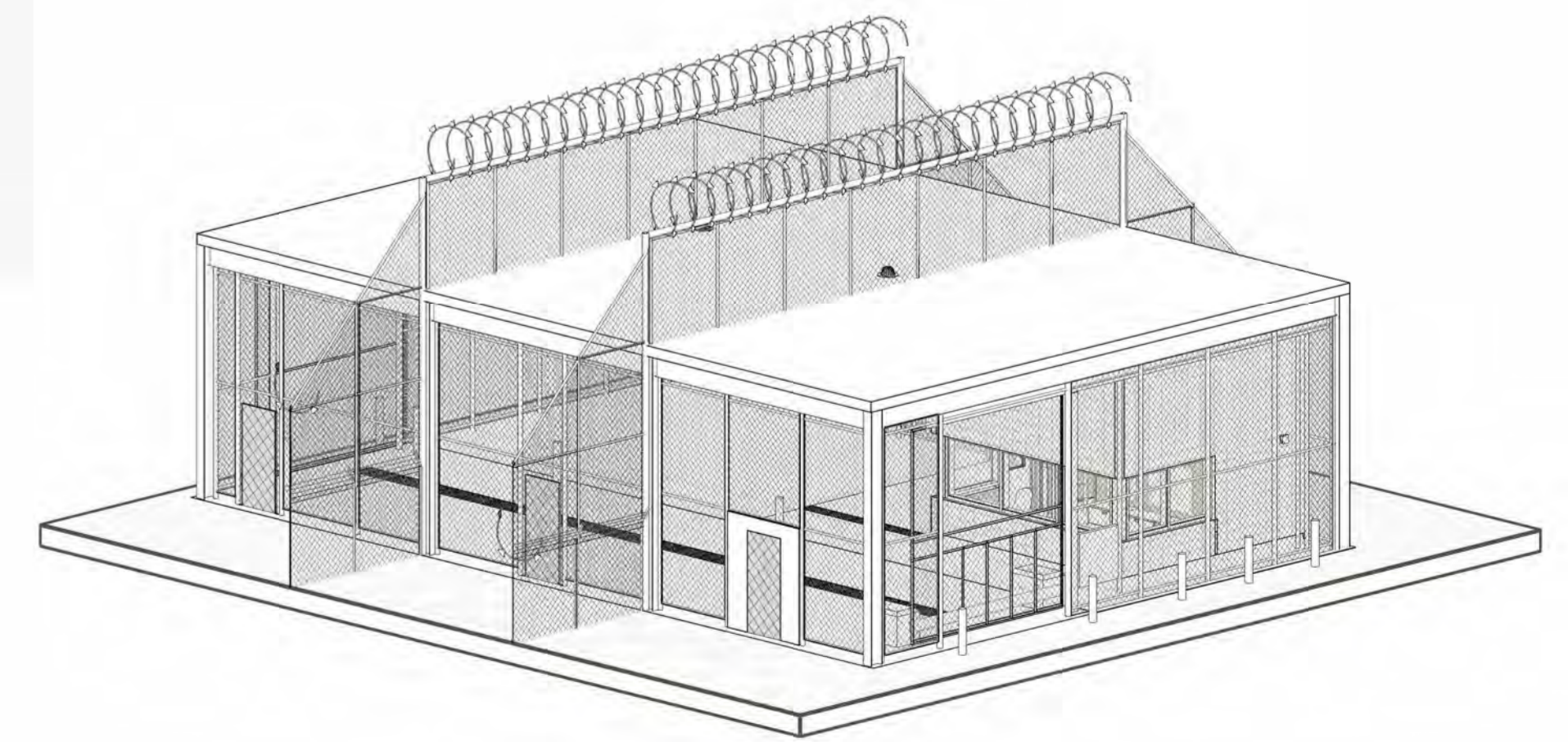


Sheet List	
Sheet Number	Sheet Name
A000	COVER
A001	CODE INFORMATION
A002	ASSEMBLIES
A003	LIFE SAFETY & DIMENSIONAL STANDARDS
A004	PROJECT TIMELINE & NOTES
A100	PLANS
A101	ROOF PLAN
A150	REFLECTED CEILING PLANS
A200	ELEVATIONS
A300	BUILDING SECTIONS
A400	ENLARGED PLANS
A500	SECTION DETAILS
A501	PLAN DETAILS
A502	FENCING DETAILS
A600	SCHEDULES + TYPES
A900	PERSPECTIVES
D100	DEMOLITION PLAN
D101	DEMOLITION RCP & ROOF PLAN
S000	Structural Notes & Typical Details
S100	CLT
S101	CLT
S150	Foundations



**A000**

Scale 1/8" = 1'-0"



Gatehouse - Sallyport  
Maine State Prison - 807 Cushing Rd, Warren, ME 04864  
**COVER**

www.pauldesignsproject.com  
207.747.5080  
22 Monument Square | Suite 602 | Portland, ME | 04101



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5-26-26

**Maine State Prison -  
Department of Corrections  
New Gatehouse & Sallyport Renovation**  
807 Cushing Road, Warren, ME 04864

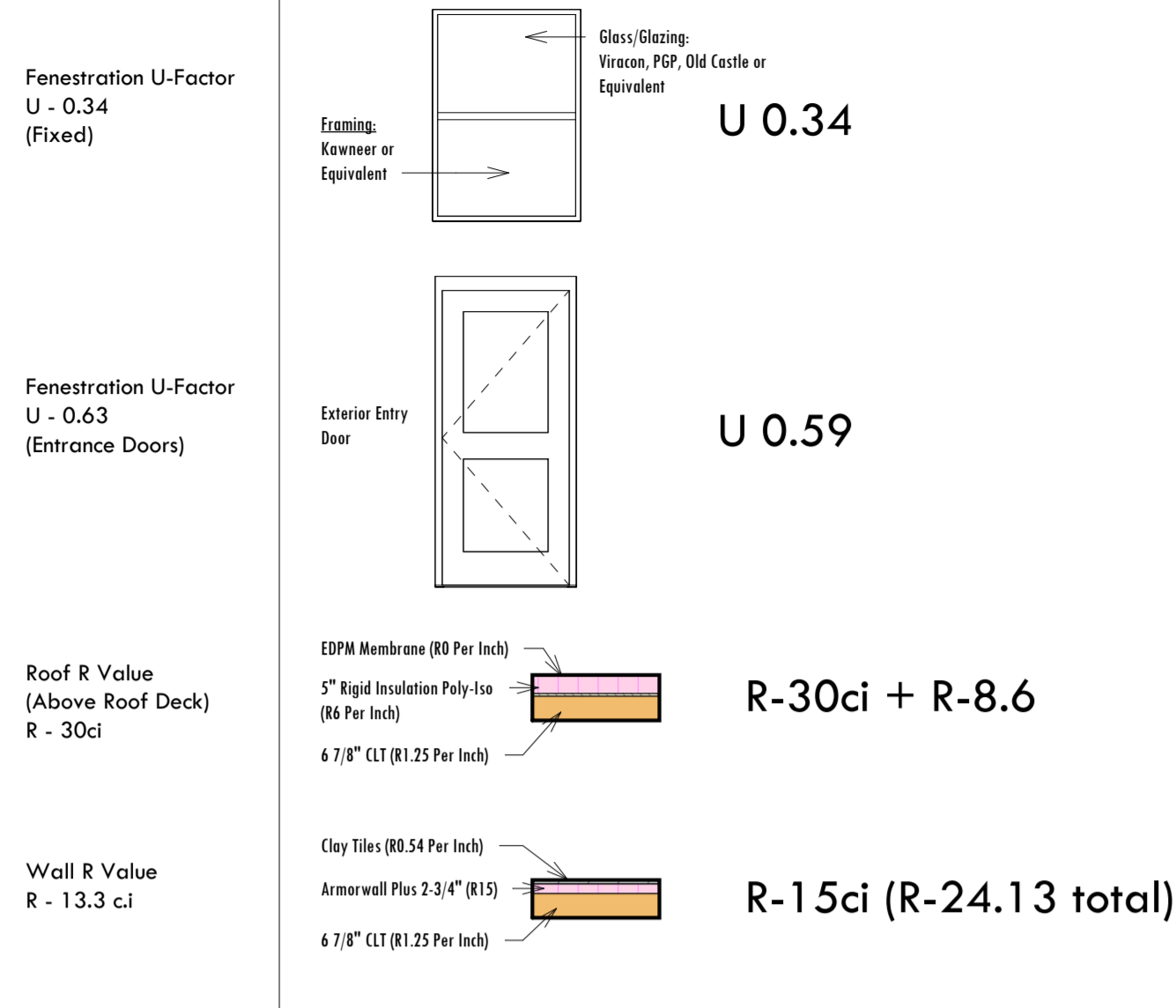
**ISSUED FOR CONSTRUCTION**

**May 26, 2026**

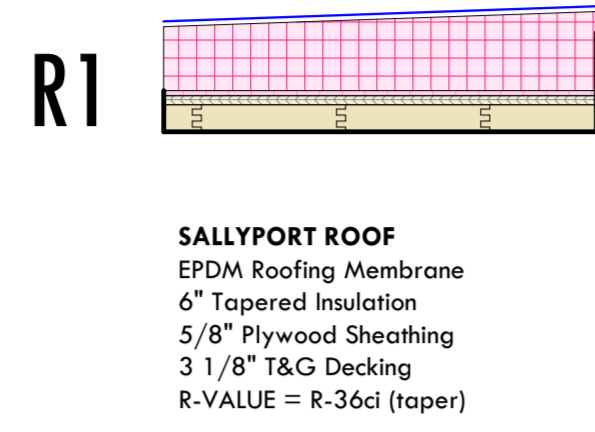
5/26/2026 1:47:16 PM © 2025 Paul Designs Project Sheet Size: D 34 in x 36 in



