



Scott Kirchner, Architect

Addendum No. 01
To Contract Documents for Construction

DATE 10/24/2025
PROJECT Catchings Clinic
CLIENT Field Health System
BWBR COMM. # 3.2020181.01

PREPARED BY

BWBR, P.C.
380 St. Peter Street, Suite 600
Saint Paul, MN 55102

I hereby certify that this Addendum was prepared by me or under my direct supervision, and that I am a duly licensed Architect under the laws of the State of Mississippi.

Scott C. Kirchner, AIA

Registration No. 5395

To: Bidders of Record

This Addendum modifies the Bidding Documents for the project identified above. Acknowledge receipt of this Addendum by recording number and date of issue on the Bid Form. Failure to do so may result in disqualification of the Bid.

Project Manual							
00-0110	01-7419	07-5400	08-4229	08-4313	08-5659		

Drawing Sheets							
500	511	565	566	606			

Specifications

1. **Document 00-0110 - Table of Contents** (Reissued)
 - A. Add AD-01 to Issuances.
 - B. Document revised and reissued in its entirety.
2. **Section 01-7419 - Construction Waste Management and Disposal** (Reissued)
 - A. Section revised and reissued in its entirety.
3. **Section 07-5400 - Thermoplastic Membrane Roofing** (Reissued)
 - A. Section revised and reissued in its entirety.
4. **Section 08-4229 - Automatic Entrances** (Reissued)
 - A. Section revised and reissued in its entirety.
5. **Section 08-4313 - Aluminum-Framed Storefronts** (Reissued)
 - A. Section revised and reissued in its entirety.
6. **Section 08-5659 - Service and Teller Window Units** (Reissued)
 - A. Section revised and reissued in its entirety.

Drawings

1. **Sheet 500 – ROOF PLAN AND ROOF DETAILS** (Reissued)
 - A. Clarify notes on TPO-1B roof types.
2. **Sheet 511 – CANOPY ELEVATIONS AND DETAILS** (Reissued)
 - A. Clarify Metal Panel notes on 3D.
3. **Sheet 565 – EXTERIOR SECTION DETAILS** (Reissued)
 - A. Remove waterproofing from details 2H, 4H, & 6H.
 - B. Remove granular fill notes from details 2H, 4H, & 6H.
 - C. Clarify Metal Panel notes on 1C.
4. **Sheet 566 – EXTERIOR SECTION DETAILS** (Reissued)
 - A. Remove waterproofing from detail 1H.
 - B. Remove granular fill notes from detail 1H.
5. **Sheet 606 – ¼" PLANS AND INTERIOR ELEVATIONS - PHARMACY** (Reissued)
 - A. Modify 3C as shown.

END ADDENDUM NO. 01



Scott Kirchner, *Architect*

Addendum No. 01
To Contract Documents for Construction
Specialized Engineering Solutions

DATE 10/24/2025
PROJECT Catchings Clinic
CLIENT Field Health System
BWBR COMM. # 3.2020181.01

PREPARED BY
Specialized Engineering Solutions
10360 Ellison Circle
Omaha, Nebraska 68134

To: Bidders of Record

This Addendum modifies the Bidding Documents for the project identified above. Acknowledge receipt of this Addendum by recording number and date of issue on the Bid Form. Failure to do so may result in disqualification of the Bid.

Drawing Sheets							
902.P	906.2						

Drawings

1. **Sheet 902.P – Roof Level – Floor Plan – Power and low Voltage** (Reissued)
 - A. Provide outline and note to include lightning protection design for building per specifications.
2. **Sheet 906.2 – Electrical Details** (Reissued)
 - A. Provide general details for lightning protection design.

END ADDENDUM NO. 01

		CD Issue 30 September 2025		
DIVISION 00 - PROCUREMENT & CONTRACTING REQUIREMENTS				
00-0100	Cover Page	■		
00-0101	Title Page	■		
00-0110	Table of Contents [AD-01]	■		
00-1113	Advertisement for Bids	■		
00-2113	AIA A701 Instructions to Bidders	■		
00-2113.01	Exhibit A - Sheet List	■		
00-2113.02	Exhibit B - Table of Contents	■		
00-2113.03	RD Instruction 1942-A, Guide 27, Attachment 2	■		
00-2113.04	Supplementary Instructions to Bidders	■		
00-2114	AIA G716 Request for Information	■		
00-2115	AIA A305 Contractor's Qualification Statement	■		
00-2116	Exhibit A - General Information	■		
00-2117	Exhibit B - Financial and Performance Information	■		
00-2118	Exhibit C - Project Specific Information	■		
00-2119	Exhibit D - Past Project Experience	■		
00-2120	Exhibit E - Past Project Experience, Continued	■		
00-2215	Instructions for Submitting BABAA Certifications	■		
00-3100	Available Project Information	■		
00-3101	Geotechnical Investigation	■		
00-4100	Bid Form	■		
00-4120	Itemized Bid Breakdown Form	■		
00-4200	AIA A310 Bid Bond	■		
00-4250	Compliance Statement - Form RD 400-6	■		
00-4260	Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions - Form AD-1048	■		
00-4270	Certification for Contracts, Grants and Loans - RD Instruction 1940-Q, Exhibit A-1	■		
00-4280	Disclosure of Lobbying Activities - Form SF-LLL	■		
00-4325	Substitution Request Form - During Procurement	■		
00-5200	Agreement Form	■		
00-5201	AIA A101 Standard Form of Agreement Between Owner and Contractor	■		
00-5202	RD Instruction 1942-A, Guide 27, Attachment 3	■		
00-6325	Substitution Request Form - During Construction	■		
00-7200	General Conditions	■		
00-7201	AIA A201 General Conditions of the Contract	■		

- Section issued; replaces previously issued versions
R Section reissued without changes

		CD Issue 30 September 2025		
00-7300	Supplementary Conditions AIA A201	■		
00-7300.01	RD Instruction 1942-A, Guide 27, Attachment 4	■		
00-7300.02	AIA A312 Performance Bond	■		
00-7300.03	AIA A312 Payment Bond	■		
00-7375	Electronic Files for Bidding and Construction	■		
DIVISION 01 - GENERAL REQUIREMENTS				
01-1100	Summary of Work	■		
01-2000	Price and Payment Procedures	■		
01-2500	Substitution Procedures	■		
01-3115	Project Coordination Documentation	■		
01-3119	Project Meetings	■		
01-3300	Submittal Procedures	■		
01-4023	Definitions and Quality Requirements	■		
01-4500	Quality Control	■		
01-4501	Special Inspection and Testing Schedule	■		
01-5000	Temporary Facilities and Controls	■		
01-5813	Temporary Project Signage	■		
01-5815	Rural Development Construction Sign	■		
01-6100	Product Requirements	■		
01-6116	Volatile Organic Compound (VOC) Content Restrictions	■		
01-7300	Execution	■		
01-7329	Cutting and Patching	■		
01-7419	Construction Waste Management and Disposal [AD-01]	■		
01-7500	Starting and Adjusting	■		
01-7700	Closeout Procedures	■		
DIVISION 02 - EXISTING CONDITIONS				
02-4100	Demolition	■		
DIVISION 03 - CONCRETE				
03-3000	Cast-In-Place Concrete	■		
03-3511	Concrete Floor Finishes	■		
03-5400	Cast Underlayment	■		

- Section issued; replaces previously issued versions
R Section reissued without changes

		CD Issue 30 September 2025		
DIVISION 04 - MASONRY				
04-7200	Cast Stone Masonry	■		
DIVISION 05 - METALS				
05-1200	Structural Steel Framing	■		
05-3100	Steel Decking	■		
05-4000	Cold Formed Metal Framing	■		
05-4300	Slotted Channel Framing	■		
05-5000	Metal Fabrications	■		
05-5100	Metal Stairs	■		
05-5133	Metal Ladders	■		
05-5213	Pipe and Tube Railings	■		
DIVISION 06 - WOODS, PLASTICS, AND COMPOSITES				
06-1000	Rough Carpentry	■		
06-1600	Sheathing	■		
06-4100	Architectural Woodwork	■		
DIVISION 07 - THERMAL & MOISTURE PROTECTION				
07-0510	Roof System Installer's Warranty	■		
07-2100	Thermal Insulation	■		
07-2700	Air Barriers	■		
07-4213.16	Metal Plate Wall Panels	■		
07-4646	Fiber Cement Siding	■		
07-5400	Thermoplastic Membrane Roofing [AD-01]	■		
07-6200	Sheet Metal Flashing and Trim	■		
07-7100	Roof Specialties	■		
07-7200	Roof Accessories	■		
07-8400	Firestopping	■		
07-9200	Joint Sealants	■		
DIVISION 08 - OPENINGS				
08-1113	Hollow Metal Doors and Frames	■		
08-1416	Flush Wood Doors	■		

- Section issued; replaces previously issued versions
R Section reissued without changes

		CD Issue 30 September 2025		
08-3100	Access Doors and Panels	■		
08-3200	Sliding Glass Doors	■		
08-4229	Automatic Entrances [AD-01]	■		
08-4313	Aluminum-Framed Storefronts [AD-01]	■		
08-5659	Service and Teller Window Units [AD-01]	■		
08-7100	Door Hardware	■		
08-7113	Power Door Operators	■		
08-8000	Glazing	■		
DIVISION 09 - FINISHES				
09-0561	Common Work Results for Flooring Preparation	■		
09-2116	Gypsum Board Assemblies	■		
09-3000	Tiling	■		
09-5100	Suspended Acoustical Ceilings	■		
09-5423	Linear Metal Ceilings	■		
09-6500	Resilient Flooring	■		
09-6813	Tile Carpeting	■		
09-7200	Wall Covering	■		
09-8430	Sound-Absorbing Wall and Ceiling Units	■		
09-9100	Painting	■		
09-9106	Paint Schedules	■		
DIVISION 10 - SPECIALTIES				
10-1153	Slotted Display Panels	■		
10-2239	Folding Panel Partitions	■		
10-2600	Wall and Door Protection	■		
10-2800	Toilet Accessories	■		
10-4400	Fire Protection Specialties	■		
10-5123	Plastic-Laminate-Clad Lockers	■		
10-7316.13	Metal Canopies	■		
DIVISION 11 - EQUIPMENT				
	<i>Not Used</i>	-		

■	Section issued; replaces previously issued versions
R	Section reissued without changes

		CD Issue 30 September 2025		
DIVISION 12 - FURNISHINGS				
12-2400	Window Shades	■		
12-3600	Countertops	■		
DIVISION 13 - SPECIAL CONSTRUCTION				
13-4913	Integrated X-Ray Shielding Assemblies	■		
DIVISION 14 - CONVEYING EQUIPMENT				
	<i>Not Used</i>	-		
DIVISION 21 - FIRE SUPPRESSION				
21-0000	General Fire Suppression Requirements	■		
21-0500	Common Work Results for Fire Suppression	■		
21-0523	General Duty Valves for Fire Suppression	■		
21-0548	Vibration and Seismic Controls for Fire Suppression	■		
21-0553	Fire-Suppression Identification	■		
21-0700	Fire-Suppression Systems Insulation	■		
21-1313	Wet-Pipe Sprinkler System	■		
DIVISION 22 - PLUMBING				
22-0000	General Mechanical Requirements	■		
22-0500	Common Work Results for Mechanical	■		
22-0513	Common Motor Requirements for Mechanical	■		
22-0516	Expansion Fittings and Loops for Mechanical	■		
22-0519	Meters and Gauges for Mechanical	■		
22-0523	General-Duty Valves for Mechanical	■		
22-0529	Hangers and Supports for Mechanical	■		
22-0548	Vibration and Seismic Controls for Mechanical	■		
22-0553	Mechanical Identification	■		
22-0700	Mechanical Insulation	■		
22-1116	Domestic Water Piping	■		
22-1119	Domestic Water Piping Specialties	■		
22-1316	Sanitary Waste and Vent Piping	■		
22-1319	Sanitary Waste Piping Specialties	■		

■	Section issued; replaces previously issued versions
R	Section reissued without changes

		CD Issue 30 September 2025		
22-1413	Storm Drainage Piping	■		
22-1423	Storm Drainage Piping Specialties	■		
22-2923	Variable Frequency Controllers	■		
22-4000	Plumbing Fixtures	■		
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING				
23-0000	General HVAC Requirements	■		
23-0500	Common Work Results for HVAC	■		
23-0513	Common Motor Requirements for HVAC	■		
23-0516	Expansion Fittings and Loops for HVAC	■		
23-0519	Meters and Gauges for HVAC	■		
23-0523	General-Duty Valves for HVAC	■		
23-0529	Hangers and Supports for HVAC	■		
23-0548	Vibration and Seismic Controls for HVAC	■		
23-0553	HVAC Identification	■		
23-0593	Testing, Adjusting, and Balancing for HVAC	■		
23-0700	HVAC Insulation	■		
23-0800	Commissioning of HVAC	■		
23-0923	Direct Digital Control (DDC) Systems for HVAC	■		
23-1123	Facility Natural-Gas Piping	■		
23-2113	Hydronic Piping	■		
23-2123	Hydronic Pumps	■		
23-2923	Variable Frequency Controllers for HVAC	■		
23-3113	Metal Ducts	■		
23-3300	Duct Accessories	■		
23-3443	Fans	■		
23-3600	Air Terminal Units	■		
23-3713	Diffusers, Registers, and Grilles	■		
23-4100	Particulate Air Filtration	■		
23-5216	Condensing Boilers	■		
23-7413	Packaged, Outdoor, Central-Station Air-Handling Units	■		
23-8126	Small-Capacity Split-System Air Conditioners	■		
DIVISION 25 - INTEGRATED AUTOMATION				
	<i>Not Used</i>	-		

■	Section issued; replaces previously issued versions
R	Section reissued without changes

		CD Issue 30 September 2025		
DIVISION 26 - ELECTRICAL				
26-0000	General Electrical Requirements	■		
26-0500	Common Work Results for Electrical	■		
26-0519	Conductors and Cables for Electrical	■		
26-0526	Grounding and Bonding for Electrical	■		
26-0529	Hangers and Supports for Electrical	■		
26-0533	Raceways and Boxes for Electrical	■		
26-0536	Cable Trays for Electrical	■		
26-0553	Electrical Identification	■		
26-0573	Power System Studies	■		
26-0943	Addressable Network Lighting Controls	■		
26-2200	Low-Voltage Transformers	■		
26-2416	Panelboards	■		
26-2726	Wiring Devices	■		
26-2816	Enclosed Switches and Circuit Breakers	■		
26-3213	Engine Generators	■		
26-3600	Transfer Switches	■		
26-4113	Lightning Protection for Structures	■		
26-4313	Surge Protective Devices for Low Voltage Electrical Power Circuits	■		
26-5119	LED Interior Lighting	■		
26-5619	LED Exterior Lighting	■		
DIVISION 27 - COMMUNICATIONS				
27-0000	General Communication Requirements	■		
27-0500	Common Work Results for Communications	■		
27-0519	Conductors and Cables for Communications	■		
27-0526	Grounding and Bonding for Communications	■		
27-0529	Hangers and Supports for Communications	■		
27-0533	Raceways and Boxes for Communications	■		
27-0553	Communications Identification	■		
27-1200	Voice and Data Communications Cabling	■		
27-5116	Public Address Systems	■		
27-5119	Sound Masking Systems	■		
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY				
28-0000	General Electronic Safety and Security Requirements	■		
28-0500	Common Work Results for Electronic Safety and Security	■		

■	Section issued; replaces previously issued versions
R	Section reissued without changes

		CD Issue 30 September 2025		
28-0519	Conductors and Cables for Electronic Safety and Security	■		
28-0526	Grounding and Bonding for Electronic Safety and Security	■		
28-0529	Hangers and Supports for Electronic Safety and Security	■		
28-0533	Raceways and Boxes for Electronic Safety and Security	■		
28-0553	Electronic Safety and Security Identification	■		
28-4621	Digital, Addressable, Fire-Alarm System	■		
DIVISIONS 29 - 30				
	<i>Not Used</i>	-		
DIVISION 31 - EARTHWORK				
31-1100	Clearing	■		
31-2050	Site Demolition and Abandonments	■		
31-2100	Building Earthwork	■		
31-2300	Excavation and Backfill	■		
31-2310	Excavation, Backfilling, and Compacting for Pavement	■		
31-2400	Slope Protection and Erosion Control	■		
DIVISION 32 - EXTERIOR IMPROVEMENTS				
32-1410	Concrete	■		
32-1420	Concrete Curb and Sidewalks	■		
32-1540	Crushed Stone and Gravel	■		
32-2010	Pavement Markings	■		
32-3123	Composition Gates	■		
DIVISION 33 - UTILITIES				
33-1200	Water Distribution Systems	■		
33-4101	Drainage Structures	■		
33-4601	Buried Piping Installation	■		
DIVISIONS 34 - 49				
	<i>Not Used</i>	-	-	

END OF DOCUMENT

■	Section issued; replaces previously issued versions
R	Section reissued without changes

SECTION 01-7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**PART 1 GENERAL****1.01 WASTE MANAGEMENT REQUIREMENTS**

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
~~Minimum Recycling: 75 percent.
Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.
Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.~~
- D. Develop and follow a Waste Management Plan designed to implement these requirements.
- E. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
 - 5. Incineration, either on- or off-site.
- F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.
- G. Disposal Sites, Recyclers, and Waste Material Processors: Use only facilities properly permitted by the State where the Project is located, and by local authorities where applicable.

1.02 RELATED REQUIREMENTS

- A. Section 01-5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- B. Section 01-6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- C. Section 01-7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Construction Waste Management Plan (CWMP): The Contractor's plan to collect, segregate, and recycle or recover the stated minimum percent of construction wastes and debris generated by the Work.
- D. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity; including, but not limited to, aerosols, paints, activators, adhesives, and caulks.
- E. Mixed Solid Waste: Solid waste commonly collected as a municipal service, exclusive of other defined waste materials.
- F. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- G. Nonrecyclable Waste: Waste not defined as recyclable waste.
- H. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

-
- I. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
 - J. Recyclable Waste: Waste materials generated during demolition or construction, including the following:
 - 1. Land clearing debris: Solid waste generated solely from land clearing operations, such as stumps and trees.
 - 2. Concrete and Masonry: Clean concrete, brick, rock, masonry.
 - 3. Metals: Scrap iron, steel, copper, brass, aluminum.
 - 4. Untreated, Unpainted Wood: Dimension lumber, timbers, engineered wood products, plywood, oriented strand board, hardboard, particleboard, wood shipping pallets, wood crates.
 - 5. Gypsum Wallboard Scrap: Scrap, excess material.
 - 6. Paper and Cardboard: Discarded files, correspondence, clean corrugated cardboard used for packaging, and similar materials.
 - K. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
 - L. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
 - M. Return: To give back reusable items or unused products to vendors for credit.
 - N. Reuse: To reuse a construction waste material in some manner on the project site.
 - O. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
 - P. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
 - Q. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
 - R. Toxic: Poisonous to humans either immediately or after a long period of exposure.
 - S. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
 - T. Waste: Excess materials generated during demolition or construction. Extra material or material that has reached the end of its useful life in its intended use. Waste includes packing, containers, demolition products, removed materials and equipment, cut-offs, damaged products, and other materials and products that cannot be effectively used in the Work. Waste also includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. Landfill Alternatives Proposal: Within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner, submit a projection of trash/waste that will require disposal and alternatives to landfilling, with net costs.
 - 1. Submit to Architect for Owner's review and approval.
 - ~~If Owner wishes to implement any cost alternatives, the Contract Price will be adjusted as specified elsewhere.~~
 - ~~Include an analysis of trash/waste to be generated and landfill options as specified for Waste Management Plan described below.~~
 - ~~Describe as many alternatives to landfilling as possible:~~
 - ~~List each material proposed to be salvaged, reused, or recycled.~~
 - ~~List the proposed local market for each material.~~
 - ~~State the estimated net cost resulting from each alternative, after subtracting revenue from sale of recycled or salvaged materials and landfill tipping fees saved due to diversion of materials from the landfill.~~
 - 2. Provide alternatives to landfilling for at least the following materials:
 - a. Aluminum and plastic beverage containers.

- b. Corrugated cardboard.
 - c. Wood pallets.
 - d. Clean dimensional wood.
 - e. Land clearing debris, including brush, branches, logs, and stumps.
 - f. Concrete.
 - g. Bricks.
 - h. Concrete masonry units.
 - i. Asphalt paving.
 - j. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - k. Glass.
 - l. Gypsum drywall and plaster.
 - m. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (<http://flooring.dupont.com>) and Interface (www.interfaceinc.com) conduct reclamation programs.
 - n. Paint.
 - o. Rigid foam insulation.
 - p. Windows, doors, and door hardware.
 - q. Plumbing fixtures.
 - r. Acoustical ceiling tile and panels.
- B. Once Owner has determined which of the landfill alternatives addressed in the Proposal above are acceptable, prepare and submit Waste Management Plan; submit within 10 calendar days after notification by Architect.
- C. Waste Management Plan: Include the following information:
1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
 6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.

~~Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.~~

~~Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.~~

~~Submit Report on a form acceptable to Owner.~~

~~Landfill Disposal: Include the following information:~~

~~Identification of material.~~

~~Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.~~

~~State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.~~

~~Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.~~
~~Recycled and Salvaged Materials: Include the following information for each:~~
~~Identification of material, including those retrieved by installer for use on other projects.~~
~~Amount, in tons or cubic yards, date removed from the project site, and receiving party.~~
~~Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.~~
~~Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.~~
~~Certification by receiving party that materials will not be disposed of in landfills or by incineration.~~
~~Material Reused on Project: Include the following information for each:~~
~~Identification of material and how it was used in the project.~~
~~Amount, in tons or cubic yards.~~
~~Include weight tickets as evidence of quantity.~~
~~Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.~~

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 01-5000 for additional requirements related to trash/waste collection and removal facilities and services.
- B. See Section 01-6000 for waste prevention requirements related to delivery, storage, and handling.
- C. See Section 01-7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 07-5400 - THERMOPLASTIC MEMBRANE ROOFING**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Fully adhered system with thermoplastic roofing membrane (TPO).
- B. Insulation, flat and tapered, adhered.
- C. Cover boards.
- D. Flashings.
- E. Roofing roofing expansion joints and walkway pads.

1.02 RELATED REQUIREMENTS

- A. Section 07-0510 - Roofing Installer's Warranty.
- B. Section 07-7100 - Roof Specialties: Prefabricated roofing expansion joint flashing.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- D. ASTM D1149 - Standard Test Methods for Rubber Deterioration-Cracking in an Ozone Controlled Environment.
- E. ASTM D1204 - Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.
- F. ASTM D2137 - Standard Test Methods for Rubber Property_Brittleness Point of Flexible Polymers and Coated Fabrics.
- G. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin-Based Sheet Roofing.
- H. ASTM D751 - Standard Test Methods for Coated Fabrics.
~~FM DS 1-28—Wind Design.~~
- I. NRCA (RM) - The NRCA Roofing Manual.
- J. NRCA (WM) - The NRCA Waterproofing Manual.
- K. UL (FRD) - Fire Resistance Directory.
- L. UL 1256 - Standard for Fire Test of Roof Deck Constructions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.
 - 1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.05 SUBMITTALS

- A. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
- B. Shop Drawings: Provide the roof membrane manufacturer's standard details customized for this project for all relevant conditions, including including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, curbs, and drains, approved by the manufacturer. Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, mechanical fastener layout, and roof dimensions and slopes including location and types of penetrations.
 - 1. Provide drain detail showing adjustable extension collar to fit insulation. Coordinate with tapered insulation drawings for dimension of insulation thicknesses.
 - 2. Shop Drawings shall be prepared and approved by the membrane manufacturer.
- C. Build America, Buy America Act (BABAA) Certifications: Provide documentation from each manufacturer stating compliance with BABAA in the form of a BABAA Compliance Certification.
- D. Manufacturer's qualification statement.
- E. Warranty Documentation:

1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
2. Submit installer's written verification that installation complies with warranty conditions for waterproof membrane.

