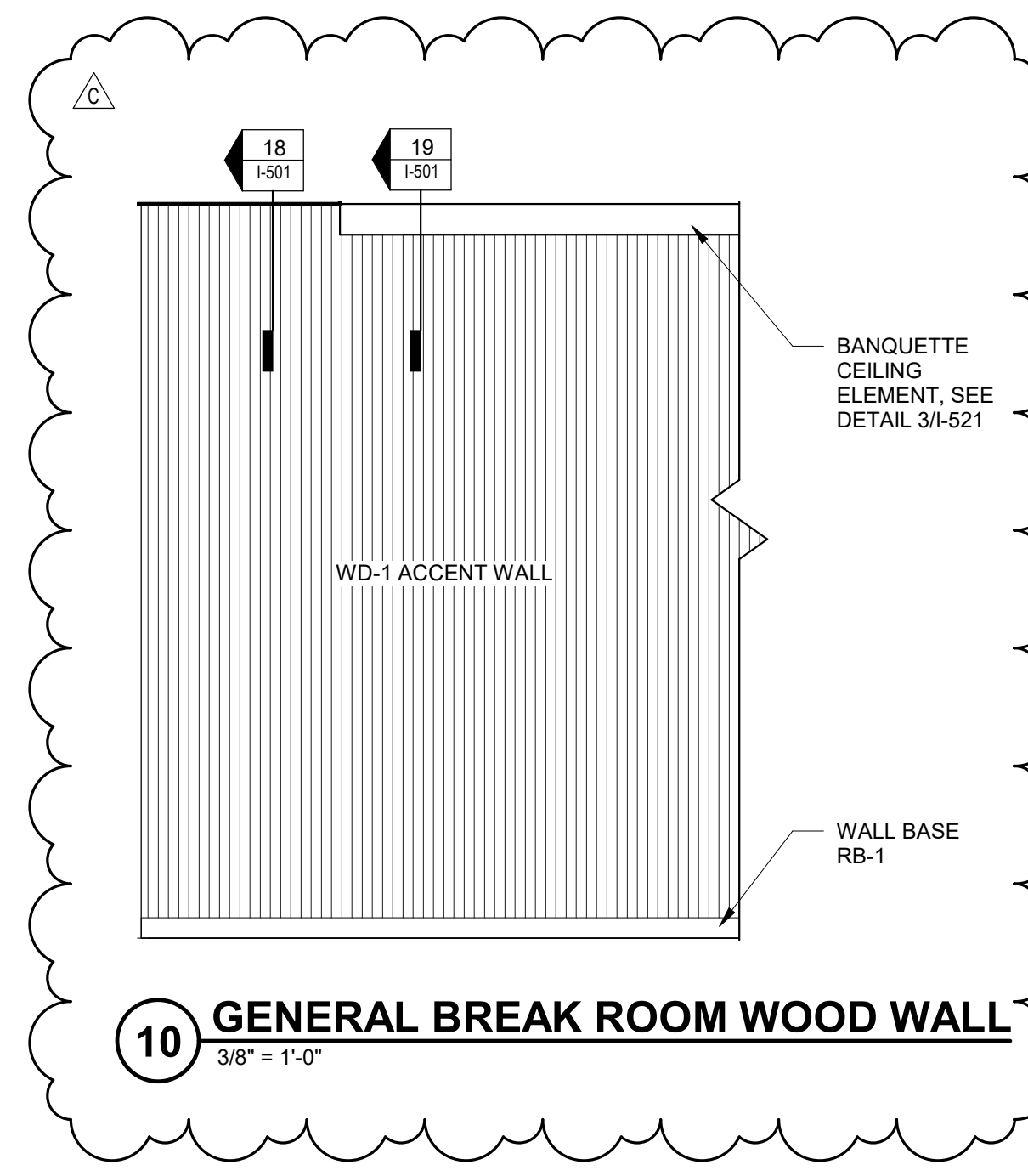
CEILING PLAN LEGEND: SEE ELECTRICAL FOR LIGHT FIXTURE LEGEND

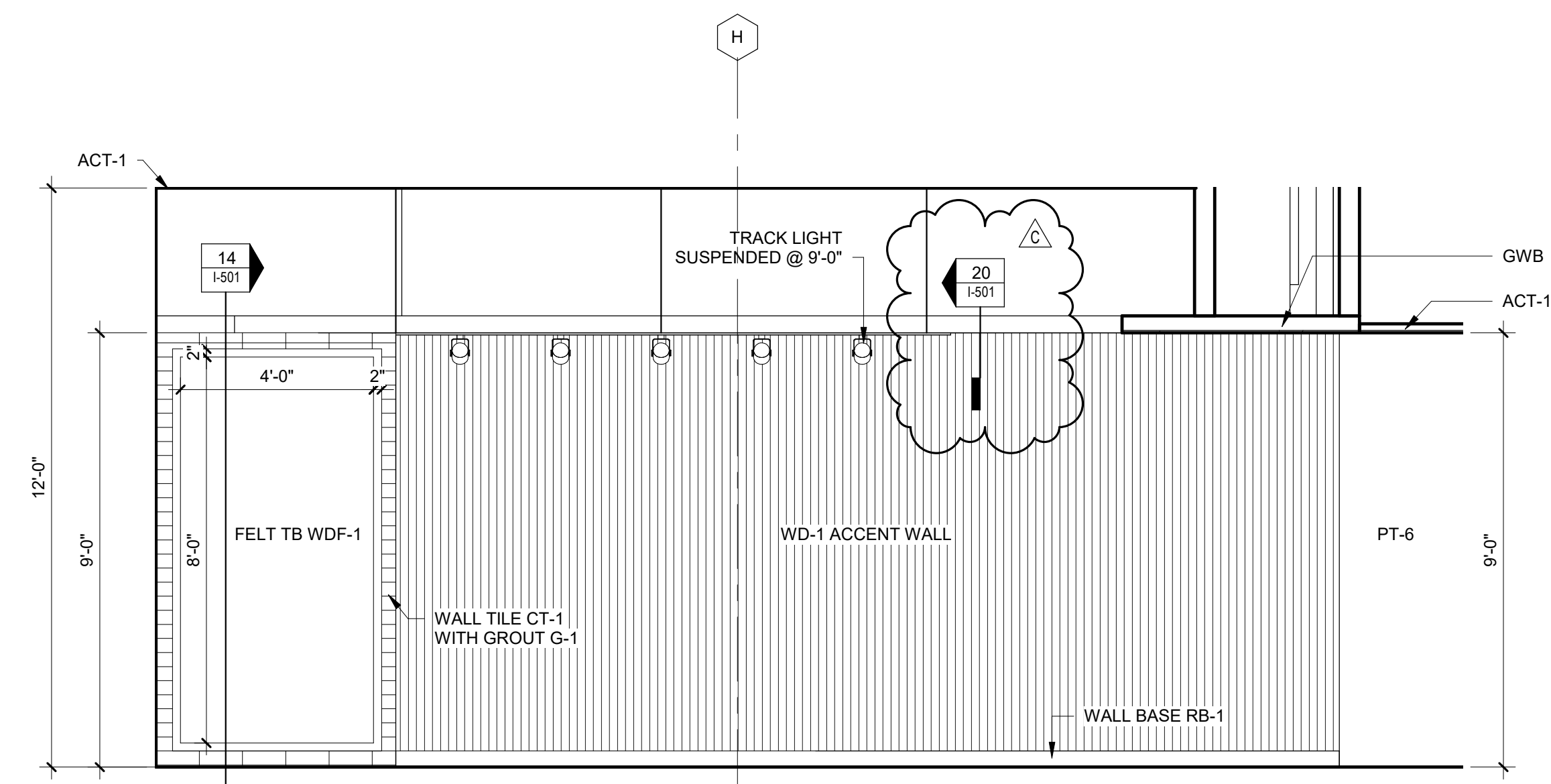


1 FIRST FLOOR REFLECTED CEILING PLAN - AREA A
1/8" = 1'-0"

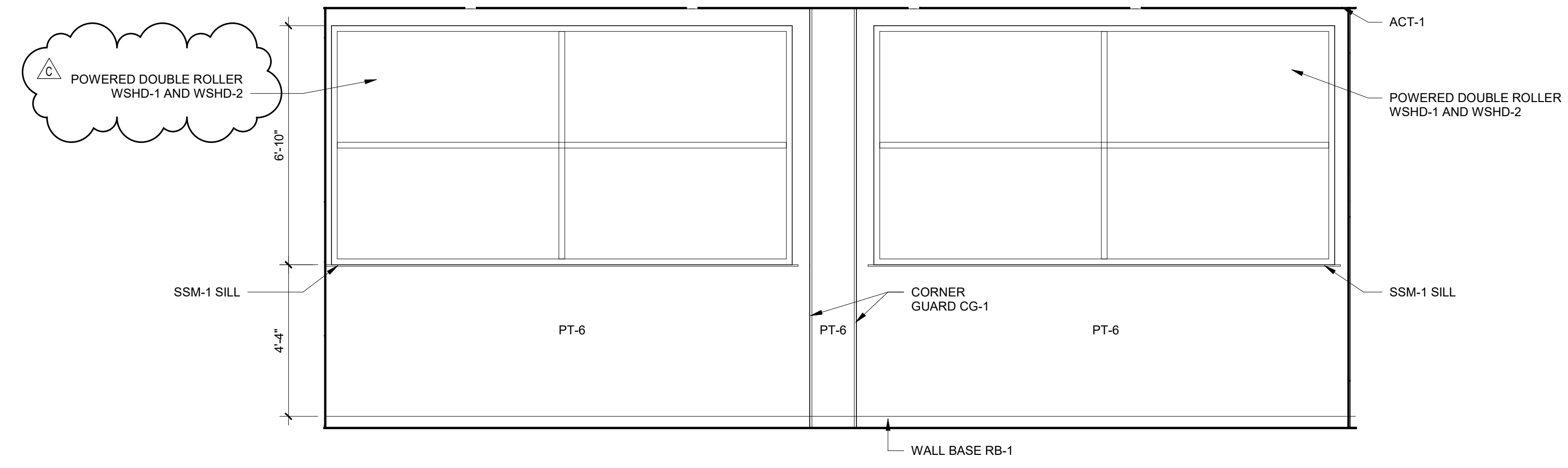


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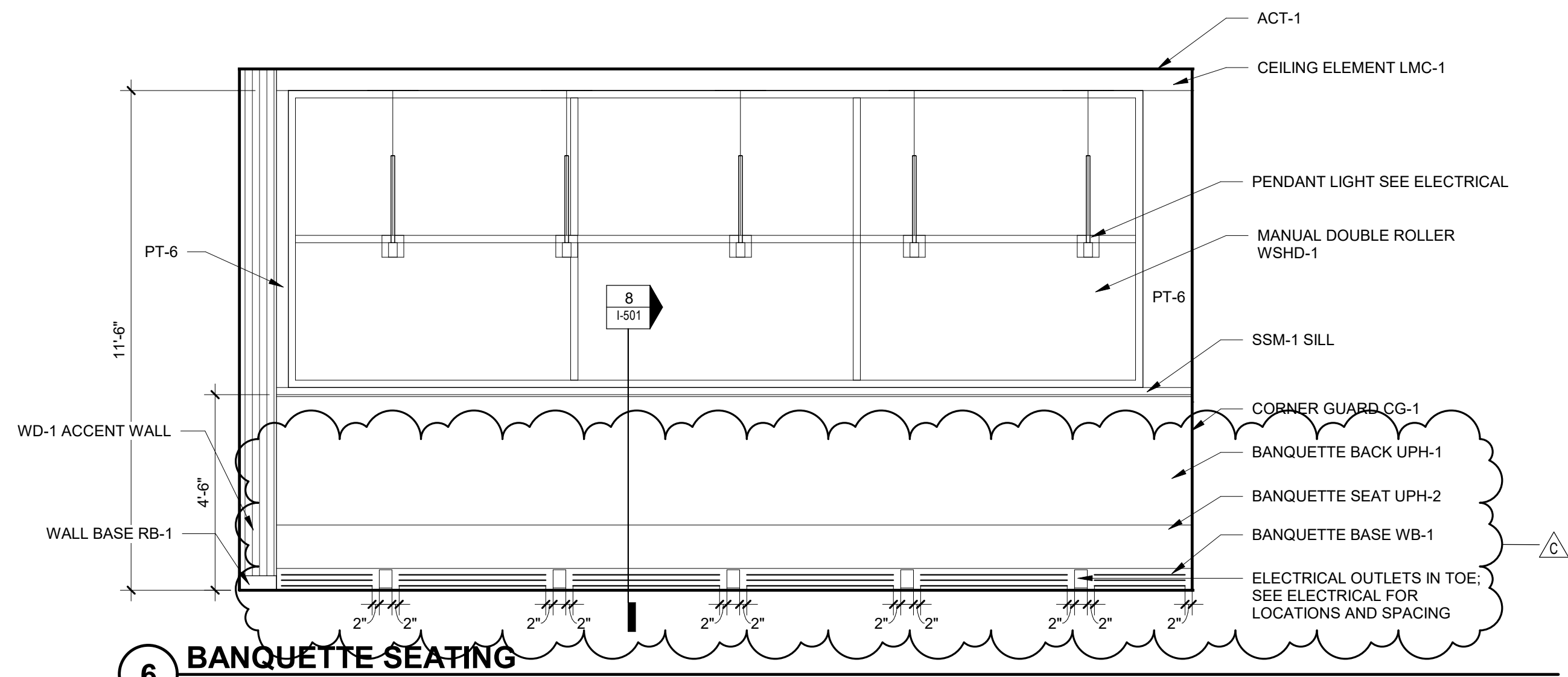




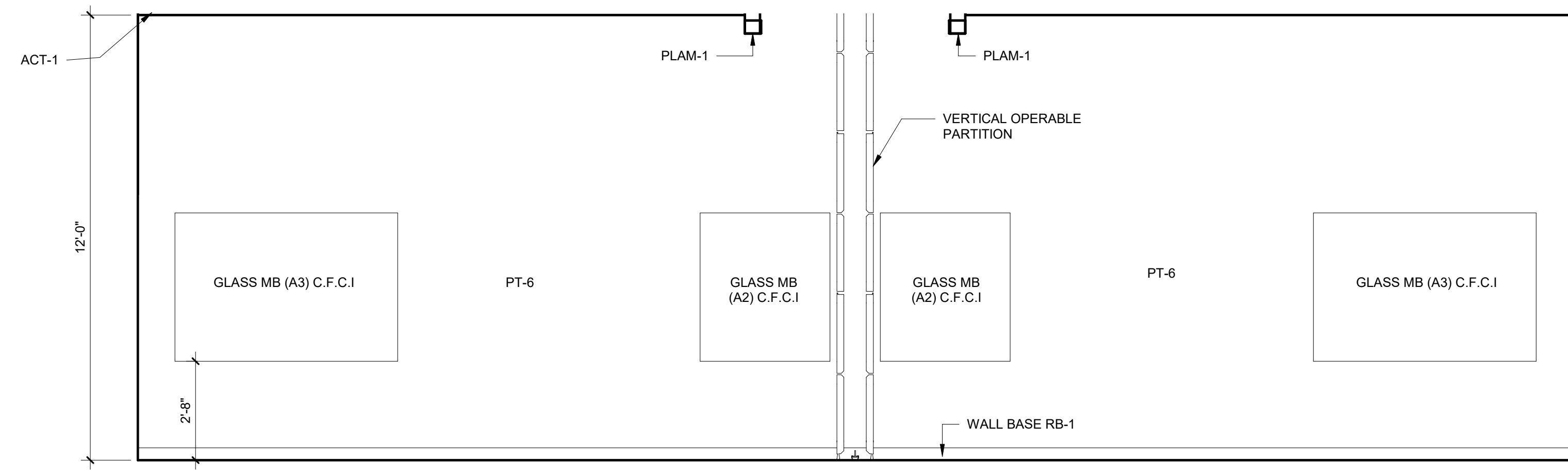
5 GREETING AND CORRIDOR
3/8" = 1'-0"



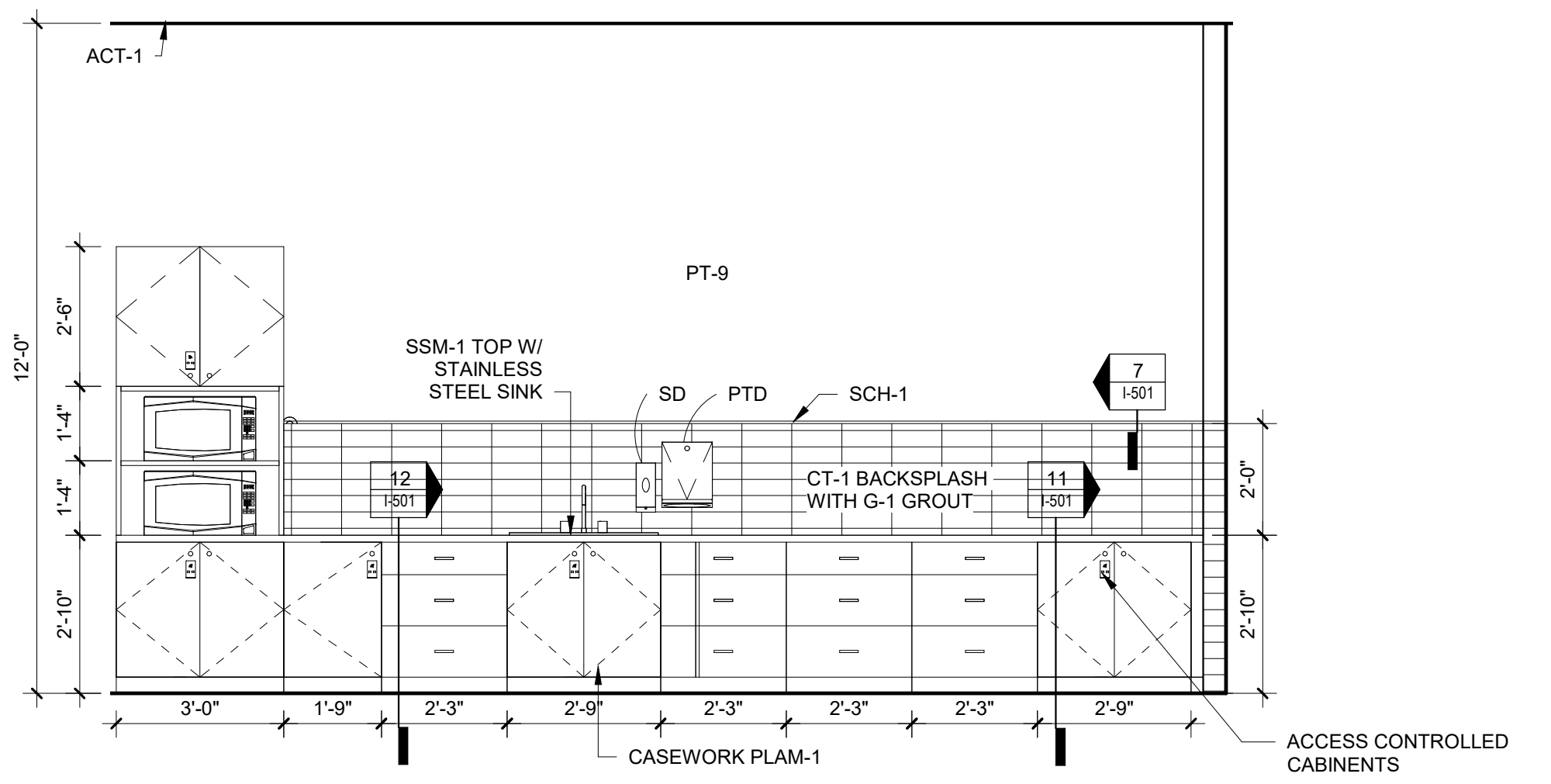
1 DRIVER TRAINING ROOM (WEST WALL)
3/8" = 1'-0"