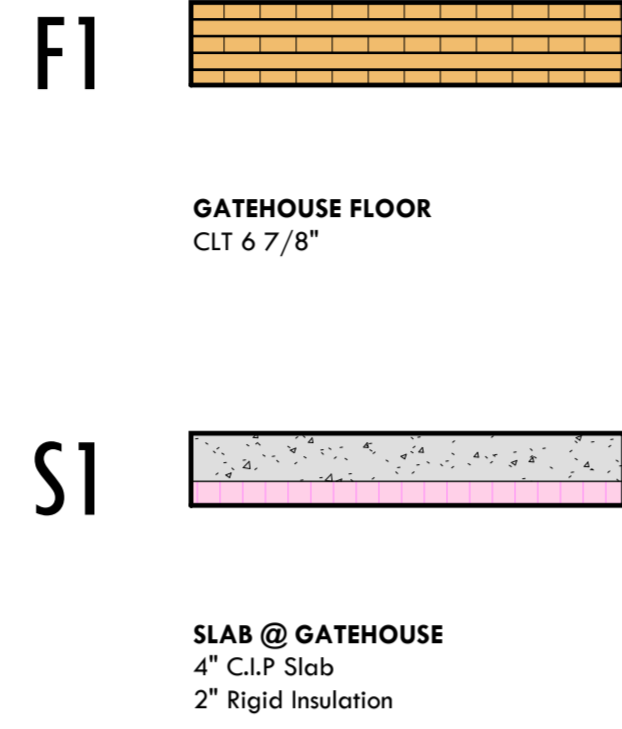
2021 IECC ACTUAL R-VALUE



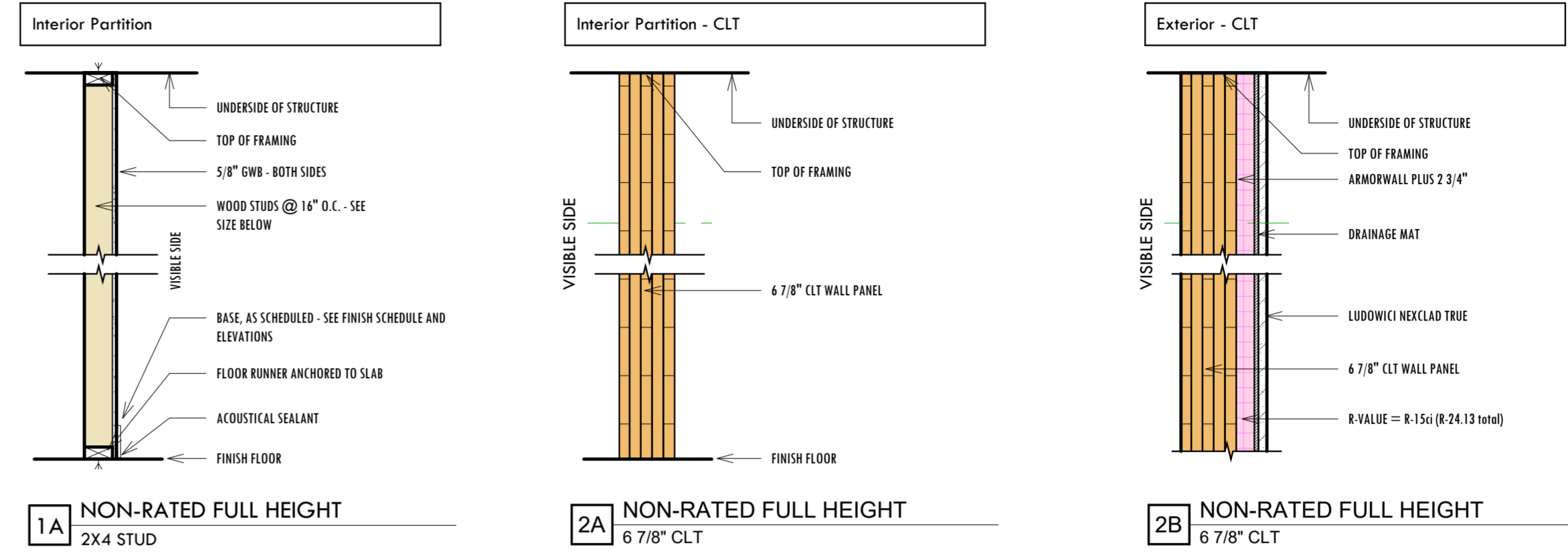
ROOF TYPES



FLOOR TYPES



WALL TYPES



IECC 2021 Code Requirements  
1/4" = 1'-0"

TABLE C402.1.3 OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD<sup>a</sup>

CLIMATE ZONE	0 AND 1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
<b>Roofs</b>																
Insulation entirely above roof deck	R-20ci	R-25ci	R-25ci	R-25ci	R-25ci	R-25ci	R-30ci	R-30ci	R-30ci	R-30ci	R-30ci	R-30ci	R-35ci	R-35ci	R-35ci	R-35ci
Metal buildings <sup>b</sup>	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-25 + R-11 LS	R-30 + R-11 LS	R-30 + R-11 LS	R-25 + R-11 LS	R-25 + R-11 LS
Attic and other	R-38	R-38	R-38	R-38	R-38	R-38	R-49	R-49	R-49	R-49	R-49	R-49	R-60	R-60	R-60	R-60
<b>Walls, above grade</b>																
Mass <sup>c</sup>	R-5.7ci <sup>d</sup>	R-5.7ci <sup>d</sup>	R-5.7ci <sup>d</sup>	R-7.6ci	R-7.6ci	R-9.5ci	R-9.5ci	R-11.4ci	R-11.4ci	R-13.3ci	R-13.3ci	R-15.2ci	R-15.2ci	R-15.2ci	R-25ci	R-25ci
Metal building	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci	R-13 + R-6.5ci
Metal framed	R-5ci	R-5ci	R-5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci
Wood framed and other	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20
<b>Walls, below grade</b>																
Below-grade wall <sup>f</sup>	NR	NR	NR	NR	NR	NR	R-7.5ci	R-10ci	R-7.5ci	R-10ci	R-10ci	R-10ci	R-10ci	R-10ci	R-10ci	R-10ci
Mass <sup>g</sup>	NR	NR	R-6.3ci	R-8.3ci	R-10ci	R-10ci	R-14.6ci	R-16.7ci	R-14.6ci	R-16.7ci	R-16.7ci	R-16.7ci	R-20.9ci	R-20.9ci	R-23ci	R-23ci
Joist framing	R-13	R-13	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30
<b>Floors</b>																
<b>Slab-on-grade floors</b>																
Unheated slabs	NR	NR	NR	NR	NR	NR	R-10 for 24" below	R-15 for 24" below	R-15 for 24" below	R-15 for 24" below	R-15 for 24" below	R-20 for 24" below	R-20 for 24" below	R-20 for 24" below	R-25 for 24" below	R-25 for 24" below
Heated slabs <sup>h</sup>	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-10 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-20 for 24" below + R-5 full slab	R-20 for 24" below + R-5 full slab	R-20 for 24" below + R-5 full slab	R-25 for 24" below + R-5 full slab	R-25 for 24" below + R-5 full slab

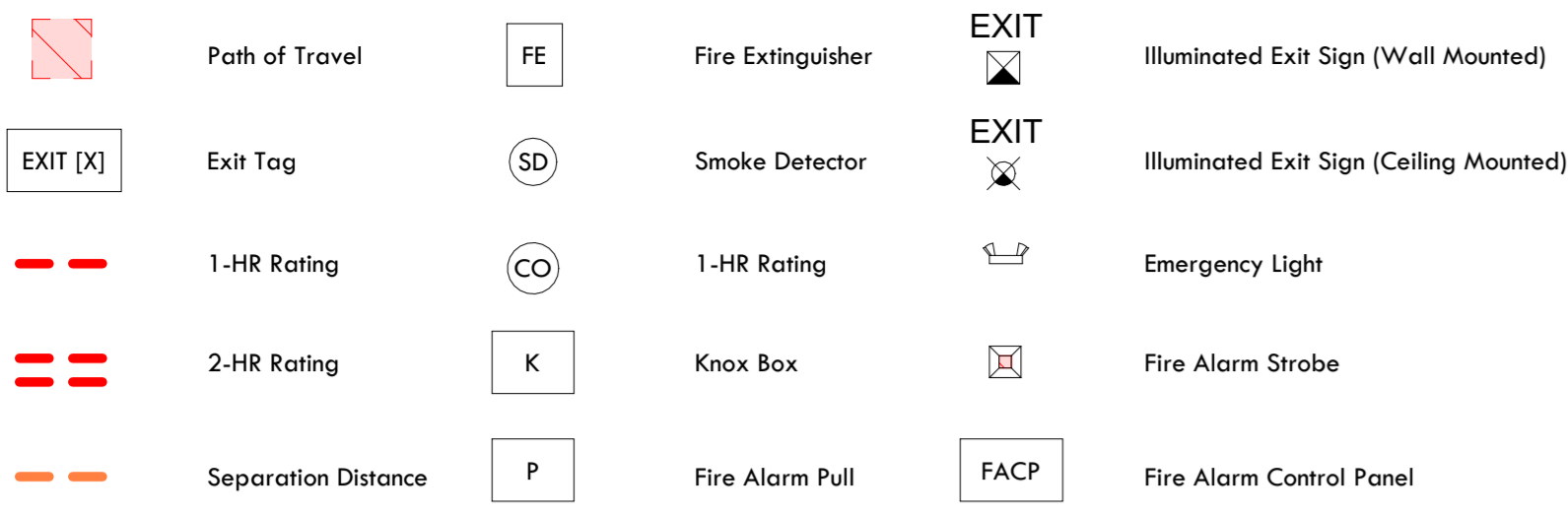
For SI: 1 inch = 25.4 mm, 1 pound per square foot = 4.88 kg/m<sup>2</sup>, 1 pound per cubic foot = 16 kg/m<sup>3</sup>.  
 a. Continuous insulation, per IECC Requirements, L5.1, Linear System.  
 b. Assembly configurations can be found in ANSI/AIAA/ASTM E90.1 Appendix A.  
 c. Where using the prescriptive method, a thermal spacer block shall be provided, otherwise use the U-factor compliance method in Table C402.1.4.  
 d. R-7.6 is allowed to be substituted with concrete block walls complying with ASTM C90, ungrouted or partially grouted at 32 inches or less on center vertically and 48 inches or less on center horizontally, with ungrouted cores filled with materials having a maximum thermal conductivity of 0.44 Btu-in/h<sup>2</sup>-ft<sup>2</sup>.  
 e. Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for heated slabs.  
 f. "Mass floor" shall be in accordance with Section C402.2.3.  
 g. "Mass walls" shall be in accordance with Section C402.2.3.  
 h. The R-value is for perimeter insulation and the reported value is for full, under-slab insulation. Perimeter insulation is not required to extend below the bottom of the slab.