1.06 QUALITY ASSURANCE

- A. A single installer shall perform the work of this section and related work specified in Section 07-6200 - Sheet Metal Flashing and Trim.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with at least five years of documented experience and approved by manufacturer.
- D. Provide products recommended by the roofing manufacturer to be compatible with each other and with substrates. Provide separation materials where recommended by roofing manufacturer to eliminate contact between incompatible materials.
- E. If required for specified full roofing system warranty, provide products supplied by membrane manufacturer.
- F. Arrange for observation, supervision, and final inspection by the roofing manufacturer, and other procedures required for warranty.
- G. Where manufacturer's shop drawings indicate details or materials that differ from the Contract Documents, specifications and details required by the manufacturer to obtain the specified warranty shall take precedence.
- H. Upon completion of the installation, the roofing manufacturer shall inspect the installation to verify that the membrane and related work have been properly installed.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact, unless otherwise indicated.
- B. Store products in weather protected environment, clear of ground and moisture, between 60 and 80 degrees F.
- C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
- D. Protect membrane and foam insulation from direct exposure to sunlight and high temperatures.

1.08 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F for installation or curing.
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.09 COORDINATION

- A. Do not begin installation of membrane roofing until materials, equipment, and personnel required for complete installation are on site.

1.10 WARRANTY

- A. Roofing installer's warranty: Use the form in Section 07-0510.
- B. System Warranty: Provide manufacturer's total system, non-pro-rated, no-dollar-limit warranty, including flashing and sheet metal, covering defects of materials and workmanship that permit leaks, membrane displacement, membrane fracture, or deterioration of the roof materials in excess of normal weather. This warranty shall include flashing and sheet metal specified in Section 07-6200 that is associated with roofing.
 1. Warranty Term: 20 years beginning at Substantial Completion.
 2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Thermoplastic Polyolefin (TPO) Membrane Roofing Materials:
1. Carlisle Roofing Systems, Inc; Sure-Weld TPO: www.carlisle-syntec.com.
 2. Elevate; UltraPly TPO Membrane: www.holcimelevate.com/#sle.
 3. GenFlex Roofing Systems, LLC; EZ TPO: www.genflex.com.
 4. Johns Manville; JM TPO - 60 mil: www.jm.com/sle.
 5. Versico Roofing Systems; VersiWeld TPO: www.versico.com/#sle.
 6. Other as approved.

2.02 ROOFING FULLY ADHERED

- A. TPO-1A Thermoplastic Membrane Roofing on metal deck: One ply membrane, fully adhered, over cover board, and rigid insulation.
- B. TPO-1B Thermoplastic Membrane Roofing on existing standing seam roof. One ply membrane, fully adhered, over cover board, rigid insulation and flute filler insulation.
- C. Roofing Assembly Requirements:
1. Roof Covering External Fire Resistance Classification: UL (FRD) Class A.
~~Factory Mutual Classification: Class 1 and windstorm resistance of 1-90, in accordance with FM-DS 1-28.~~
 2. Insulation Long Term Thermal Value (LTTR), minimum: 5.7 per inch; provide insulation of thickness required.
- D. Acceptable Insulation Types - Constant Thickness Application:
1. TPO-1A: Minimum 2 layers of polyisocyanurate board.
 2. TPO-1B: Bottom layer of expanded polystyrene board covered with single layer of polyisocyanurate board.
- E. Acceptable Insulation Types - Tapered Application:
1. Tapered polyisocyanurate board.

2.03 MEMBRANE ROOFING AND ASSOCIATED MATERIALS

- A. Membrane Roofing Materials:
1. Material: Reinforced thermoplastic polyolefin (TPO) complying with ASTM D6878/D6878M.
 - a. Thickness: 60 mil, 0.060 inch, minimum.
 2. Sheet Width: Factory fabricated into largest sheets possible to minimize seams.
 3. Tolerance, normal thickness, ASTM D751: Plus or minus 10 percent.
 4. Breaking strength ASTM D751: Grab Method. 250 lbf force minimum.
 5. Tear strength ASTM D751: 80 lbf force minimum.
 6. Brittleness point ASTM D2137: Minus 40 degrees F.
 7. Linear dimensional change ASTM D1204 6 hours at 176 degrees F: 1.0 percent maximum.
 8. Ozone resistance ASTM D1149: No cracks, no crazing.
 9. Color: White.
- B. Seaming Materials: As recommended by membrane manufacturer. Corrosion-resistant, FM-4470 approved, 360 pounds pullout capacity.
- C. Flexible Flashing Material: Same material as membrane.
1. Type 1: Reinforced 60 mil membrane.
 2. Type 2: Premolded.
 3. Type 3: Non-reinforced 60 mil membrane.
- D. Flashing and seaming accessories: Membrane manufacturer's cleaners, adhesives, tapes, cements, and sealants.
- E. Pourable sealer: 2 part, 2-color urethane.
- F. Night seal: Membrane manufacturer's liquid elastomer to protect completed portions of roof when work is terminated before completion.

- G. Separation Sheet: As recommended by the manufacturer; 2 mil thick minimum.

2.04 COVER BOARDS

- A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C1177/C1177M.
1. Thickness: 1/2 inch, Type X, fire-resistant.
 2. Products:
 - a. Georgia-Pacific; DensDeck Prime with EONIC Technology: www.densdeck.com/#sle.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company; DEXcell FA Glass Mat Roof Board: www.goldbondbuilding.com/#sle.
 - c. USG Corporation; Securock Ultralight Coated Glass-Mat Roof Board: www.usg.com/#sle..

2.05 INSULATION

- A. Expanded Polystyrene (EPS) Board Insulation: Comply with ASTM C578.
1. Board Size: Match width of existing standing seam roof panel.
 2. Board Thickness: As required to fill existing standing seam roof profile.
 3. Board Edges: Profile cut to match existing standing seam roof.
 4. Products:
 - a. InsulFoam LLC; FluteFill: www.insulfoam.com/#sle.
- B. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
1. Classifications:
 - a. Type I: Faced with aluminum foil on both major surfaces of the core foam.
 - 1) Class 1 - Non-reinforced core foam.
 - 2) Compressive Strength: 16 psi, minimum.
 2. Board Size: 48 by 96 inches.

2.06 ACCESSORIES

- A. Prefabricated Roofing Expansion Joint Flashing: Sheet butyl over closed-cell foam backing seamed to galvanized steel flanges.
- B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
1. Length as required for thickness of insulation material and penetration of deck substrate, with metal washers.
- C. Membrane Adhesive: As recommended by membrane manufacturer.
- D. Insulation Adhesive: As recommended by insulation manufacturer.
- E. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
1. Composition: Roofing membrane manufacturer's standard.
 2. Size if not indicated on drawings: 12 by 12 inch minimum, 24 by 24 inch maximum.
 3. Edges: Square.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

3.02 INSTALLATION, GENERAL

- A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.
- B. Do not apply roofing membrane during cold or wet weather conditions.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.03 INSTALLATION - INSULATION

- A. Attachment of Insulation at Existing Standing Seam Roof:
1. Mechanically fasten first layer of insulation to deck in accordance with roofing manufacturer's instructions.
 2. Embed second layer of insulation into full bed of adhesive in accordance with roofing and insulation manufacturers' instructions.
- B. Attachment of Insulation: Embed each layer of insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.
- C. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions ~~and FM- (AG) Factory Mutual requirements.~~
- D. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

3.04 INSTALLATION - MEMBRANE

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. After laying in place, allow membrane to relax 30 minutes before attaching or cutting.
- D. Fully Adhered Application: Apply adhesive to substrate at rate of manufacturer's recommend gal/square. Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
- E. Clean membrane before welding as recommended by the manufacturer.
- F. Overlap edges and ends and seal seams by heat welding, minimum 1-1/2 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge. Do not allow adhesive within membrane overlaps.
- G. At intersections with vertical surfaces: Secure membrane at the perimeter of each roof level, roof section, expansion joint, curb, interior wall, penthouse, penetrations, and other changes in plane that exceed 2 inches per horizontal foot.
1. Extend membrane over cant strips and up a minimum of 4 inches onto vertical surfaces.
 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- H. Flash walls and curbs between corners with Type 1 flashings.
- I. Flash inside and outside corners, penetrations, and other areas with multiple changes of plane with Type 2 flashing whenever possible.
- J. Use Type 3 flashing only when other flashing types are not practical.
- K. Extend flashing vertically 8 inches above roof on walls and penetrations.
- L. Install roofing expansion joints where indicated. Make joints watertight.
1. Install prefabricated joint components in accordance with manufacturer's instructions.
- M. Coordinate installation of roof drains and sumps and related flashings.
- N. Heat weld walkway pad to the roof membrane.

3.05 FIELD QUALITY CONTROL

- A. See Section 01-4000 - Quality Requirements for additional requirements.
- B. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.06 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 08-4229 - AUTOMATIC ENTRANCES**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Sliding type packaged power-operated door assemblies.
- B. Controllers, actuators and safety devices.

1.02 RELATED REQUIREMENTS

- A. Section 08-7113 - Power Door Operators.
- B. Electrical: 120 VAC, 10 amp service. Wiring and conduit to control switch. Wiring and conduit from control switch to power unit.

1.03 DEFINITIONS

- A. AAADM: American Association of Automatic Door Manufacturers.

1.04 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design.
- B. BHMA A156.10 - Power Operated Pedestrian Doors.
- C. NFPA 101 - Life Safety Code.

1.05 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection requirements.
 - a. Indicate stile, top rail, bottom rail, and header/operator dimensions.
 - b. Submittals that only include product brochure will be rejected.
 - 2. Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.
- B. Product Data: Provide data on system components, sizes, features, parts list, and finishes.
- C. Build America, Buy America Act (BABAA) Certifications: Provide documentation from each manufacturer stating compliance with BABAA in the form of a BABAA Compliance Certification.
- D. Samples: Provide verification samples of selected finishes to confirm color match to aluminum framed storefront system.
- E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and manufacturer's hardware and component templates.
- F. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.
- G. Maintenance Data: Include manufacturer's parts list and maintenance instructions for each type of hardware and operating component.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Wrenches and other tools required for maintenance of equipment.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience, and a member of AAADM.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience and approved by manufacturer.
 - 1. Certified by AAADM.

1.07 WARRANTY

- A. Manufacturer Warranty: Provide 2-year manufacturer's warranty for automatic entrances. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Sliding Automatic Entrance Door Assemblies:

1. ASSA ABLOY Entrance Solutions; Besam SL500: www.besam-usa.com/#sle.
2. DORMA USA, Inc; ESA200: www.dorma.com/#sle.

2.02 POWER OPERATED DOORS

- A. Power Operated Doors: Provide products that comply with NFPA 101 and requirements of authorities having jurisdiction; provide equipment selected for actual door weight and for light pedestrian traffic, unless otherwise indicated.
 1. Sliding and Folding Door Operators: In the event of power failure, provide for manual open, close, and break-away operation of door leaves.
 2. Packaged Door Assemblies: Provide components by single manufacturer, factory-assembled, including doors, frames, operators, actuators, and safeties.
 3. Exterior Swinging Doors: Provide equipment capable of operating, closing, and holding doors closed under positive and negative differential pressure; if necessary, provide power closing.
 4. Exterior and Vestibule Doors: Provide equipment suitable for operating temperature range of minus 20 to plus 140 degrees F ambient.
- B. Sliding and Folding Doors with Full Power Operators: Comply with BHMA A156.10; safeties required; provide break-away operation unless otherwise indicated; in the event of break-away operation, interrupt power operation.
 1. Force Required to Swing Break-Away Panel: 50 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the closing cycle.
 2. The force required to stop a door in the last 10 degrees of opening shall not exceed 40 LBF applied at one inch from the leading edge of the FS leaf.
- C. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.
 1. Entrance Doors and Frames: 1.00 cu ft/min sq ft when tested at a pressure of at least 1.57 pounds per square foot in accordance with AAMA/ADMA/CSA 101/I.S.2/A440, NFRC 400, or ASTM E283.
 2. Non-Entrance Doors and Frames: 0.2 cu ft/min sq ft when tested at a pressure of at least 1.57 pounds per square foot in accordance with AAMA/ADMA/CSA 101/I.S.2/A440, NFRC 400, or ASTM E283.
- D. Thermal Performance Requirements:
 1. Condensation Resistance Factor of Framing: 70 minimum, measured in accordance with AAMA 1503.
 2. Overall U-Factor of Fixed Windows Including Glazing: 0.38 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC 100.
 3. Overall U-Factor of Entrance Doors Including Glazing: 0.68 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC 100.
- E. Solar Heat Gain Performance Requirements:
 1. Overall SHGC of Fixed Windows Including Glazing: 0.25, maximum, tested in accordance with NFRC 200.
 2. Overall SHGC of Operable Windows and Entrance Doors Including Glazing: 0.23, maximum, tested in accordance with NFRC 200.
- F. Operators:
 1. Electric Operators: 3/16 hp minimum, self-contained.
 - a. Adjustable opening and closing speeds.
 - b. Adjustable opening and closing force.
 - c. Adjustable back-check.
 - d. Reverse on obstruction.
 - e. Variable rate open/closed speed control.
 - f. Closed loop speed control with active braking and acceleration.
 - g. Variable obstruction recycle time delay.
 - h. Switch to open/switch to close operation.

- i. Independently adjustable for each pair of leaves.
 - j. Non-resettable cycle counter.
- 2. Controls: Self-contained solid state, low voltage power supply for actuation, 1 to 30 second owner-adjustable delay, reduced-power when door is in hold-open mode.
- 3. Connecting hardware: Case hardened steel arm, electroplated finish, secured to top rail of door by 1-piece threaded tubular inserts.
- 4. Control wiring: Two 18 gauge stranded wires from automatic operator to remote activation devices.
- 5. Sensor shall not be affected by ambient light or radio frequency transmissions.
- G. Operation:
 - 1. Power open: Automatic operator opens door; constant mechanical engagement during full cycle.
 - 2. Spring close: Helical compression spring, closing forces regulated by using motor and gear drive as dynamic brake. Functions as manual door closer during power failure. Adjustable without removing operator.
 - 3. Emergency operation: Breakaway device allowing doors to swing out; operating forces complying with ANSI 156-19. Doors return to full-closed position and automatically reset after emergency use. Include a disconnect switch to prevent powered operation while door is broken out.

2.03 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

- A. Comply with ADA Standards for egress requirements.
- B. Framing and Transom Members: Provide manufacturer's standard extruded aluminum framing, reinforced as required to support imposed loads.
 - 1. Nominal Sizes:
 - a. Single Slide and Bi-Parting Sliding Doors: 1-3/4 inch wide by 4-1/2 inch deep.
 - 2. Concealed Fastening: Provide concealed fastening pocket in framing, with continuous flush insert cover extending full length of each framing member.
 - 3. Transoms: Provide flush glazed transom with framing that is integral with automatic entrance framing system.
- C. Door and Sidelight Construction: Heavy duty interlocked extruded aluminum tubular stile and rail sections, through-rod bolted construction with steel corner support at hinge stile of carrier-suspended swinging panels or mechanically fastened corners with welded reinforcing brackets to reduce sag in sliding or breakout mode.
 - 1. Door Thickness: 1-3/4 inch, nominal.
 - 2. Stile Design:
 - a. Medium stile, 3-1/2 inch, nominal width.
 - 3. Top Rail Height: 4 inch, nominal.
 - 4. Bottom Rail Height: 10 inch, nominal.
 - 5. Glazing Stops: Manufacturer's standard snap-on extruded aluminum square stops with preformed resilient glazing gaskets.
 - 6. Glazing Stop Width: Manufacturers standard.
 - 7. Glazing Thickness: ~~1/4 inch~~. Provide Glass Type IG-02 as specified in Section 08-8000.

2.04 CONTROLLERS, ACTUATORS, AND SAFETIES

- A. Control device: Matless microwave/infrared presence sensor.
- B. Operation: Immediate opening when approach sensor is activated, hold in open position, and close, unless safety device or re-actuation of approach sensor over-rides cycle.
- C. Presence detection: Full width of door opening, adjustable to 24 inches on either side of active leaf. Detects motionless people and inanimate objects; always energized. Learn mode for self-adjustment after changes in floor conditions.
- D. Motion detection: Full width of door, adjustable to 60 inches out from door. De-energized by position switch when doors are not in use.

2.05 FINISHES

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.
 - 1. Color: Medium bronze - color match to aluminum framed storefront system.
- B. Steel clips, supports, reinforcing: Steel primer.

PART 3 EXECUTION**3.01 INSTALLATION**

- A. Install equipment in accordance with manufacturer's written instructions, except where more stringent requirements are specified.
- B. Install entrances securely anchored in place, plumb, level, and true to location, in alignment with established lines and grades, without warp, bow, or racking of members.
- C. Where frames are assembled in field, fit frame joints hairline tight without burrs or distortion; rigidly secure nonmoving joints and seal watertight.
- D. Install plumb and level, in alignment with adjacent surfaces.
- E. Provide for thermal expansion and contraction of door and frame units and live and dead loads that may be transmitted to operating equipment.

3.02 ADJUSTING

- A. ~~Adjust door equipment for correct function and smooth operation per ANSI-156.10.~~ Adjust entrances for correct function and smooth operation, without binding or scraping and without excessive noise; lubricate operating hardware and other moving parts.

3.03 CLEANING

- A. Remove temporary protection; clean exposed surfaces.

3.04 CLOSEOUT ACTIVITIES

- A. Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.05 MAINTENANCE

- A. Provide service and maintenance of operating equipment for one year from Date of Substantial Completion, at no extra charge to Owner.

END OF SECTION

SECTION 08-4313 - ALUMINUM-FRAMED STOREFRONTS**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Aluminum-framed storefront, with vision glass.
- B. Infill panels of glass.
- C. Aluminum doors and frames.
- D. Weatherstripping.

1.02 RELATED REQUIREMENTS

- A. Section 07-2700 - Air Barriers: Sealing framing to air barrier installed on adjacent construction.
- B. Section 07-9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- C. Section 08-4229 - Automatic Entrances.
- D. Section 08-7100 - Door Hardware: Hardware items other than specified in this section.
- E. Section 08-8000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems.
- C. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems.
- D. AAMA 611 - Specification for Anodized Architectural Aluminum.
- E. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
- F. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- G. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- H. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- I. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- J. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
- K. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- L. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- M. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- N. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors.
- O. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.
- P. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details.

- B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required. Include the following:
 1. Plan showing location of each unit, and type used at each location.
 2. Elevations showing dimensions of each unit.
 3. Full-scale cross sections showing each component and assembly.
 4. Certification by a qualified structural engineer licensed in the state that the project is located.
- C. Build America, Buy America Act (BABAA) Certifications: Provide documentation from each manufacturer stating compliance with BABAA in the form of a BABAA Compliance Certification.
- D. Samples: Pairs of approval samples of selected finish to illustrate range of finish on installed products, on 8 inches long extrusions of same material used in specified products.
- E. Samples: Metal, glass, fasteners, anchors, frame sections, mullion section, corner section, and other Samples as requested, without additional cost.
- F. Test Reports: Submit reports from AAMA accredited laboratory certifying specified performance. Submit results of full-size mock-up testing. Reports of tests previously performed on the same design are acceptable. Tests shall be no more than 3 years old.
- G. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.
- H. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations; include load calculations at points of attachment to building structure.
- I. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

1.06 QUALITY ASSURANCE

- A. Engineering Responsibility: Structural design is the responsibility of the manufacturer.
- B. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- C. Manufacturer Qualifications: Company specializing in performing work of type specified and with minimum five years of documented experience.
- D. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience and approved by manufacturer.
- E. Pre-Installation Meeting: Schedule pre-installation meeting with storefront system manufacturer, installer, Architect, and other interested parties to review procedures, schedules, and coordination of storefront installation with other elements of Work.
 1. Provide a sample storefront unit on date of pre-installation conference. This unit will be tested for air and water infiltration at time of installation. Pre-installed unit shall pass tests prior to installation of remaining units and prior to payment for storefront materials.
 2. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code - Aluminum".

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Store and protect system components in accordance with manufacturer's recommendations.
- C. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 WARRANTY

- A. Furnish manufacturer's and installer's warranty for materials, installation and workmanship. Correct defective Work within a ten year period after the Date of Substantial Completion
- B. Warranty shall cover complete system for failure to meet specified requirements, including ability to exclude exterior moisture from interior, and shrinkage of thermal separation material.

- C. Provide a ten year manufacturer warranty for an anodized finish, against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Aluminum-Framed Storefronts:
1. EFCO Corporation: www.efcocorp.com.
 2. Kawneer North America: www.kawneer.com/#sle.
 3. Oldcastle BuildingEnvelope: www.oldcastlebe.com/#sle.
 4. YKK AP America Inc.: www.ykkap.com.
 5. Other as approved.

2.02 BASIS OF DESIGN - FRAMING FOR INSULATING GLAZING

- A. Storefront - Framing for Insulating Glazing: Thermally broken, outside glazed, 2 inch wide frame profile by 6-1/2 inch frame depth. Kawneer 601UT Trifab VersaGlaze Framing System.

2.03 BASIS OF DESIGN - FRAMING FOR MONOLITHIC GLAZING

- A. Storefront - Framing for Monolithic Glazing at Vestibule: Non-thermally broken, center glazed, Kawneer Trifab Versaglaze 601 storefront framing, 2 inch wide frame profile by 6 inch frame depth.
- B. Storefront - Framing for Monolithic Glazing at Interior Locations Indicated on Drawings: Non-thermally broken, center glazed, Kawneer Trifab Versaglaze 450 storefront framing, 2 inch wide frame profile by 4-1/2 inch frame depth.

2.04 BASIS OF DESIGN - SWINGING DOORS

- A. Swing Doors: Thermally-broken, medium stile, 2 inch frame thickness, insulating glazing, Kawneer 350T Insulpour Thermal Entrance.
- B. Swing Doors: Non-thermally broken, medium stile, 1-3/4 inch frame thickness, monolithic glazing, Kawneer 350 Standard Entrance Series.

2.05 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Glazing Rabbet: For 1 inch insulating glazing.
 2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 3. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 5. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
 6. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 7. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
 8. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel, and heel bead of glazing compound.
- B. Performance Requirements

1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of ASCE 7.
 - b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 12 psf.
3. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.
 - a. Entrance Doors and Frames: 1.00 cu ft/min sq ft when tested at a pressure of at least 1.57 pounds per square foot in accordance with AAMA/ADMA/CSA 101/I.S.2/A440, NFRC 400, or ASTM E283.
 - b. Non-Entrance Doors and Frames: 0.2 cu ft/min sq ft when tested at a pressure of at least 1.57 pounds per square foot in accordance with AAMA/ADMA/CSA 101/I.S.2/A440, NFRC 400, or ASTM E283.
4. Condensation Resistance Factor of Framing: 70 minimum, measured in accordance with AAMA 1503.
5. Overall U-Factor of Fixed Windows Including Glazing: ~~0.341 Btu/(hr sq ft deg F)~~ 0.33 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC100.
6. Overall U-Factor of Entrance Doors Including Glazing: 0.51 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC 100.
7. Solar Heat Gain Performance Requirements:
 - a. Overall SHGC of Fixed Windows Including Glazing: ~~0.40~~ 0.19, maximum, tested in accordance with NFRC 200.
 - b. Overall SHGC of Operable Windows and Entrance Doors Including Glazing: 0.13, maximum, tested in accordance with NFRC 200.
8. The deflection of building cladding members in a direction normal to the plane of the wall when subjected to design windloads or concentrated maintenance loads shall be limited to the following:
 - a. Spans up to 13'-6": Limit deflection to L/175.
 - b. Spans greater than 13'-6": Limit deflection to L/240 + 1/4 inch.
 - c. Cantilevered members: Limit deflection to the lesser of 2L/175 or 3/4 inch.
 - d. No permanent deformation in excess of 0.2 percent of span.
 - e. The deflection of any member shall not impair the function of or damage any joint seals as warranted by the manufacturer.
9. The deflection of building cladding members in a direction parallel to the plane of the wall shall not exceed an amount that will reduce the glass bite below 75 percent of the design dimension, and the member shall have a minimum 1/8 inch clearance between itself and the edge of the fixed panel, glass, or fixed part immediately below.