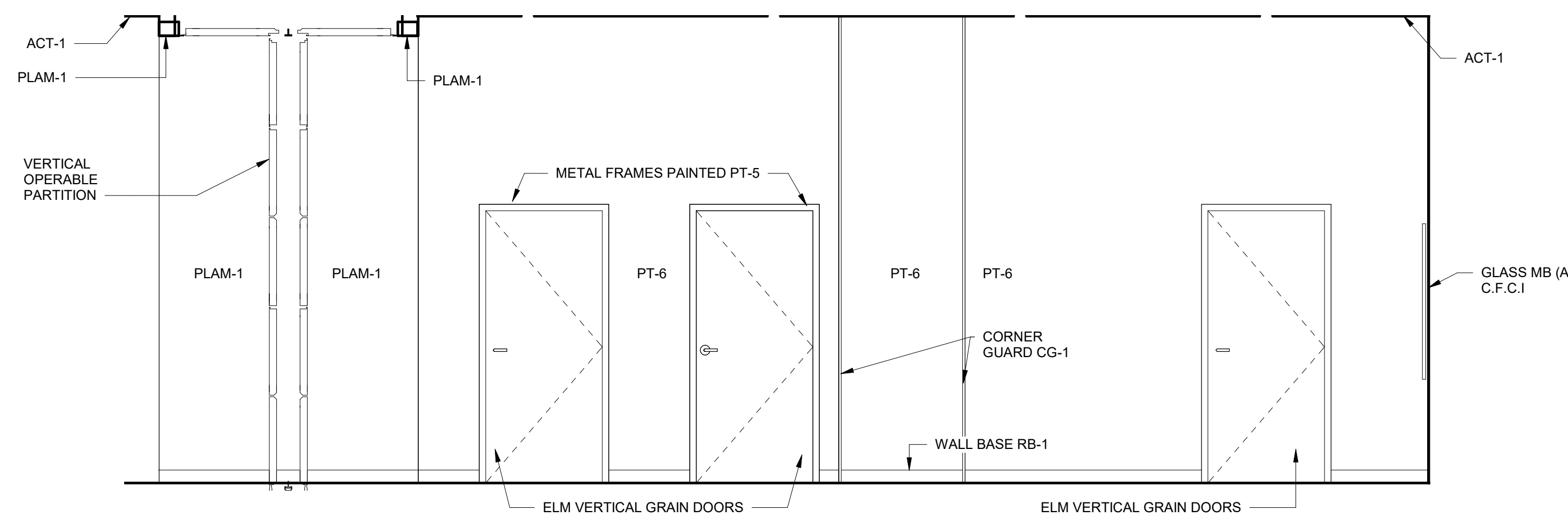
6 BANQUETTE SEATING
3/8" = 1'-0"



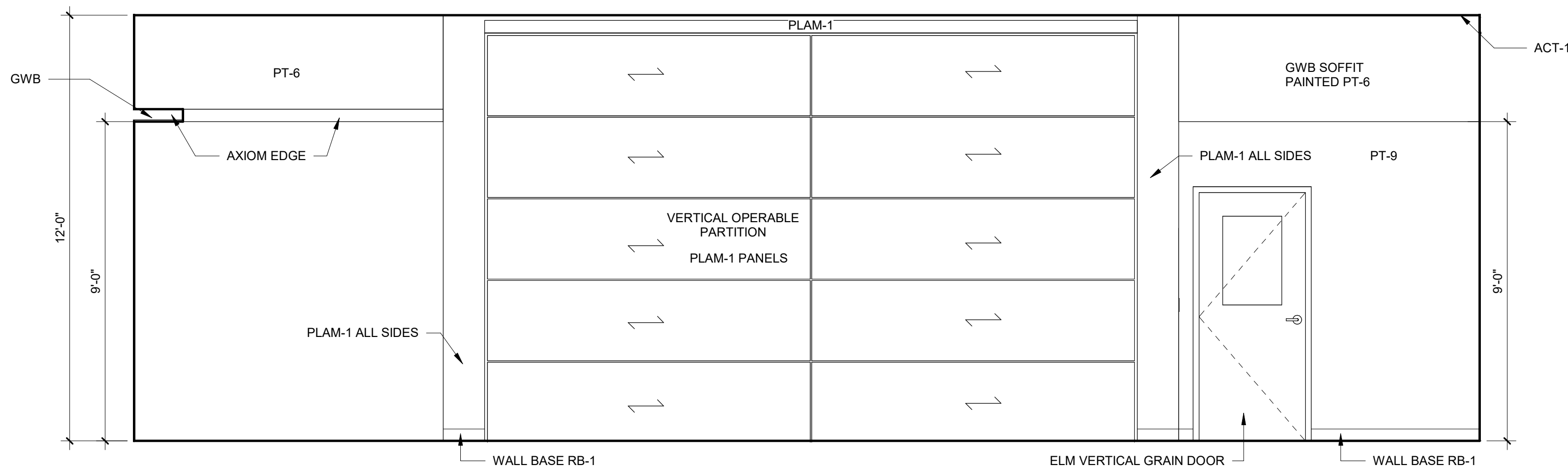
2 DRIVER TRAINING ROOM (SOUTH WALL)
3/8" = 1'-0"



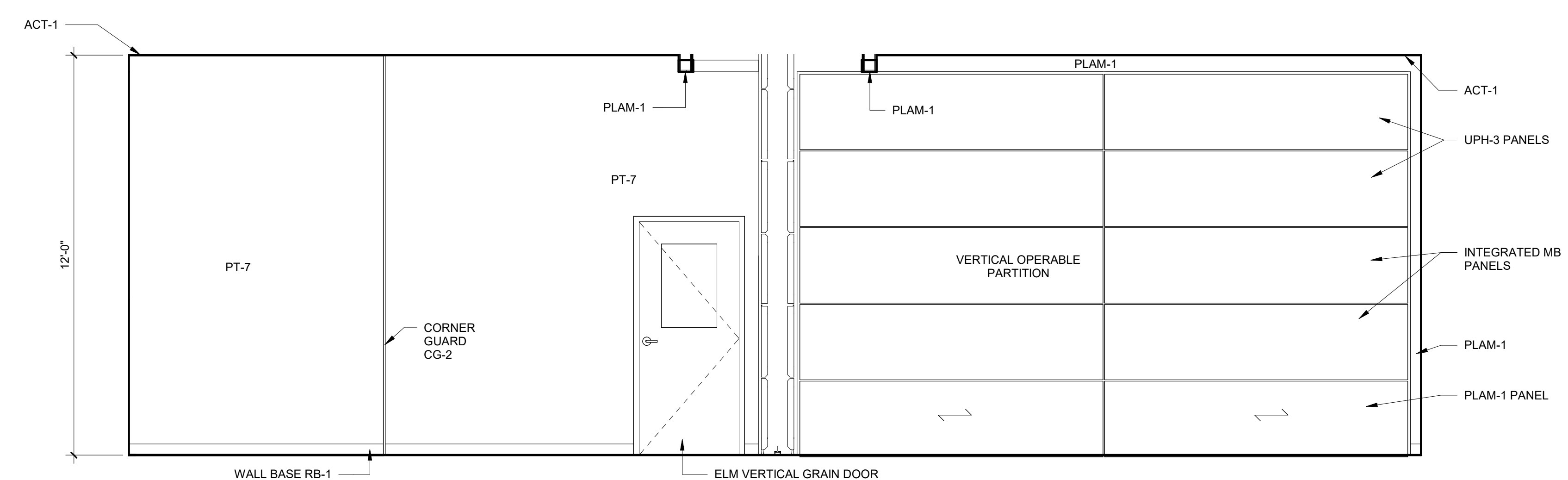
7 GENERAL BREAK ROOM CASEWORK
3/8" = 1'-0"



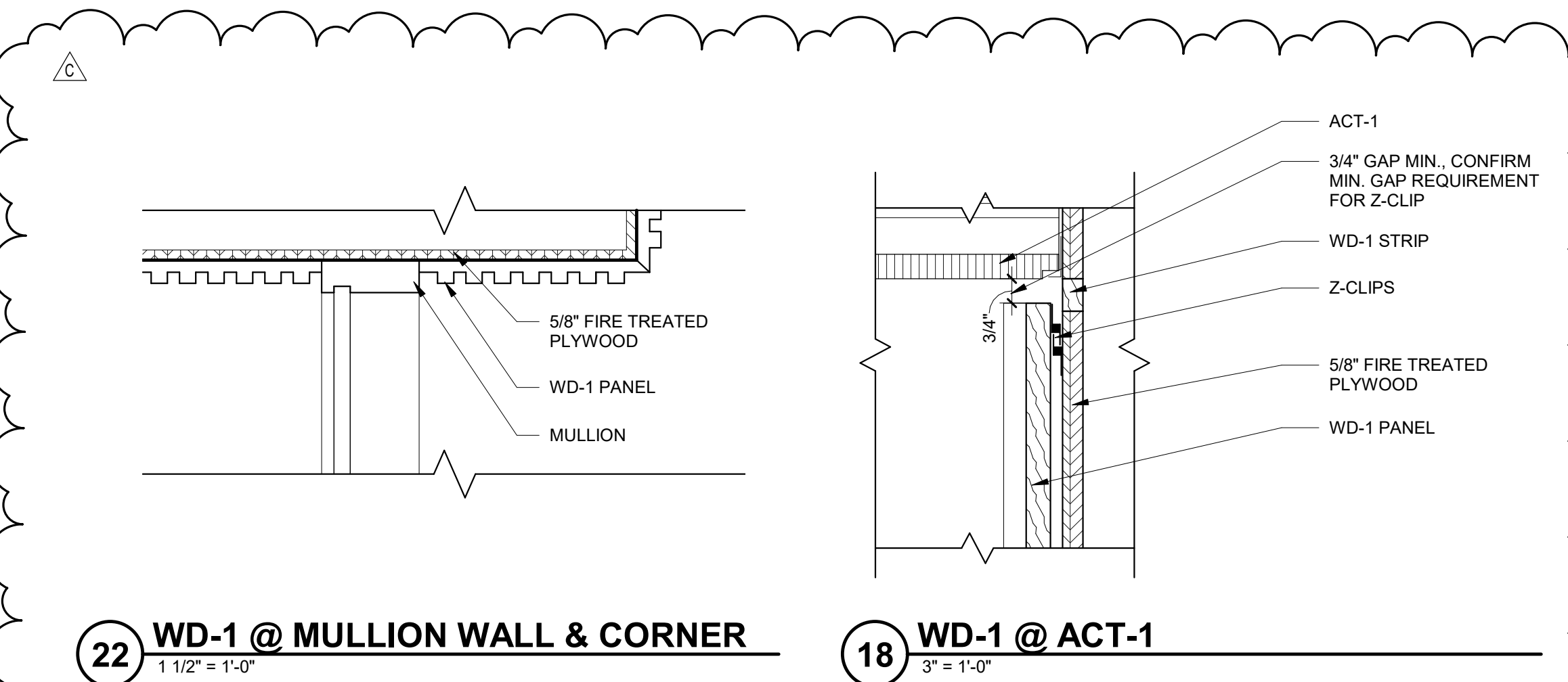
3 DRIVER TRAINING ROOM (EAST WALL)
3/8" = 1'-0"



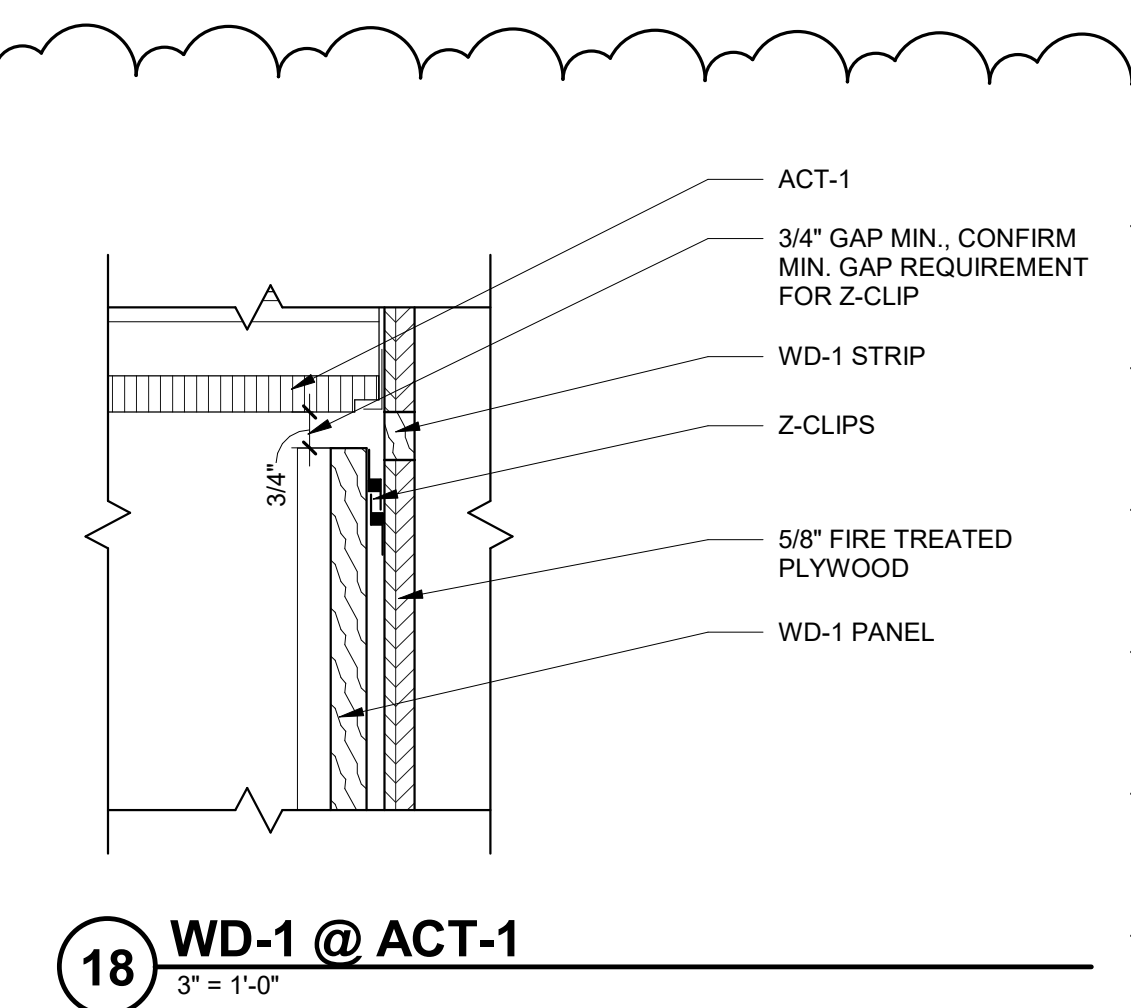
8 HALLWAY (SOUTH WALL)
3/8" = 1'-0"



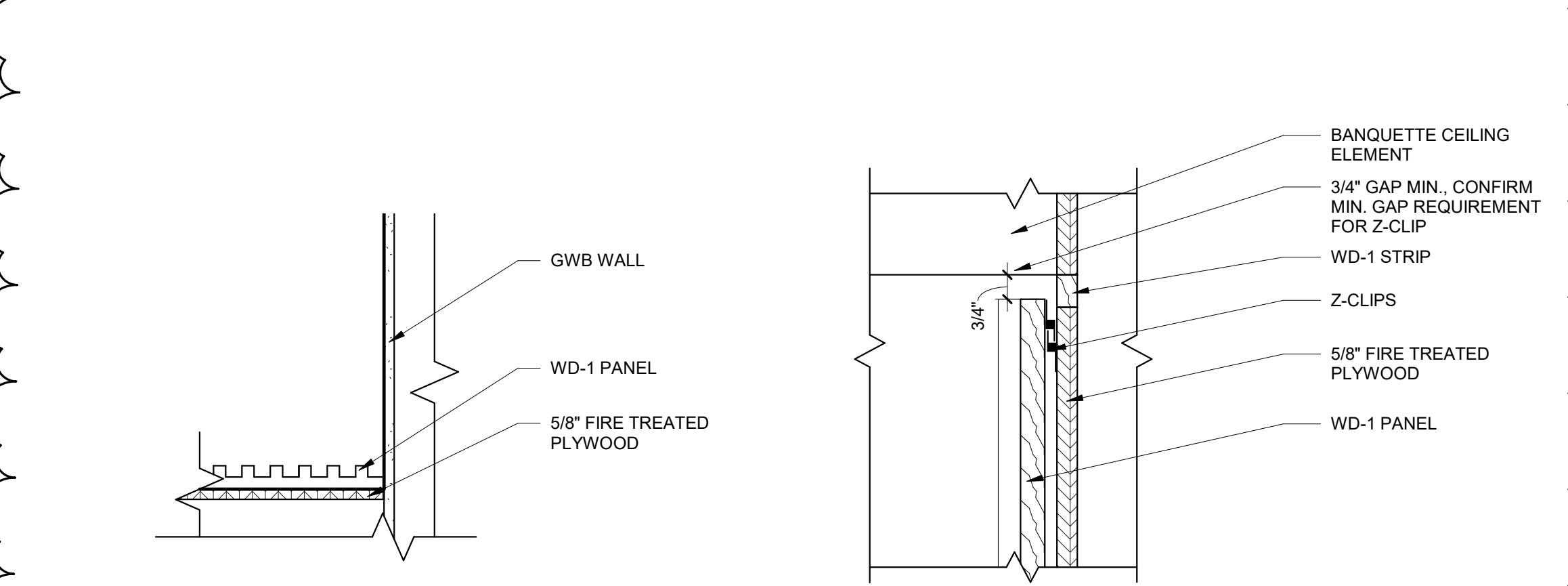
4 DRIVER TRAINING ROOM (NORTH WALL)
3/8" = 1'-0"