TABLE C402.1.4 OPAQUE THERMAL ENVELOPE ASSEMBLY MAXIMUM REQUIREMENTS, U-FACTOR METHOD<sup>a, b</sup>

CLIMATE ZONE	0 AND 1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
<b>Roofs</b>																
Insulation entirely above roof deck	U-0.048	U-0.039	U-0.039	U-0.039	U-0.039	U-0.039	U-0.032	U-0.032	U-0.032	U-0.032	U-0.032	U-0.032	U-0.028	U-0.028	U-0.028	U-0.028
Metal buildings	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.035	U-0.029	U-0.029	U-0.029	U-0.029
Attic and other	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.021	U-0.021	U-0.021	U-0.021	U-0.021	U-0.021	U-0.017	U-0.017	U-0.017	U-0.017
<b>Walls, above grade</b>																
Mass <sup>c</sup>	U-0.151	U-0.151	U-0.151	U-0.125	U-0.125	U-0.125	U-0.104	U-0.104	U-0.104	U-0.104	U-0.104	U-0.080	U-0.071	U-0.071	U-0.071	U-0.071
Metal building	U-0.079	U-0.079	U-0.079	U-0.079	U-0.079	U-0.079	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.050	U-0.044	U-0.044	U-0.044	U-0.044
Metal framed	U-0.077	U-0.077	U-0.077	U-0.077	U-0.077	U-0.077	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.055	U-0.049	U-0.049	U-0.049	U-0.049
Wood framed and other <sup>d</sup>	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.051	U-0.051	U-0.051	U-0.051	U-0.051
<b>Walls, below grade</b>																
Below-grade wall <sup>f</sup>	C-1.140 <sup>e</sup>	C-1.140 <sup>e</sup>	C-1.140 <sup>e</sup>	C-1.140 <sup>e</sup>	C-1.140 <sup>e</sup>	C-1.140 <sup>e</sup>	C-0.919	C-0.919	C-0.919	C-0.919	C-0.919	C-0.919	C-0.863	C-0.863	C-0.863	C-0.863
Mass <sup>g</sup>	U-0.322 <sup>h</sup>	U-0.322 <sup>h</sup>	U-0.307	U-0.287	U-0.287	U-0.287	U-0.274	U-0.274	U-0.274	U-0.274	U-0.274	U-0.261	U-0.261	U-0.261	U-0.261	U-0.261
Joist framing	U-0.066 <sup>i</sup>	U-0.066 <sup>i</sup>	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.027	U-0.027	U-0.027	U-0.027
<b>Floors</b>																
<b>Slab-on-grade floors</b>																
Unheated slabs	F-0.73 <sup>j</sup>	F-0.73 <sup>j</sup>	F-0.73 <sup>j</sup>	F-0.73 <sup>j</sup>	F-0.73 <sup>j</sup>	F-0.73 <sup>j</sup>	F-0.54	F-0.54	F-0.54	F-0.54	F-0.54	F-0.51	F-0.434	F-0.434	F-0.434	F-0.434
Heated slabs	F-0.69	F-0.69	F-0.69	F-0.69	F-0.69	F-0.69	F-0.66	F-0.66	F-0.66	F-0.66	F-0.66	F-0.62	F-0.602	F-0.602	F-0.602	F-0.602
<b>Opaque doors</b>																
Nonswinging door	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31
Swinging door <sup>k</sup>	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37	U-0.37
Garage door < 14% glazing <sup>l</sup>	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31	U-0.31

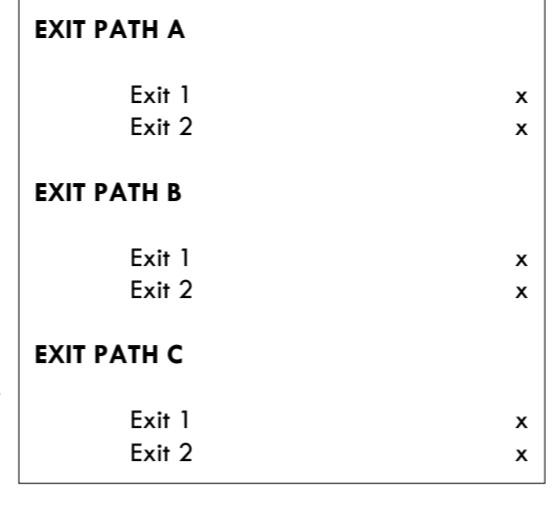
For SI: 1 pound per square foot = 4.88 kg/m<sup>2</sup>, 1 pound per cubic foot = 16 kg/m<sup>3</sup>.  
 a. Continuous insulation, per IECC Requirements, L5.1, Linear System.  
 b. Where assembly U-factor, C-factor and F-factor are established in ANSI/AIAA/ASTM E90.1 Appendix A, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table. The R-value of continuous insulation shall be permitted to be added or subtracted from the original tested design.  
 c. Where U-factor has been established by testing in accordance with ASTM C1363, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table. The R-value of continuous insulation shall be permitted to be added or subtracted from the original tested design.  
 d. Where heated slabs are below grade, below-grade walls shall comply with the U-factor requirements for above-grade mass walls.  
 e. "Mass floor" shall be in accordance with Section C402.2.3.  
 f. "Mass walls" shall be in accordance with Section C402.2.3.  
 g. Swinging door U-factor shall be determined in accordance with Section C402.2.3.  
 h. Garage doors having a single pane of fenestration shall have an assembly U-factor less than or equal to 0.44 in Climate Zones 0 through 4 and less than or equal to 0.36 in Climate Zones 5 through 8 and less than or equal to 0.36 in Climate Zones 7 and 8, provided that the fenestration area is not less than 14 percent and not more than 25 percent of the total door area.  
 i. U-factor shall be in accordance with Section C402.2.3.  
 j. U-factor shall be in accordance with Section C402.2.3.  
 k. U-factor shall be in accordance with Section C402.2.3.  
 l. U-factor shall be in accordance with Section C402.2.3.