2.06 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 1. Framing members for interior applications need not be thermally broken.
 2. Glazing Stops: Flush.
 3. Cross-Section: As indicated on drawings.
- B. Glazing: See Section 08-8000.
- C. Swing Doors: Glazed aluminum.
 1. Thickness: 1-3/4 inches.
 2. Top Rail: 3-1/2 inch to 4-1/4 inches wide.

3. Bottom Rail: Minimum 10 inches wide.
 4. Glazing Stops: Square.
 5. Finish: Same as storefront.
- D. Snap Covers and Accent Covers: Aluminum extruded, standard profile snap covers and accent covers for frame face dimensions and depths shown on profile types indicated on Drawings.
1. Provide 1/16 inch minimum gap at each end, maximum gap of 1/8 inch.
- E. Brake Metal Column Covers and Trim: Sheet aluminum, profile as indicated on drawings.

2.07 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M). 6063-T5 or 6063-T6.
- B. Frame extrusions, minimum thickness of primary walls:
1. Storefront Frames: 0.080 inch wall thickness.
 2. Aluminum Doors: 0.125 inch wall thickness.
- C. Door Glazing Stops: Exterior stops an integral part of the door; interior stops snap-in type. Glazing stop section material 0.050 inch wall thickness.
- D. Sheet Aluminum: ASTM B209 (ASTM B209M). 5005-H32 (anodic) or 3003-H14.
- E. Thermal separator appropriate for separation between exterior and interior extrusions meeting performance requirements of each window or curtain wall system.
1. Internally connected and locked celcon insulator clips.
- F. Structural Steel Sections: ASTM A36/A36M; galvanized in accordance with requirements of ASTM A123/A123M.
1. ASTM A36 steel reinforcement for structural shapes, plates, and bars.
 2. ASTM A500-B for Hollow Structural Sections.
- G. Exposed Fasteners: 300 Series Stainless steel; type as required or recommended by curtain wall manufacturer. Exposed portions matching finish of each window system.
- H. Concealed Fasteners: ASTM A449, SAE Grade 5 carbon steel with cadmium and yellow chromate finish, type and size recommended by window system manufacturer.
- I. Sprayed Foam Insulation: As specified in Section 07-2100.
- J. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- K. Sealant and Backer: The curtain wall manufacturer is responsible for selection of joint sealant that is warranted to be compatible with all components of the exterior wall that are in contact with the sealant.
- L. Glazing Accessories: See Section 08-8000.
- M. Setting Blocks: Black EPDM 85-5 durometer, Shore-A per ASTM D 2000.
- N. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.
- O. Hinge Reinforcement: Steel, continuous full height of frame; hinges anchored directly to hinge reinforcement.
1. Framing Reinforcement: 1-1/4 inches by 1 1/4 inches by 3/16 inch steel angle.
 2. Door Reinforcement: 1-1/2 inches by 3/16 inch.

2.08 FABRICATION

- A. General: Fabricate to minimize field assembly. Provide minimum shim spacing around perimeter of assembly.
- B. Provide extruded aluminum members with sharp, well defined corners, integral screw splines for frame joinery and flush sightlines.
- C. Joints: Rigidly fit and secured; flush, hairline, weatherproof.
- D. Drainage Holes: Weep to exterior.
- E. Fasteners, Attachments, and Jointing: Concealed from view where possible.
- F. Doors: Shop mortised and reinforced per hardware manufacturer's templates for specified hardware items.
- G. Reinforce interior horizontal as necessary for head rail to receive drapery track bracket and attachments.
- H. Dissimilar metals shall be separated to prevent galvanic action..

2.09 FINISHES

- A. General: Comply with NAAMM Metal Finishes Manual. Form aluminum shapes before finishing.

- B. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.
 - 1. Color: Medium bronze.
- C. Anodic coating shall be continuous, fully sealed and free from powdery surfaces.
- D. Factory finish all surfaces that will be exposed in completed assemblies.
- E. Touch-Up Materials: As recommended by coating manufacturer for field application.
- F. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.

2.10 HARDWARE

- A. Other Door Hardware: See Section 08-7100.
- B. Weatherstripping: Wool pile, continuous and replaceable; provide on all exterior doors.
- C. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all exterior doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.
- C. Verify that anchorage devices have been properly installed and located.

3.02 INSTALLATION

- A. Install storefront system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities. Separate from sources of corrosion or galvanic action.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Install to drain water and condensation to the exterior.
- E. Align assembly plumb, square and level, without warp or rack, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work, with exposed surfaces of perimeter flanges uniformly proportioned.
- F. Provide thermal isolation where components penetrate or disrupt building insulation.
- G. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- H. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- I. Attach panning extrusions to frame with screws. Scribe flanges to fit openings. Back-seal joints before installation. Secure transverse joints in panning flanges with stainless steel clips. Exposed fasteners not permitted on exposed face of panning members.
- J. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- K. Install sprayed foam insulation in shim spaces at perimeter of assembly for cracks smaller than 1/4 inch.
- L. Install perimeter sealant for complete air and water seal of opening. Clean and prime surfaces as recommended by sealant manufacturer. Install sealant backer rod where required by depth or width of crack. Tool sealant to neat uniform concave surface.
- M. Set thresholds in bed of two beads of sealant, one near each edge, and secure.
- N. Install glass using glazing method required to achieve performance criteria; see Section 08-8000.
- O. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 1/16 inches per 10 ft, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/64 (0.015) inch.
- C. Sealant Space Between Storefront Mullions and Adjacent Construction: Maximum of 3/8 inch and minimum of 1/4 inch.

3.04 FIELD QUALITY CONTROL

- A. The Owner will pay for initial testing. Cost for all subsequent tests shall be paid by the Contractor.
- B. Water-Spray Test: Provide water spray quality test of installed storefront components in accordance with AAMA 501.2 during construction process and before installation of interior finishes. Tests will include perimeter sealant joint.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
- C. Provide field testing of installed storefront system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes. Tests will include perimeter sealant joint.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
 - 3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 4.18 psf.
 - a. Maximum allowable rate of water penetration in 15-minute test is 0.5 ounce that is not contained in an area with provisions to drain to exterior, or collected on surface of interior horizontal framing member.
 - b. For each failed test, 2 additional units of the same type will be tested.
 - 4. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf.
 - a. The maximum allowable rate of air infiltration is 1.5 times the amount in the article titled "Storefront."
- D. For each failed test, 2 additional units of the same type will be tested.
- E. For each failed test, 2 additional units of the same type will be tested. Repair or replace storefront components that have failed designated field testing, and retest to verify performance complies with specified requirements. Perform the same correctoins on all units of the same type.
- F. Failed installations shall be removed, re-installed, and re-tested until they pass.

3.05 ADJUSTING

- A. Adjust operating hardware for smooth operation.

3.06 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Clean aluminum surfaces promptly after installation. Remove excess glazing compounds and sealants.
- C. Remove gross smears, glazing compounds, and sealants from glass.

3.07 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 08-5659 - SERVICE AND TELLER WINDOW UNITS**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Interior and exterior service window units.

1.02 REFERENCE STANDARDS

- A. AAMA 611 - Specification for Anodized Architectural Aluminum.
- B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for specified products indicating materials, operation, glazing, finishes, and installation instructions.
- B. Shop Drawings: Indicate configuration, sizes, rough-in, mounting, anchors and fasteners, and installation clearances. Elevations showing dimensions of each type of window. Full-scale cross sections showing each component and assembly.
- C. Build America, Buy America Act (BABAA) Certifications: Provide documentation from each manufacturer stating compliance with BABAA in the form of a BABAA Compliance Certification.
- D. Samples for Selection of Finishes: Provide verification samples of selected finishes to confirm color match to aluminum framed storefront system.
- E. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver units in manufacturer's original packaging and unopened containers with identification labels intact.
- B. Store units in area protected from exposure to weather and vandalism.

1.05 WARRANTY

- A. Provide manufacturer's warranty agreeing to repair or replace units and their components that fail in materials or workmanship within two years from Date of Substantial Completion.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Service and Teller Window Units:
 - 1. Basis of Design:
 - a. Exterior Location: Quikserv; BPSC-4236: www.quikserv.com/#sle.
 - b. Interior Location: C.R. Laurence; SHCOXA Sharyn.com/#sle.
 - 2. Acceptable Manufacturers:
 - a. C.R. Laurence: www.crlaurence.com.
 - b. Ready Access, Inc: www.ready-access.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

- A. Thermal Performance Requirements:
 - 1. Overall U-Factor of Fixed Windows Including Glazing: 0.38 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC 100.
 - 2. Overall U-Factor of Operable Windows Including Glazing: 0.54 Btu/(hr sq ft deg F), maximum, tested in accordance with NFRC 100.
- B. Solar Heat Gain Performance Requirements:
 - 1. Overall SHGC of Fixed Windows Including Glazing: 0.25, maximum, tested in accordance with NFRC 200.
 - 2. Overall SHGC of Operable Windows and Entrance Doors Including Glazing: 0.23, maximum, tested in accordance with NFRC 200.

2.03 SERVICE AND TELLER WINDOW UNITS

- A. Location: Built within exterior and interior wall, as indicated on drawings.
- B. Window Type: Sliding, double horizontal, center-parting and sliding, single horizontal, provide as indicated on drawings.
 - 1. Operation: Self-closing.
 - 2. Mounting: Flush with wall surface.
 - 3. Window Size: As indicated on drawings.
 - 4. Material: Aluminum.
 - a. Exterior Finish: Color anodized, medium bronze.
 - b. Interior Finish: Clear anodized.
 - 5. Header: Manufacturer's standard type.
 - 6. Sill: Manufacturer's standard integral stainless steel countertop.
- C. Glazing:
 - 1. Exterior Location: Insulating glass, 1 inch overall depth, low-e coating. [Provide Glass Type IG-02 as specified in Section 08-8000.](#)
 - 2. Interior Location: Single (monolithic), 1/4 inch thick.
 - 3. Tempered safety glazing.

2.04 ASSEMBLY COMPONENTS

- A. Windows: Factory-fabricated, finished, and glazed, with extruded aluminum frame and glazing stops; complete with hardware and anchors.
 - 1. Provide window units that are re-glazable from the secure side without dismantling the non-secure side of framing.
 - 2. Rigidly fit and secure joints and corners with internal reinforcement. Make joints and connections flush, hairline, and weatherproof. Fully weld corners.
 - 3. Apply factory finish to exposed surfaces.
 - 4. Ensure water-resistive barrier seal is applied to perimeter of frames; see Section 07-2500.
 - 5. Ensure joint sealant is applied between frames and adjacent construction; see Section 07-9200.
 - 6. Self-Closing Operation: Manual open and self-closing with auto-locking handles and magnetic hold-open device.

2.05 MATERIALS

- A. Aluminum Extrusions: Minimum 1/8 inch thick frame and sash material complying with ASTM B221 and ASTM B221M.
 - 1. Finish: Class I color anodized and clear anodized
- B. Insulating Glass: Double pane insulating vision glass; 1 inch thick, minimum.
- C. Runners, Tracks: Nylon.
- D. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

2.06 FINISHES

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.
- B. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.
- C. Color: Medium bronze- color match to aluminum framed storefront system.

2.07 ACCESSORIES

- A. Hardware and Security Devices for Sliding Windows:
 - 1. Auto-Lock Handle: Stainless steel auto-locking handle on all self-closing sliders to prevent intrusion.
 - 2. Hook-Lock: Maximum security hook lock on each slider.
 - 3. Weatherstripping and Glazing Sealant: Factory applied.
 - 4. Handles: Stainless steel, manufacturer's standard profile and finish.

PART 3 EXECUTION

3.01 INSTALLATION

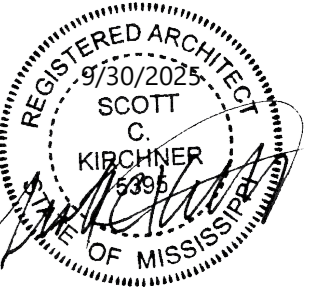
- A. Install in accordance with manufacturer's instructions.
- B. Plumb and align window faces in a single plane for each wall plane.
- C. Install units in correct orientation (inside/outside or secure/non-secure).
- D. Anchor units securely in manner so as to achieve performance specified.
- E. Set sill members and sill flashing in continuous bead of sealant.
- F. Remove and replace defective work.

3.02 ADJUSTING

- A. Adjust operating components for smooth operation while also maintaining a secure, weather-tight enclosure and a tight fit at the contact points; lubricate operating hardware.

END OF SECTION

This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the original documents on file at BWBR.

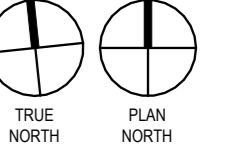


Issued For

Item	Date
CD ISSUE	09/30/2025
AD-01	10/24/2025

This sheet may be a Reduced Copy. The bar above is 1" long on a Full Size Sheet. Drawing Scales apply to Full Size Sheets.