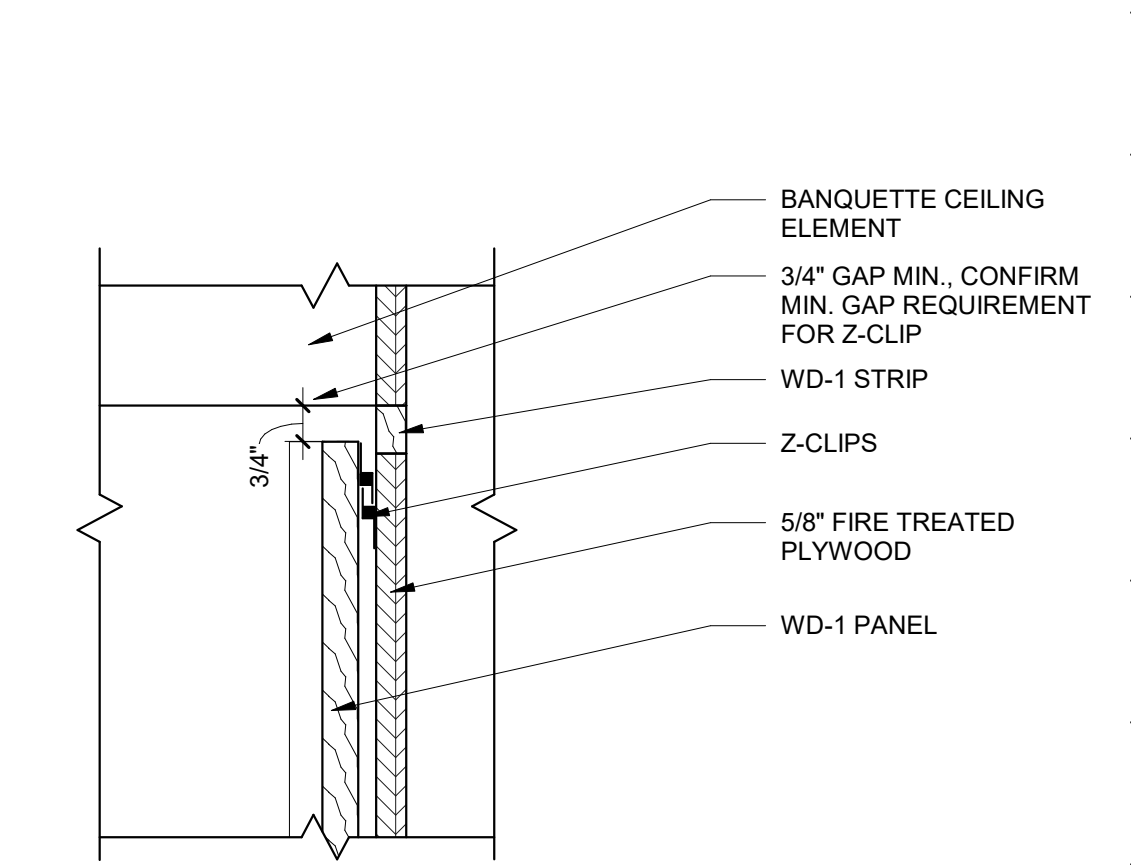
22 WD-1 @ MULLION WALL & CORNER
1 1/2" = 1'-0"



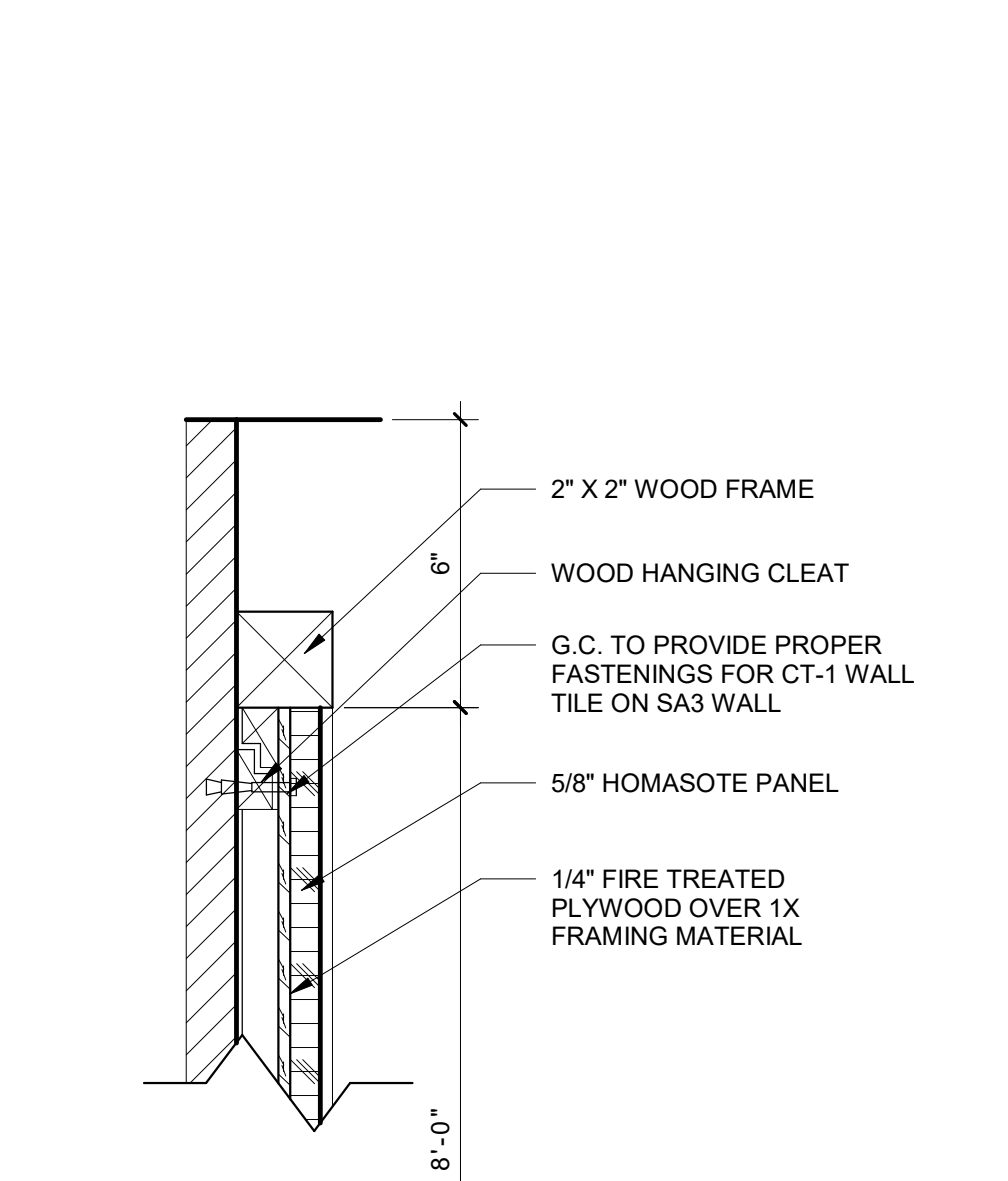
18 WD-1 @ ACT-1
3" = 1'-0"



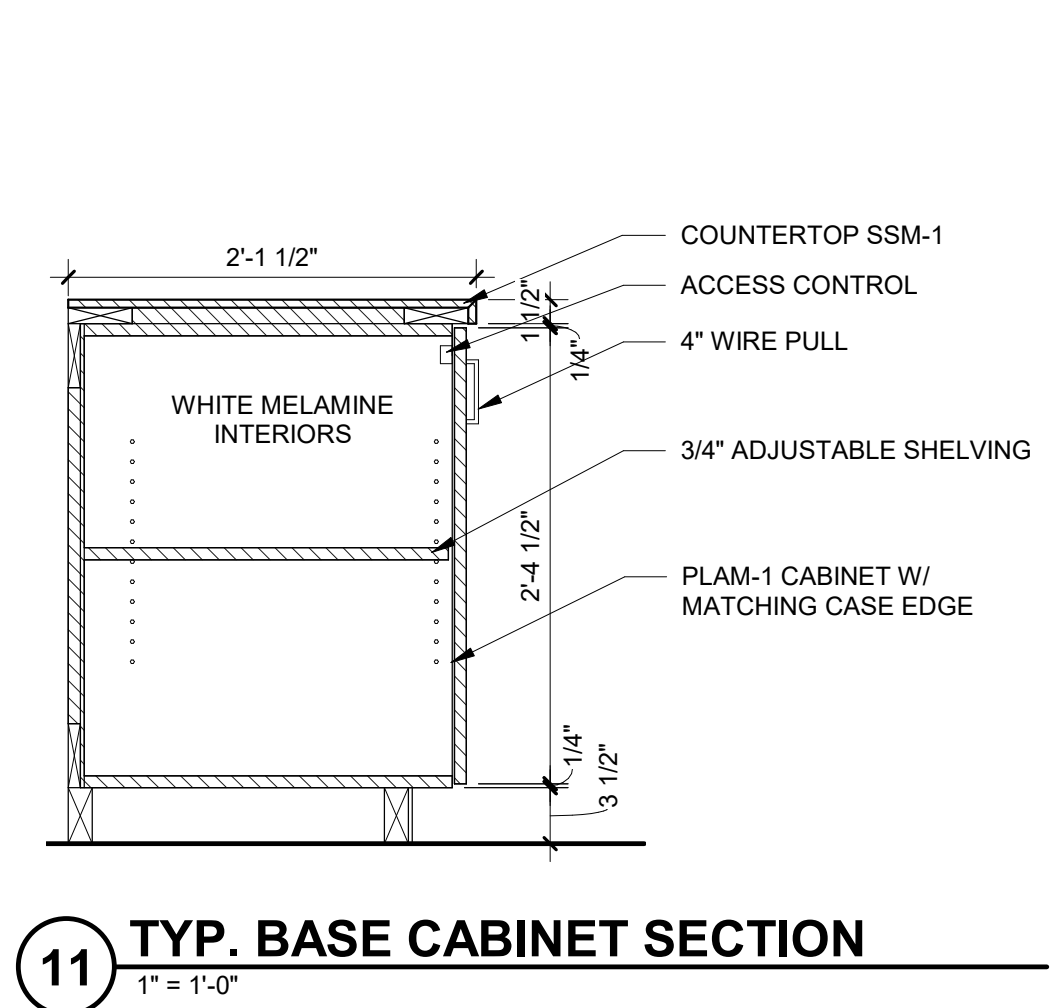
23 WD-1 @ GWB WALL
1 1/2" = 1'-0"



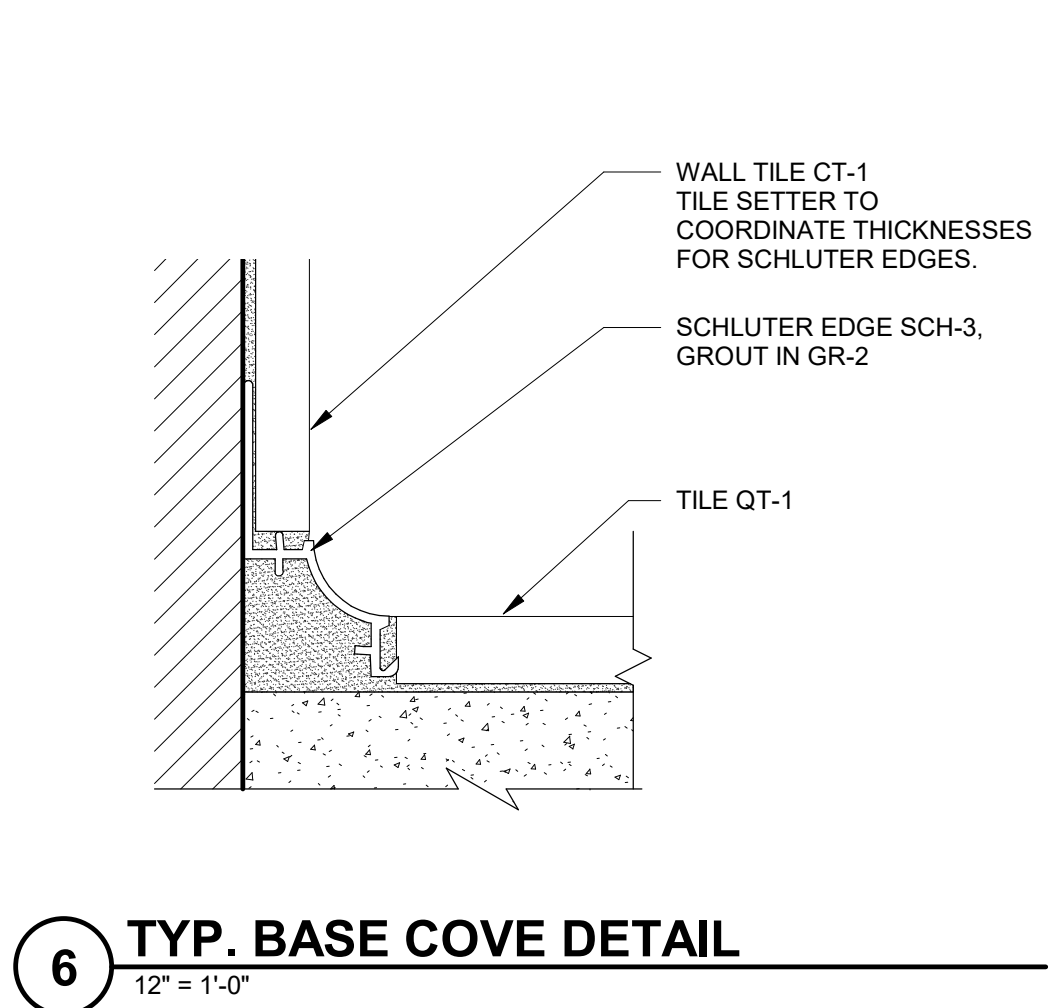
19 WD-1 @ BANQUETTE CEILING ELEMENT
3" = 1'-0"



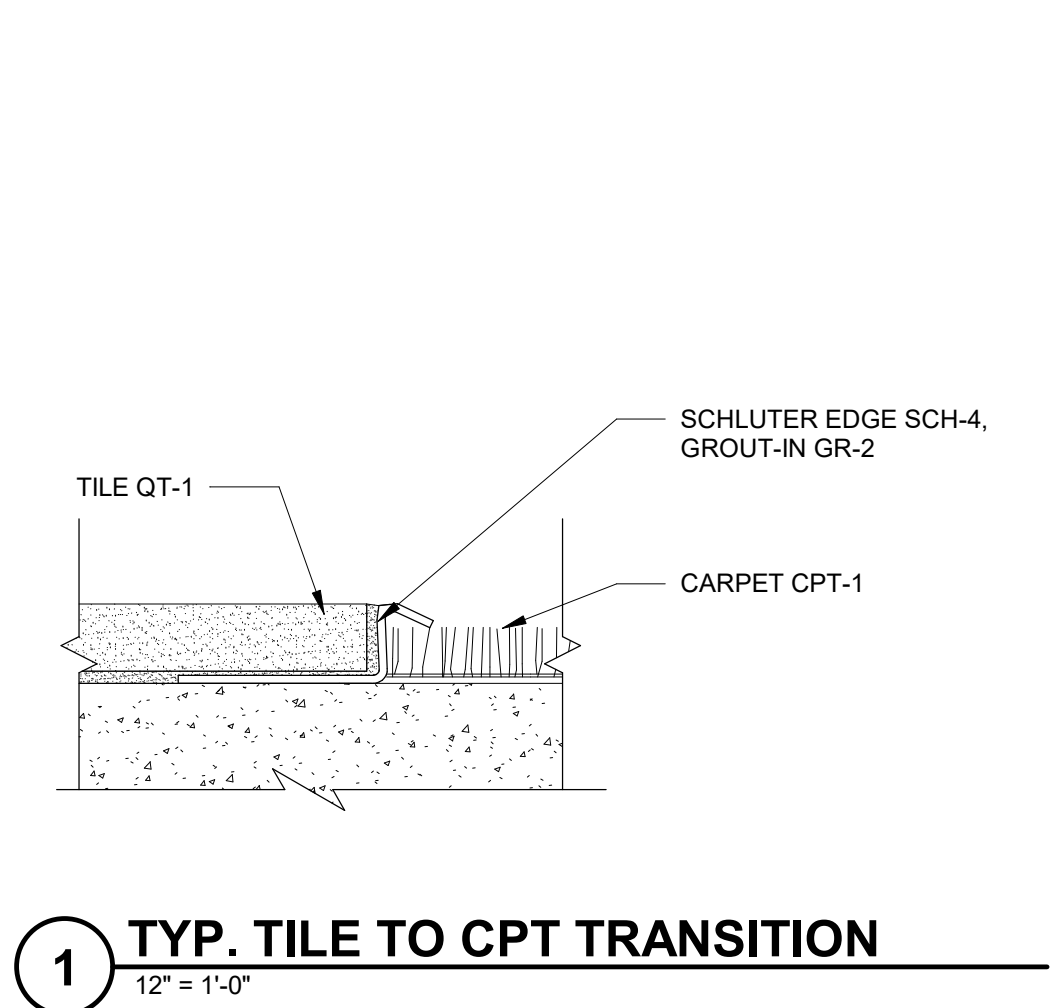
14 FELT TACKBOARD SECTION
3" = 1'-0"