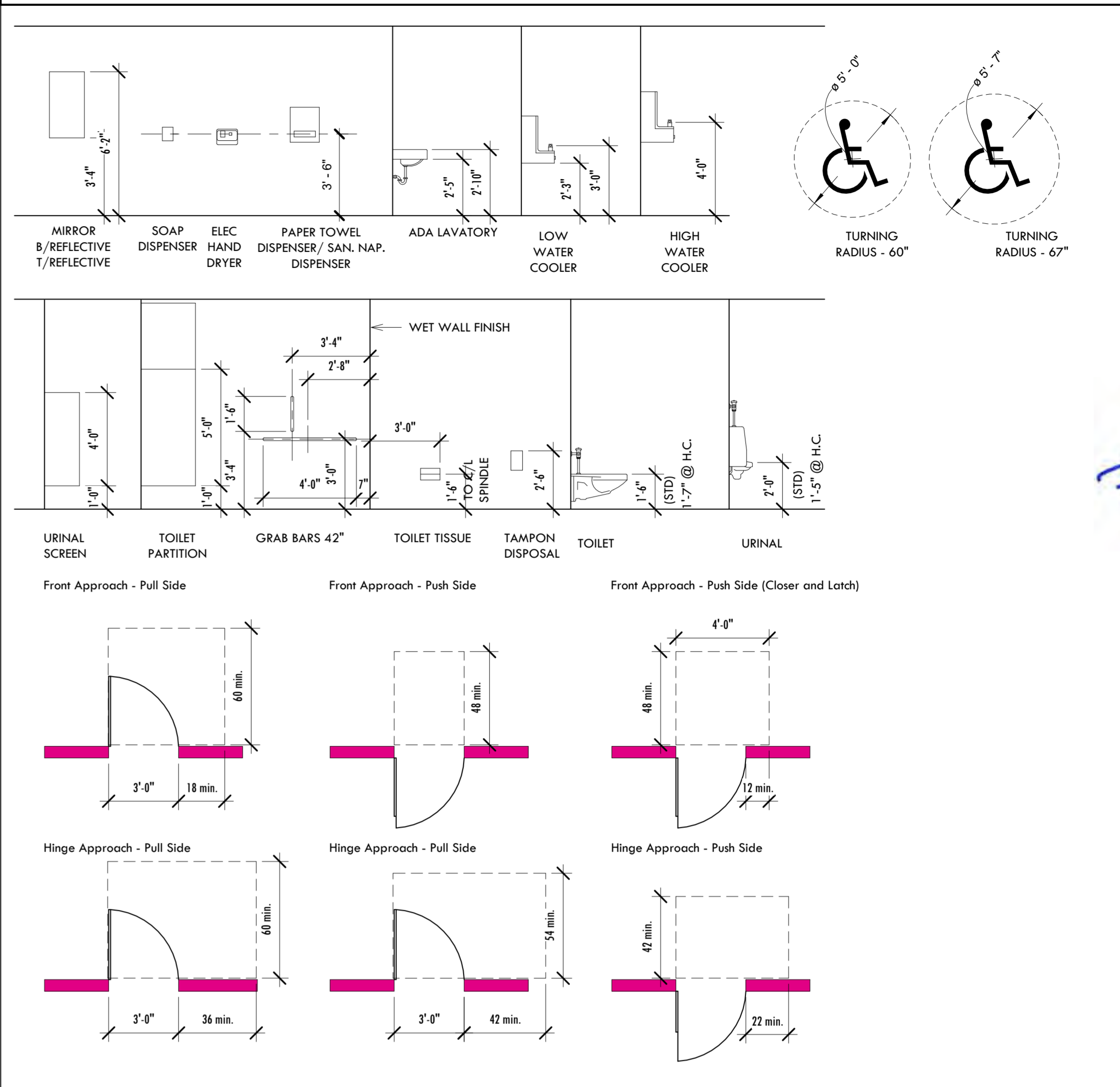


**LIFE SAFETY NOTES**

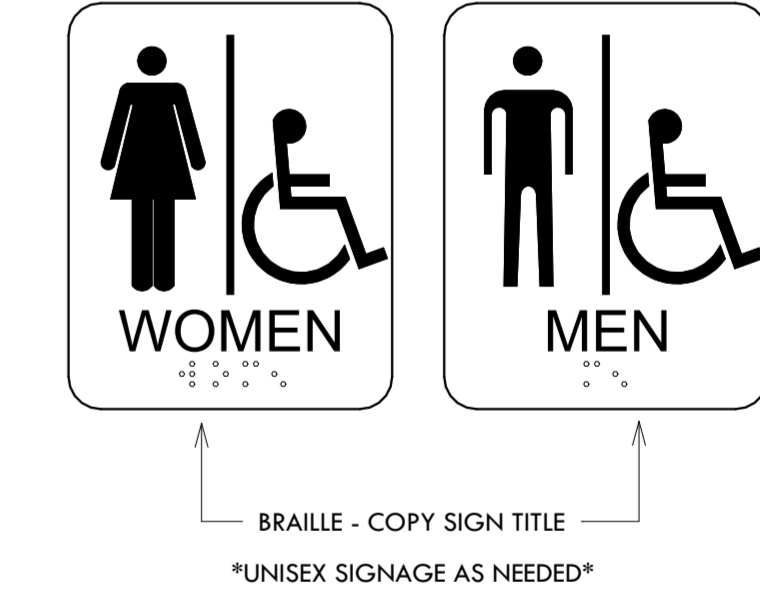
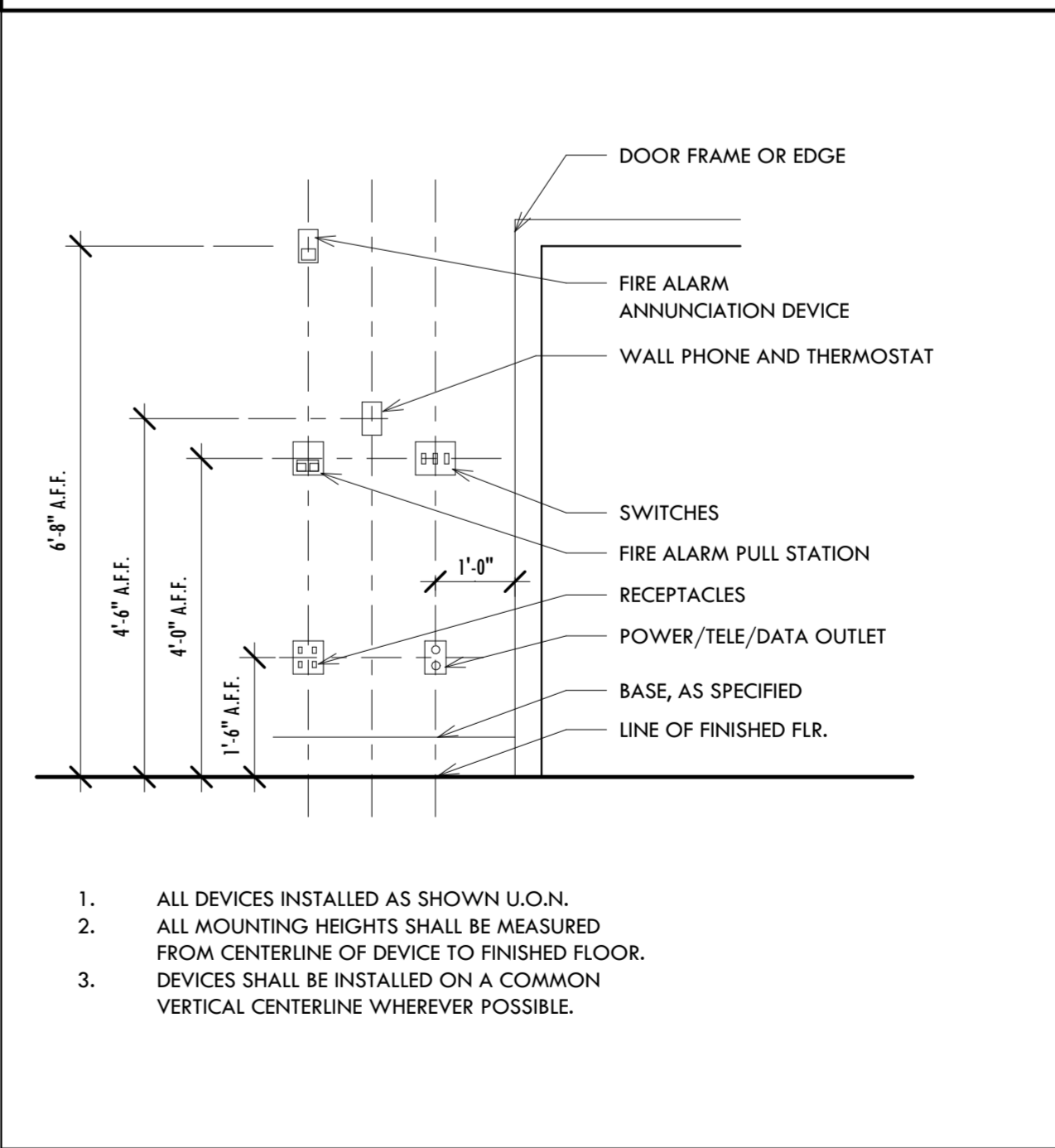
1. THESE LIFE SAFETY PLANS ARE MEANT TO SHOW CONFORMANCE WITH THE REGULATIONS EXISTING AT THE TIME OF CONSTRUCTION, OR AS INDICATED IN THE CODE SUMMARY NOTES WHERE RENOVATIONS ARE PROPOSED. THESE DOCUMENTS ARE A COMPILATION OF EXISTING CONSTRUCTION DOCUMENTS, EXISTING CONDITIONS AS OBSERVED IN THE FIELD, AND CURRENT PROGRAMMATIC USE STATEMENTS. THOUGH THE INTENT IS TO ACCURATELY REFLECT THE CURRENT CONDITIONS OF THE SPACE, AN AS-BUILT SURVEY WAS NOT CONDUCTED FOR THE COMPLETION OF THESE DRAWINGS; SOME CONDITIONS MAY DIFFER FROM THOSE SHOWN.
2. SEE A003 FOR PARTITION TYPES
3. EXISTING FP SYSTEM, EMERGENCY EGRESS LIGHTINGS AND EXIT SIGNS ARE TO REMAIN U.N.O. SEE REFLECTED CEILING PLAN FOR PROPOSED LOCATIONS OF ADDITIONAL FIXTURES OR ALTERATIONS. SEE E AND FP SERIES DWGS FOR ALL OTHER NOTES.
4. SEE ENLARGED PLANS AND INTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF DEVICES
5. EXISTING EXIT SIGNS AND EMERGENCY EGRESS LIGHTING ARE EQUIPPED WITH BATTERY BACK-UP POWER
6. THIS SUBMISSION REFLECTS A CORE AND SHELL SPACE ONLY, TENANT SPECIFIC LAYOUT TO BE FURNISHED BY TENANT



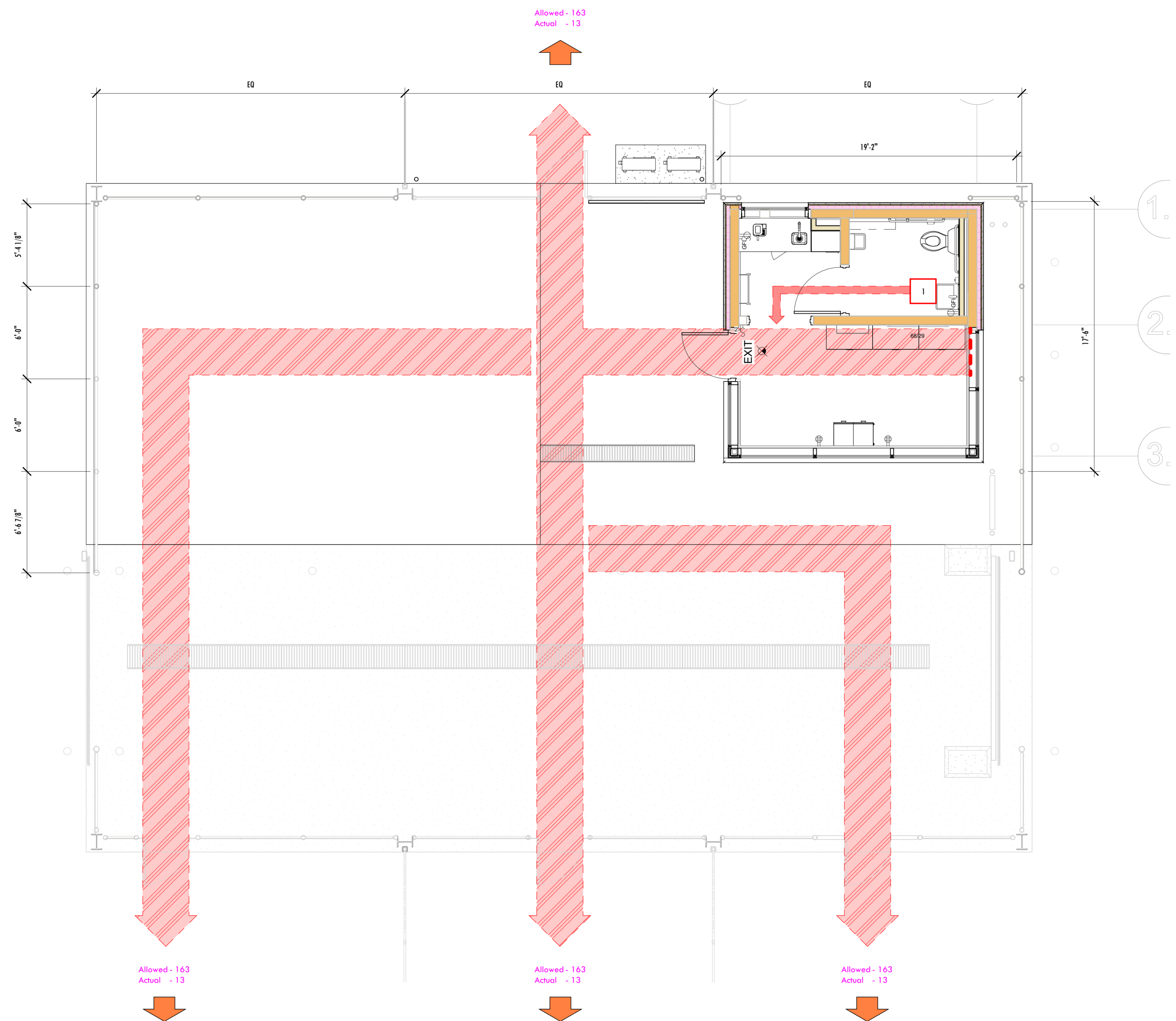
**ACCESSIBILITY LEGEND**



**DEVICE MOUNTING LEGEND**



**LIFE SAFETY SYMBOLS**  
1/8" = 1'-0"



**01 First Level - Life Safety**  
1/4" = 1'-0"



**GENERAL PHASING NOTES:**

1. Coordination protocols for maintaining a secure perimeter and operation of the sallyport/gatehouse must be established in written form prior to the commencement of any demolition or construction. There are certain times of day when traffic is reduced; these times should be coordinated with anticipated periods of work.
2. Temporary fencing and additional razor wire may be necessary to maintain a secure perimeter. The location of fencing and wire is the responsibility of the Contractor after coordination with MDOC.
3. The Sallyport/Gatehouse will remain operational to the greatest extent possible during demolition and construction. Demolition will occur in phases in order to maintain a secure perimeter and operation of the gatehouse.
4. A secure enclosure must be maintained at all times.
5. Coordination with the DOC regarding phasing and timing of construction is required.
6. An on-site coordination meeting should be scheduled immediately after the award of the contract. The agenda for the meeting will review the initial phasing of demolition and construction, impact on daily operations, and security requirements. Additional items may be included in this meeting.
7. Any removal of fencing or razor wire must be coordinated with MDOC.
8. After installation or replacement of any part of the secure perimeter, MDOC and the Architect must observe and approve the work.