Keyplan



Comm. No. 32020181.01
Drawn SF

Sheet Title
ROOF PLAN AND ROOF DETAILS

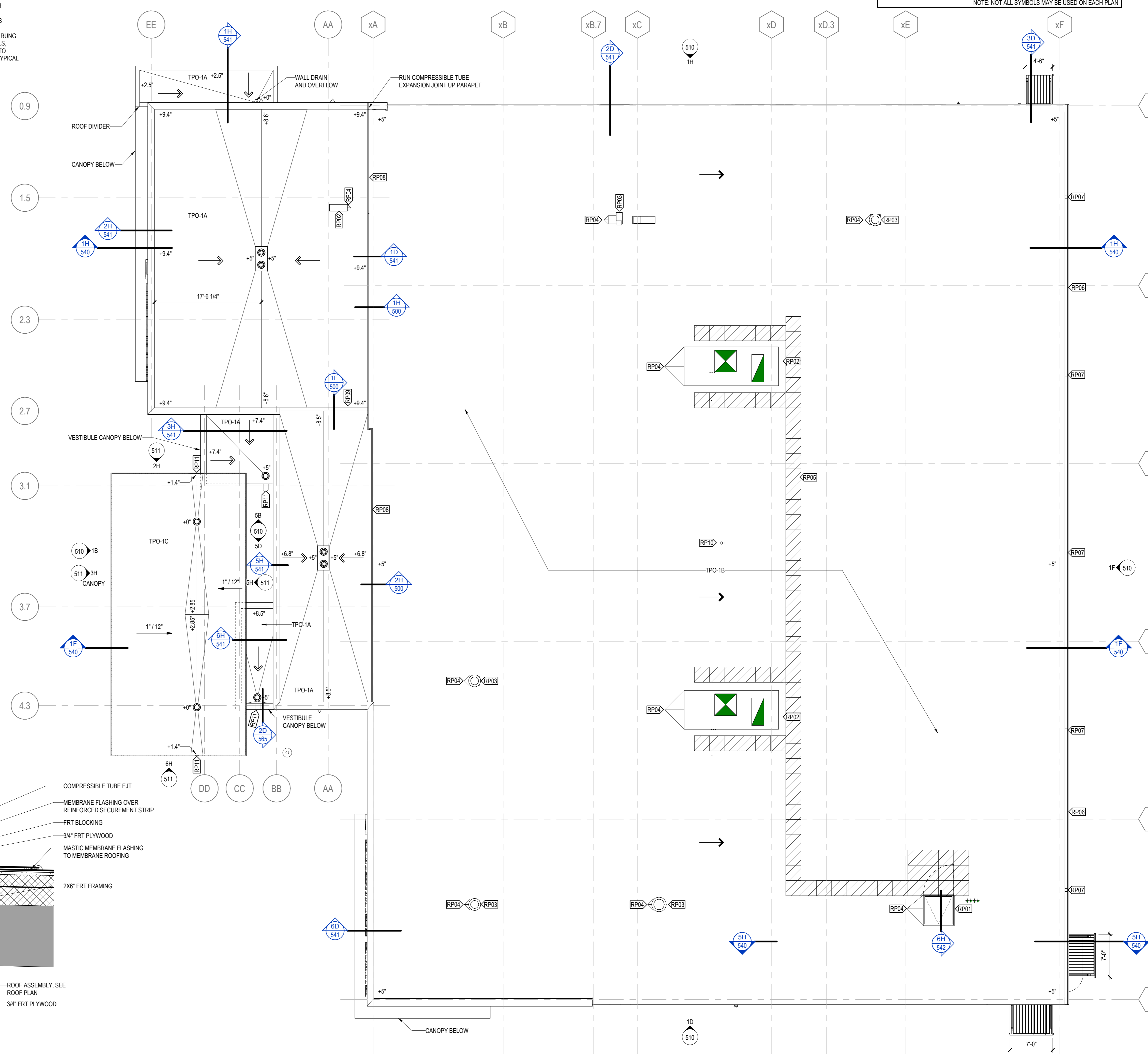
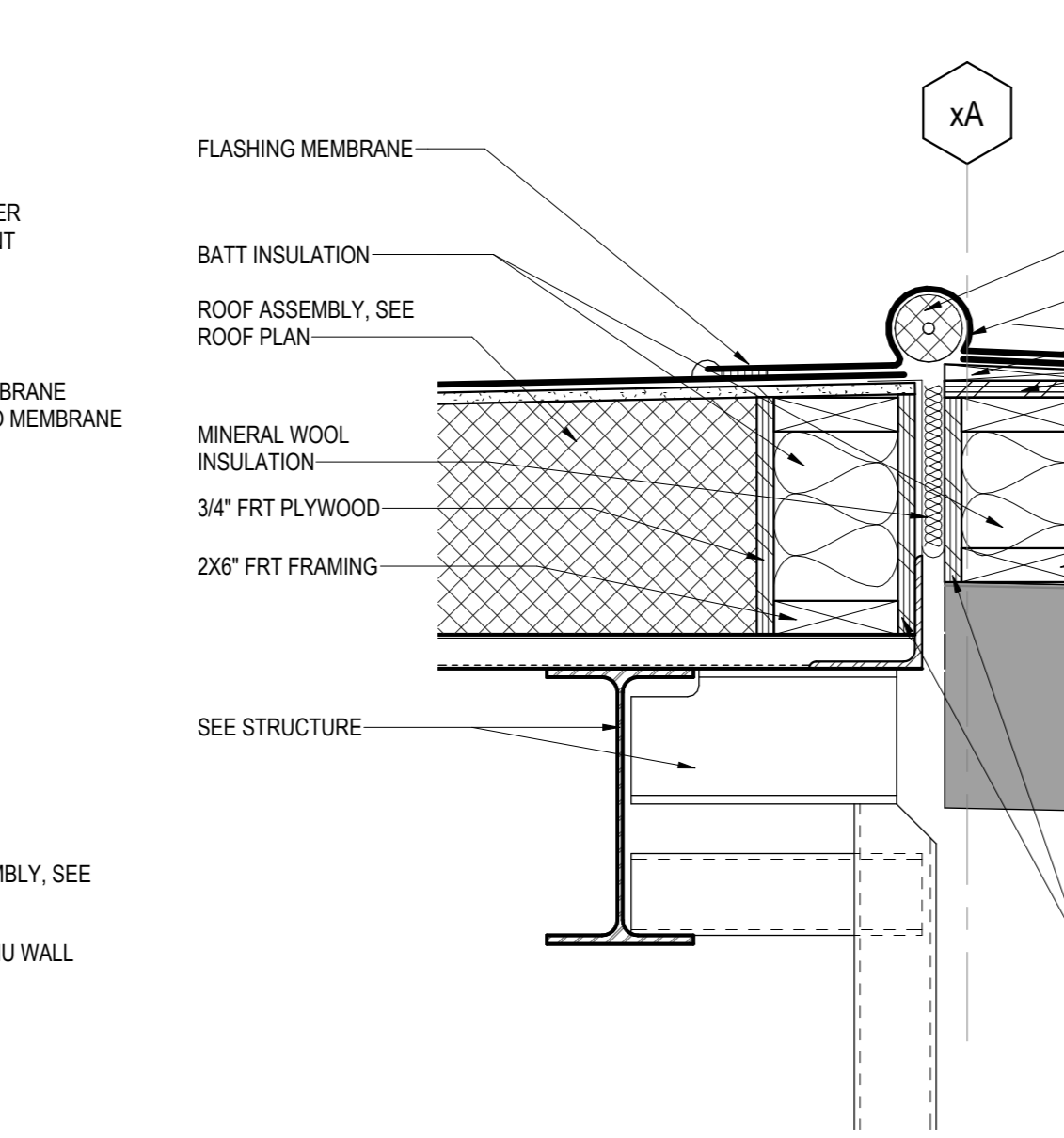
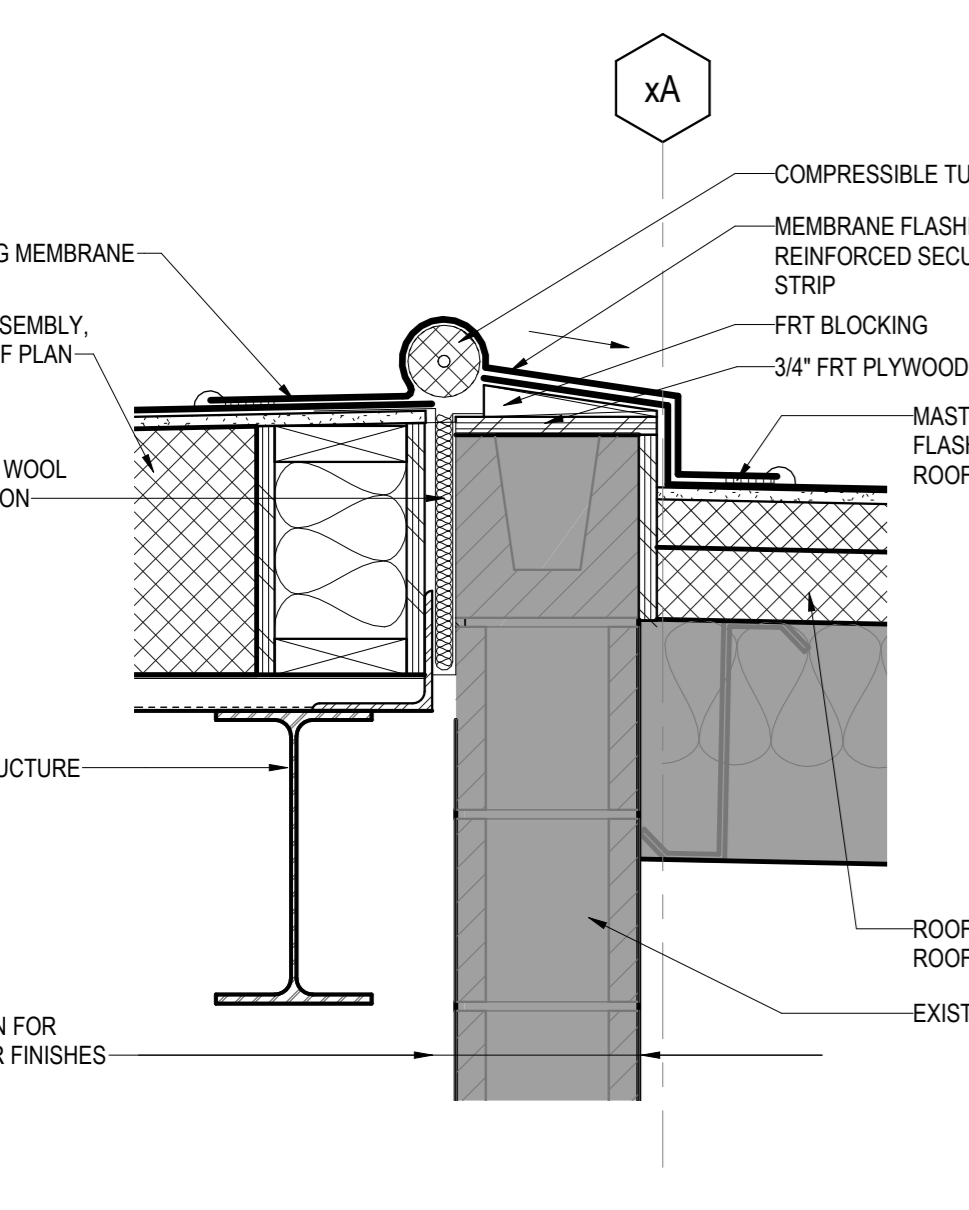
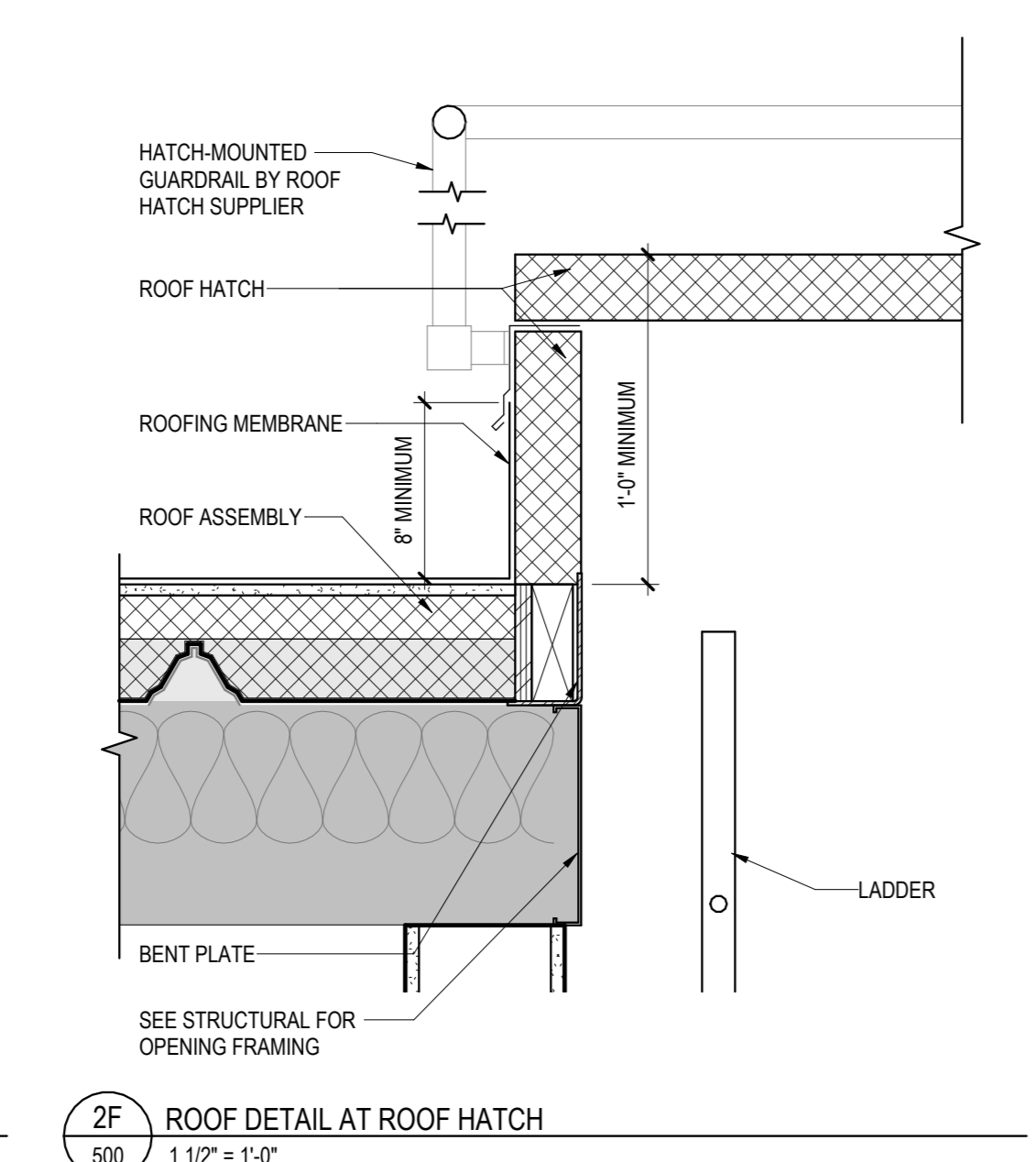
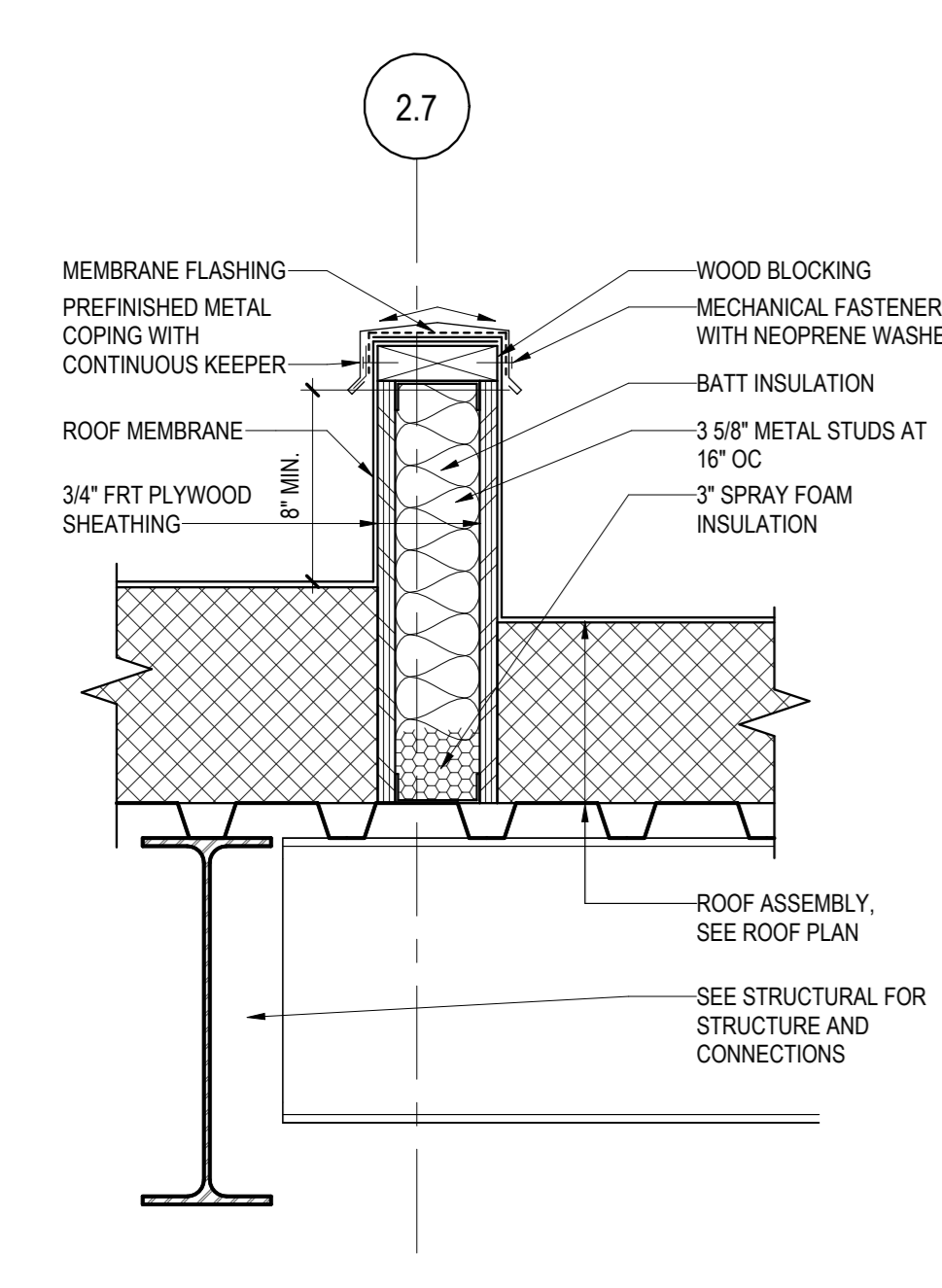
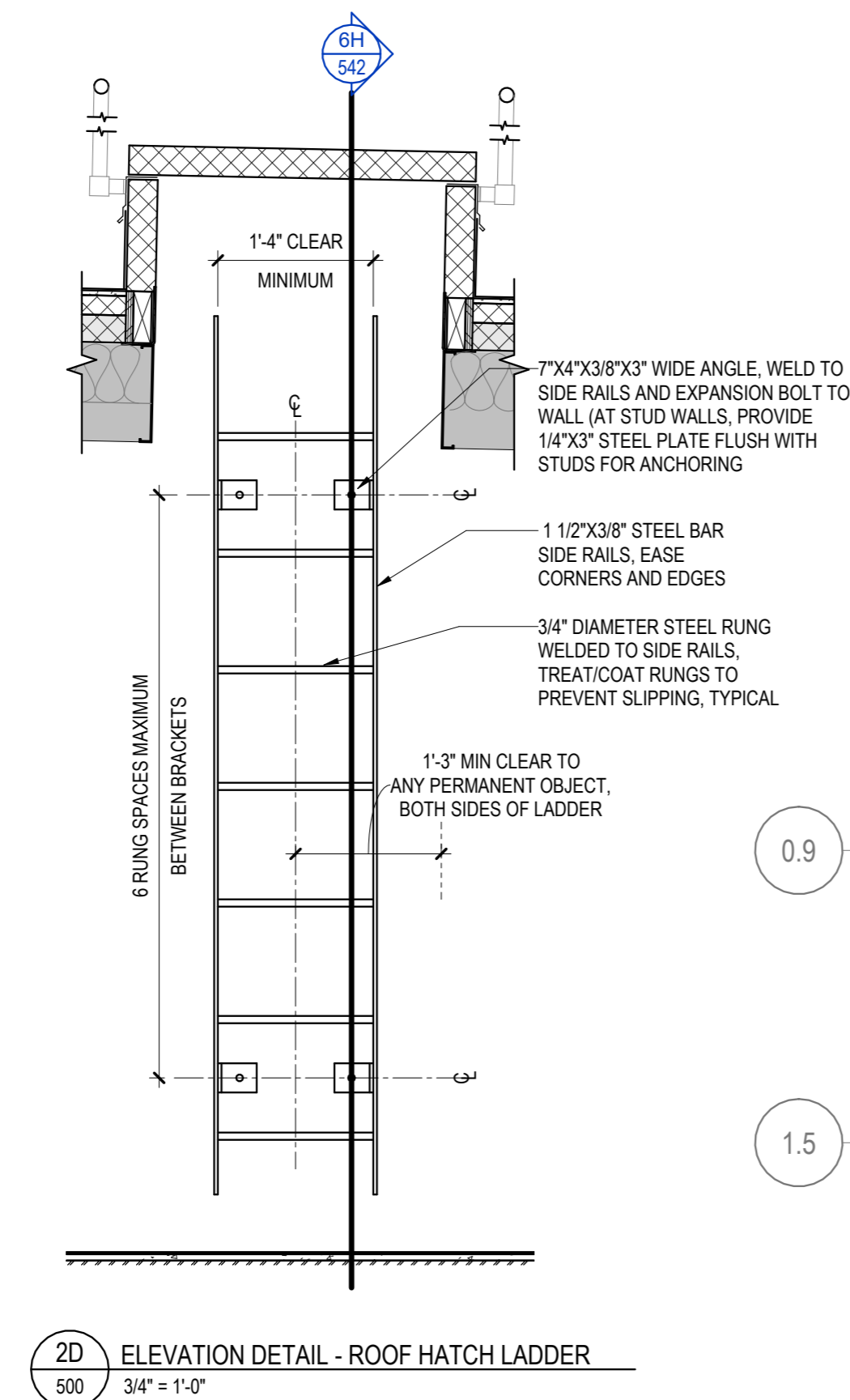
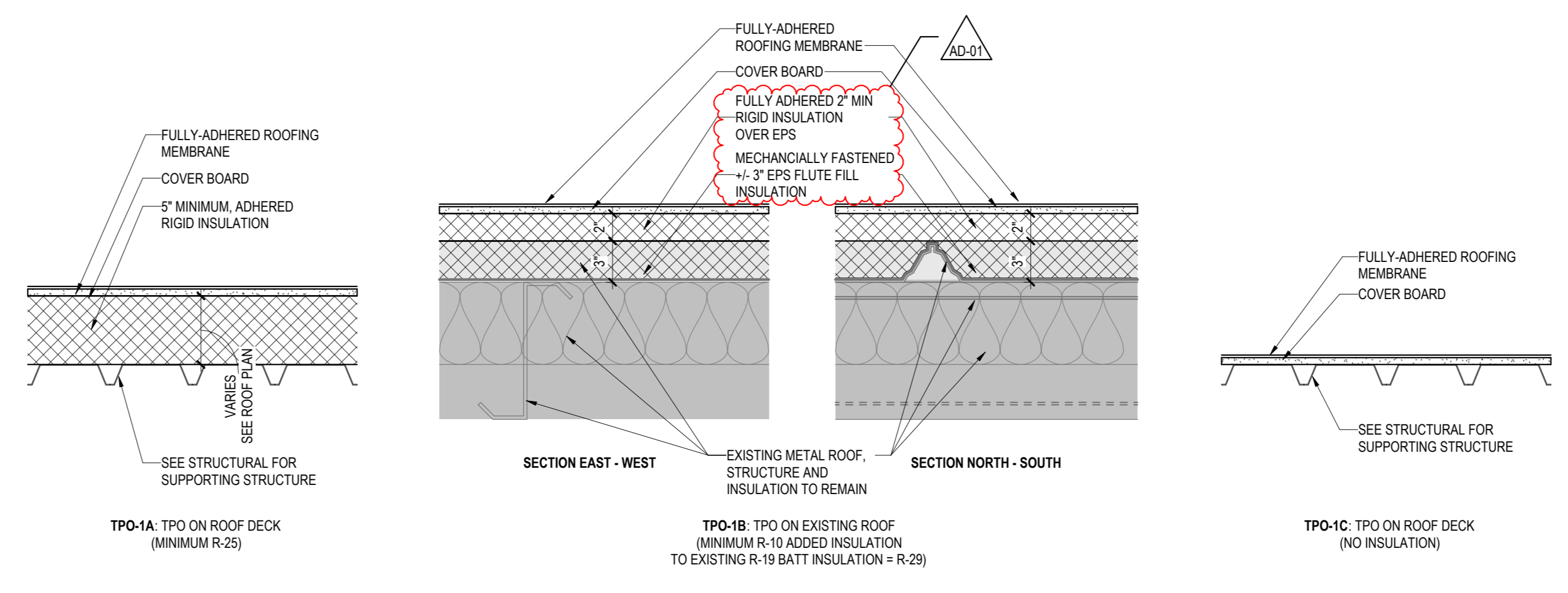
Sheet No.

500

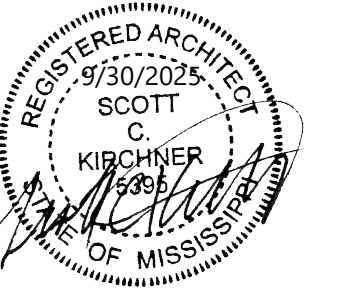
KEYNOTES - ROOF PLAN	
REV	NOTE: NOT ALL KEYNOTES MAY BE USED ON EACH DRAWING
RP01	ROOF HATCH (48" X 48") WITH INTEGRAL FALL PROTECTION RAILING SYSTEM AND GATE
RP02	ROOF TOP UNIT, SEE MECHANICAL
RP03	EXHAUST FAN, SEE MECHANICAL
RP04	CRICKET TO PROVIDE POSITIVE DRAINAGE
RP05	WALKWAY PATH PADS
RP06	PREFINISHED ALUMINUM GUTTER (8" X 6")
RP07	PREFINISHED ALUMINUM DOWNSPOUT (6" X 6")
RP08	1" EJT IN ROOF
RP09	ROOF DIVIDER, COORDINATE HEIGHT WITH ADJACENT TAPERED INSULATION
RP10	ROOF HYDRANT, SEE MECHANICAL
RP11	OVERFLOW SCUPPER

SYMBOLS LEGEND - ROOF PLAN		
6.3"	INSULATION THICKNESS	WALKWAY PATHPADS
CRICKET	CRICKET BETWEEN ROOF DRAINS	
FLAT	FLAT STRUCTURE WITH TAPERED INSULATION (1/4" PER FOOT SLOPE UNLESS NOTED OTHERWISE)	
SLOPED	SLOPED STRUCTURE WITH CONSISTENT THICKNESS INSULATION (1/4" PER FOOT SLOPE UNLESS NOTED OTHERWISE)	
OUTSIDE LIMITS WITHIN LIMITS	CONSTRUCTION LIMITS	CRICKET AT EQUIPMENT

NOTE: NOT ALL SYMBOLS MAY BE USED ON EACH PLAN



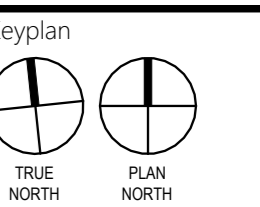
This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the original documents on file at BWBR.



Issued For

Item	Date
CD ISSUE	09/30/2025
AD-01	10/24/2025

This Sheet may be a Reduced Copy. The bar above is 1" long on a Full Size Sheet. Drawing Scales apply to Full Size Sheets.



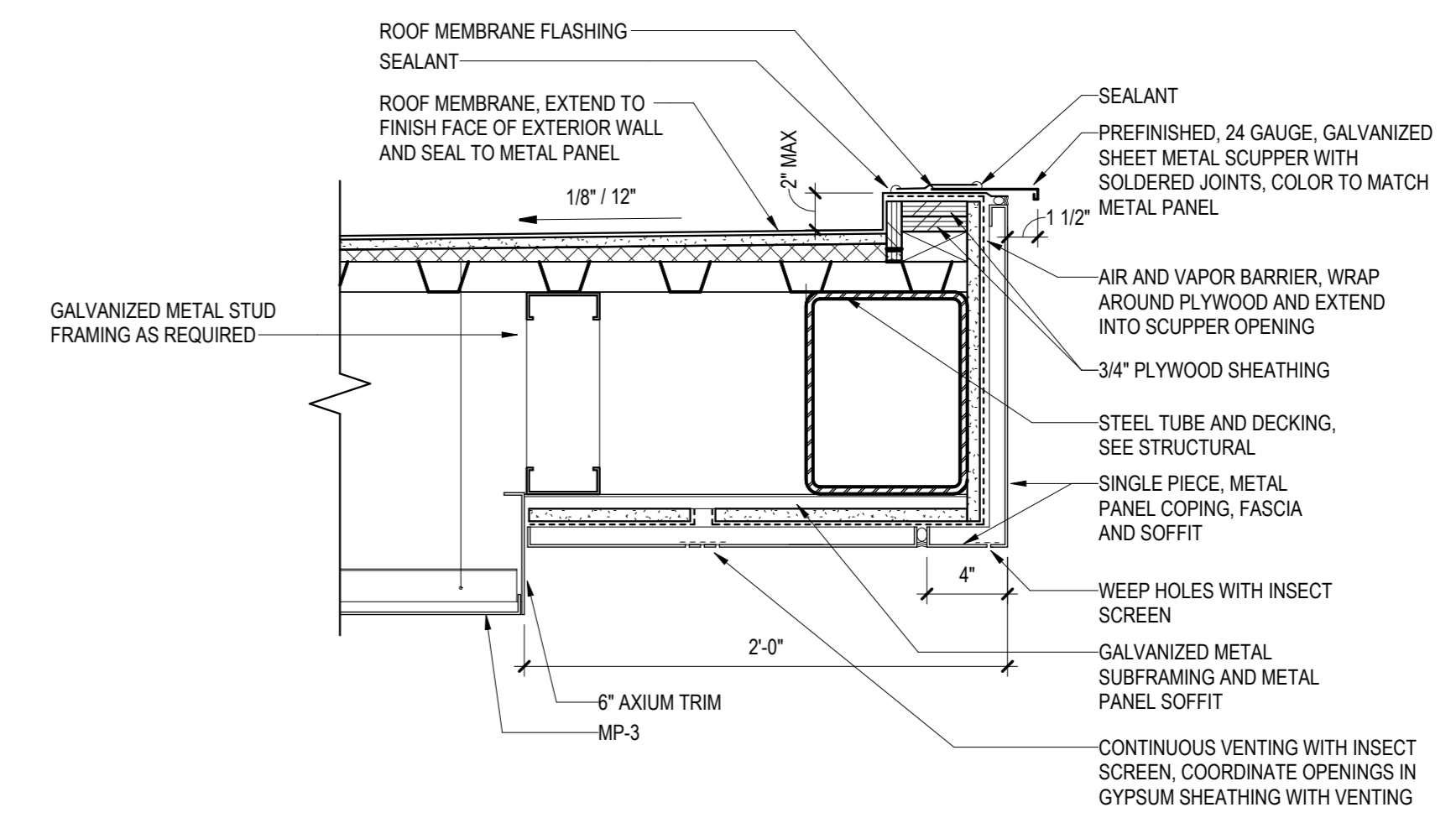
Comm. No. 32020181.01
Drawn SF

Sheet Title
CANOPY ELEVATIONS AND DETAILS

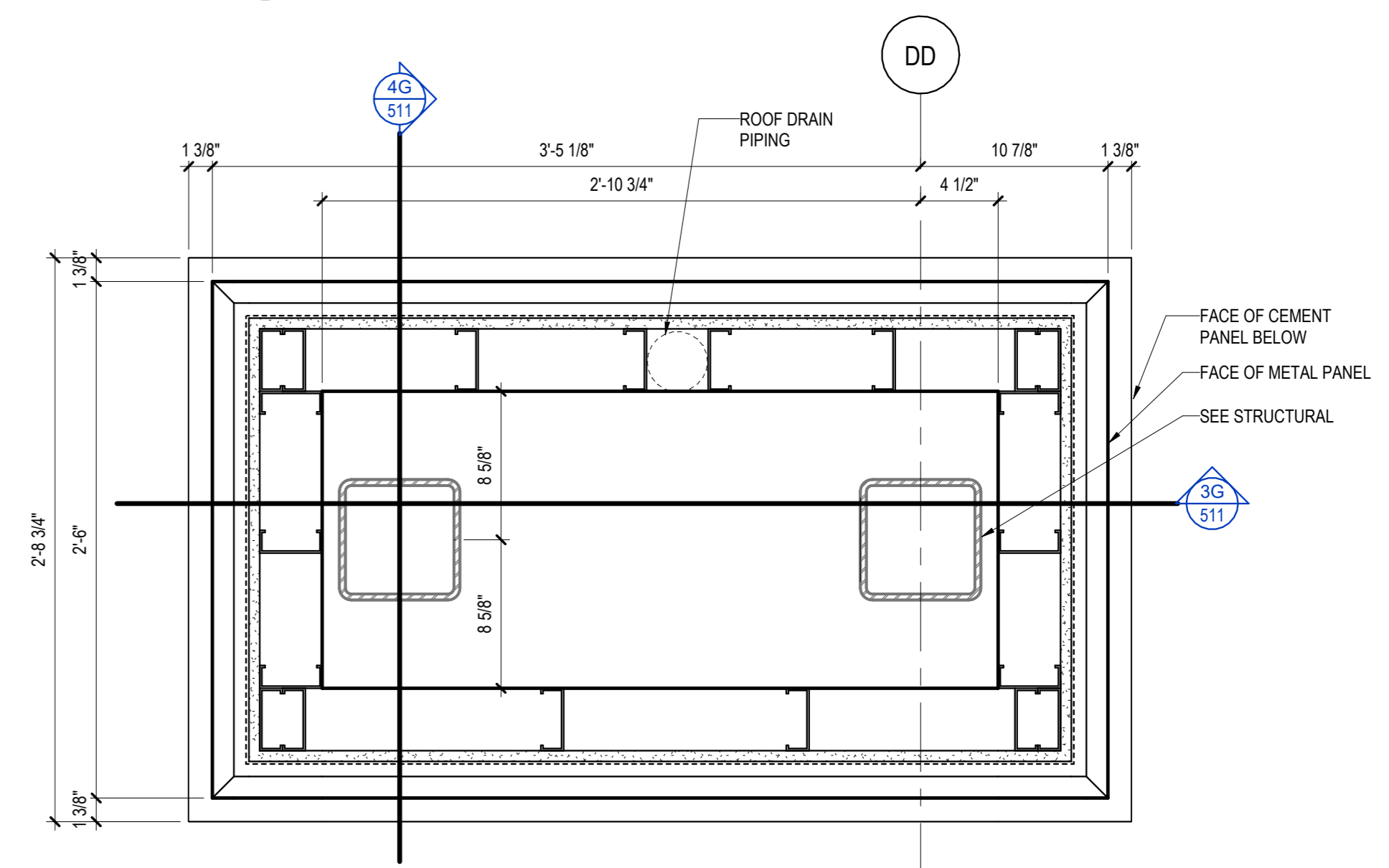
Sheet No.