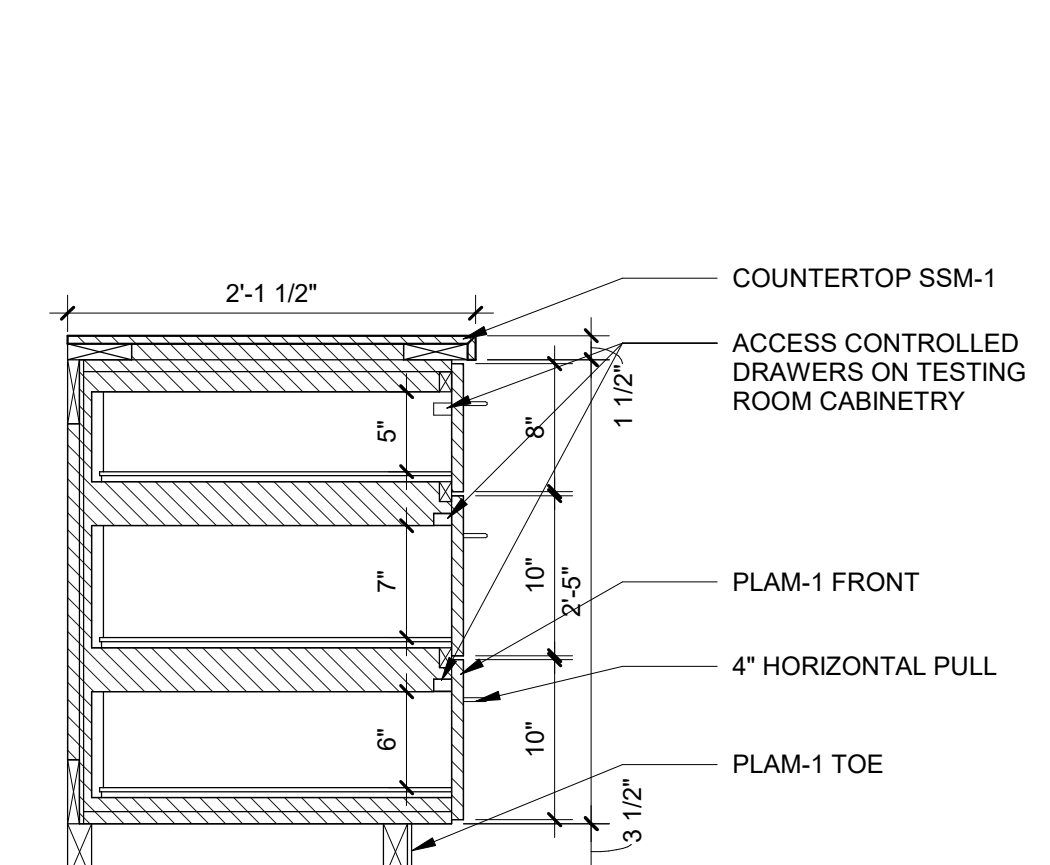
11 TYP. BASE CABINET SECTION
1" = 1'-0"



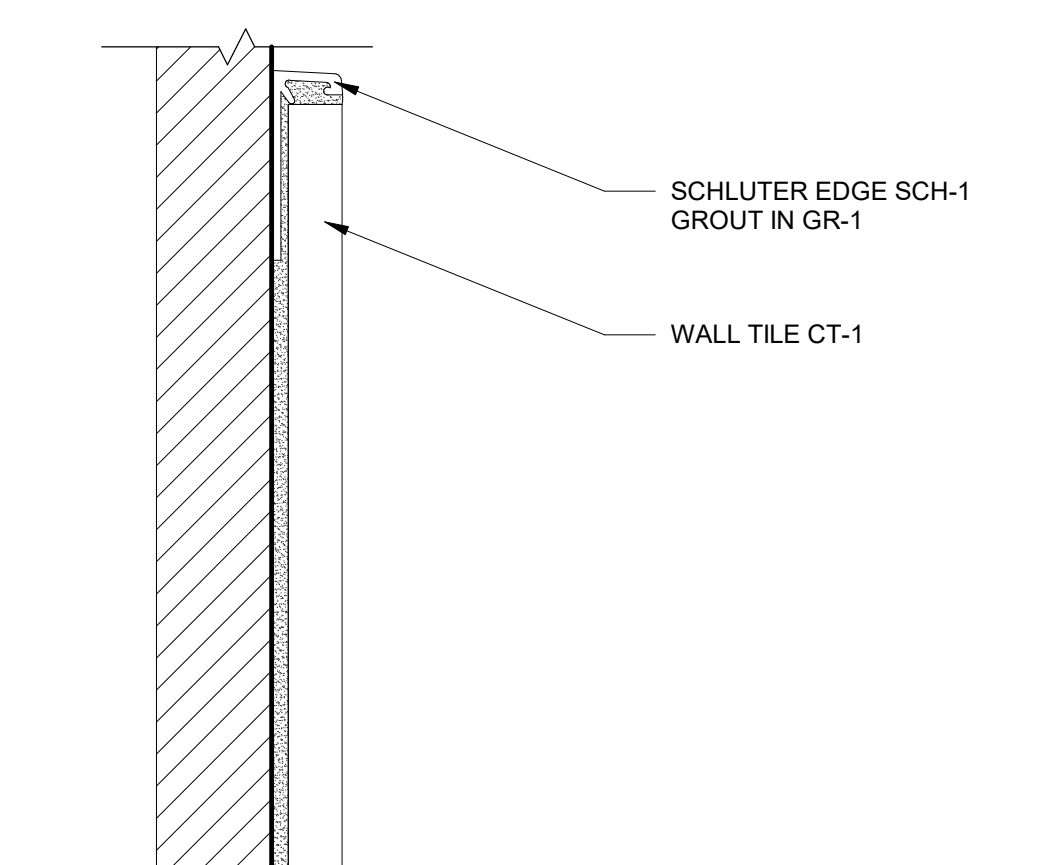
6 TYP. BASE COVE DETAIL
12" = 1'-0"



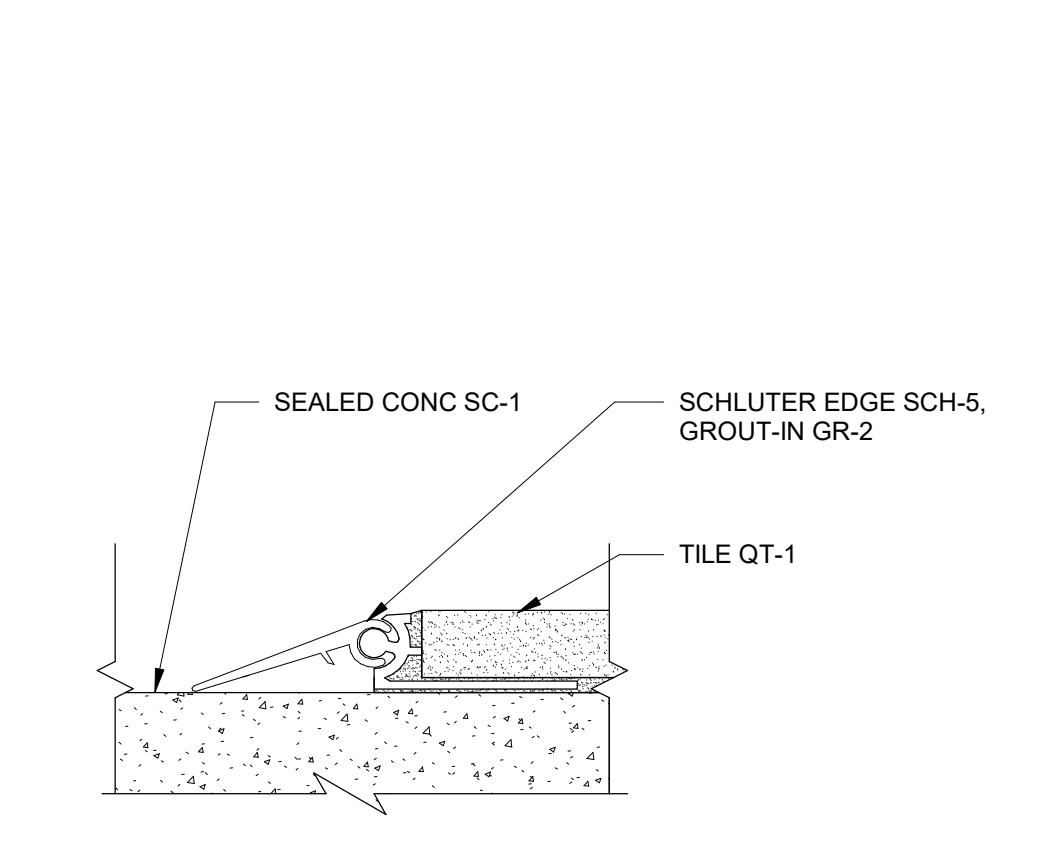
1 TYP. TILE TO CPT TRANSITION
12" = 1'-0"



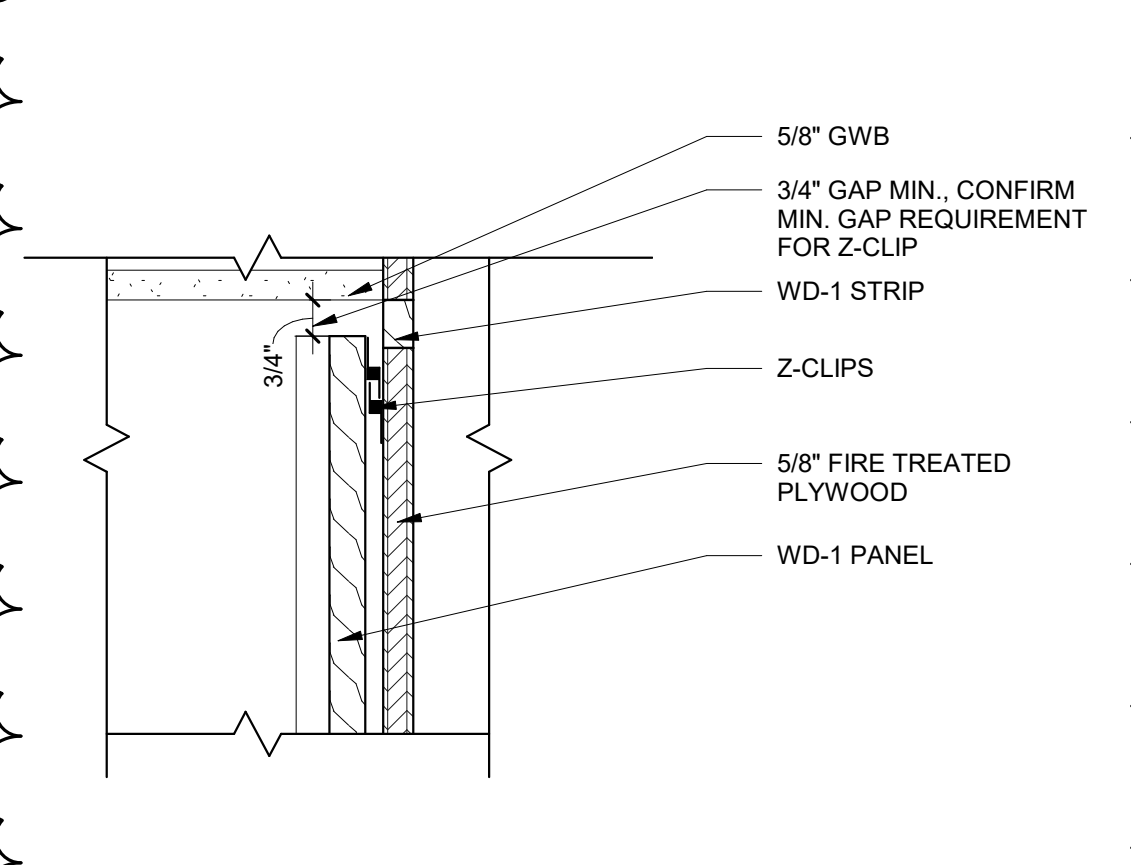
12 TYP. 3 DRAWER CABINETRY SECTION
1" = 1'-0"



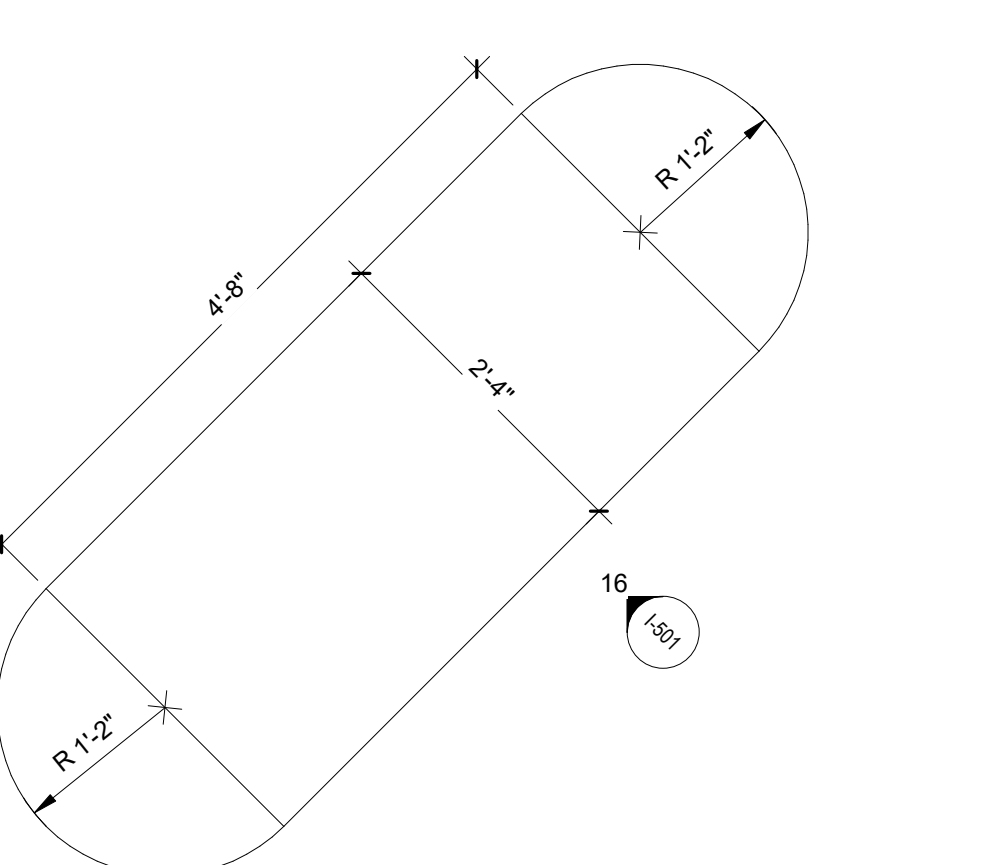
7 TOP EDGE SCHLUTER DETAIL
12" = 1'-0"



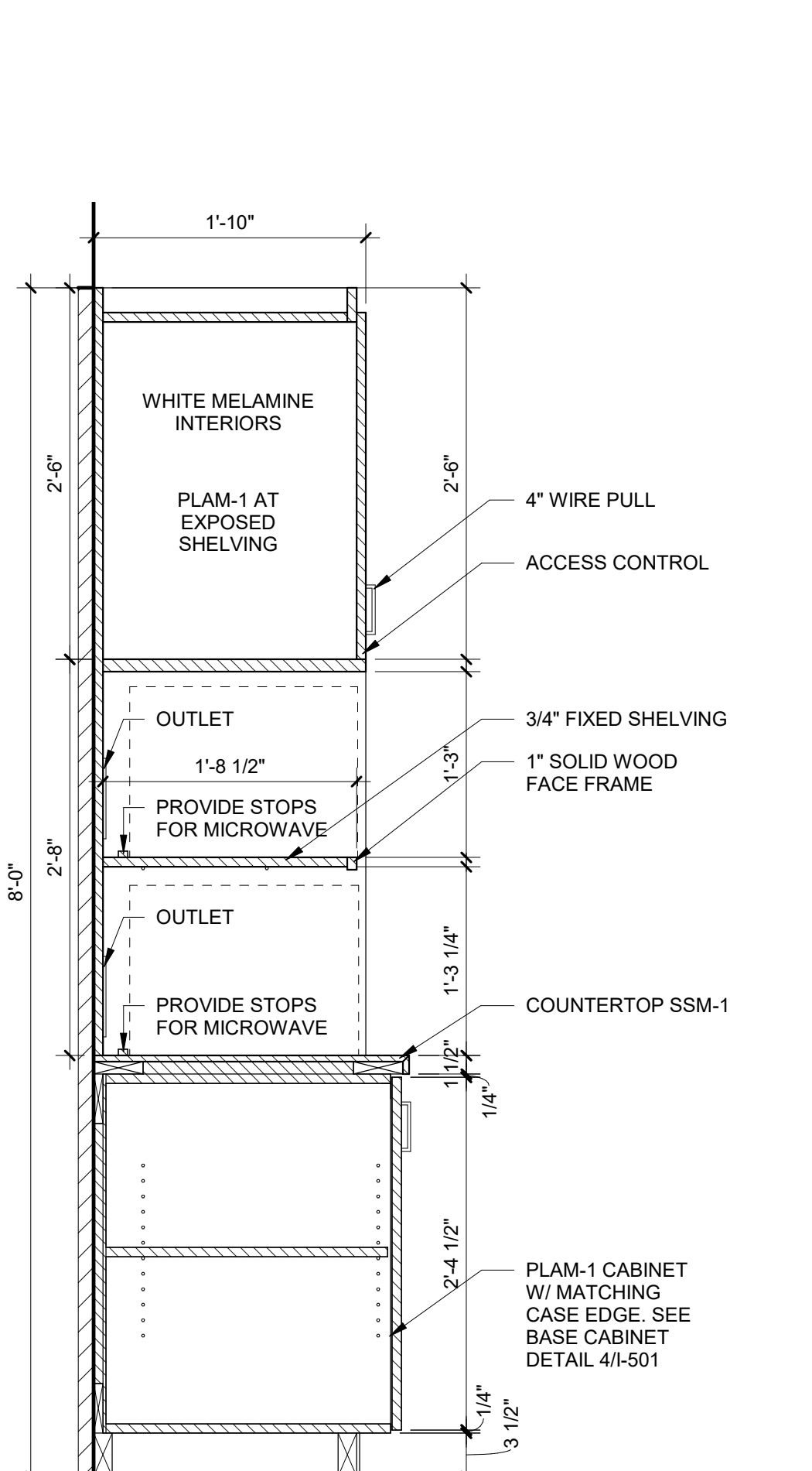
2 TYP. CONC. TO TILE TRANSITION
12" = 1'-0"