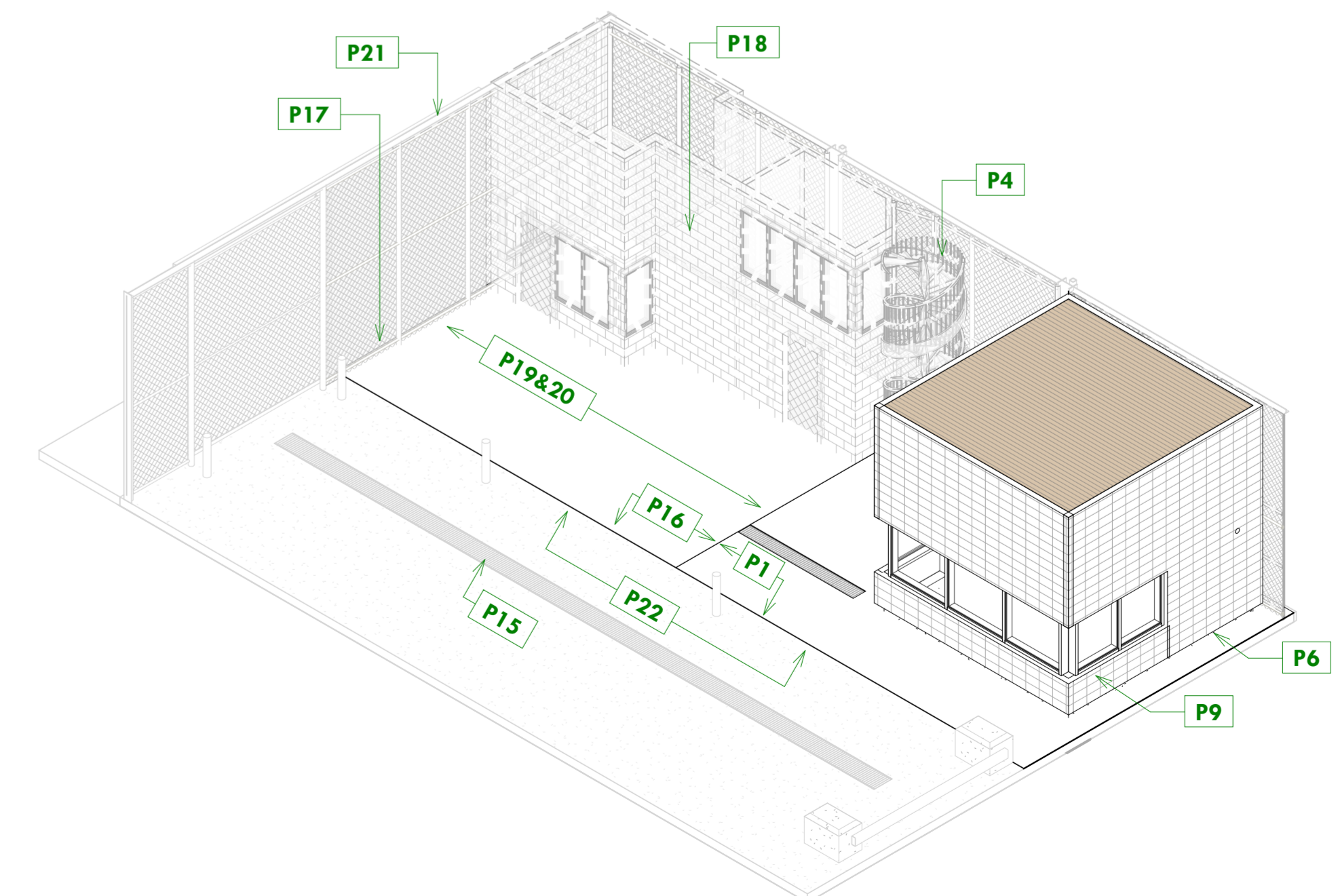
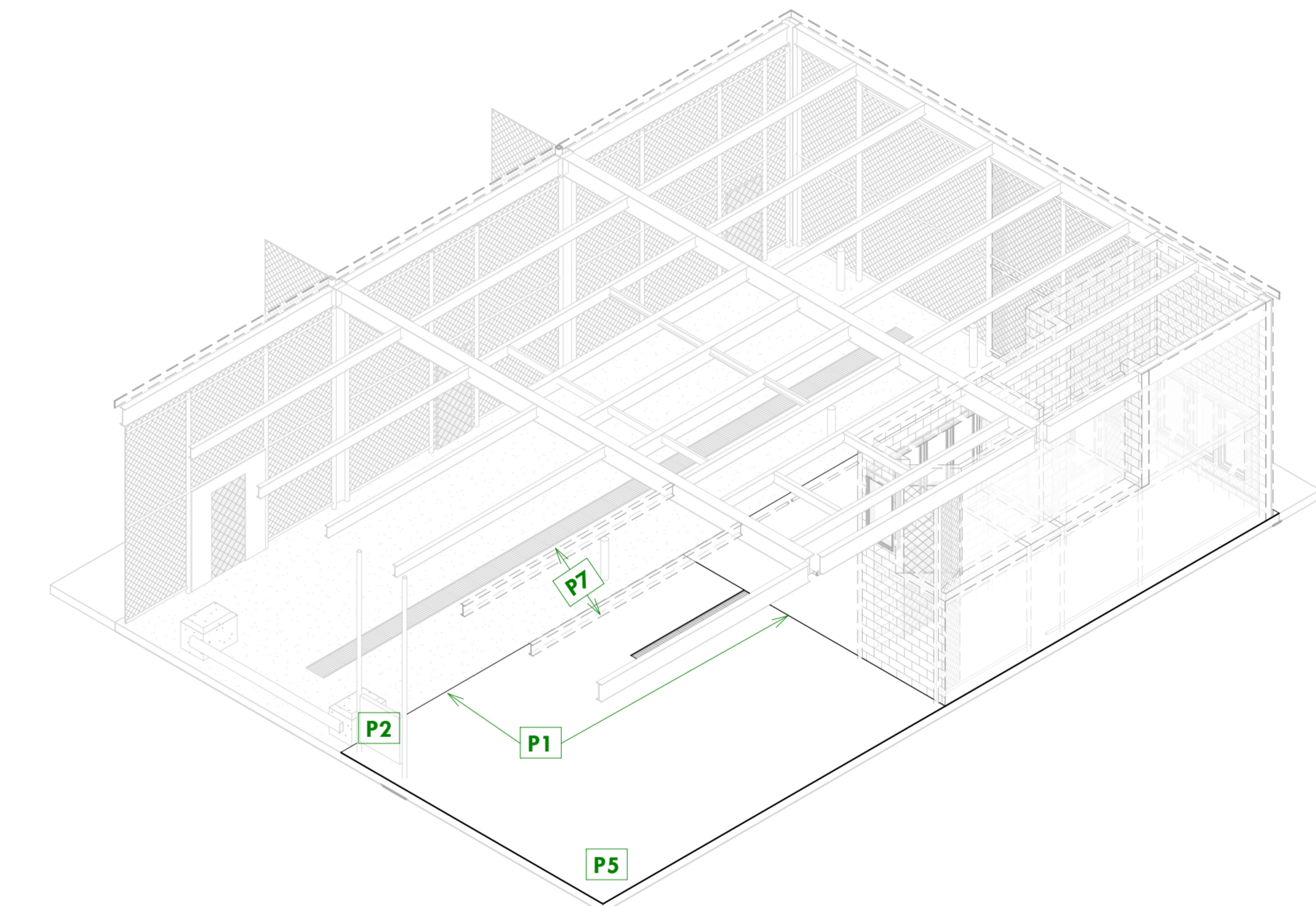
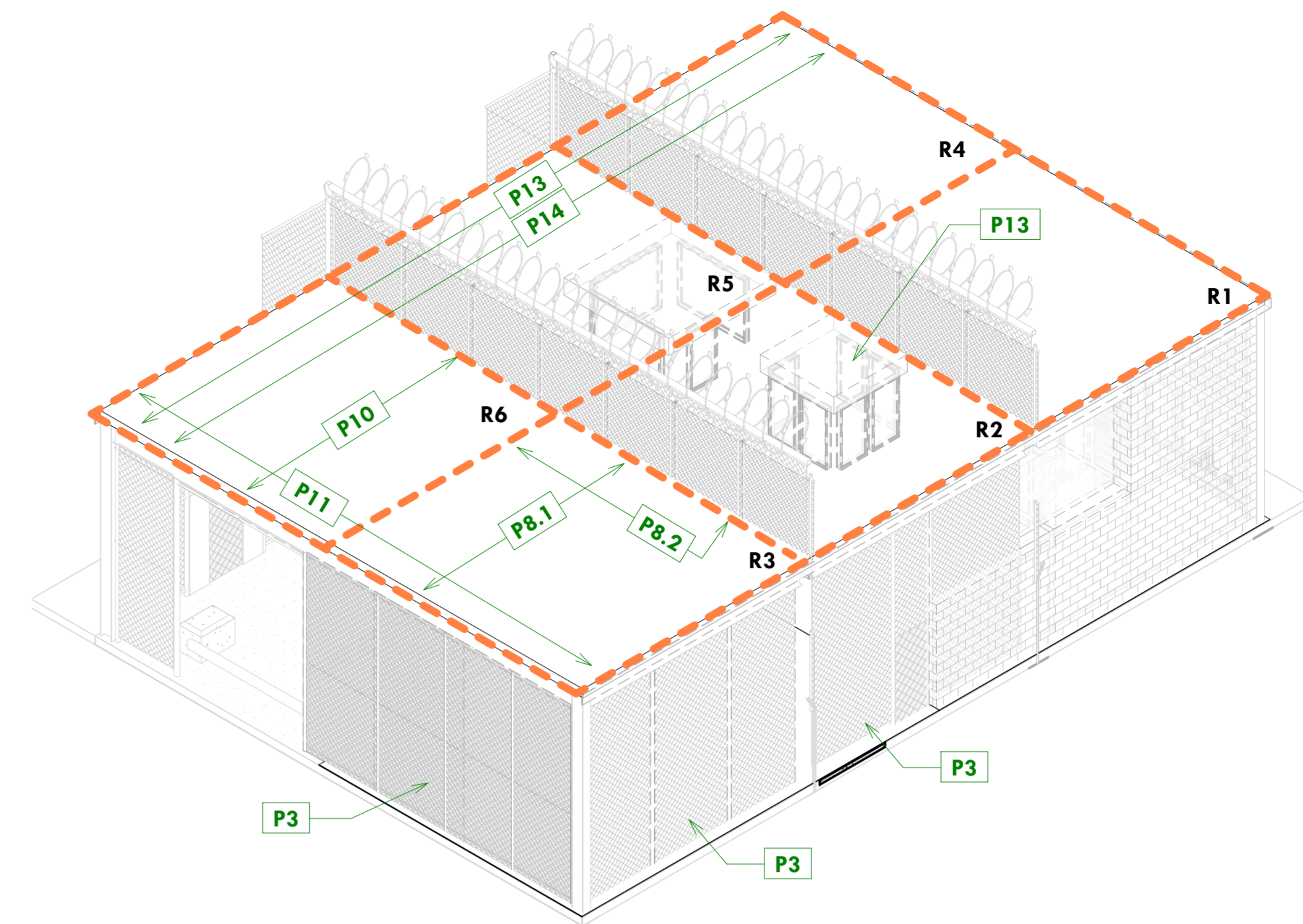
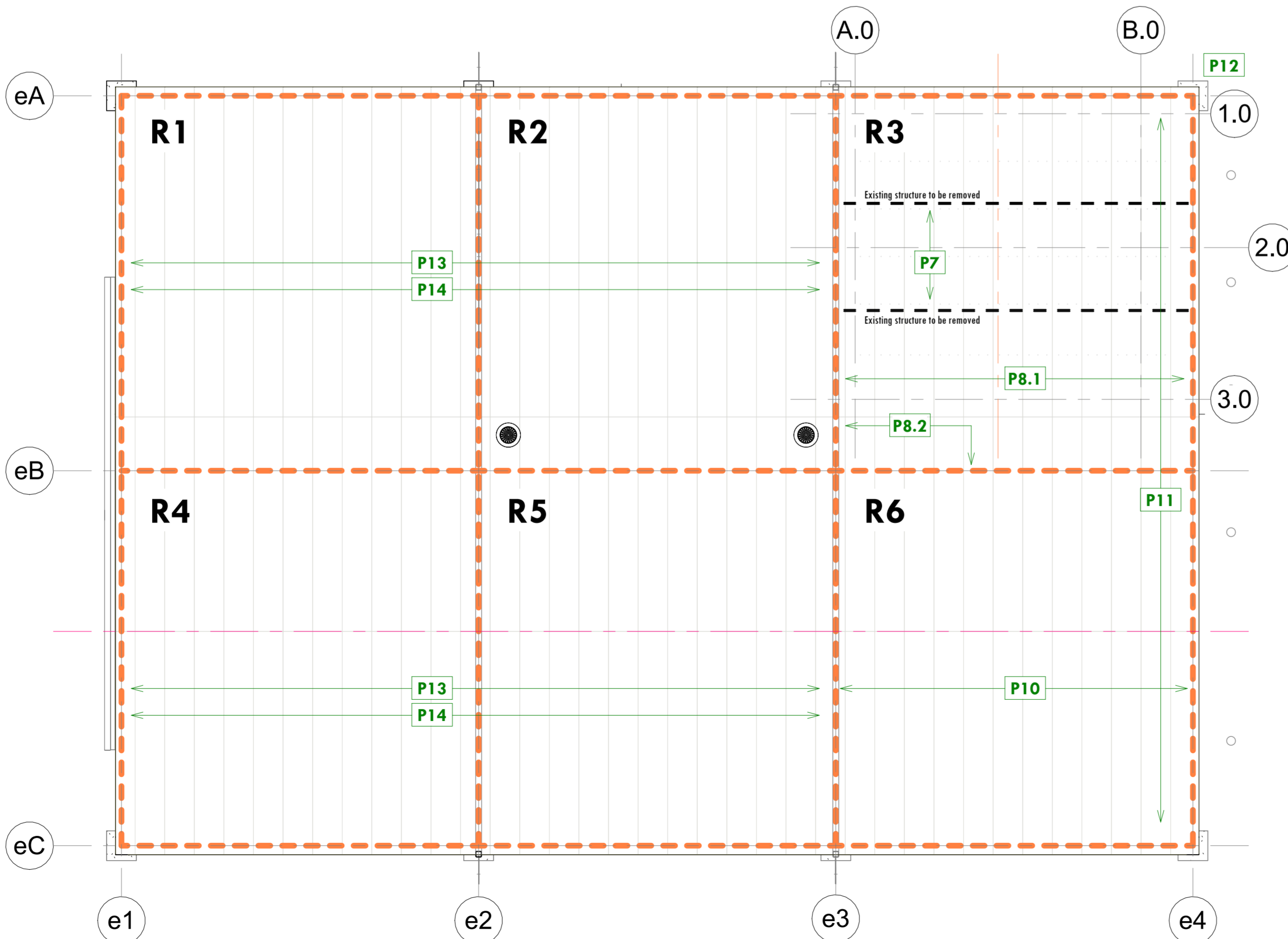
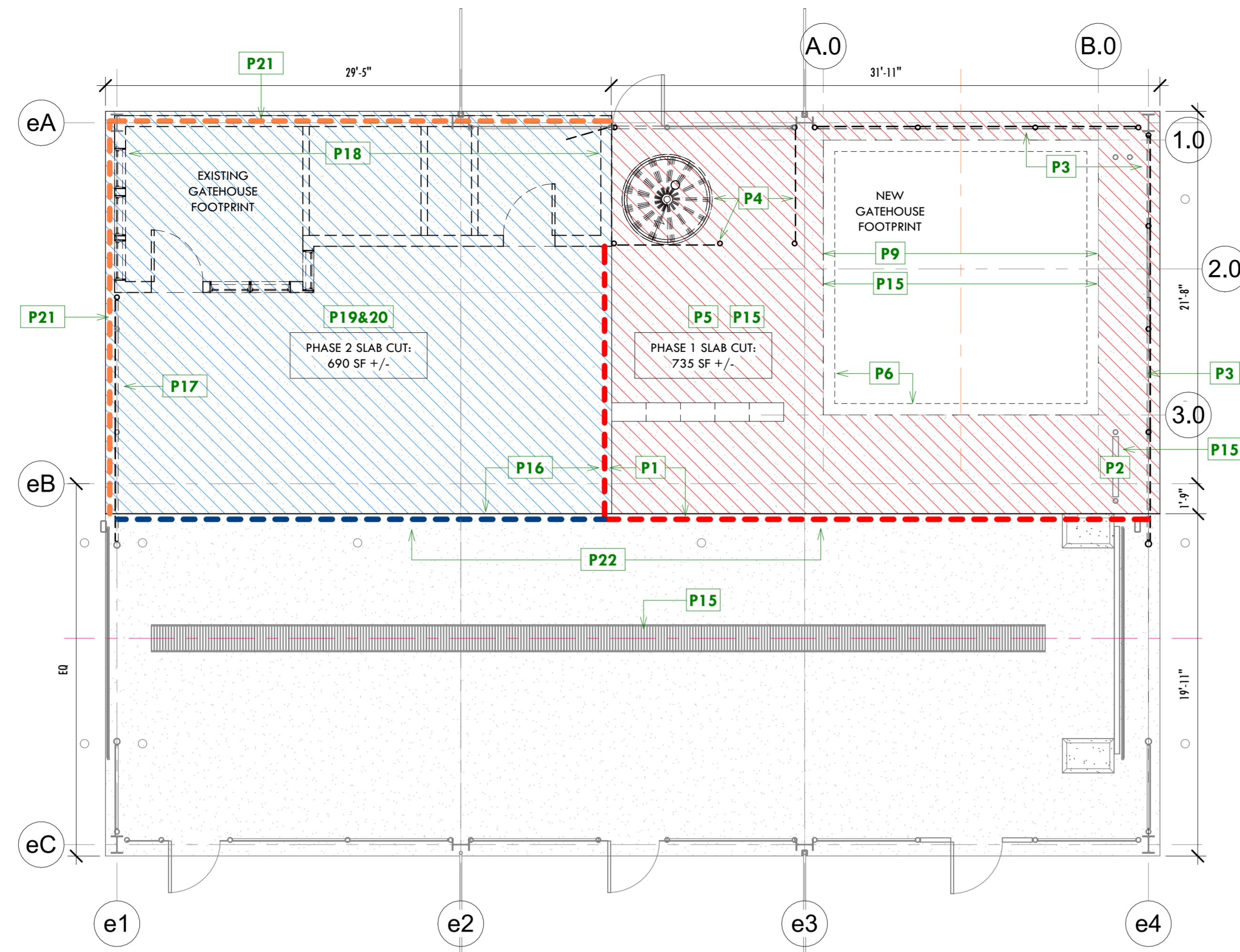
**SPECIFIC PHASING NOTES:**