511

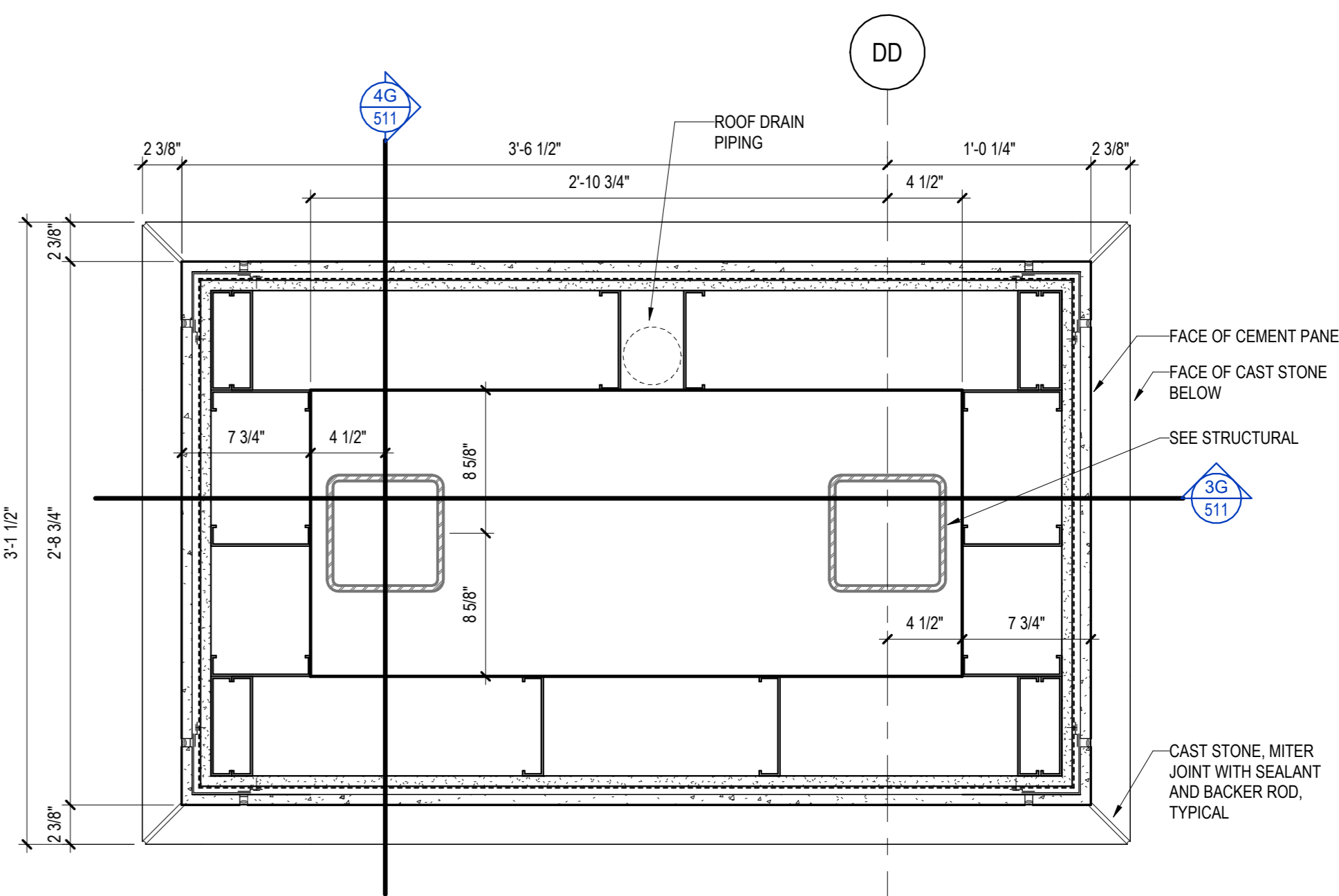
Copyright BWBR



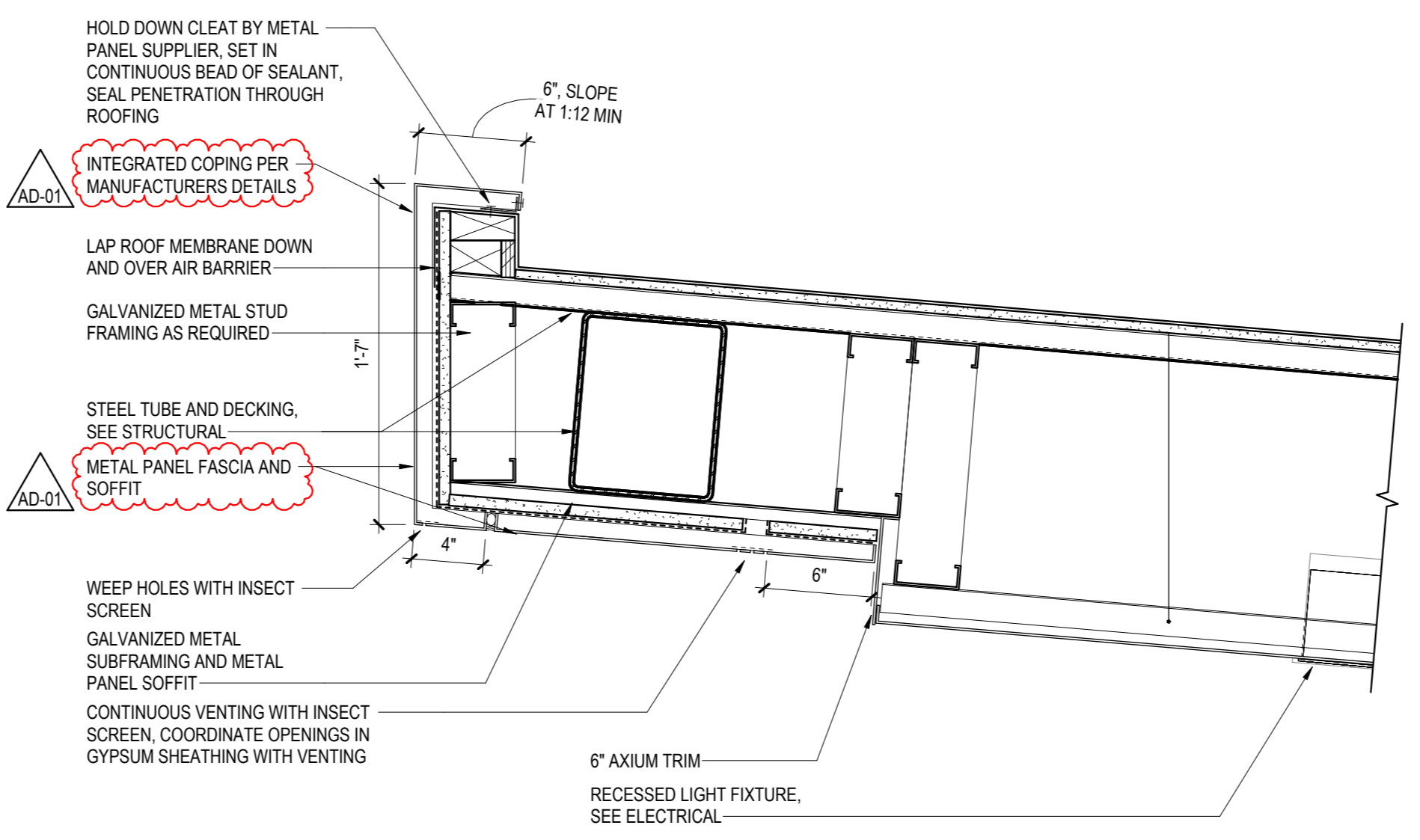
6C SECTION DETAIL - CANOPY EDGE - SIDES, TYP
S11 1 1/2" = 1'-0"



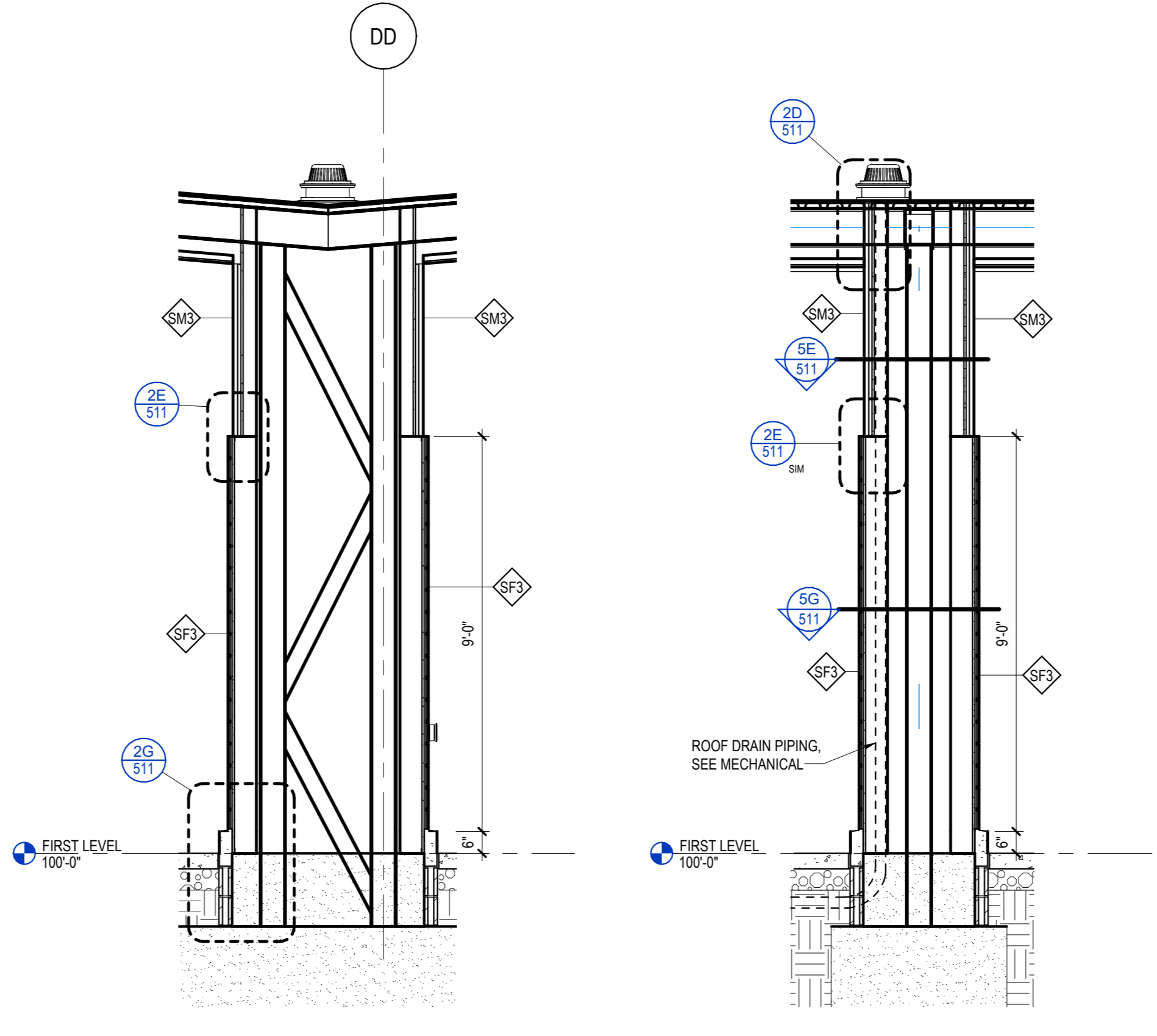
6E PLAN DETAIL - CANOPY COLUMN ENCLOSURE - METAL PANEL
S11 1 1/2" = 1'-0"



6G PLAN DETAIL - CANOPY COLUMN ENCLOSURE - CEMENT PANEL
S11 1 1/2" = 1'-0"

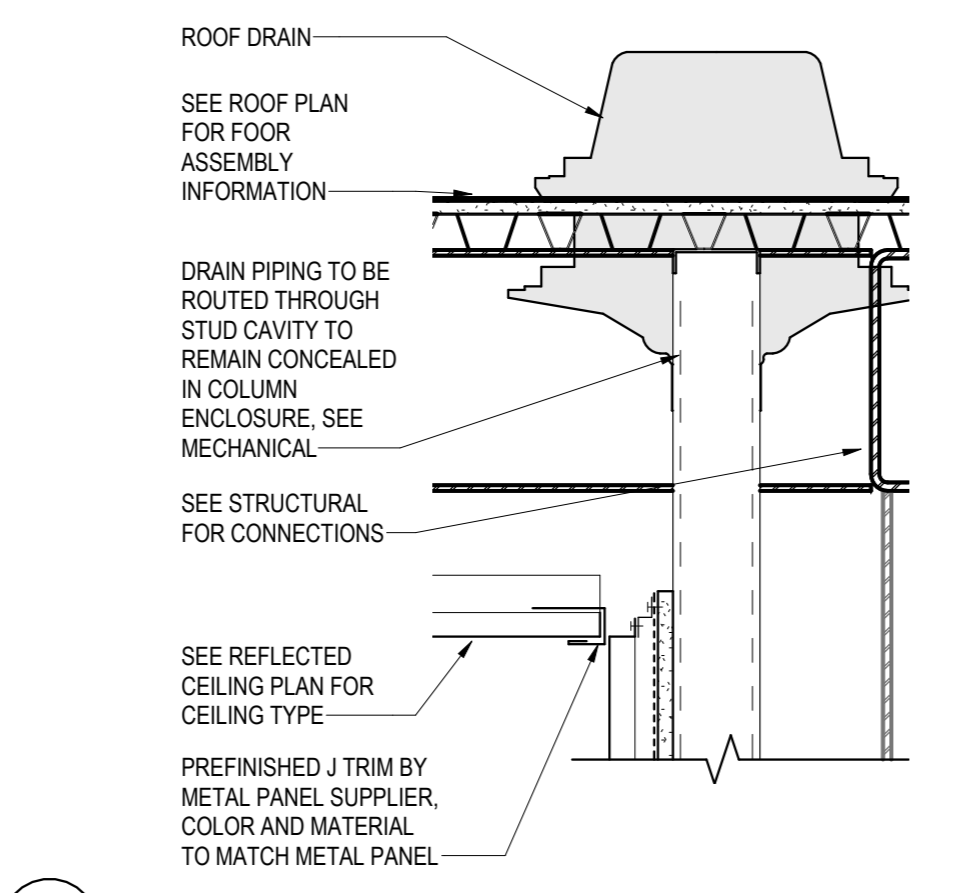


3D SECTION DETAIL - CANOPY EDGE, TYP
S11 1 1/2" = 1'-0"

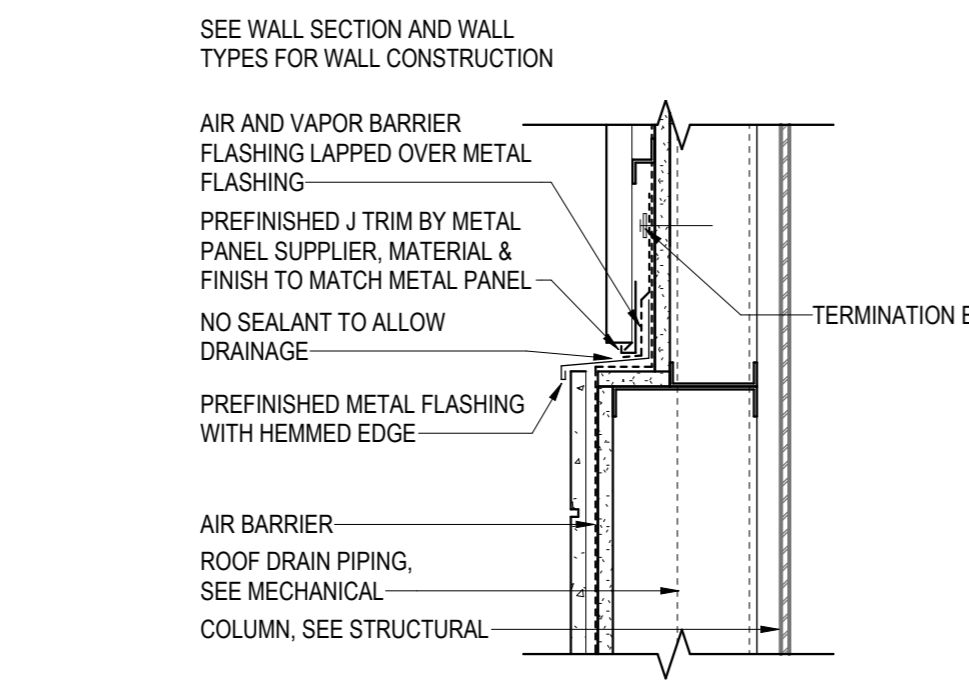


3G WALL SECTION - CANOPY ENCLOSURE EW
S11 3/8" = 1'-0"

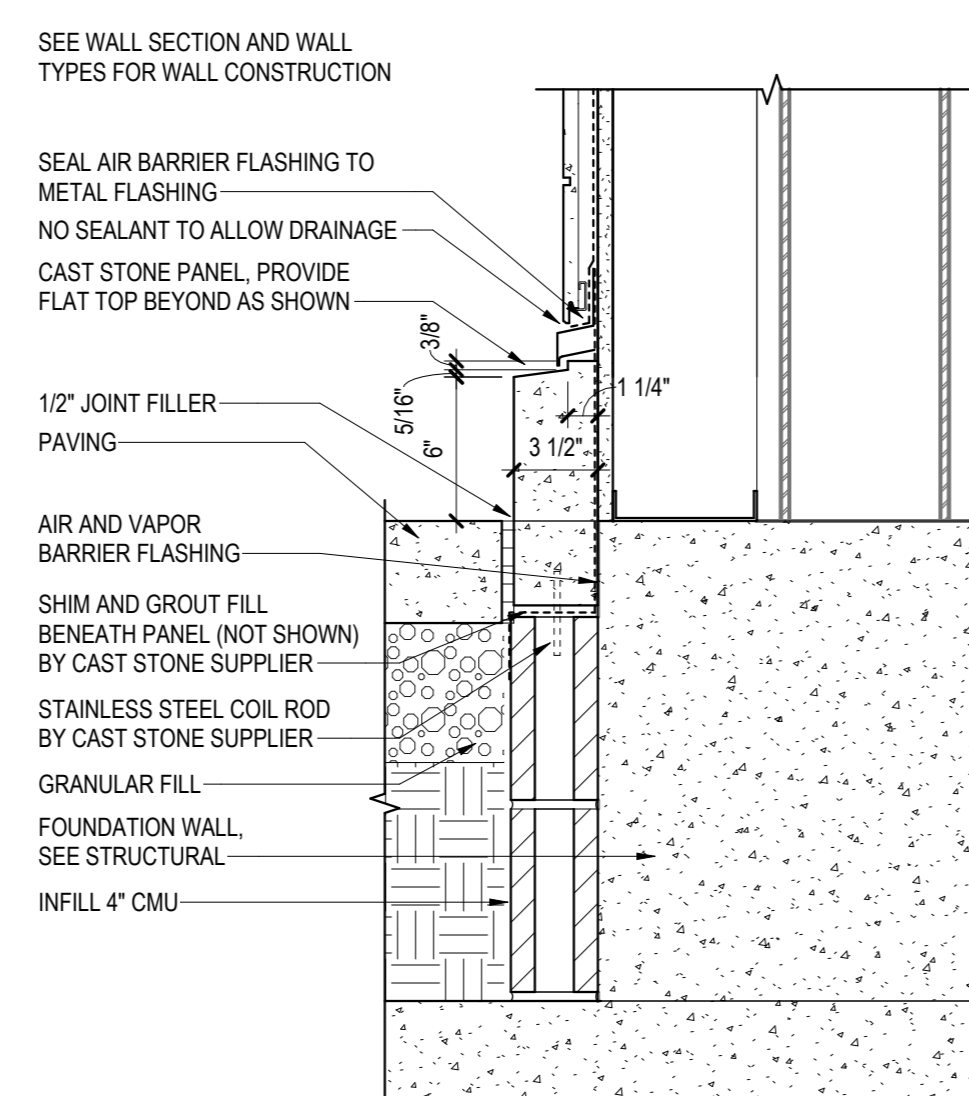
4G WALL SECTION - CANOPY ENCLOSURE NS
S11 3/8" = 1'-0"



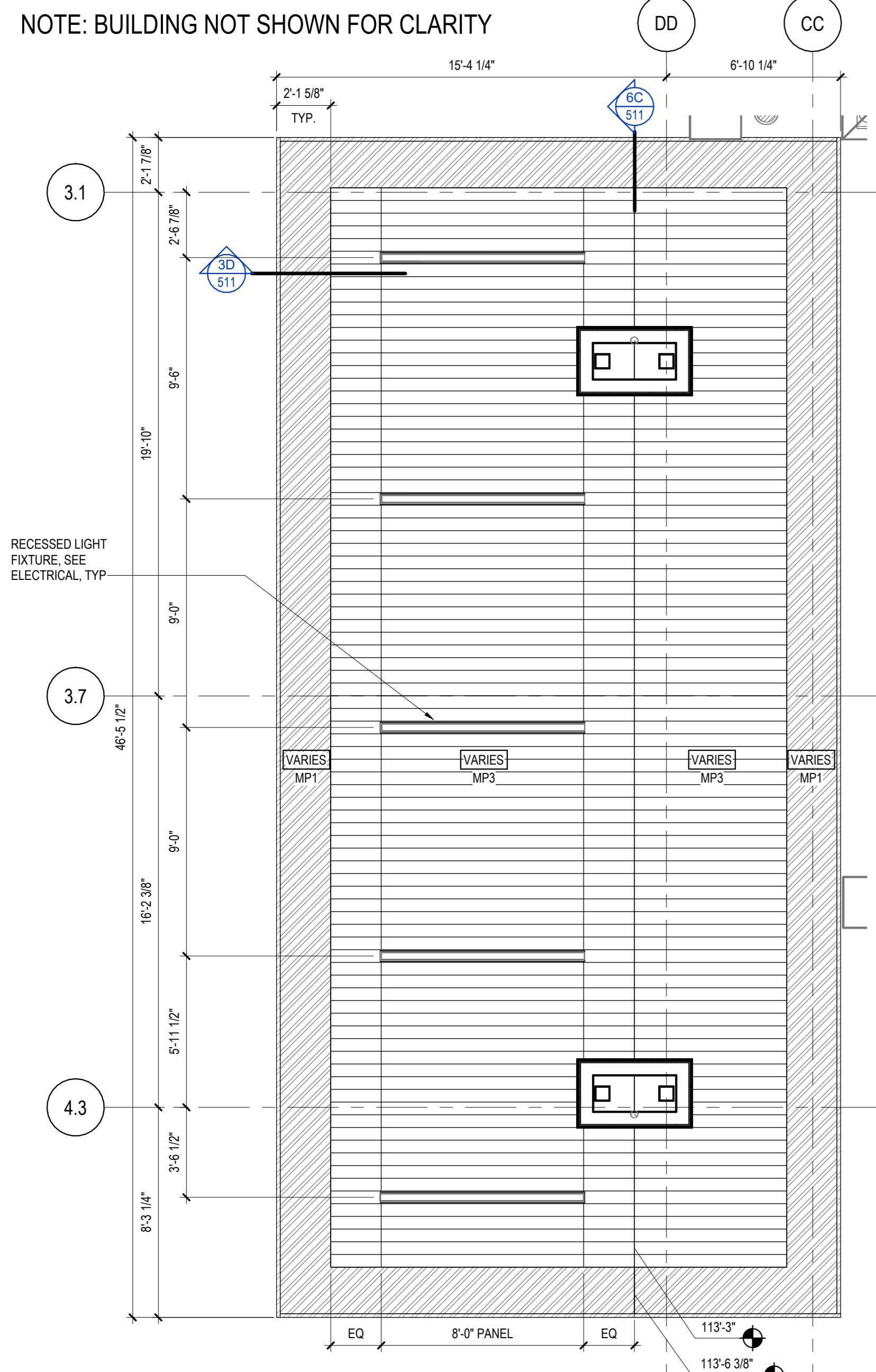
2D SECTION DETAIL - CANOPY COLUMN ENCLOSURE @ ROOF
S11 1 1/2" = 1'-0"