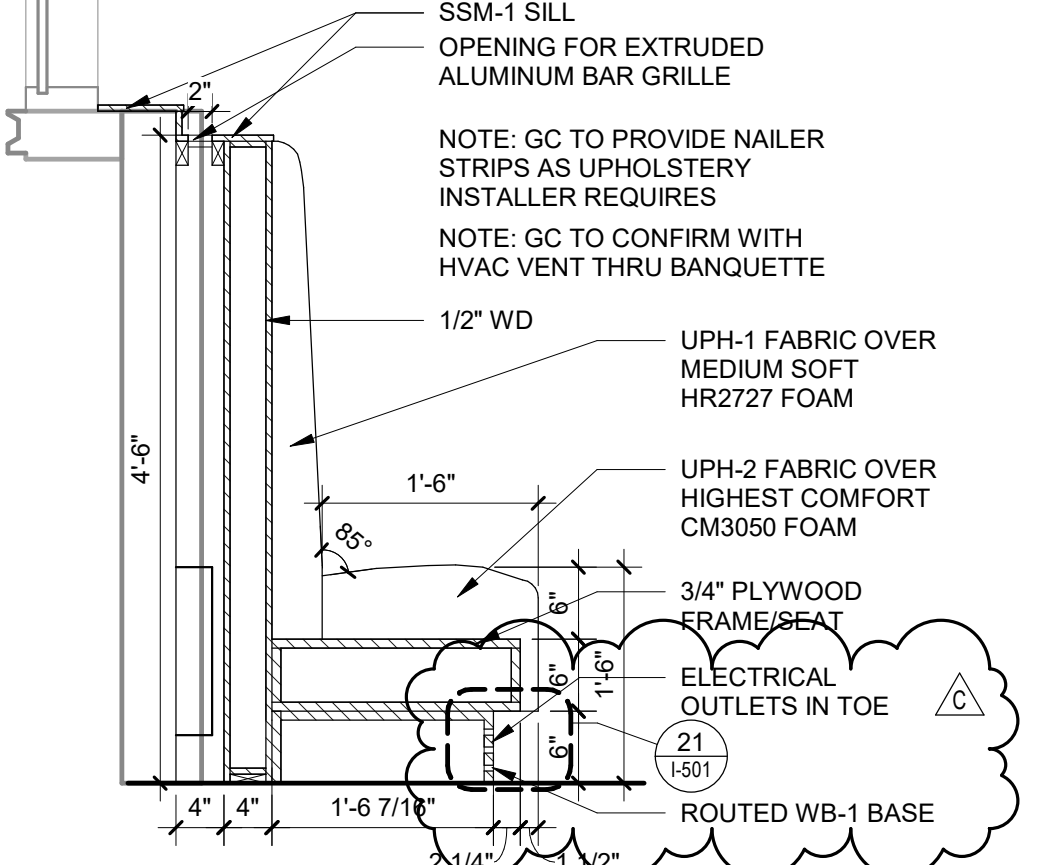
20 WD-1 @ GWB
3" = 1'-0"



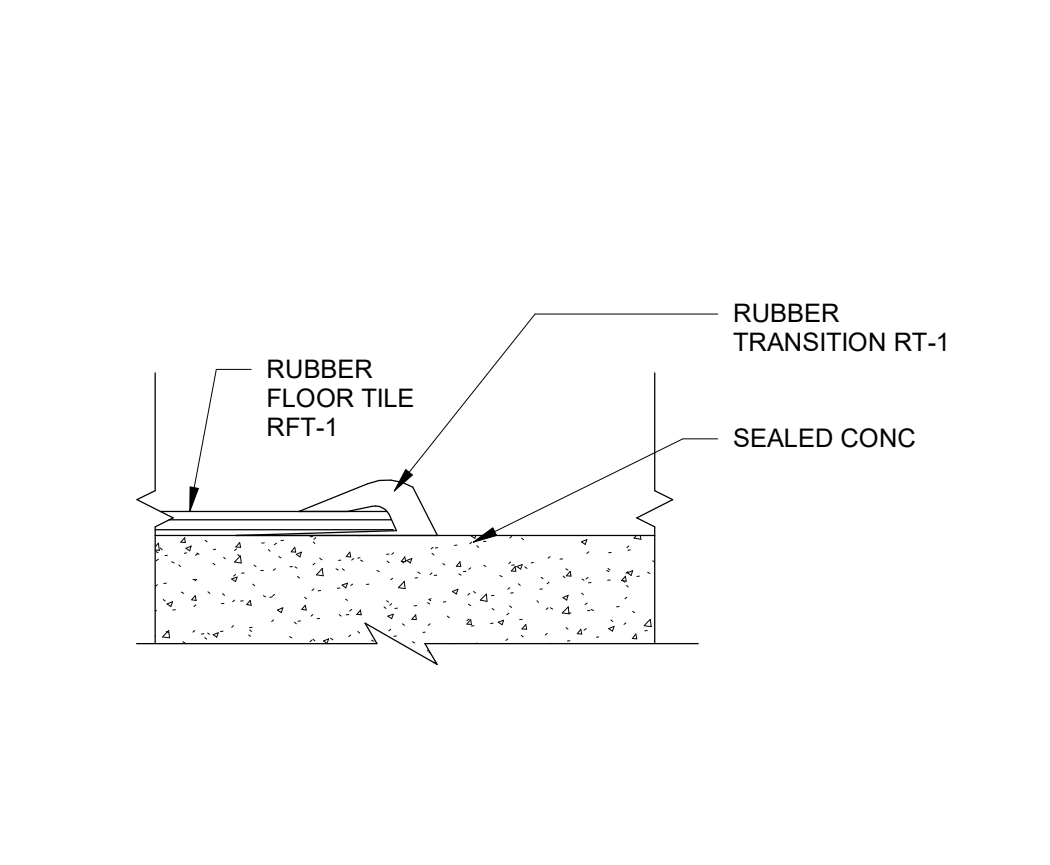
15 MOBILE TRASH CABINETRY
3/4" = 1'-0"



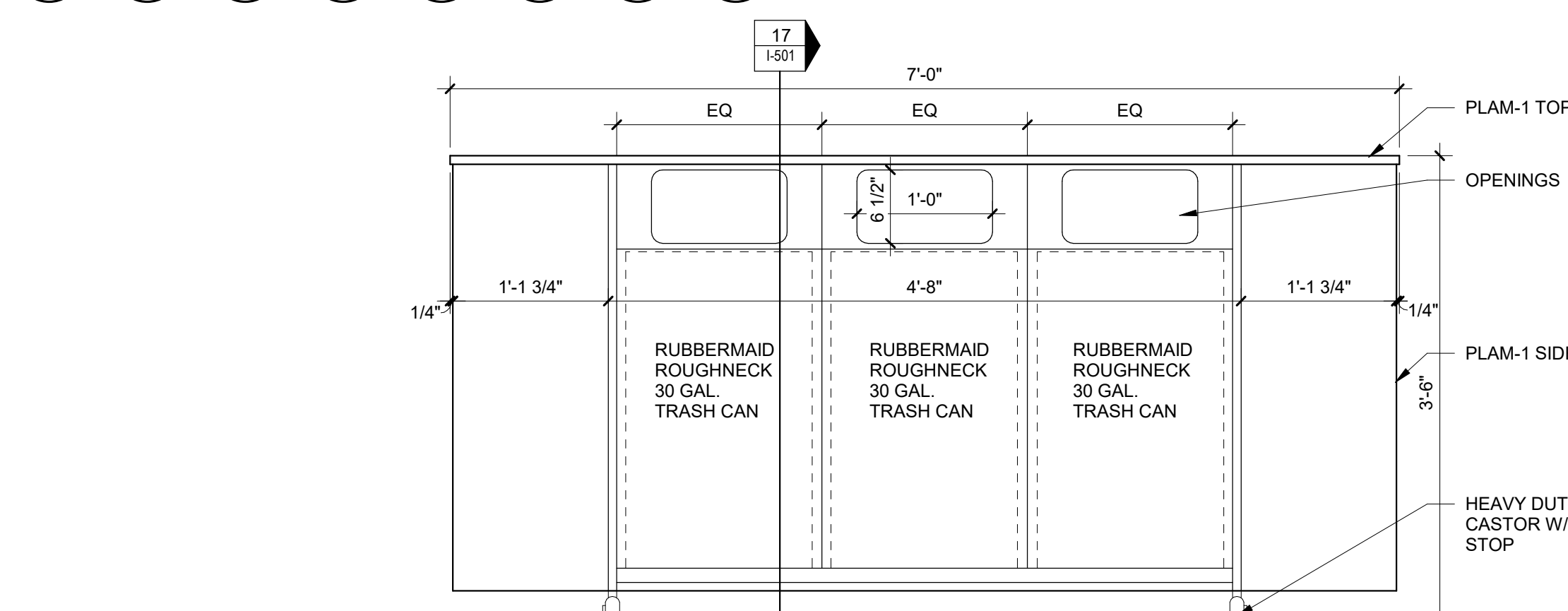
13 MICROWAVE CABINET SECTION
1" = 1'-0"



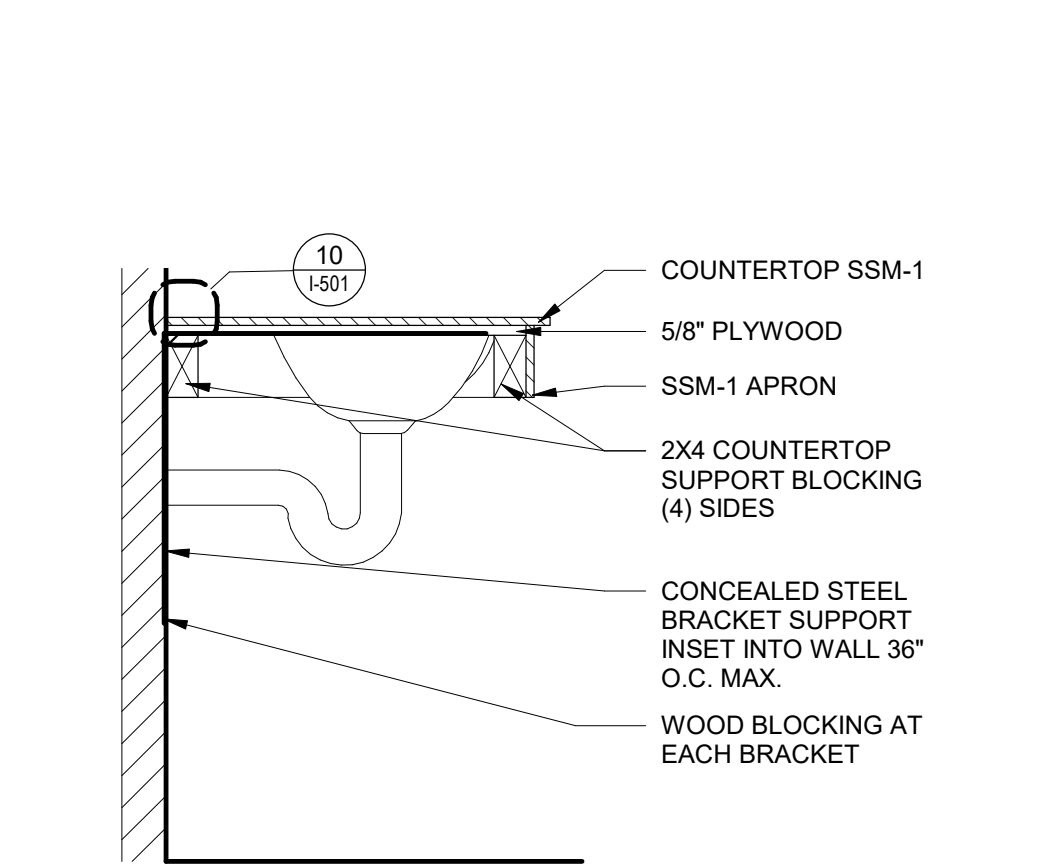
8 BANQUETTE SECTION
3/4" = 1'-0"



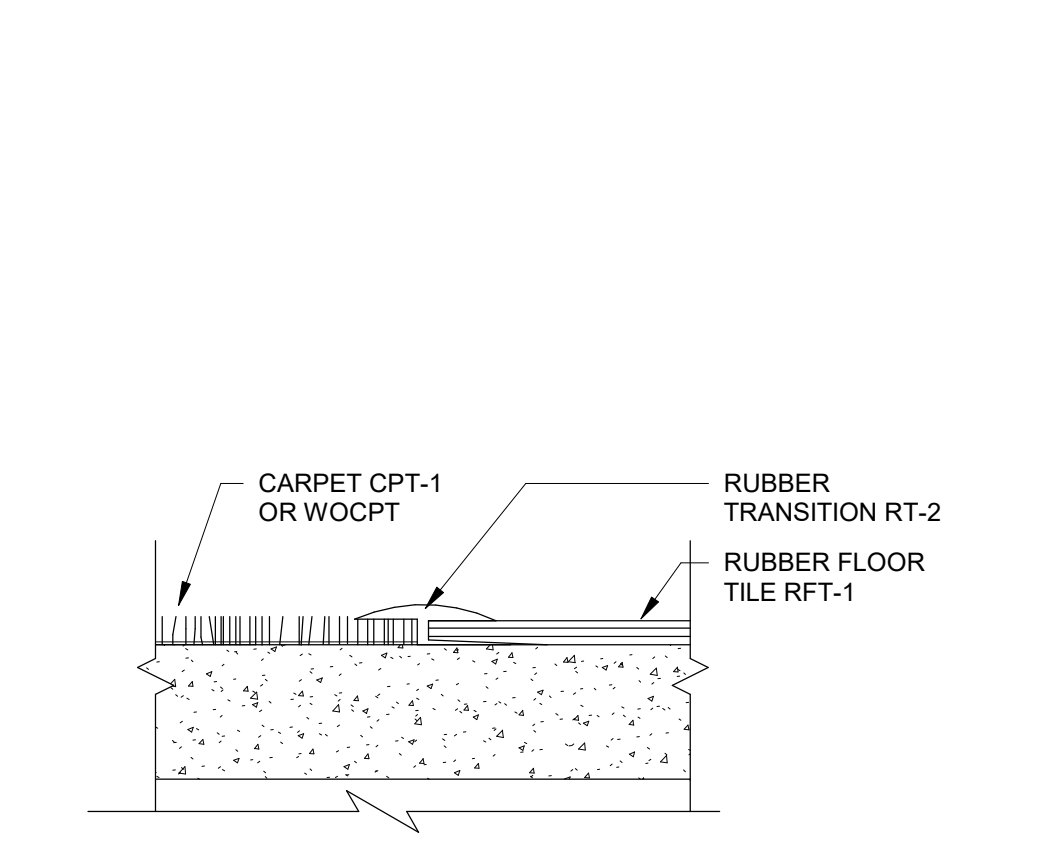
3 TYP. CONC. TO RUBBER TRANSITION
12" = 1'-0"



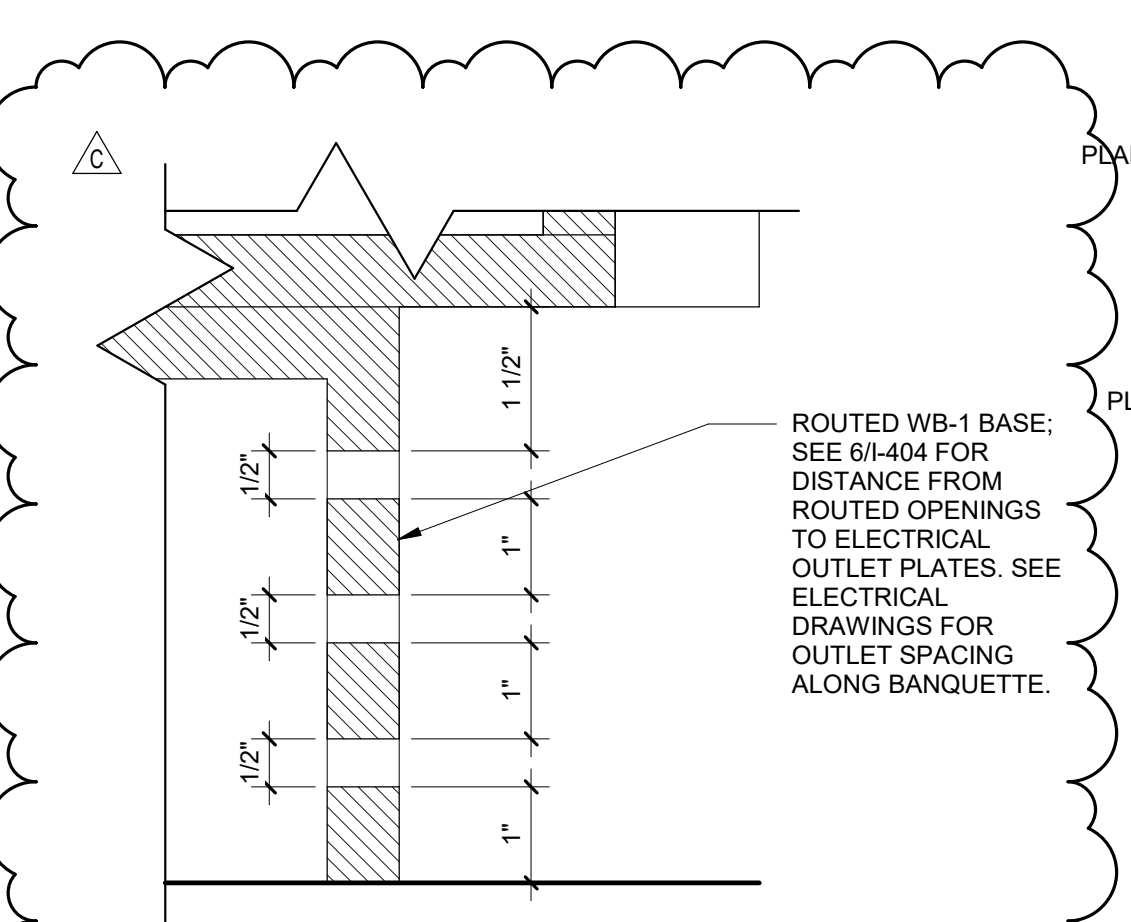
16 MOBILE TRASH CABINETRY
1" = 1'-0"