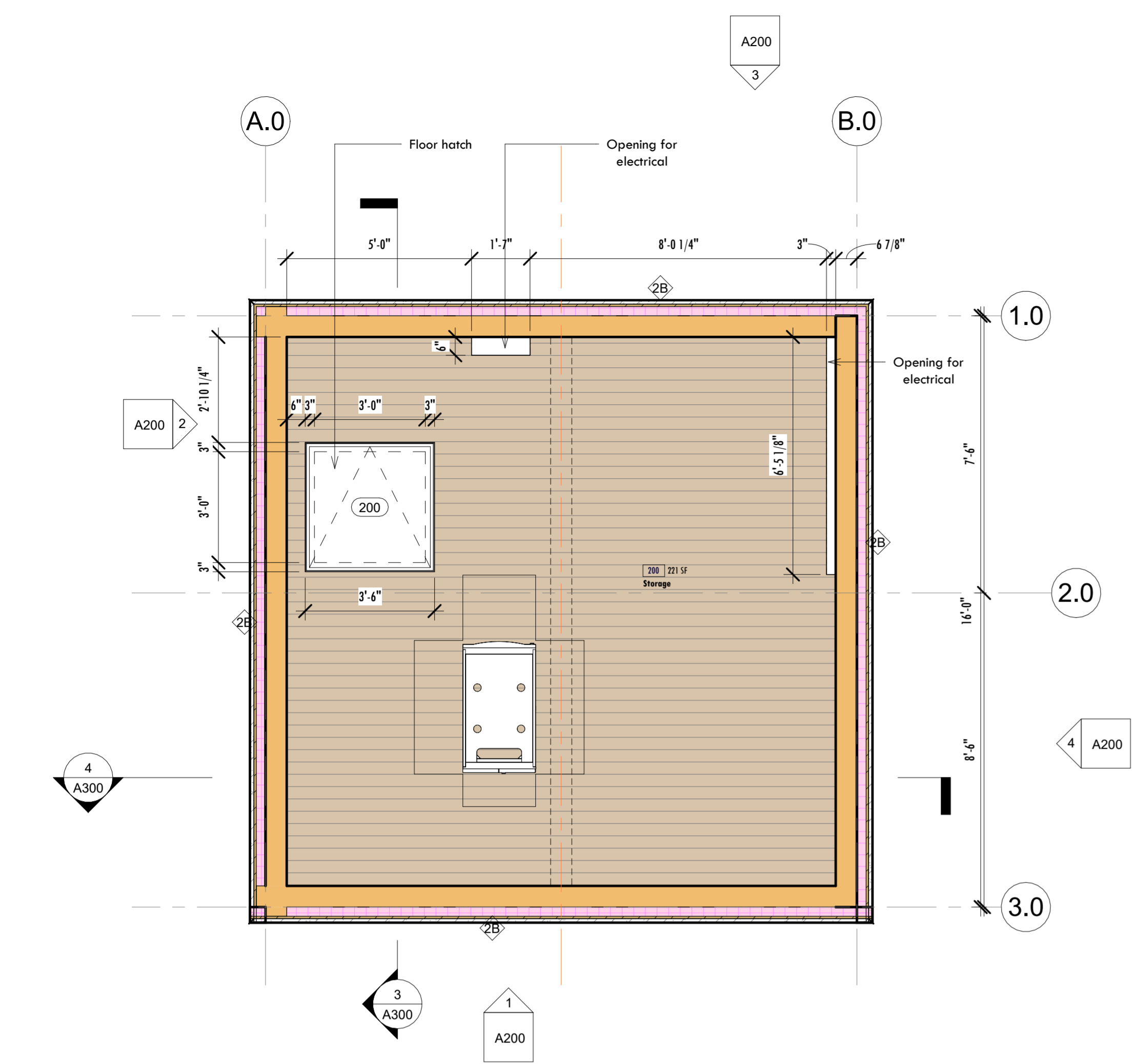
1. The gate controller may need to be relocated during construction. The gate must remain operational. The controller should be relocated in a temporary location that will allow for continued operation. Coordination with MDOC will be necessary for any time period that will affect operations.