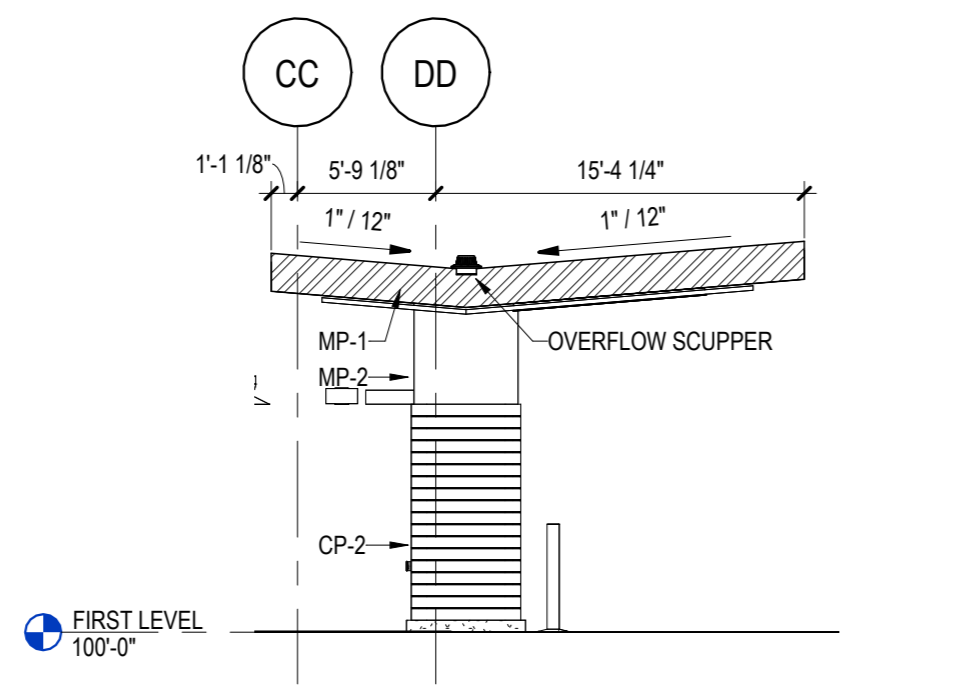
2E SECTION DETAIL - CANOPY COLUMN ENCLOSURE MATERIAL TRANSITION
S11 1 1/2" = 1'-0"



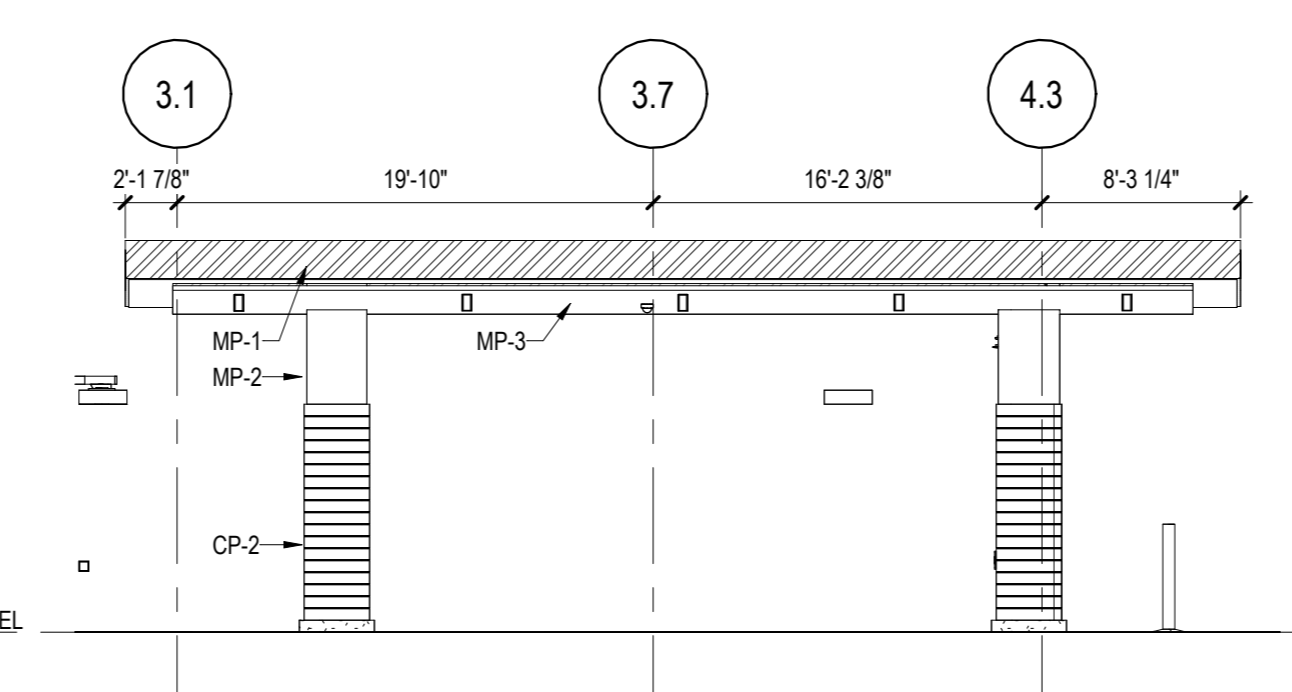
2G SECTION DETAIL - CANOPY FOOTING
S11 1 1/2" = 1'-0"



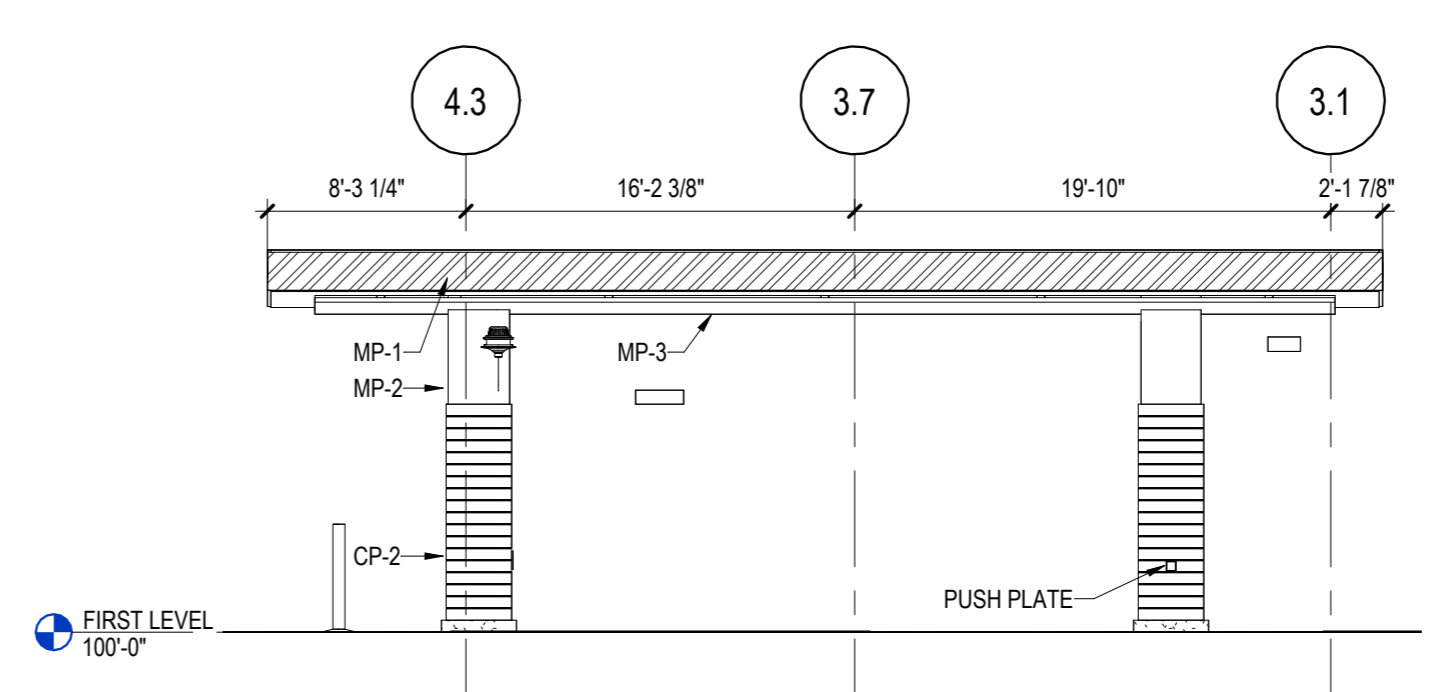
1H ENLARGED REFLECTED CEILING PLAN - ENTRY CANOPY
S11 1/4" = 1'-0"



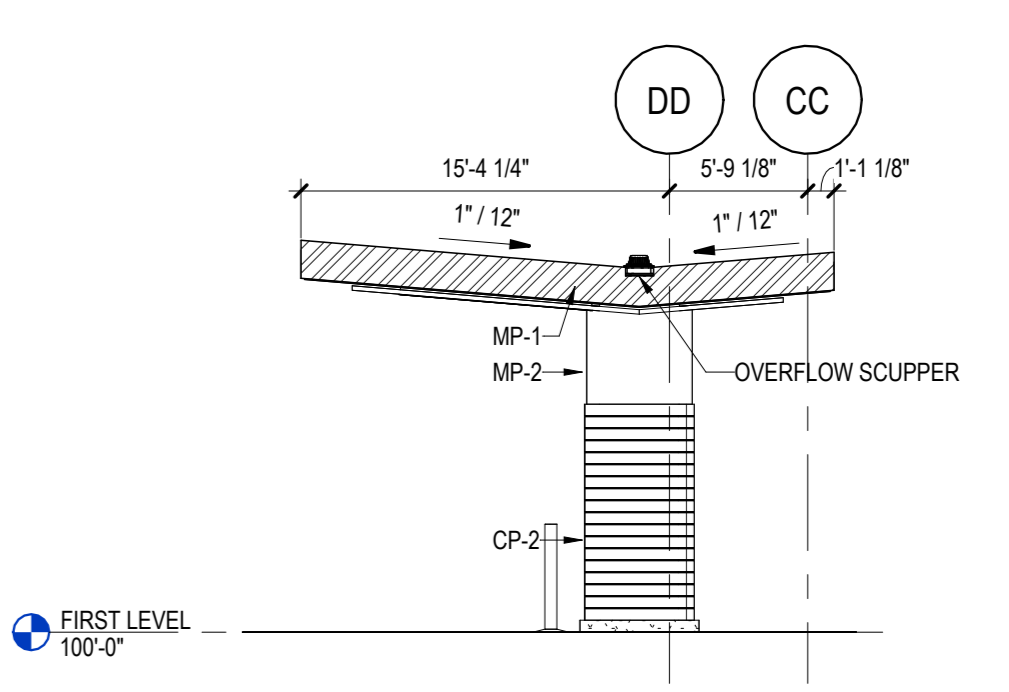
2H EXTERIOR ELEVATION - ENTRY CANOPY NORTH
S11 1/8" = 1'-0"



3H EXTERIOR ELEVATION - ENTRY CANOPY WEST
S11 1/8" = 1'-0"



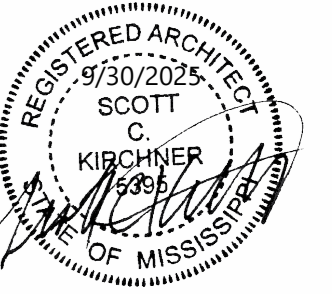
5H EXTERIOR ELEVATION - ENTRY CANOPY EAST
S11 1/8" = 1'-0"



6H EXTERIOR ELEVATION - ENTRY CANOPY SOUTH
S11 1/8" = 1'-0"

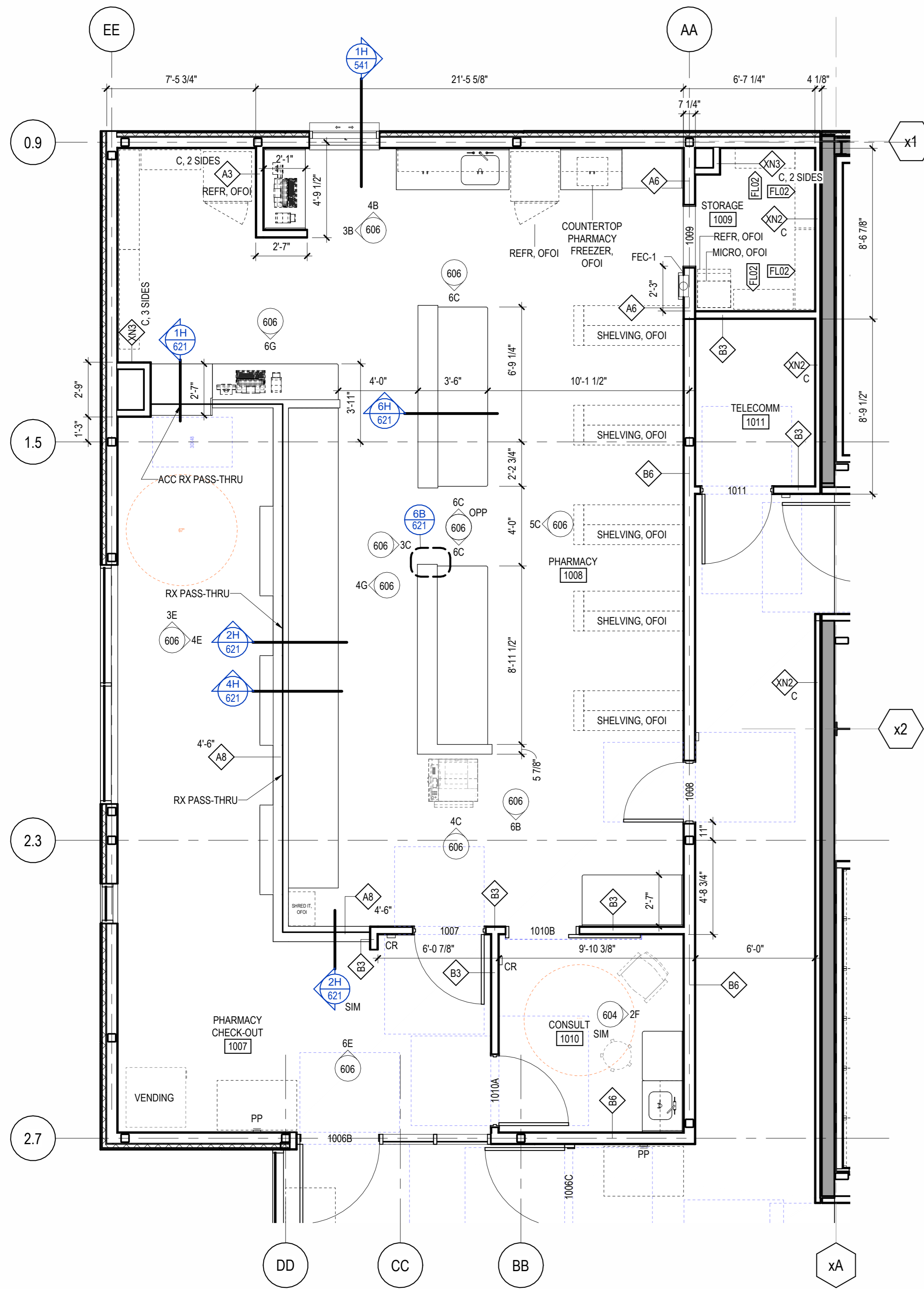
10/24/2025 9:42:37 AM

This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the original documents on file at BWBR.

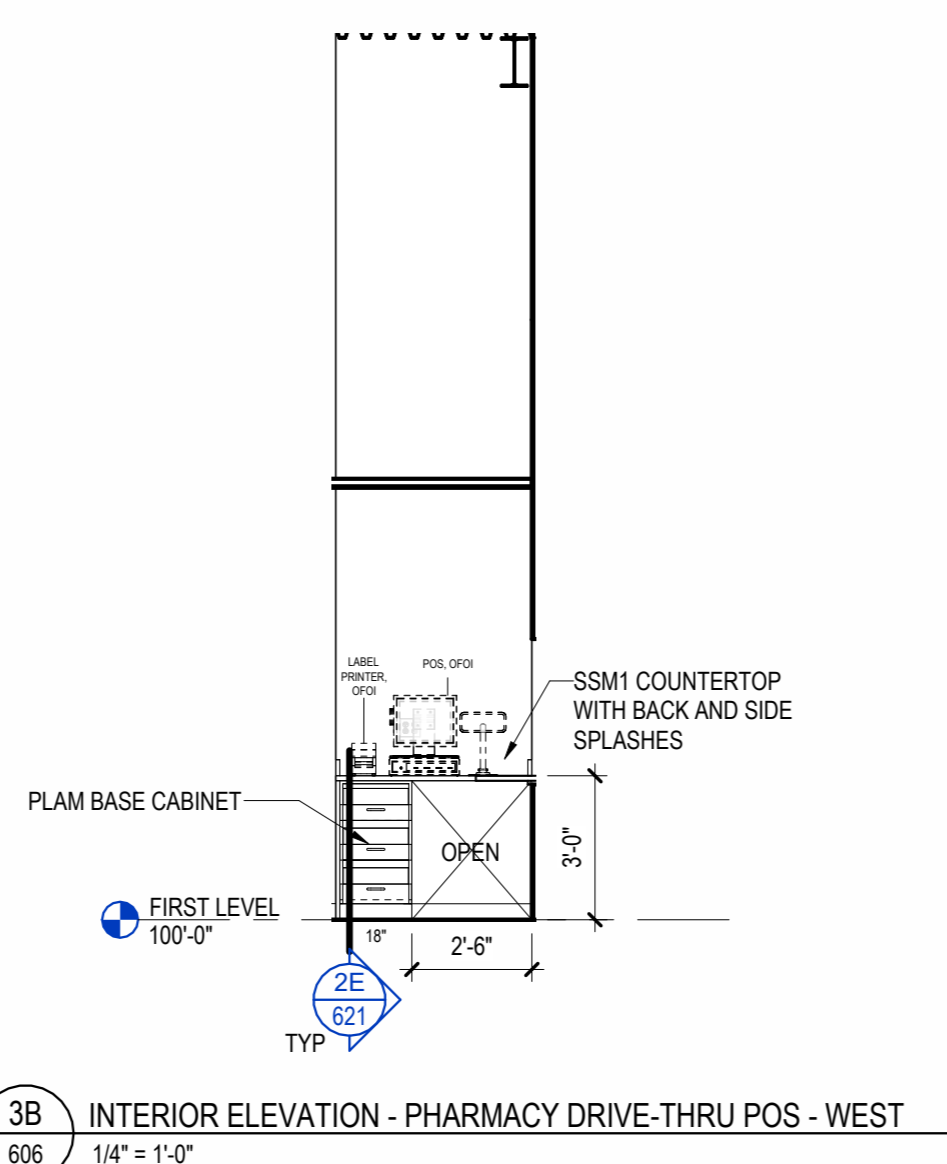


Item	Date
CD ISSUE	09/30/2025
AD-01	10/24/2025

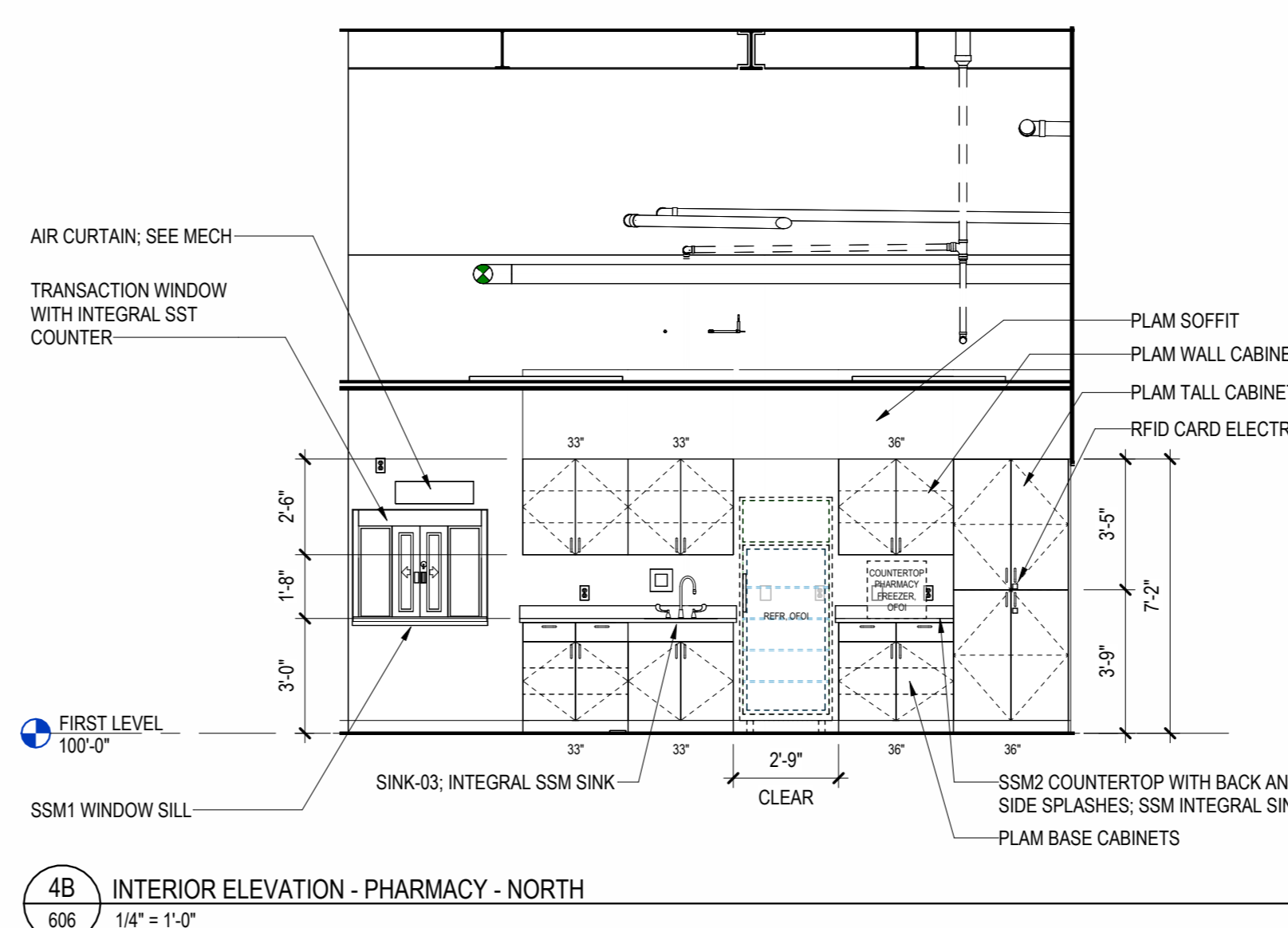
This Sheet may be a Reduced Copy. The bar above is 1" long on a Full Size Sheet. Drawing Scales apply to Full Size Sheets.