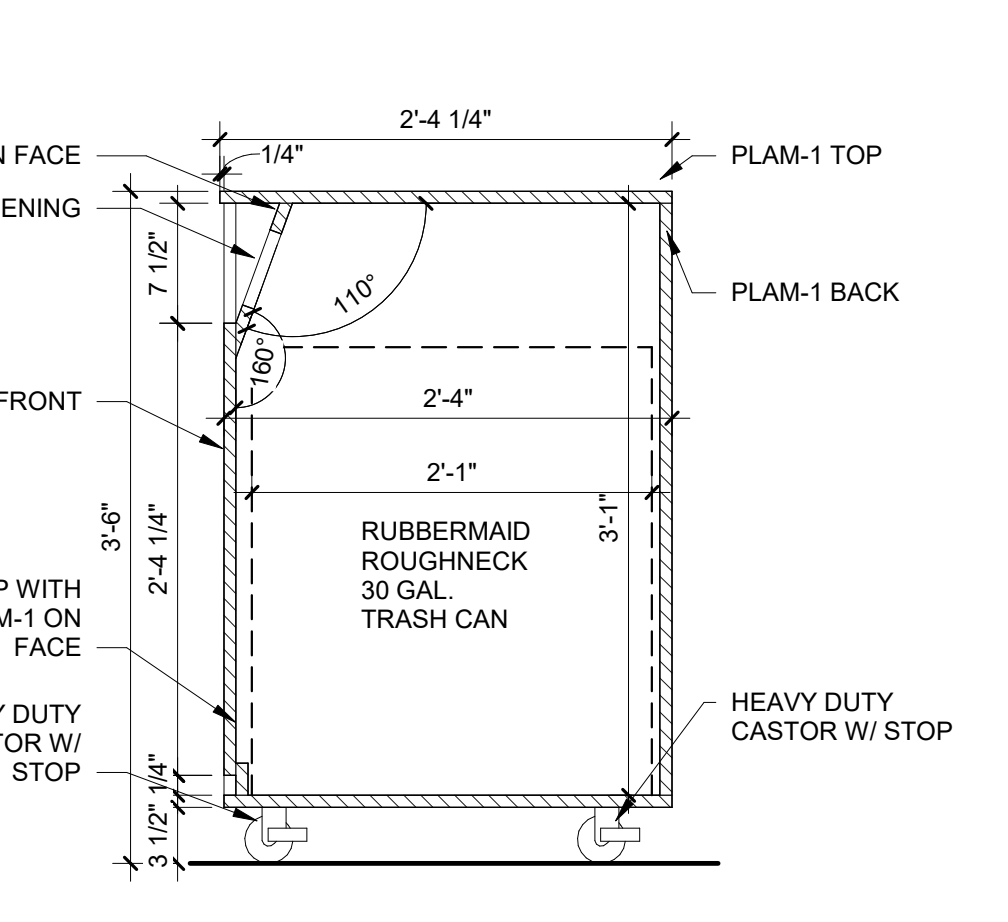
9 TYP. LAVATORY COUNTER W/ SKIRT
1" = 1'-0"



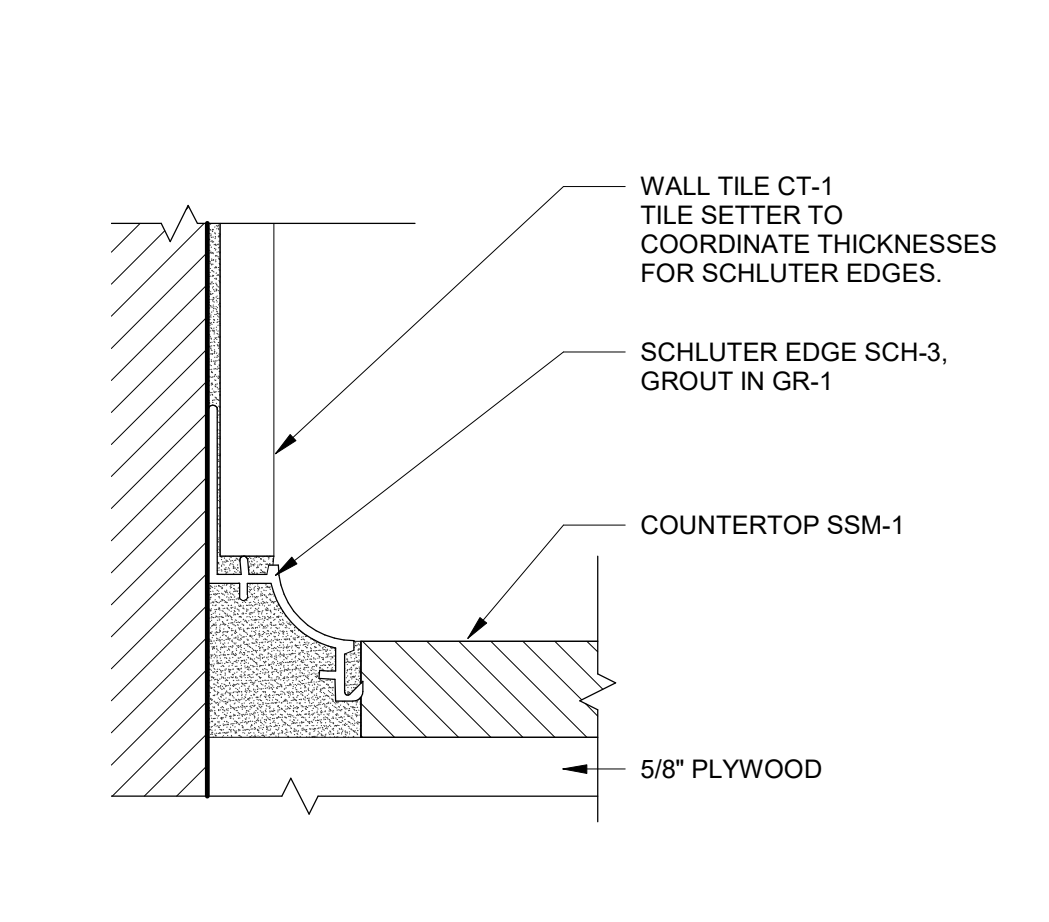
4 TYP. RUBBER TO CPT TRANSITION
12" = 1'-0"



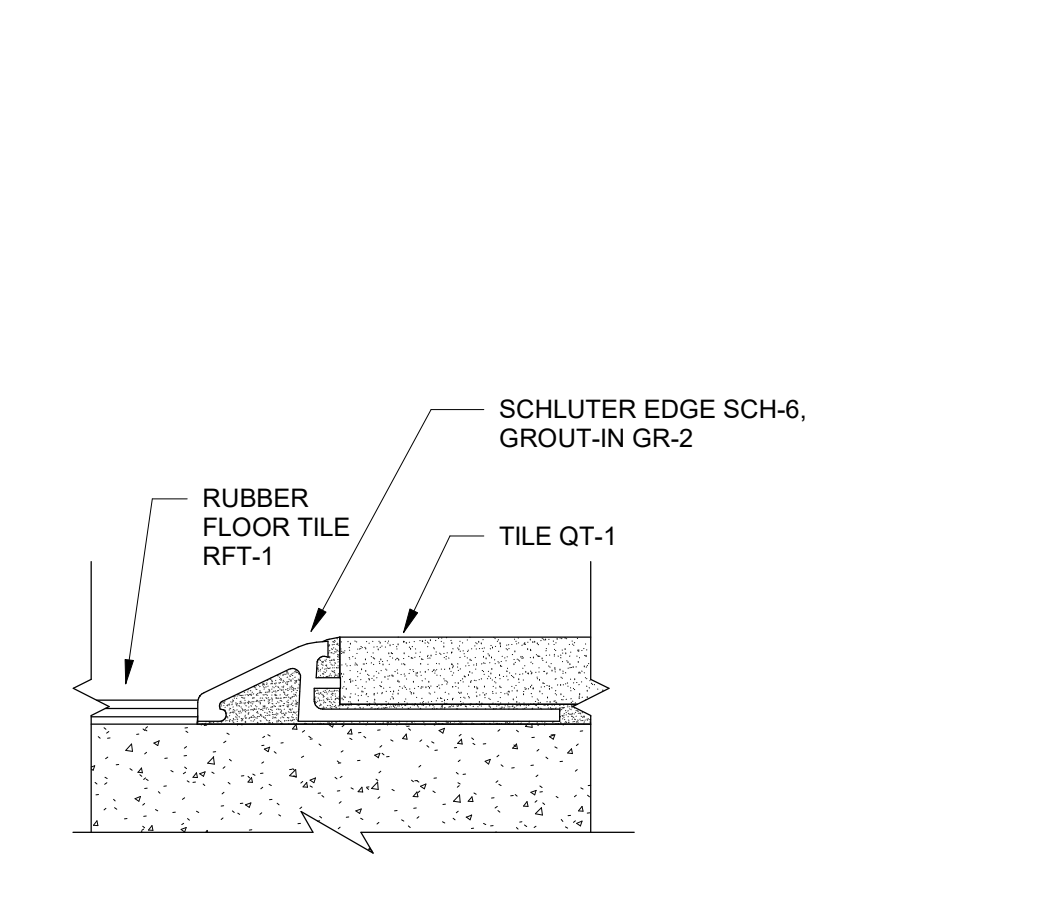
21 BANQUETTE ROUTED BASE
5" = 1'-0"



17 MOBILE TRASH CABINETRY SECTION
1" = 1'-0"



10 BASE COVE COUNTER DETAIL
12" = 1'-0"



5 TYP. RUBBER TO TILE TRANSITION
12" = 1'-0"

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GENERAL FINISH NOTES:

- ALL INTERIOR HM DOOR FRAME FINISHES AND METAL DOORS TO BE PAINTED PT-5. UNLESS NOTED OTHERWISE.
- ALL PLAM-1 TO RUN IN THE VERTICAL DIRECTION UNLESS NOTED OTHERWISE.
- SEE FINISH PLAN I-101A, ELEVATION 41-404 (TYPICAL), AND ELEVATION 81-404 FOR VERTICAL PARTITION FINISHES.
- ALL CORNER GUARDS TO MATCH WALL PAINT COLOR.
- WVC-2 TO BE OWNER SUPPLIED, OWNER INSTALLED.
- STAIR NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS AT THE TOP OF STAIR FLIGHTS. ALL OTHER STEPS TO HAVE STAIR TREADS WITH YELLOW VISUALLY IMPAIRED STRIPS. STAIR TREADS, RISERS, AND LANDINGS TO BE RFT-2.

INTERIORS FINISH ABBREVIATIONS:

- ACT = ACOUSTICAL CEILING TILE
- APT = ALUMINUM PERIMETER TRIM
- CG = CORNER GUARD
- CONC = CONCRETE
- CMU = CONCRETE MASONRY UNIT
- CPT = CARPET
- CT = CERAMIC TILE
- EXP = EXPOSED
- GR = GROUT
- GWB = GYPSUM WALL BOARD
- LMC = LINEAR METAL CEILING
- MB = MARKER BOARD
- PAB = POLYESTER ACOUSTICAL BOARD
- PLAM = PLASTIC LAMINATE
- PMTL = PERFORATED METAL
- PT = LATEX PAINT
- QT = QUARRY TILE
- RB = RUBBER BASE
- RFT = RUBBER FLOOR TILE
- RT = RUBBER TRANSITION
- SC = SEALED CONCRETE
- SCH = SCHLUTER
- SSM = SOLID SURFACE MATERIAL
- TB = TACKBOARD
- UPH = UPHOLSTERY
- VWC = VINYL WALL COVERING
- WD = WOOD
- WDF = WOOL DESIGN FELT
- WOCPCT = WALK OFF CARPET

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	
1101	VESTIBULE	WO/CPT	RB-1	WD-1	PT-6	PT-9	PT-6	GWB	11'-6"	WOOD ACCENT WALL ON NORTH WALL - SEE I-101A
1102	HALLWAY	RFT-1	RB-1	WD-1	-	PLAM-1/PT-9	PT-6	GWB/ACT-1	12'-0"	WOOD ACCENT WALL ON NORTH WALL AND PLAM SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON SOUTH WALL - SEE I-101A
1103	GENERAL BREAK ROOM	RFT-1	RB-1	PT-6	PT-6/ CT-1	WD-1	PT-6	ACT-1	12'-0"	TILE ON WALLS SURROUNDING EWC AND WHERE KITCHENETTE CASEWORK OCCURS. WOOD ACCENT WALL ON SOUTHERN END OF BANQUETTE SEATING - SEE I-101A
1104	DRIVER TRAINING ROOM	RFT-1	RB-1	PLAM-1/PT-7	PT-6	PT-6	PT-6	ACT-1	12'-0"	PLAM SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON NORTH WALL - SEE I-101A
1105	STORAGE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	9'-0"	
1106	CORRIDOR	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	9'-0"	
1107	VESTIBULE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	9'-0"	
1108	INSTRUCTOR'S OFFICE	CPT-1	RB-1	PT-6	PT-10	PT-6	PT-6	ACT-1	9'-0"	SEE I-101A
1109	CLOSET	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-6	EXP/PT-6		
1110	WOMEN'S	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	9'-0"	VWC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE I-101A
1111	MEN'S	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	9'-0"	VWC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE I-101A
1112	GREETING	RFT-1	RB-1	PT-6	CT-1/WD-1	CT-1/WD-1	CT-1/WD-1	GWB/ACT-1	12'-0"	SEE I-101A
1117	FLEX H.R. OFFICE	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	9'-0"	SEE I-101A
1118	TESTING	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GWB	8'-0"	SEE I-101A
1119	TOILET	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GWB	8'-0"	SEE I-101A
1120	VESTIBULE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	12'-0"	
1211	SERVICE BAY #13-15	SC-1	-	-	-	-	-	PT-4	-	EXP
1214	SERVICE BAY #16-18	SC-1	-	-	-	-	-	PT-4	-	EXP
1217	SERVICE BAY #19-21	SC-1	-	-	-	-	-	PT-4	-	EXP
1218	WORK AREA	SC-1	-	-	-	-	-	PT-4	-	EXP
1220	VEHICLE CIRCULATION	SC-1	-	-	-	-	-	PT-4	-	EXP
1221	VEHICLE CIRCULATION	SC-1	-	-	-	-	-	PT-4	-	EXP
1228	DATA	SC-1	-	PT-6	PT-6	PT-6	PT-6	EXP/PT-6		
1229	ELECTRICAL ROOM	SC-1	-	PT-6	PT-6	PT-6	PT-6	EXP/PT-6		
1230	TIRES	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1231	WATER SERVICE ENTRY	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1232	RECEIVING	SC-1	-	PT-4/PT-8	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1233	LOADING DOCK	SC-1	-	PT-4/PT-8	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1234	STAGING	SC-1	-	PT-4/PT-8	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1235	STAIRS	RB-2	-	PT-4	PT-4	PT-4	PT-4	EXP		RFT STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
1236	BATTERY STORAGE/ CHARGING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1237	PARTS STORAGE	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1238	PARTS	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10'-0", PT-4 ABOVE 10'-0". SEE I-101A
1701	COMM	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		NON CMU WALL TO HAVE 4" COVE WALL BASE
2121	COMM	SC-1	RB-1	PT-6	PT-6	PT-6	PT-6	EXP		
2201	MECHANICAL	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
2301	ELECTRICAL	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
2302	STORAGE	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
2303	STORAGE	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
2305	WATER/ COMPRESSOR ROOM	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
2306	MECH	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		

ROOM FINISH SCHEDULE 3A ALTERNATE NO. 1										
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	
1301	VEST.	SC-1	-	-	PT-4	PT-4	PT-4	EXP		
1302	MEN'S	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	8'-0"	
1303	WOMEN'S	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	8'-0"	
1304	STEAM CLEANING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1305	METER SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1306	UNIT SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1307	VEST.	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1308	WELDING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1309	BODY SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1310	STAIRS	RB-2	-	PT-4	PT-4	PT-4	PT-4	EXP		RB STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
1311	SERVICE BAYS #22-23	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		