**SUGGESTED PHASING NOTES:**

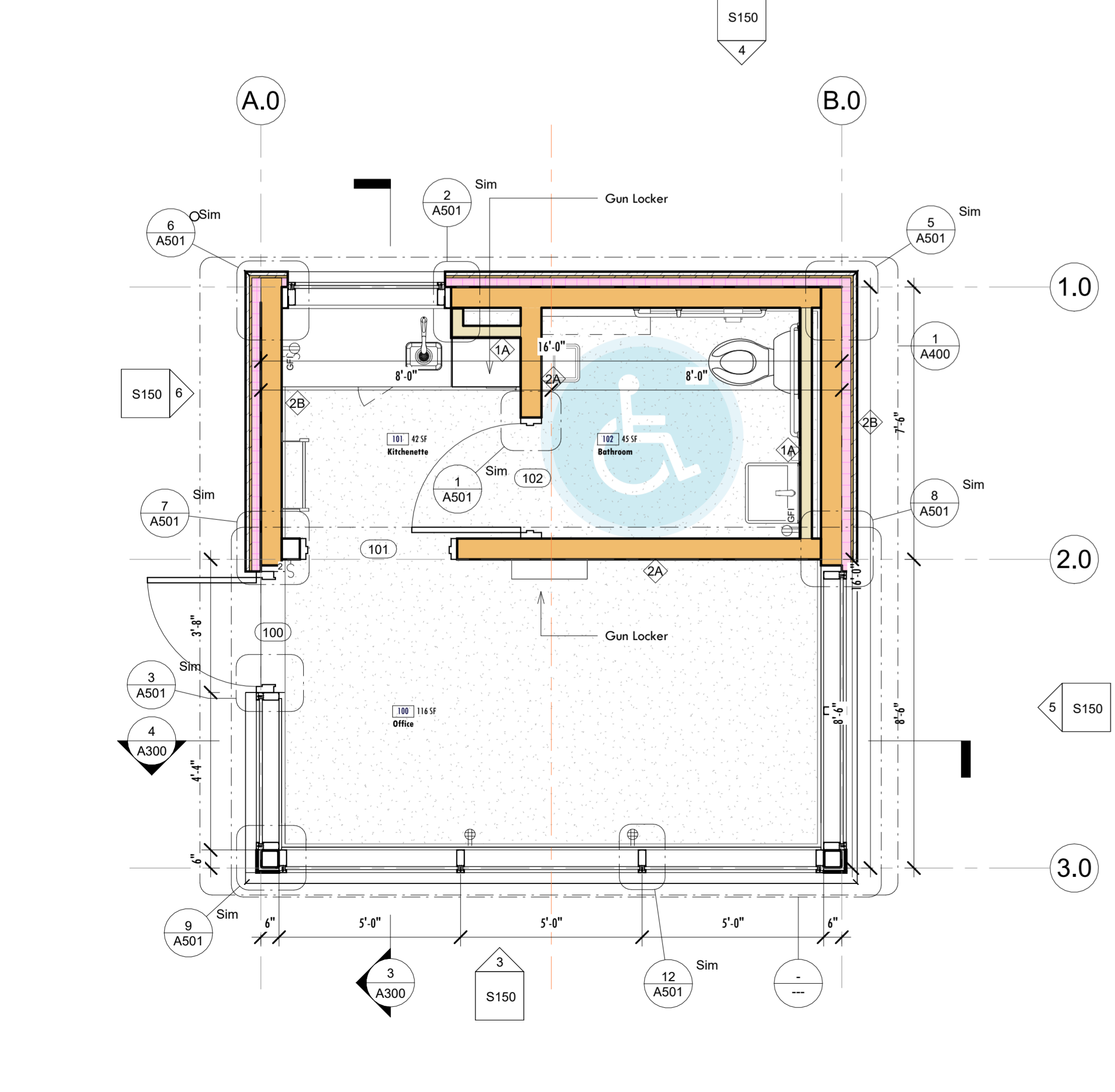
Other work than that described here may be required to maintain the secure perimeter and to construct the new gatehouse. This work shall be considered part of the scope of work.

- P1** Install temporary secure fencing. Fencing must extend to the underside of the existing deck.
- P2** The gate controller will need to be relocated during construction. The gate must remain operational. The controller should be relocated in a temporary location agreed upon by all parties and discussed at the initial meeting that will allow for continued operation. Coordination with MDOC will be necessary for any time period that will affect operations.
- P3** Exterior fencing identified may be removed to facilitate construction. A secure perimeter must be maintained.
- P4** Remove existing spiral stairs and adjacent fencing within new desired slab perimeter. Coordinate temporary access to second level with MDOC.
- P5** Remove existing slab identified to allow for placement of new foundation.
- P6** Construction of foundations for new gatehouse begins. See Construction Documents.
- P7** In preparation for the erection of CLT panels, the existing roof and metal decking will be removed. The existing steel structure will remain except for the removal of beams as identified on drawings. Structural integrity of the Sallyport frame must be maintained. This demolition process will need to be phased to maintain the secure perimeter. Coordination with MDOC must occur.
- P8** Depending on the duration of the roof replacement, the roof deck may need to be removed in sections to ensure a secure perimeter. A potential phasing of the work is as follows:
  - P8.1** Remove the metal roof decking between column lines e3 and e4 and eA and eB. Labeled "R3"
  - P8.2** Additional razor wire and fencing above the existing roof level will need to be installed to ensure a secure perimeter.
- P9** Construction of the gatehouse may begin
- P10** Remove the portion of the existing metal deck between column line e3 and e4 and eB and eC. Labeled "R6"
- P11** Install the first third of glu-lam decking (from R3 down to R6). Upon establishing a secure perimeter, the temporary fencing and razor wire installed in step P7.2 may be removed. A secure enclosure must be maintained at all times.
- P12** Temporary or permanent removal of the rooftop secure fencing and razor wire may be required for the construction of the remainder of the roof deck. A secure enclosure must be maintained at all times. The fencing and razor wire must be repaired or replaced to match the existing.
- P13** The remainder of the existing metal roof deck may now be removed. At the contractor's discretion, it may be removed in one or two parts. A secure enclosure must be maintained at all times. The sections are labeled as "R1", "R2", "R4", and "R5." Remove existing guard tower alongside deck.
- P14** Install the Glu-Lam decking in sections "R1", "R2", "R4", and "R5."
- P15** Complete construction of the new gatehouse, replace the floor slab in section "R3", repair and install the light and holding trench. Relocate the Gate Controller removed in step P2 to its original location.
- P16** The temporary fencing on gridline eB, between the midpoint and e4 should be removed and relocated to gridline eB, between e1 and the midpoint of the sallyport.
- P17** In preparation for the demolition of the existing gatehouse, remove the perimeter fencing between gridlines e1 and e2 and eA and eB up to the opening of the gate.
- P18** Demolish the existing gatehouse after the transfer of all system controls and equipment has occurred.
- P19** Demolish the remaining portion of the designated slab.
- P20** Replace slab in designated area.
- P21** Install new perimeter fencing in areas removed in step P16. All fencing should match existing in type and specification.
- P22** Remove all temporary fencing, MDOC and the Architect must observe and approve the completed work.