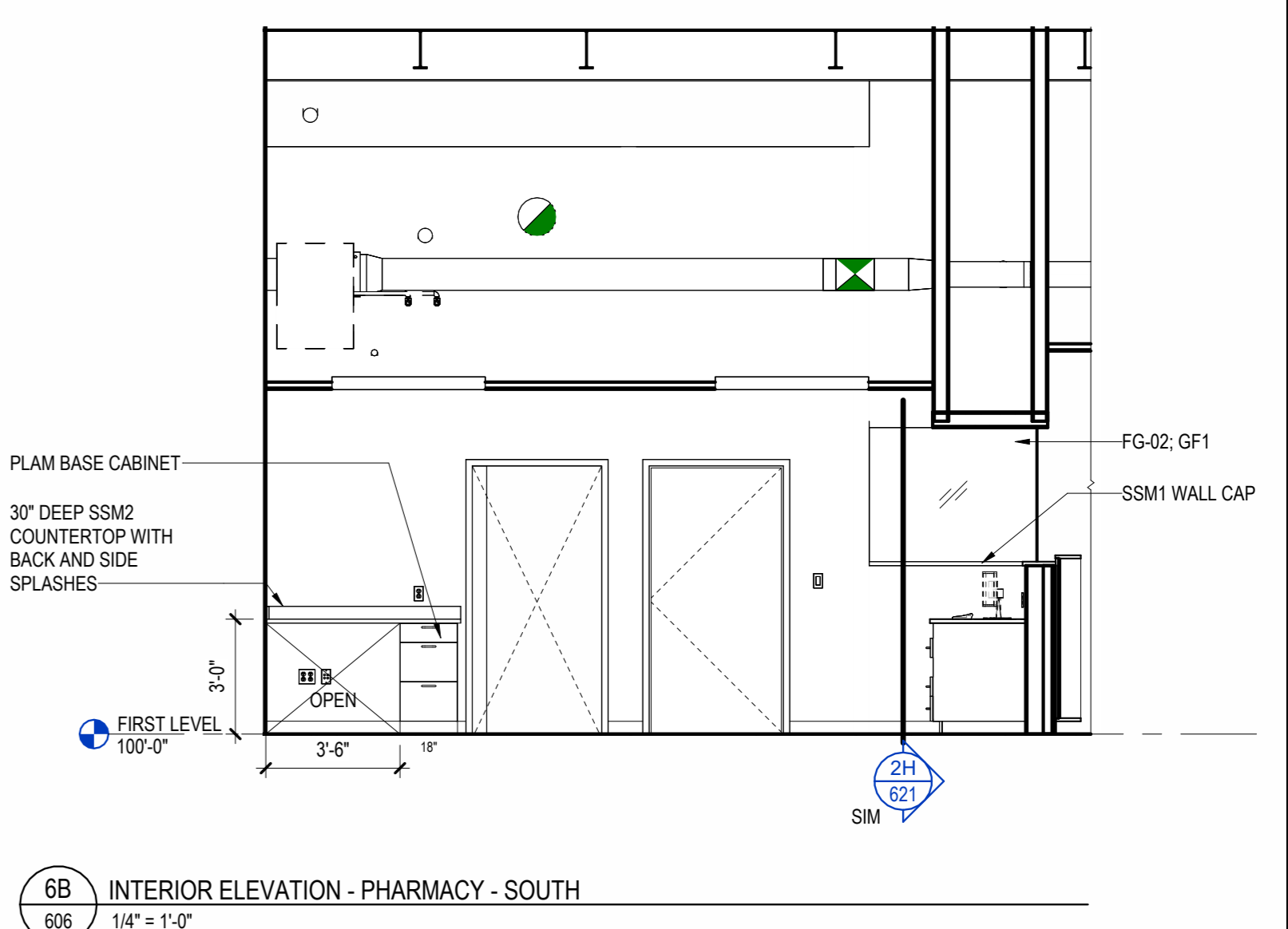
1E ENLARGED PLAN - PHARMACY
606 1/4" = 1'-0"



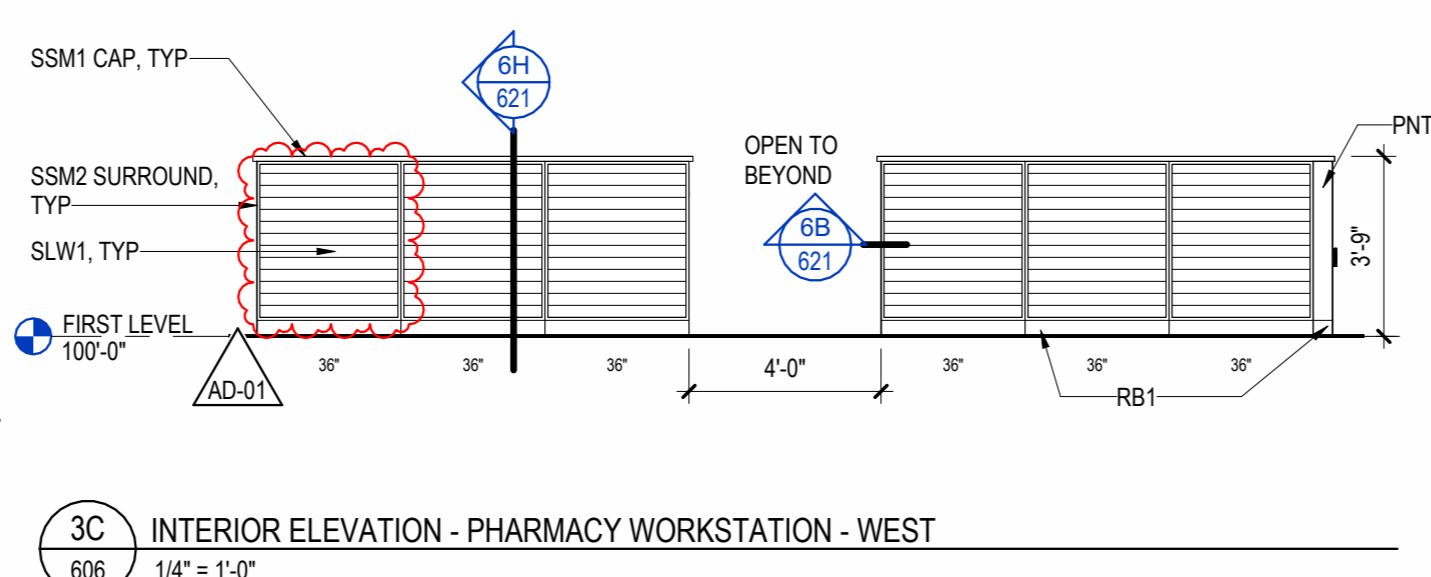
3B INTERIOR ELEVATION - PHARMACY DRIVE-THRU POS - WEST
606 1/4" = 1'-0"



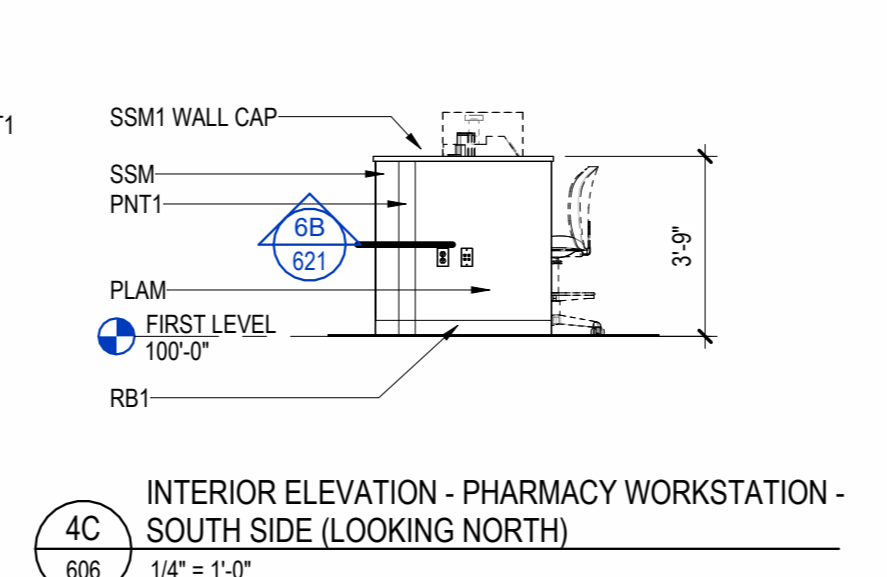
4B INTERIOR ELEVATION - PHARMACY - NORTH
606 1/4" = 1'-0"



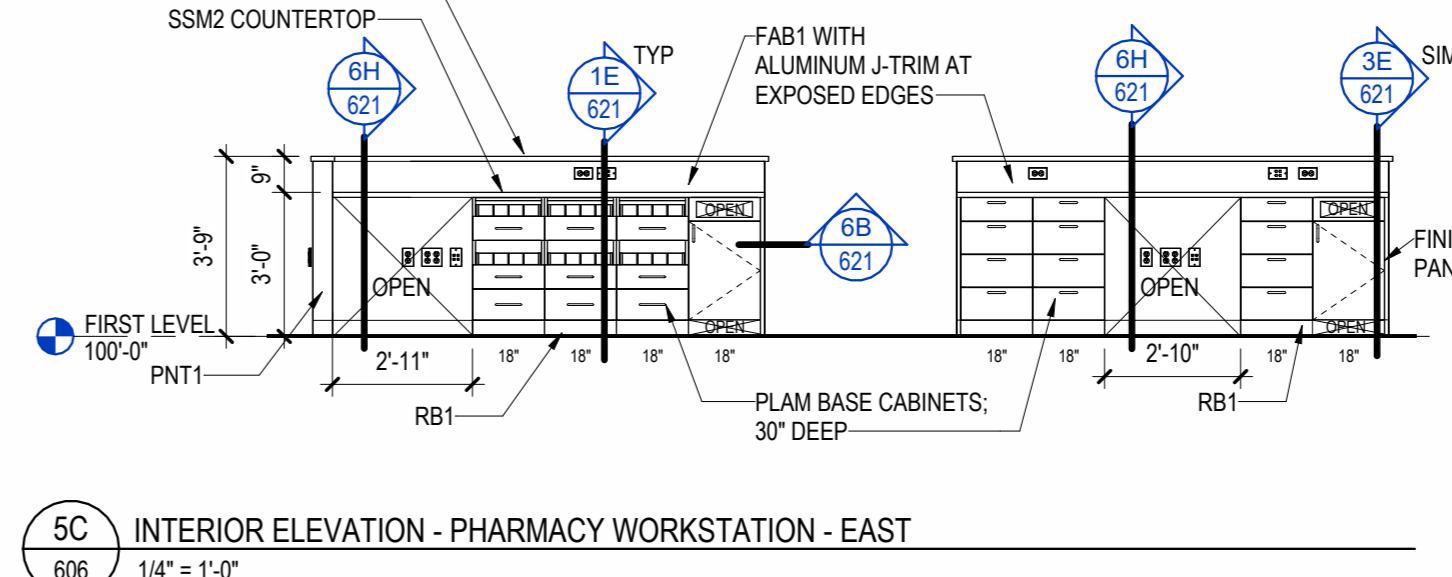
6B INTERIOR ELEVATION - PHARMACY - SOUTH
606 1/4" = 1'-0"



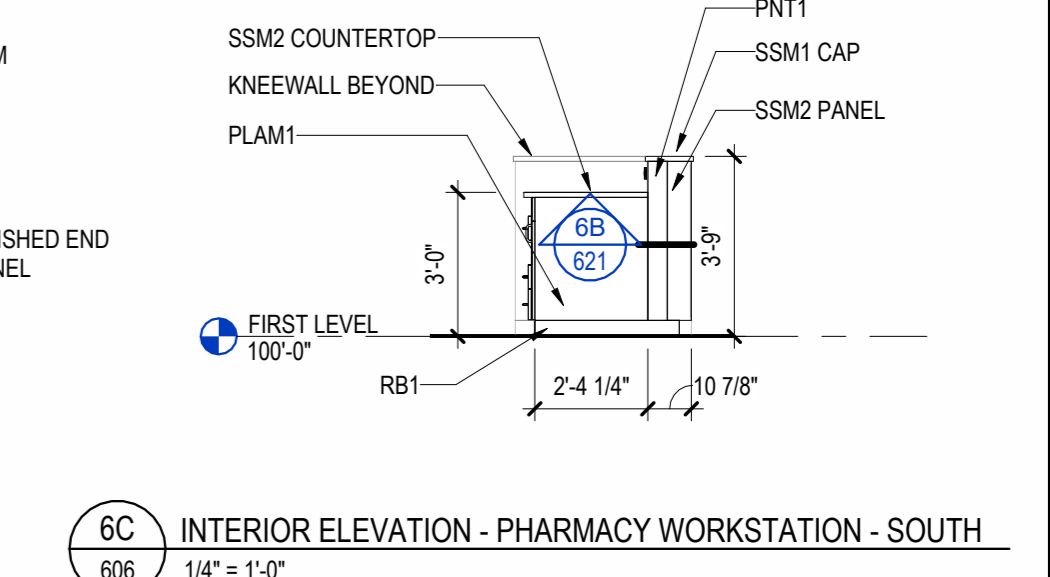
3C INTERIOR ELEVATION - PHARMACY WORKSTATION - WEST
606 1/4" = 1'-0"



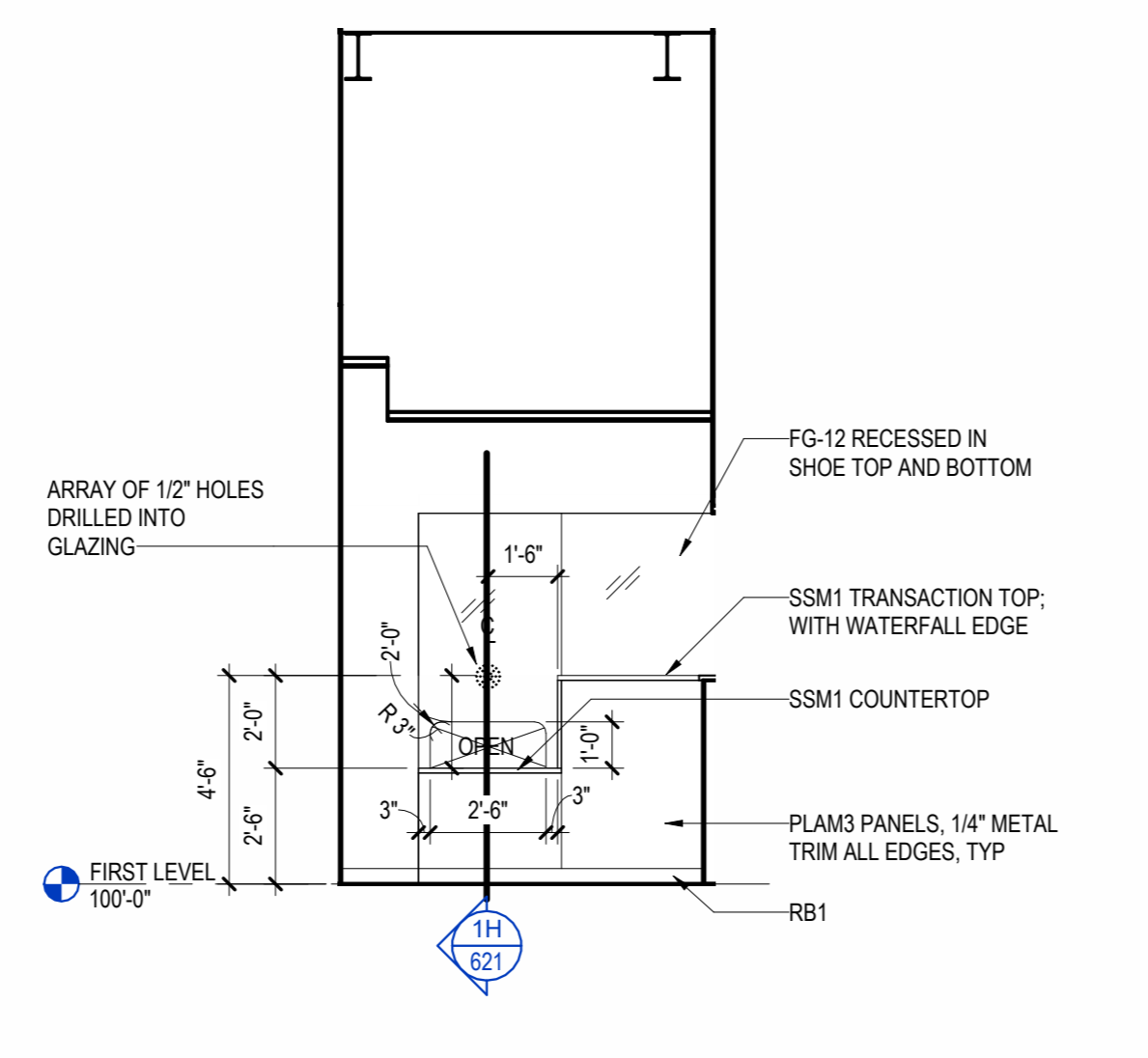
4C INTERIOR ELEVATION - PHARMACY WORKSTATION - SOUTH SIDE (LOOKING NORTH)
606 1/4" = 1'-0"



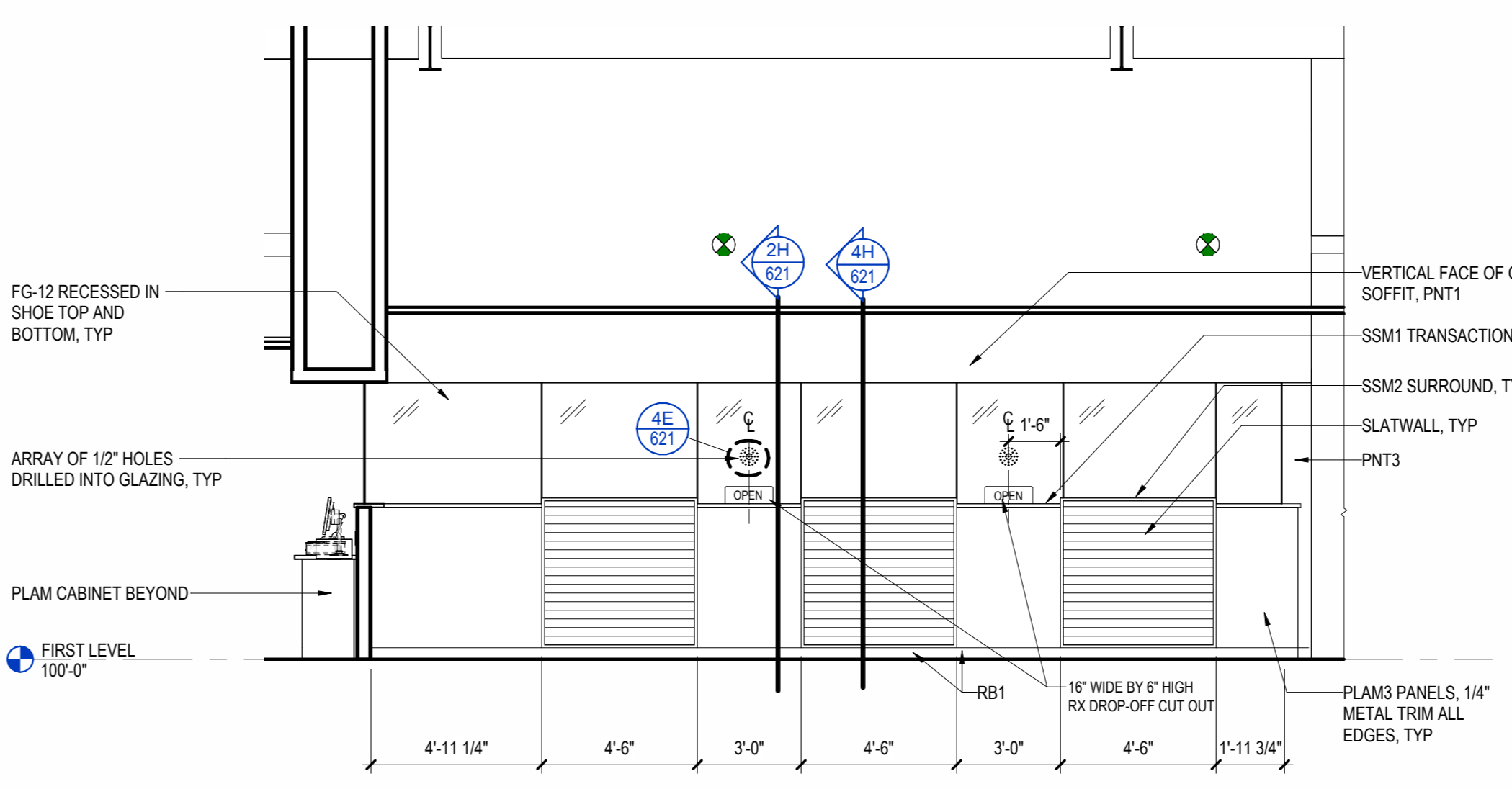
5C INTERIOR ELEVATION - PHARMACY WORKSTATION - EAST
606 1/4" = 1'-0"



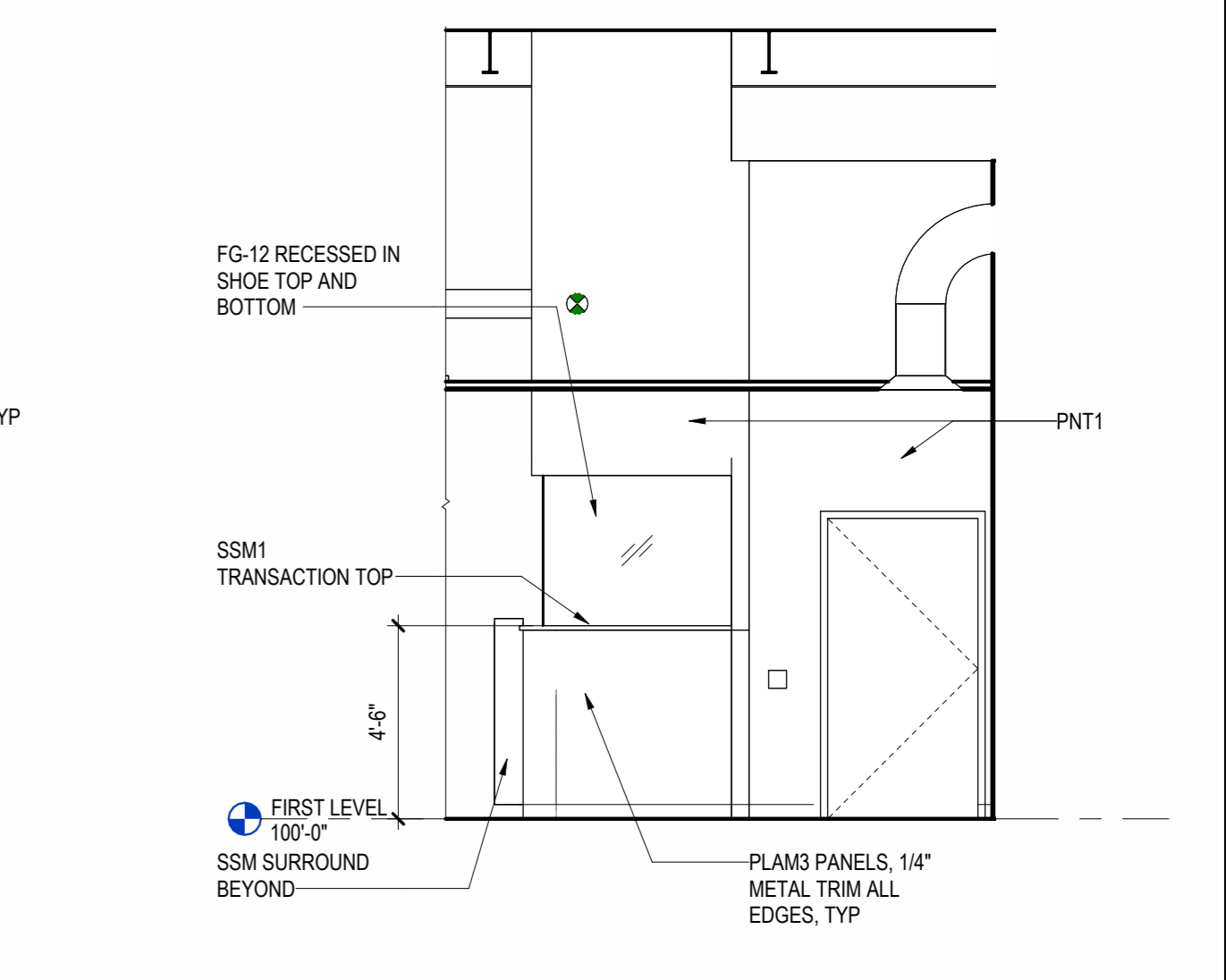
6C INTERIOR ELEVATION - PHARMACY WORKSTATION - SOUTH
606 1/4" = 1'-0"