INTERIOR FINISHES SCHEDULE							PRODUCT DESCRIPTION			REMARKS
FINISH NUMBER	FINISH DESCRIPTION	MANUFACTURER	MODEL NUMBER	STYLE	COLOR	SIZE	FINISH NUMBER	FINISH DESCRIPTION	MANUFACTURER	
ACT-1	ACOUSTIC CEILING TILE - TYPE 1	USG			WHITE	24" X 24"	W/ USG DONN BRAND CENTRICITEE 9/16" GRID			
ACT-2	ACOUSTIC CEILING TILE - TYPE 2	ARMSTRONG	1753		WHITE	24" X 24"	WASHABLE ACT W/ 9/16" GRID			
APT-1	ALUMINUM PERIMETER TRIM - TYPE 1	ARMSTRONG	AX1PC6STRWH	6" ONE PIECE AXIOM CLASSIC FOR DRYWALL	WHITE					
APT-2	ALUMINUM PERIMETER TRIM - TYPE 2	ARMSTRONG	AX6BSTRWH	6" AXIOM CLASSIC	WHITE		W/ 7239 ADJUSTABLE TRIM CLIP			
CG-1	CORNER GUARD - TYPE 1	INPRO	3448		0103	12" X 3/4"	SEE I-101A FOR CORNER GUARD LOCATIONS			
CG-2	CORNER GUARD - TYPE 2	INPRO	3448		0257	12" X 3/4"	SEE I-101A FOR CORNER GUARD LOCATIONS			
CPT-1	CARPET - TYPE 1	MOHAWK GROUP	GT154		599	24" X 24"				
CT-1	CERAMIC WALL TILE - TYPE 1	DIESEL LIVING		INDUSTRIAL GLASS	WHITE	3.9" X 11.6"	GROUT TO BE GR-1			
GR-1	GROUT - TYPE 1	TEC			927		USED FOR CT-1			
GR-2	GROUT - TYPE 2	TEC			941		USED FOR QT-1			
HPDE-1	HPDE PARTITION - TYPE 1	BRADLEY	SERIES 400	SERIES 400	S225					
LMC-1	LINEAR METAL CEILING	ARMSTRONG		METALWORKS LINEAR LINES	EFFECTS CINNAMON		TOP LAYER - LINES PATTERN			
PAB-1	POLYESTER ACOUSTICAL BOARD - TYPE 1	LUCID ECOCORE			ECO-08	1/2" THICK	BASE LAYER			
PAB-2	POLYESTER ACOUSTICAL BOARD - TYPE 2	LUCID ECOCORE			ECO-06	1/2" THICK	BASE LAYER			
PAB-3	POLYESTER ACOUSTICAL BOARD - TYPE 3	CSI WALL PANELS	SCPLU4601	SOUNDCORE PLUS 1" ACOUSTICAL PANEL	SND902					
PLAM-1	PLASTIC LAMINATE - TYPE 1	FORMICA			7747					
PT-4	PAINT COLOR - TYPE 4	SHERWIN WILLIAMS			SW7004					
PT-5	PAINT COLOR - TYPE 5	SHERWIN WILLIAMS			SW7069				ALL HM FRAMES AND METAL DOORS TO BE PAINTED PT-5	
PT-6	PAINT COLOR - TYPE 6	SHERWIN WILLIAMS			SW7029					
PT-7	PAINT COLOR - TYPE 7	SHERWIN WILLIAMS			SW6342					
PT-8	PAINT COLOR - TYPE 8	SHERWIN WILLIAMS			SW6510					
PT-9	PAINT COLOR - TYPE 9	SHERWIN WILLIAMS			SW7625					
PT-10	PAINT COLOR - TYPE 10	SHERWIN WILLIAMS			SW6417					
QT-1	QUARRY TILE - TYPE 1	LANDMARK CERAMICS		CHARME	GRAPHITE DARK	12" X 24"	GROUT TO BE GR-2			
RB-1	RUBBER BASE - TYPE 1	MANNINGTON	EEETC		523	4"				
RB-2	RUBBER BASE - TYPE 2	MANNINGTON			523	4"				
RFT-1	RUBBER FLOOR TILE - TYPE 1	NORA	ARTICLE 1880	GRANO	5307, 5320, & 5308	3.5MM TILE	BURKBASE TYPE TP COVED OR EQUAL. SEE SHEET I-102F			
RFT-2	RUBBER FLOOR TILE - TYPE 2	NORA		HAMMERED	0716		SEE I-401 FOR FLOORING PATTERN			
RT-1	RUBBER TRANSITION - TYPE 1	TARKETT	SLT-63-J	SLIM LINE	63		VISUALLY IMPAIRED STRIPS IN COLOR SAFETY YELLOW			
RT-2	RUBBER TRANSITION - TYPE 2	TARKETT	SLT-63-B	SLIM LINE	63					
SCH-1	SCHLUTER EDGE - TYPE 1	SCHLUTER SYSTEMS	A 80 ATGB	SCHLUTER-JOLLY	ATGB					
SCH-2	SCHLUTER EDGE - TYPE 2	SCHLUTER SYSTEMS	AHK 1S 100 ATGB	SCHLUTER-DILEX-AHK	ATGB					
SCH-3	SCHLUTER EDGE - TYPE 3	SCHLUTER SYSTEMS	AHK 1S 80 ATGB	SCHLUTER-DILEX-AHK	ATGB		TILE TO COUNTERTOP AND INSIDE TILE CORNERS			
SCH-4	SCHLUTER EDGE - TYPE 4	SCHLUTER SYSTEMS	ATK 100 ATGB	SCHLUTER-RENO-TK	ATGB					
SCH-5	SCHLUTER EDGE - TYPE 5	SCHLUTER SYSTEMS	AEV1 100 820	SCHLUTER-RENO-V	AE					
SCH-6	SCHLUTER EDGE - TYPE 6	SCHLUTER SYSTEMS	AU 100 ATGB	SCHLUTER-RENO-J	ATGB					
SCH-7	SCHLUTER EDGE - TYPE 7	SCHLUTER SYSTEMS	RO 80 ATGB	SCHLUTER-ROUNDEC	ATGB		OUTSIDE TILE CORNERS			
SSM-1	SOLID SURFACE - TYPE 1	CORIAN			ASH CONCRETE	12MM SHEET				
UPH-1	UPHOLSTERY - TYPE 1	ARCHITEX		BILLOW	MAKENA BEACH		BANQUETTE BACK UPHOLSTERY			
UPH-2	UPHOLSTERY - TYPE 2	ARCHITEX		ENDURANCE EPU	JETTY		BANQUETTE SEAT UPHOLSTERY			
UPH-3	UPHOLSTERY - TYPE 3	CARNEGIE	6427S	METEOR	706		OPERABLE VERTICAL PARTITION FABRIC			
VWC-1	VINYL WALL COVERING - TYPE 1	CARNEGIE	8104		33					
VWC-2	VINYL WALL COVERING - TYPE 2						OWNER SUPPLIED, OWNER INSTALLED			
WB-1	WOOD BASE - TYPE 1				STAIN BLACK/BROWN	6"	BANQUETTE ROUTED TOE BASE WITH MARINE WOOD FINISH. STAIN COLOR TO BE APPROVED.			
WD-1	URBAN WOOD - TYPE 1	URBAN EVOLUTIONS		URBAN ASH	NATURAL STAIN					
WDF-1	WOOL DESIGN FELT - TYPE 1	FLIZ FELT			150	2MM THICK				
WOCPCT	WALK OFF CARPET - TYPE 1	BENTLEY MILLS	BRNZ4		800115	24" X 24"				
WSDH-1	WINDOW SHADE - TYPE 1	DRAPER INC.		DRAPER INC.	PW3570		DRAPER INC. PW3570 OR EQUAL			
WSDH-2	WINDOW SHADE - TYPE 2	DRAPER INC.		DRAPER INC.	SW7000-V40		ONXY			



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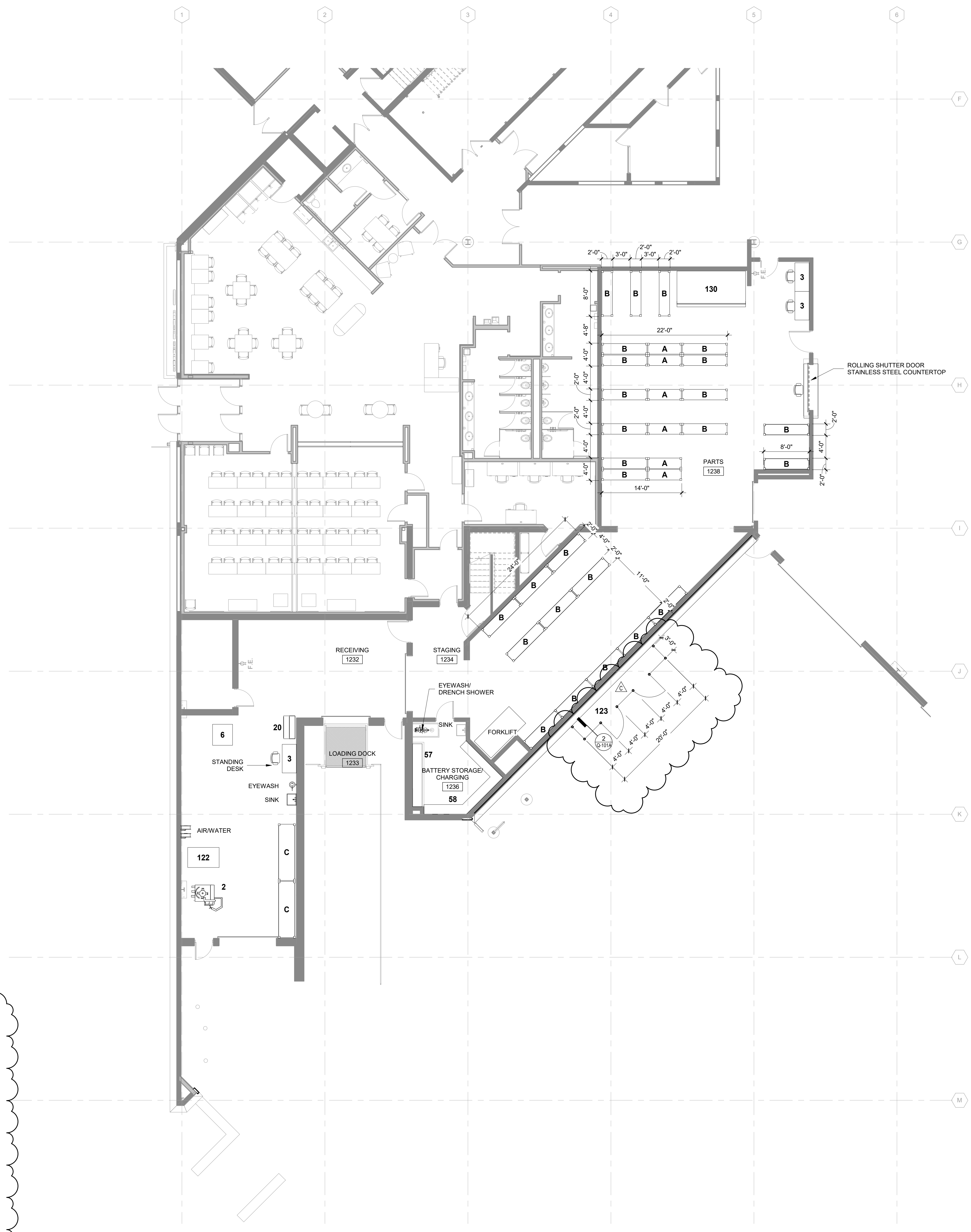
ISSUED
04/08/21 BID SET
05/13/21 ADDENDUM #2
05/20/21 ADDENDUM #3

CONTRACT NO.: 8981
M&H NO.: 4505500-190896.03
DATE: APRIL 8, 2021
DESIGNED BY: JPW
DRAWN BY: RES
CHECKED BY: Checker
DO NOT SCALE DRAWINGS

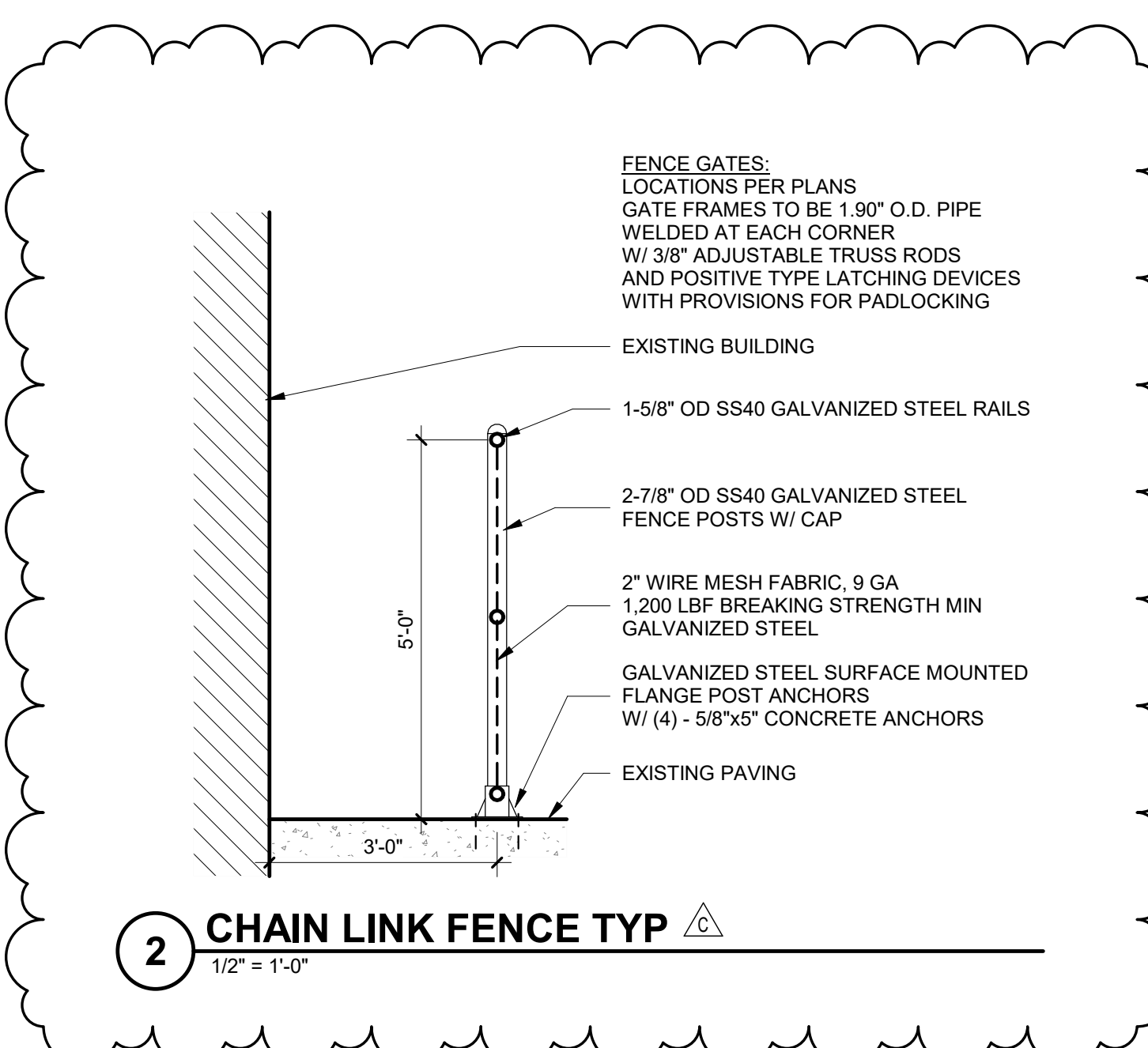
SHEET CONTENTS
FIRST FLOOR PLAN - AREA A

SHEET NO.:

Q-101A

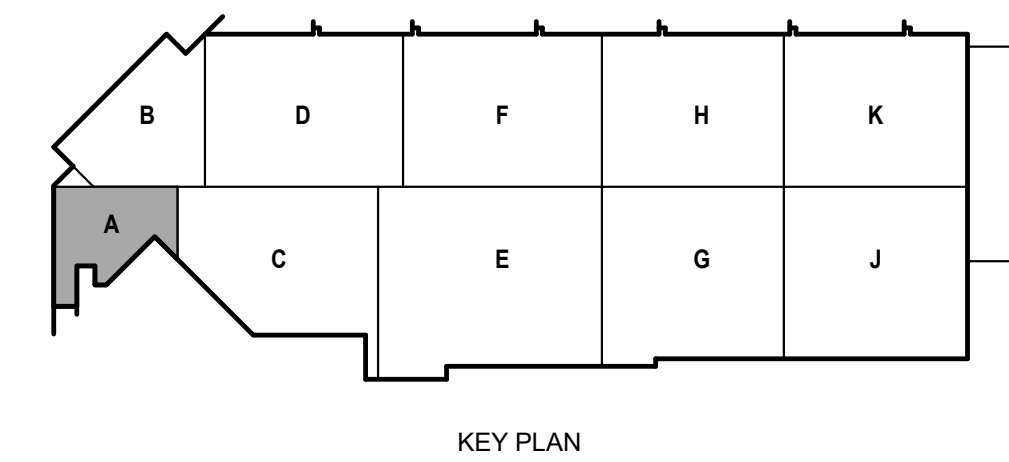


EQUIPMENT SCHEDULE						
Mark	Type	Count	Owner Provided	Owner Installed	GC Provided	GC Installed
2	Rim Clamp Tire Machine	1	X	X		
3	Desk 60"W x 30"D	3		X		
6	Tire Cage	1	X	X		
9	2-Tier Locker - 12"x15"x 78"	6		X		
20	Tool Cabinet	30	X	X		
21	Work Bench 5'-0"W x 3'-0"D x 3'-0"H	16				
34	SmartWasher SW-37	9				
35	Oil King 25 gal Used-Oil Receiver	11				
45	Tool Cabinet	1	X	X		
57	Battery Charging Bench	1		X		
58	Battery Charging Bench	1	X	X		
80	Pallet Storage Floor Space	1	X	X		
83	Pallet Storage Floor Space	1	X	X		
84	Used Oil Tank	1	X			X
89	Bulk Fluid Storage Tank #2	1	X			X
91	Dumping Hopper	1	X	X		
92	Baler	1	X			X
96	Oil Filter Crusher	1	X			X
101	Bulk Fluid Storage Tank #3	1	X			X
106	Rack Shelving - 3D x 10'W x 8'H	3	X			X
118	Rack Shelving - 3D x 10'W x 8'H	1	X			X
119	Rack Shelving - 3D x 10'W x 8'H	2	X			X
122	Tire Machine	1	X	X		
123	Flammable Tank Storage	1			X	X
127	Drill Press	1	X	X		
128	Horizontal Band Saw	1	X	X		
129	Tire Carousel	1			X	X
130	Parts Carousel	1			X	X
131-13	ECO-60-10	1			X	X
131-14	ECO-60-10	1			X	X
131-15	ECO-60-10	1			X	X
131-16	ECO-60-10	1			X	X
131-17	ECO-60-10	1			X	X
131-18	ECO-60-10	1			X	X
131-19	ECO-60-10	1			X	X
131-20	ECO-60-10	1			X	X
131-21	ECO-60-10	1			X	X
132-22	ECO-90-17	1			X	X
133-13	ECO-60 Control Console	1			X	X
133-14	ECO-60 Control Console	1			X	X
133-15	ECO-60 Control Console	1			X	X
133-16	ECO-60 Control Console	1			X	X
133-17	ECO-60 Control Console	1			X	X
133-18	ECO-60 Control Console	1			X	X
133-19	ECO-60 Control Console	1			X	X
133-20	ECO-60 Control Console	1			X	X
133-21	ECO-60 Control Console	1			X	X
133-22	ECO-90 Control Console	1			X	X
134	Oil Filter Trash Receptacle	1	X	X		
135	Waste Oil Pump	2			X	X
A	Rack Shelving - 2D x 6'W x 8'H	6				
B	Rack Shelving - 2D x 8'W x 8'H	26				
C	Rack Shelving - 3D x 10'W x 8'H	5				



2 CHAIN LINK FENCE TYP
1/2" = 1'-0"

TRUE PLAN NORTH NORTH
1 1/8" First Floor Equipment Plan - Area A
1/8" = 1'-0"



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DO NOT SCALE DRAWINGS
SHEET CONTENTS
LIGHTING SCHEDULES

SHEET NO.:

LUMINAIRE SCHEDULE

NOTE: SEE SPECIFICATION FOR ADDITIONAL INFORMATION REGARDING LUMINAIRE AND INSTALLATION REQUIREMENTS. PROVIDE OPTIONS AND ACCESSORIES REFERENCED BY THE COLUMN TITLED "OPTIONS/ACCESSORIES". MANUFACTURERS LISTED ACCEPTABLE SHALL MEET ALL REQUIREMENTS AND FEATURES INDICATED. ACCEPTABLE MANUFACTURERS MUST MEET THE PHOTOMETRIC PERFORMANCE OF THE LISTED UNIT.														
ABBREVIATIONS: GWB = GYPSUM WALL BOARD P = PENDANT R = RECESSED V = VARIES ES = EXPOSED STRUCTURE PLAS = PLASTER S = SURFACE W = WALL MOUNTED LG = LAY-IN GRID PL = POLE MOUNTED UNV = UNIVERSAL VOLTAGE														
DES.	MANUFACTURER	CATALOG SERIES	DESCRIPTION	LAMP DATA	VOLTAGE	BALLAST DRIVER	MOUNT	CEILING TYPE	FIXTURE DEPTH	LED SYSTEM INPUT WATTAGE	LED DELIVERED LUMENS	OPTIONS ACCESSORIES	ACCEPTABLE MANUFACTURERS	KEYED NOTE
A1	LITHONIA	EPANL SERIES	2' x 2' LED EDGE-LIT FLAT PANEL	4000K LED	277V	D	R	LG	2"	29.2	3333		COLUMBIA CFP, ELITE LIGHTING IKIO ASTRAL EDGE	
D1	GOTHAM	EVO4 SERIES	4" LED ROUND RECESSED DOWNLIGHT WITH WHITE REFLECTOR AND FLANGE, MEDIUM DISTRIBUTION, AND SEMI-SPECULAR FINISH	4000K LED	277V	D	R	LG	6 1/2"	13.7W	1527		PORTFOLIO, LITEISTRY USAI, ELITE LIGHTING	
DK1	HUBBELL	DOKSTAR SERIES	LED DOCK LIGHT, WITH 32 DEGREE FLOOD OPTICS AND POLYCARBONATE LENS, IN-LINE ROCKER SWITCH, 40" DOUBLE STRUT SWING ARM WITH STANDARD 6' CORD AND PLUG	5000K LED	120V	D	W	-	-	21W	1506		PHOENIX ELITE LIGHTING	
J1	CONTECH	CTL SERIES	12' LED TRACK LIGHT, WHITE, WITH SOLITE TEMPERED GLASS LENSES, ORDER WITH 1/2 CONTECH LT WHITE TRACK WITH OUTLET BOX COVER PLATE LA-4 AND AIRCRAFT CABLE	4000K LED	120V	D	R	LG	-	19W	2213		JUNO, BRUCK, ELITE LIGHTING TIMES SQUARE, LSI	
K21	CREE	LS SERIES	4' LED WALL BRACKET WITH LOW GLARE ACRYLIC LENS AND WHITE FINISH	4000K LED	277V	D	W	-	3"	40W	4250		METALUX, COLUMBIA LITHONIA, ELITE LIGHTING	
L1	AXIS	BEAM4 LED SERIES	4' LED NARROW RECESSED LINEAR FIXTURE WITH WHITE POWDER COAT EXTRUDED ALUMINUM HOUSING AND FORSTED FLUSH LENS, 90 CRI	4000K LED	277V	D	R	LG	3-7/8"	5 W/FT	400 LM/FT		PINNACLE, LUMENWERX, CORONET FINELITE, ELITE LIGHTING	
L2	AXIS	BEAM4 LED SERIES	4' LED RECESSED PERIMETER FIXTURE WITH EXTRUDED ALUMINUM HOUSING, 2" REGRESS, TELESCOPIC END. SEE PLANS FOR EXACT LENGTH REQUIRED.	4000K LED	277V	D	R	LG	6"	5 W/FT	400 LM/FT		PINNACLE, LUMENWERX, CORONET FINELITE, METALUMEN	
L3	OMNILIGHT	CONTINUUM SERIES	FIELD CUTTABLE LED TAPELIGHT MOUNTED IN ALUMINUM CHANNEL, DIMMABLE, 90 CRI	3000K LED	24V	D	S	GWB	0.5"	1.47 W/FT	140 LM/FT		ACOLYTE, OPTIC ARTS, MODA LED LINEAR, ELITE LIGHTING	
L4	AXIS	BEAM4 LED SERIES	4' LED RECESSED PERIMETER FIXTURE WITH EXTRUDED ALUMINUM HOUSING, 2" REGRESS, TELESCOPIC END. SEE PLANS FOR EXACT LENGTH REQUIRED.	4000K LED	277V	D	R	GWB	6"	5 W/FT	400 LM/FT		PINNACLE, LUMENWERX, CORONET FINELITE, METALUMEN	
N2	LITHONIA	MSL SERIES	4' LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	277V	D	S	-	3-1/4"	40W	3636		METALUX, COLUMBIA DAYBRITE	
N3	LITHONIA	MSL SERIES	4' LED CHAIN-HUNG PENDANT INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	277V	D	P	-	3-1/4"	40W	3636		METALUX, COLUMBIA DAYBRITE	
N5	LITHONIA	MSL SERIES	8' LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	277V	D	S	-	3-1/4"	58W	7273		METALUX, COLUMBIA DAYBRITE	
N6	BARRON	VPA SERIES	4' LED SURFACE LINEAR VAPORTIGHT WITH POLYCARBONATE HOUSING FOR CORROSIVE ENVIRONMENT	4000K LED	277V	D	S	-	3.6"	40W	5200		METALUX, COLUMBIA DAYBRITE, ELITE LIGHTING	
N7	LITHONIA	MSL SERIES	8' LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	120V	D	S	-	3-1/4"	58W	7273		METALUX, COLUMBIA DAYBRITE	
N11	LITHONIA	FEM SERIES	4' LED PENDANT INDUSTRIAL VAPOR-TIGHT FIXTURE WITH FIBERGLASS HOUSING	4000K LED	277V	D	P	-	4-1/4"	94.3W	15160		LITHONIA, ELITE LIGHTING METALUX, COLUMBIA	
OA1	GOTHAM	EVO6 SERIES	6" LED ROUND RECESSED DOWNLIGHT, WET LOCATION RATED, FLUSH LENSED WHITE PAINTED TRIM WITH SMOOTH CLEAR LENS	4000K LED	277V	D	R	-	7 9/16"	10W	857		PORTFOLIO, LITEISTRY USAI, ATLANTIC LIGHTING	
OA2	LITHONIA	D-SERIES SIZE 1	LED WALL MOUNTED FIXTURE WITH DIE CAST ALUMINUM HOUSING, ACRYLIC LENS, DARK SKY FRIENDLY CERTIFIED, IP68 RATED, FORWARD THROW LIGHT DISTRIBUTION AND DARK BRONZE FINISH	4000K LED	277V	D	W	-	10"	13W	1515		MOGRAW EDISON, HUBBELL, LSI PHILIPS 122 SCONCE SERIES	
P1	DESIGNPLAN	PLANK SERIES	4' LED LINEAR PENDANT WITH ALUMINUM BODY AND WOOD SIDE PANELS, AIRCRAFT CABLE MOUNT, 90 CRI	4000K LED	277V	D	P	LG	8"	72W	1848 UP 1866 DOWN		MODERN FORMS, PURE EDGE NATIONAL LIGHTING COMPANY	
P2	G LIGHTING	GLOBO SERIES	24" LED ACRYLIC GLOBE INTERIOR PENDANT	4000K LED	277V	D	P	GWB	24"	42W	4912		SPI, LIGHTWAY INDUSTRIES AI LATI	
P3	EUREKA	MIKA SERIES	8" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10V DIMMING, 80 CRI	4000K LED	277V	D	P	LG	8"	9.8W	987		WAC, LIGHTWAY INDUSTRIES AI LATI	
P4	EUREKA	MIKA SERIES	12" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10V DIMMING, 80 CRI	4000K LED	277V	D	P	LG	12"	9.8W	1062		WAC, LIGHTWAY INDUSTRIES AI LATI	
Q1	MODA LIGHT	SUPER NEON SERIES	LED FLEXIBLE COVE LIGHT PROVIDE ALL REQUIRED ACCESSORIES TO CREATE A COMPLETE AND OPERABLE SYSTEM AS SHOWN ON THE PLANS.	4000K LED	24V	D	S	GYP	1-1/8"	5 W/FT	100 LM/FT		LED LINEAR, I-LIGHT, ACOLYTE OPTIC ARTS, TPR ENTERPRISES	
S1	JUNO	SLIMFORM SERIES	LED SURFACE MOUNT DOWNLIGHT, 11" DIAMETER, WIRE DIRECTLY TO J-BOX	4000K LED	277V	D	S	ES	.9"	15W	1300		DMF LIGHTING ELITE LIGHTING	
X1	EVENLITE	RAZOR SERIES	SINGLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUNT, RED LETTERS	LED	277V	-	UNV	-	-	-	-		LITHONIA, SURE-LITE DUAL-LITE, LIGHT ALARMS	
X2	EVENLITE	RAZOR SERIES	DOUBLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUNT, RED LETTERS	LED	277V	-	UNV	-	-	-	-		LITHONIA, SURE-LITE DUAL-LITE, LIGHT ALARMS	

BALLAST/DRIVER CODE LISTING: (SEE SPECIFICATIONS)
 D LED DIMMABLE POWER SUPPLY (0-10V).
 E LED DIMMABLE POWER SUPPLY (TRAILING EDGE).
 F LED DIMMABLE POWER SUPPLY 1% DIMMING LUTRON HI LUME OR EQUAL.
 G LED DIMMABLE POWER SUPPLY ADVANCE XITANIUM OR EQUAL.

GENERAL NOTES:
 1. ONLY BALLAST SERIES IS INDICATED ON THIS SCHEDULE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION. EACH FIXTURE SUBMITTAL SHALL BE PROVIDED WITH FULL BALLAST AND LAMP INFORMATION.
 2. EC SHALL VERIFY AND COORDINATE ALL LUMINAIRE TRIMS/FLANGES WITH RESPECTIVE CEILING TYPES SCHEDULED AND/OR SUBMITTED BY THE GC PRIOR TO ORDERING OF THE LUMINAIRES. SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING INFORMATION AVAILABLE AT THE TIME BIDDING DOCUMENTS WERE ISSUED AND DOES NOT REFLECT ACTUAL THICKNESS OF GYPSUM WALL BOARD OR PLASTER CEILING OR EXACT GRID TYPE SPECIFIED BY THE ARCHITECT.

KEYED NOTES:
 1. PERIMETER FIXTURE SHALL BE WALL TO WALL INSTALLATION. LUMINAIRES SHALL BE PROVIDED WITH SLIDING SLEEVE OR EXACT MEASUREMENTS SHALL BE VERIFIED IN FIELD PRIOR TO RELEASING FIXTURE.
 2. VERIFY ALL COMPONENTS REQUIRED TO CREATE A COMPLETE SYSTEMS AS INDICATED ON PLAN INCLUDING POWER SUPPLIES AND CONNECTION ACCESSORIES.

COMMUNICATIONS GENERAL NOTES

1. REFER TO T-001 FOR NOTES, SYMBOLS, AND ABBREVIATIONS.
2. REFER TO T-500 SERIES FOR DETAILS, AND T-700 SERIES FOR RISER DIAGRAMS.
3. ALL TECHNOLOGY OUTLETS IN THIS AREA TO TERMINATE INTO DATA 1228.
4. ALTERNATE NO. 1. SEE SPECIFICATION 012300 - ALTERNATES AND DRAWING G131. ALL WORK ASSOCIATED WITH AREA F, FIRST FLOOR ONLY, AS IDENTIFIED PER DRAWING G131. THIS GENERALLY INCLUDES A BATHROOM/LOCKERROOM, A MAINTENANCE BAY, BODY SHOP, ADJACENT WORKSHOPS AND ASSOCIATED WORK.

Mead & Hunt

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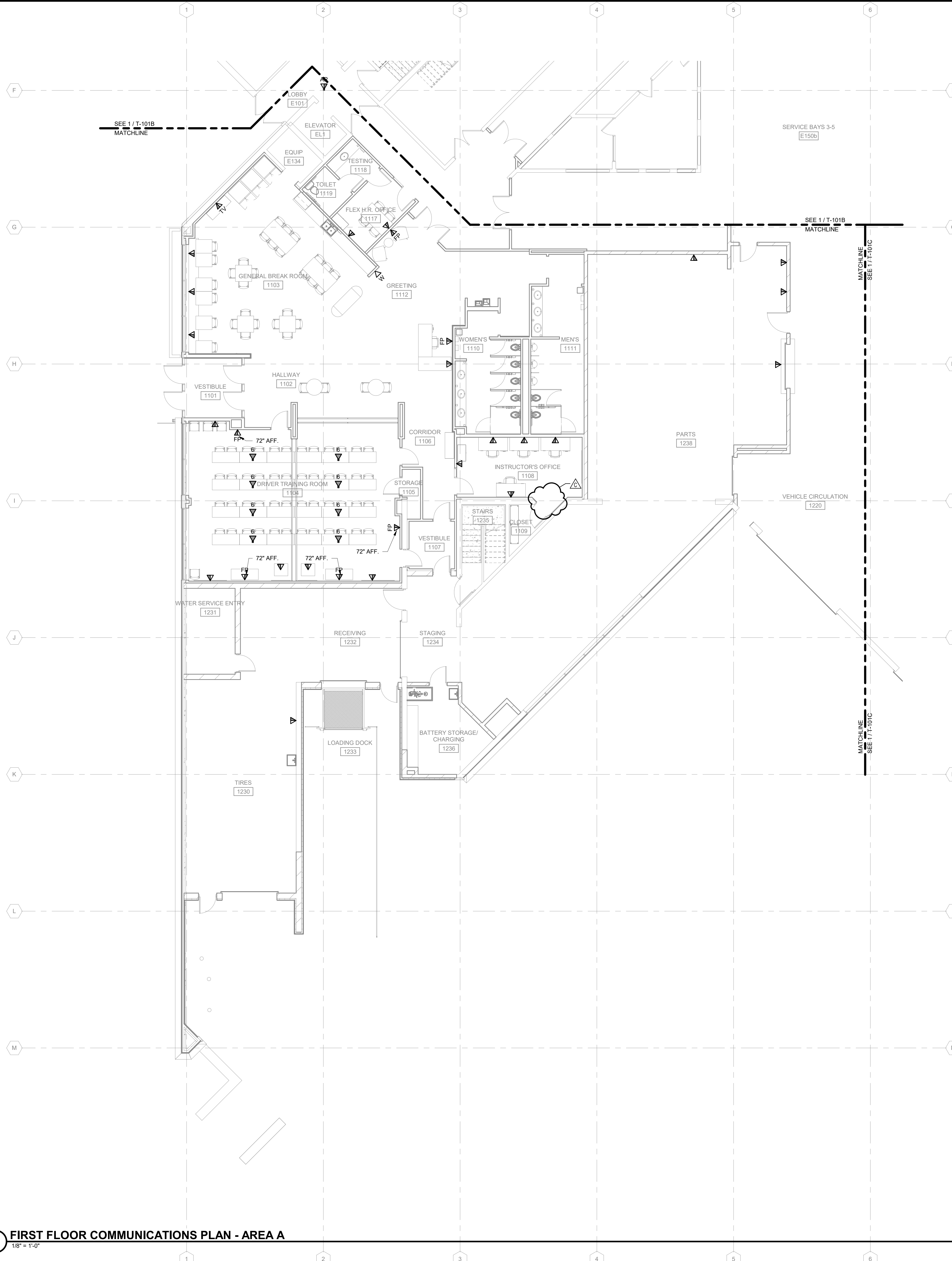
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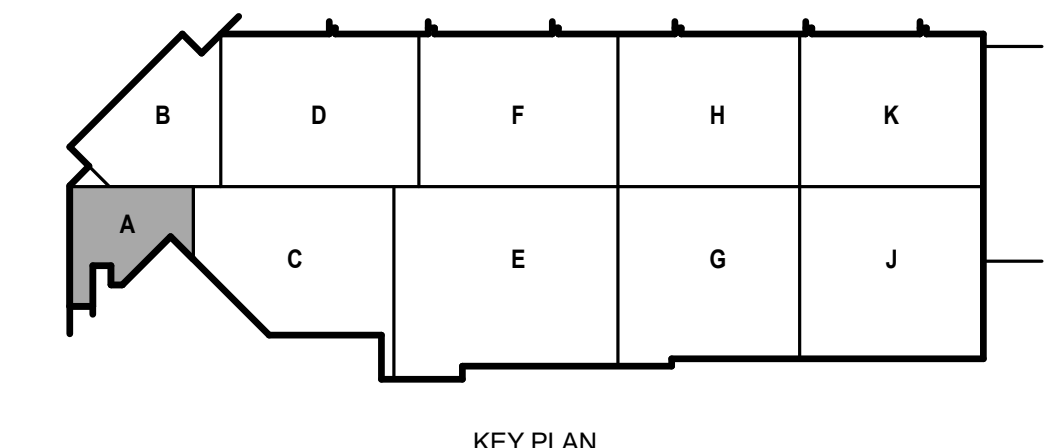
SHEET CONTENTS
FIRST FLOOR
COMMUNICATIONS
PLAN - AREA A

SHEET NO.:

T-101A



TRUE PLAN
NORTH NORTH
1 FIRST FLOOR COMMUNICATIONS PLAN - AREA A
1/8" = 1'-0"



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