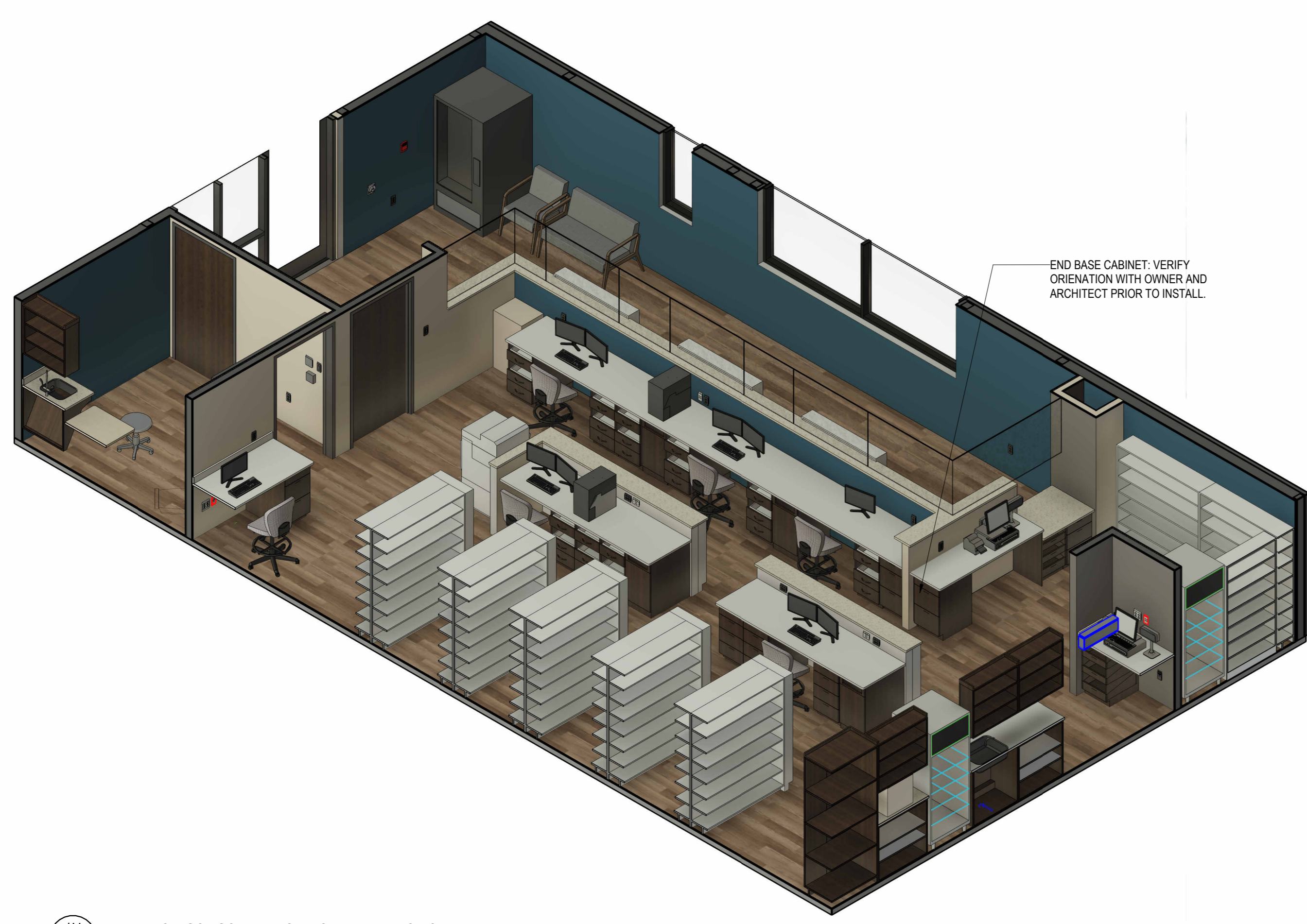
3E INTERIOR ELEVATION - PHARMACY CHECKOUT DESK - NORTH
606 1/4" = 1'-0"



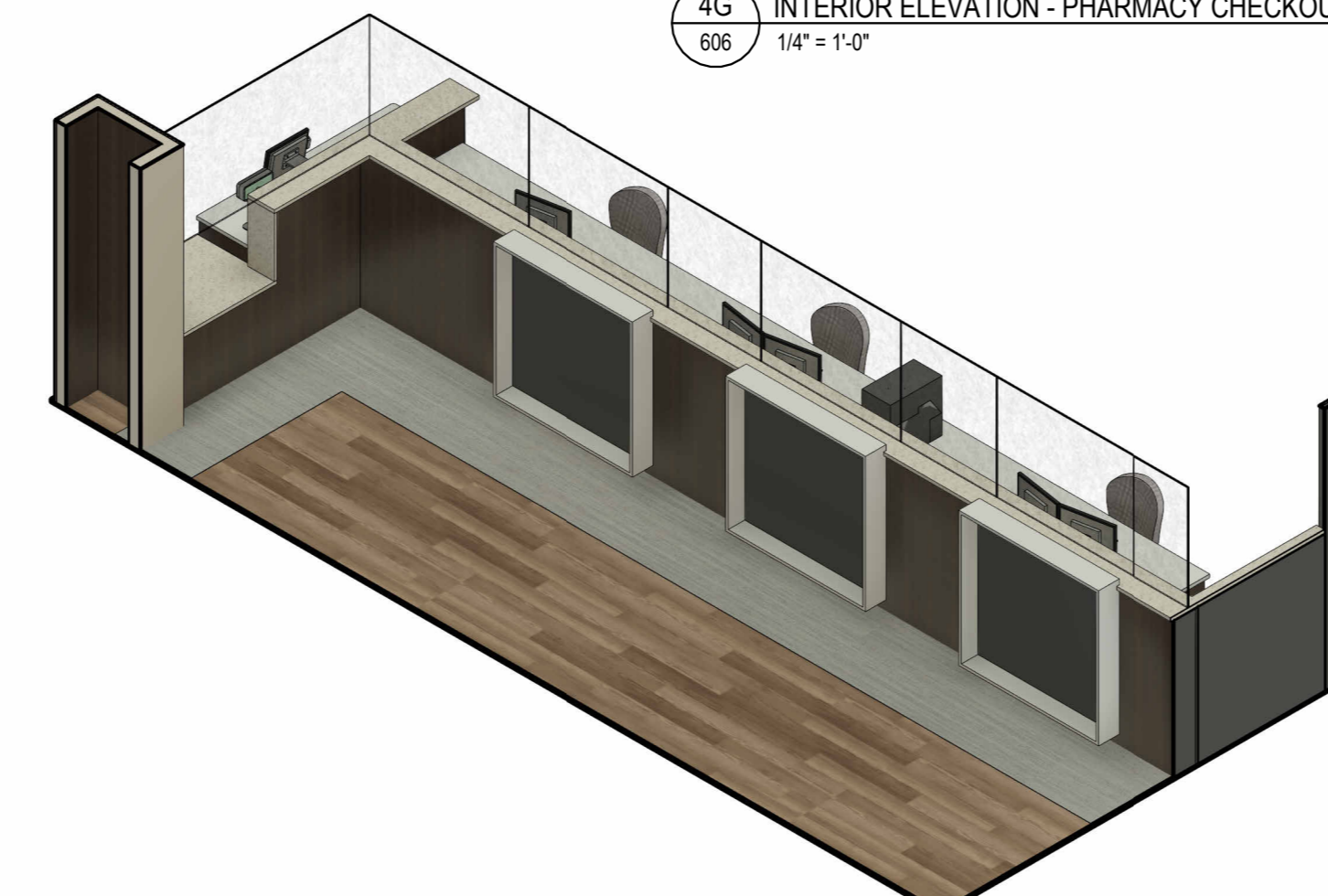
4E INTERIOR ELEVATION - PHARMACY CHECKOUT DESK - EAST
606 1/4" = 1'-0"



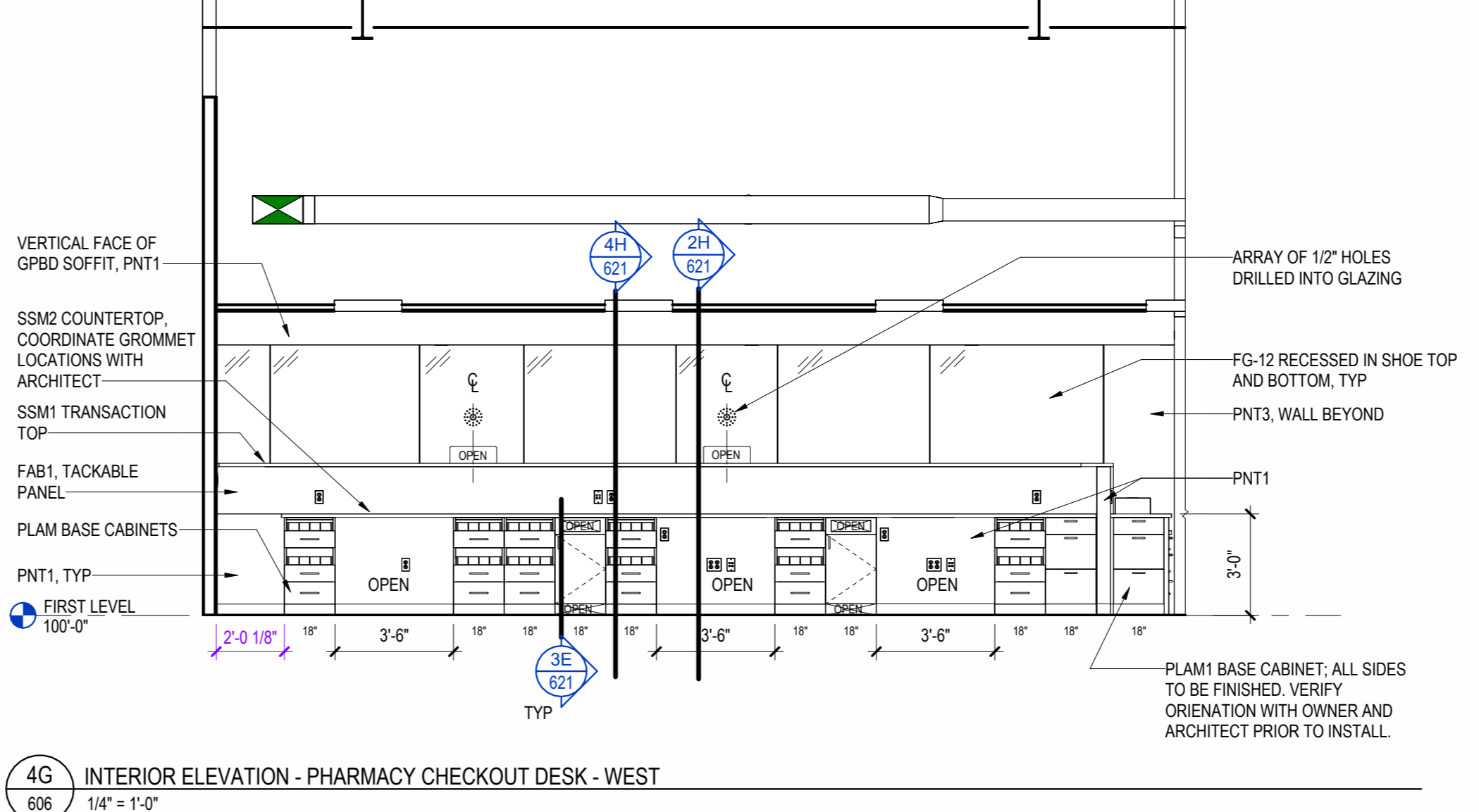
6E INTERIOR ELEVATION - PHARMACY CHECKOUT ENTRANCE - NORTH
606 1/4" = 1'-0"



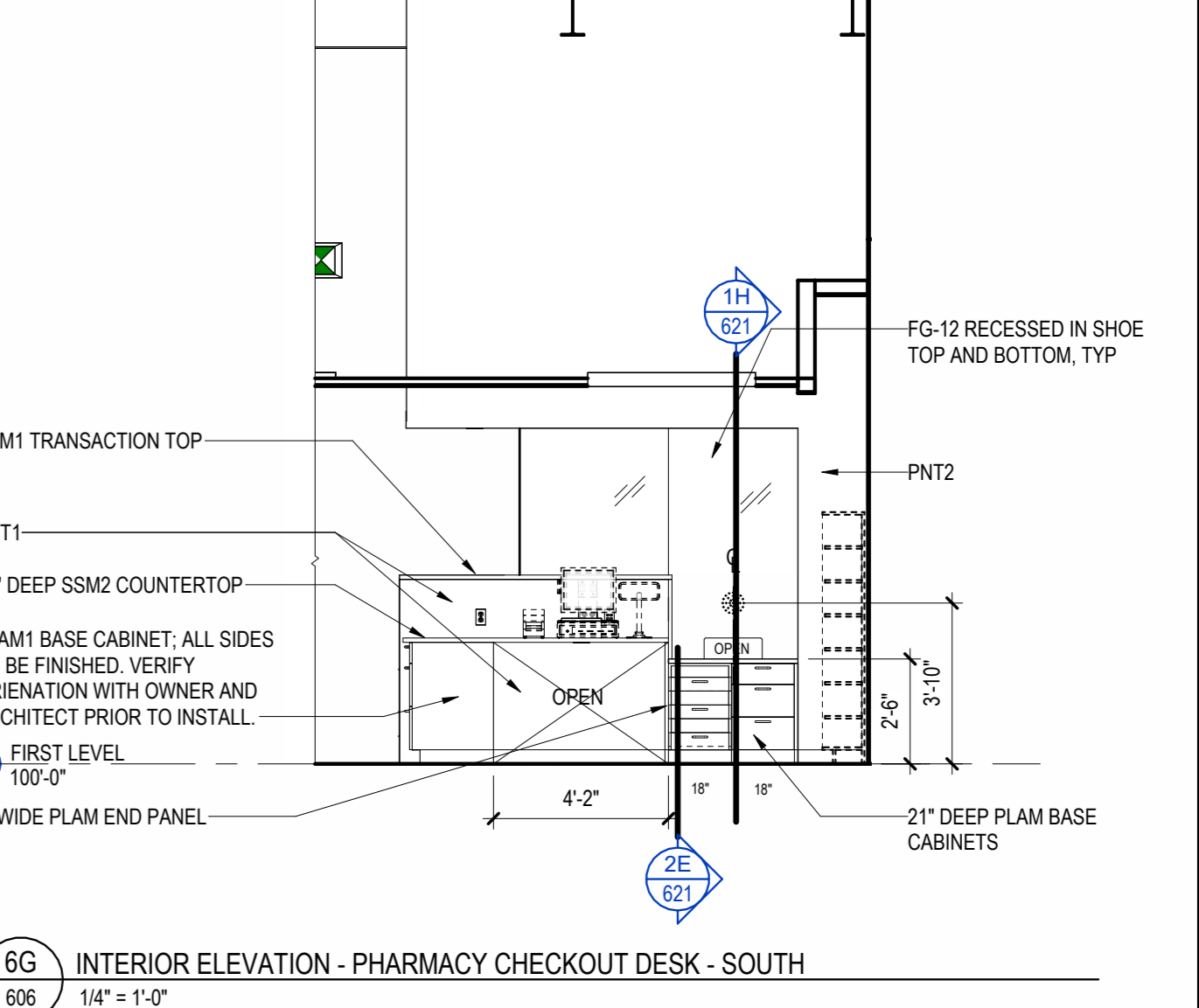
3H PHARMACY ISO - SOUTHWEST - FOR REFERENCE ONLY
606



3H PHARMACY ISO - RETAIL - FOR REFERENCE ONLY
606



4G INTERIOR ELEVATION - PHARMACY CHECKOUT DESK - WEST
606 1/4" = 1'-0"



6G INTERIOR ELEVATION - PHARMACY CHECKOUT DESK - SOUTH
606 1/4" = 1'-0"

SHEET NOTES:

- LIGHTNING PROTECTION IS A DEFERRED DESIGN TO BE INCLUDED IN THIS PROJECT. PROVIDE LIGHTNING PROTECTION ON ROOF AND MAJOR EQUIPMENT. PROVIDE ALL NECESSARY COMPONENTS AND EQUIPMENT REQUIRED FOR A COMPLETE LIGHTNING PROTECTION SYSTEM PER SPECIFICATIONS. PROVIDE AIR TERMINALS AT MAXIMUM 20'-0" ON CENTER SURROUNDING AREA.



FIELD HEALTH SYSTEM
CATCHINGS CLINIC

B|W|B|R, P.C.
Scott Kirchner, Architect

380 St. Peter Street, Ste. 600
Saint Paul, MN 55102
651.222.3701
bwwbr.com



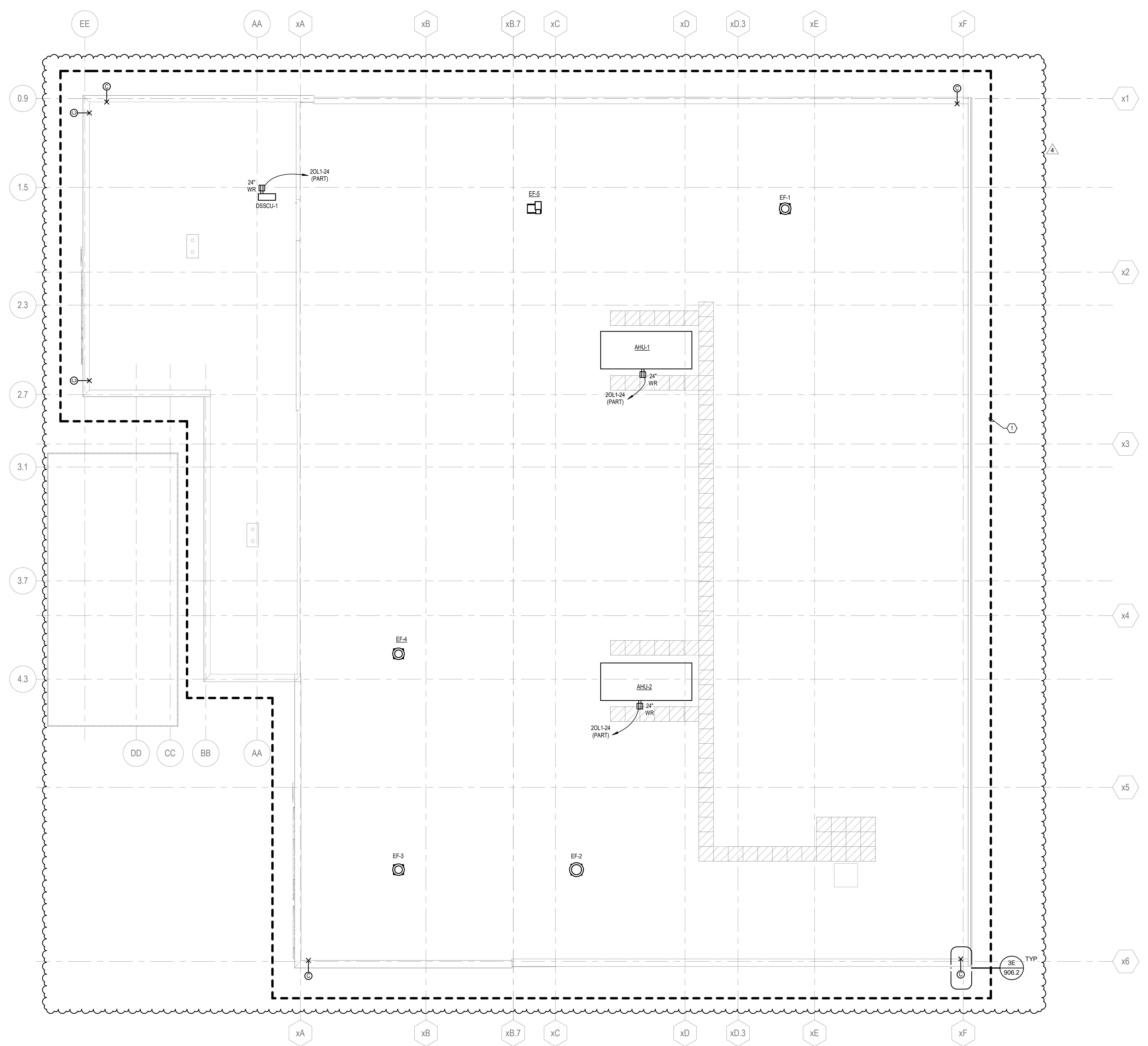
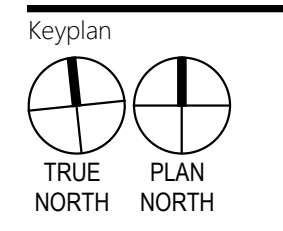
10360 Eliron Circle Phone: 402.991.5520
Omaha, NE 68134 www.specializedeng.com



Issued For

Item	Date
SD ISSUE	07/06/2023
DD ISSUE	04/18/2024
CD ISSUE	09/30/2025
AD-01	10/24/2025

This Sheet may be a Reduced Copy
The bar above is 1" long on a Full Size Sheet.
Drawing Scales apply to Full Size Sheets.



1G FLOOR PLAN - ROOF LEVEL - POWER & LOW VOLTAGE
902.P
1/8" = 1'-0"

INSTALL GREEN INSULATED GROUND WIRE WITH LIGHTING, RECEPTACLE AND EQUIPMENT BRANCH CIRCUITS.
INSTALL INDIVIDUAL (DEDICATED) NEUTRAL CONDUCTORS FOR EACH 120V OR 277V PHASE CONDUCTOR SERVED FROM A SINGLE POLE CIRCUIT BREAKER

2025 © COPYRIGHT
PERMISSION TO REPRODUCE ANY PART OF THIS DOCUMENT IS HEREBY GRANTED SOLELY FOR THE PURPOSE OF THE CONSTRUCTION OF THE PROJECT OR THE ARCHIVING OF THIS PROJECT. UNAUTHORIZED USE OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF SPECIALIZED ENGINEERING SOLUTIONS IS PROHIBITED BY COPYRIGHT LAW.
DO NOT SCALE DRAWING. ALL DIMENSIONS AND CLEARANCES SHALL BE VERIFIED FROM APPROPRIATE SOURCES. ALL WORK SHALL BE COORDINATED PRIOR TO INSTALLATION. SEE SPECIFICATIONS.

	SPECIALIZED ENGINEERING SOLUTIONS	10360 Eliron Circle Omaha, NE 68134 Phone: 402.991.5520	SES PROJECT # 20432
	www.specializedeng.com		

Comm. No. 3.2020181.01 Drawn PBM

Sheet Title
ROOF LEVEL - FLOOR PLAN - POWER & LOW VOLTAGE

Sheet No.

902.P

10/24/2025 10:42:55 AM