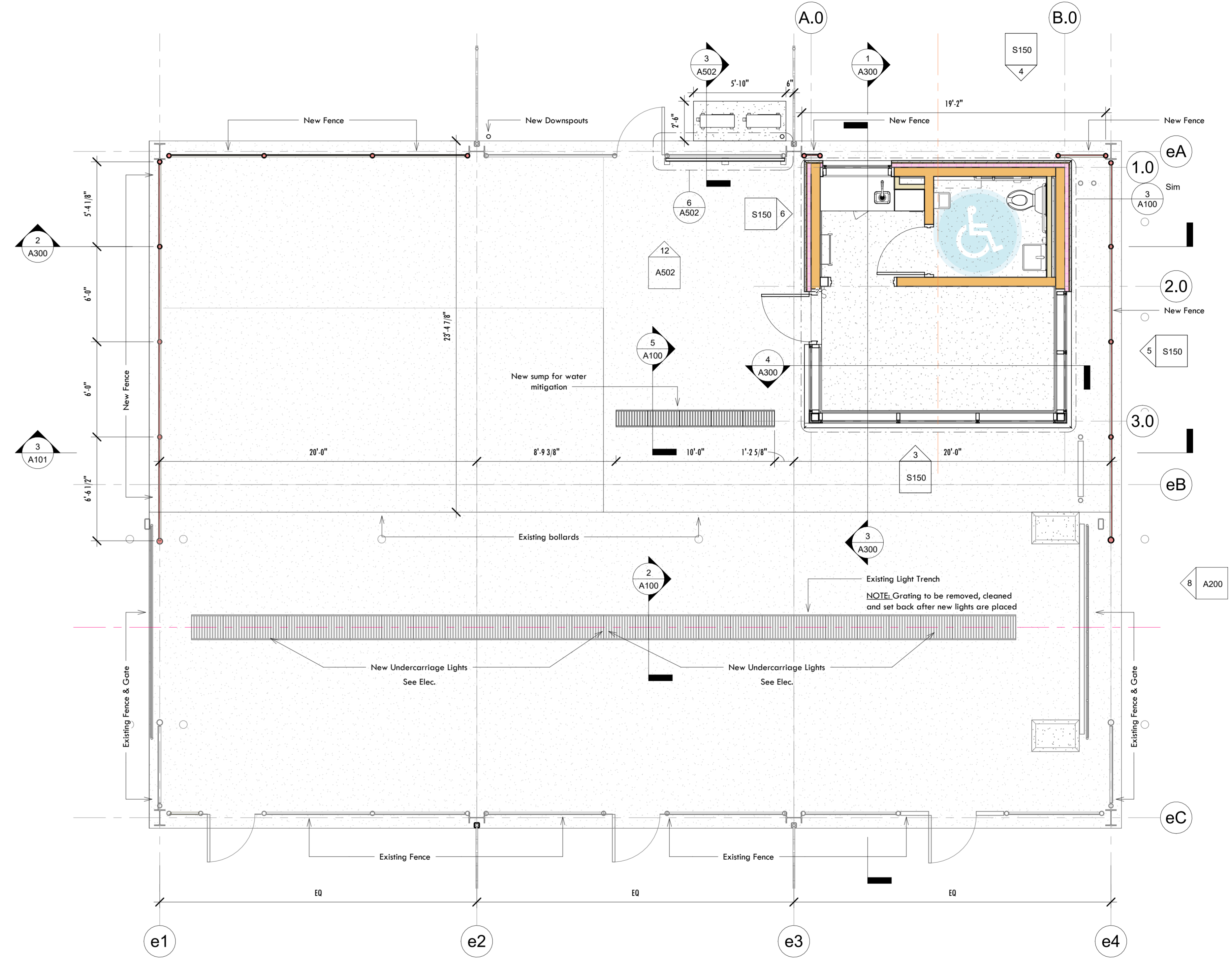




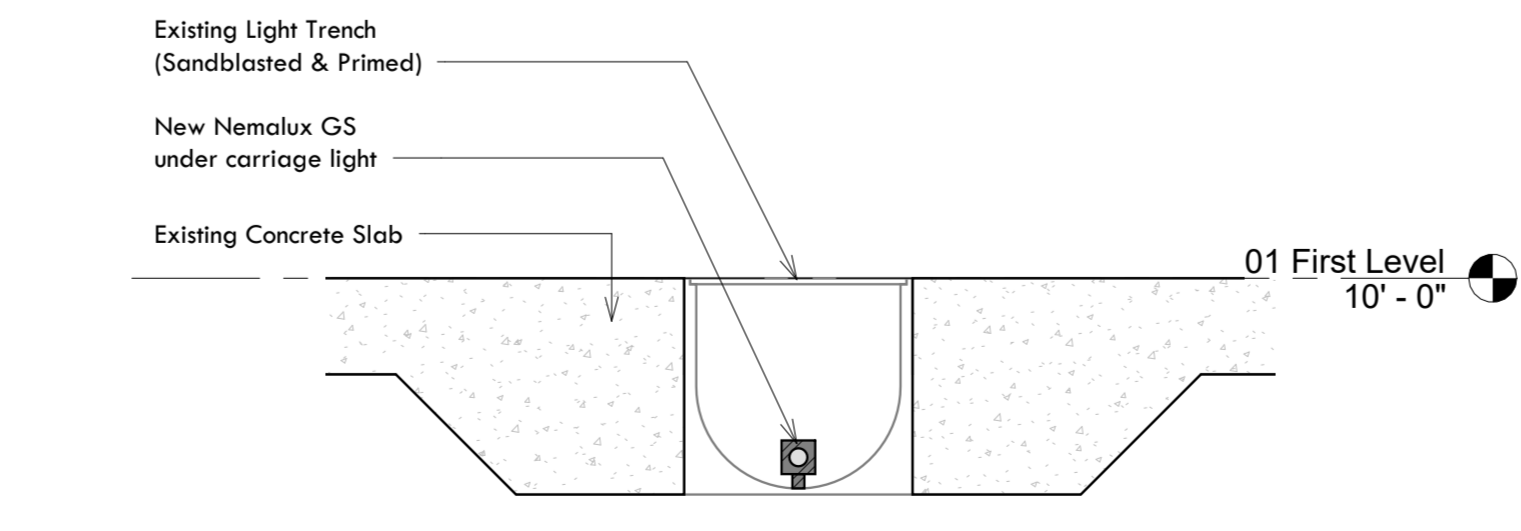
4 02 Second Level - CD  
3/8" = 1'-0"



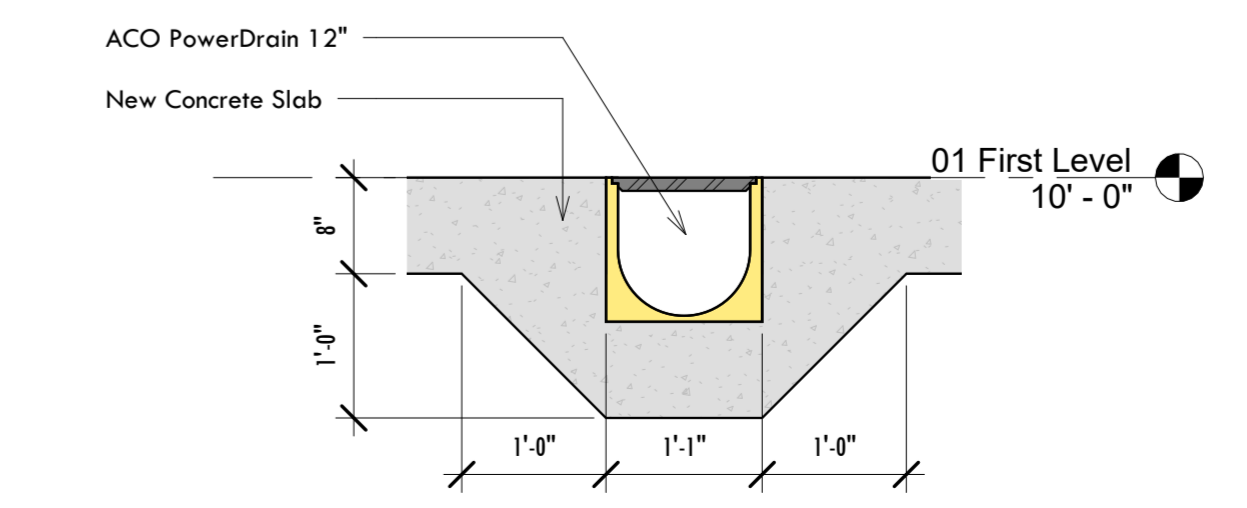
3 01 First Level - CD  
3/8" = 1'-0"



1 01 First Level - Full Station  
1/4" = 1'-0"

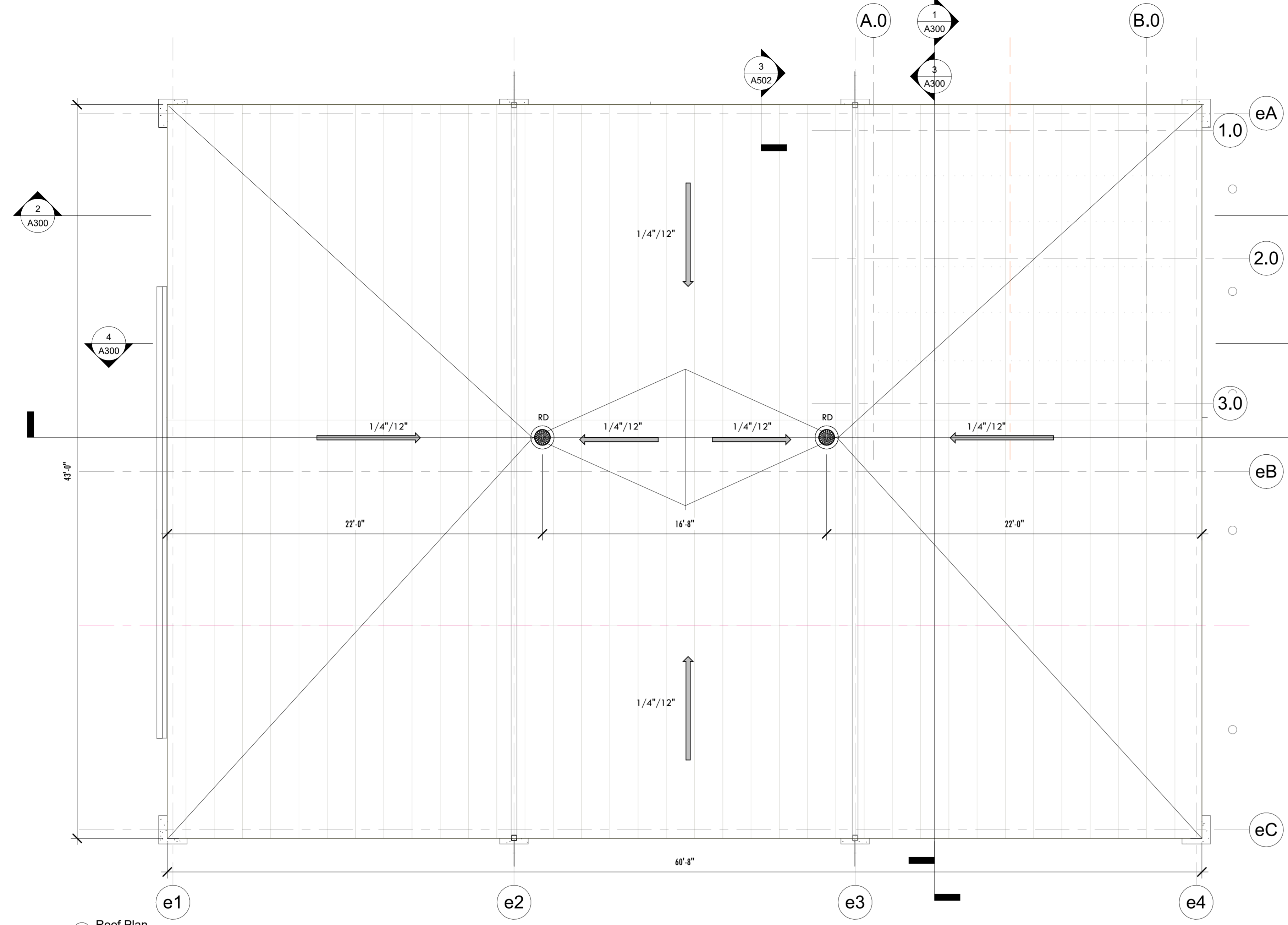


2 Section - Existing Undercarriage Light Well  
3/4" = 1'-0"

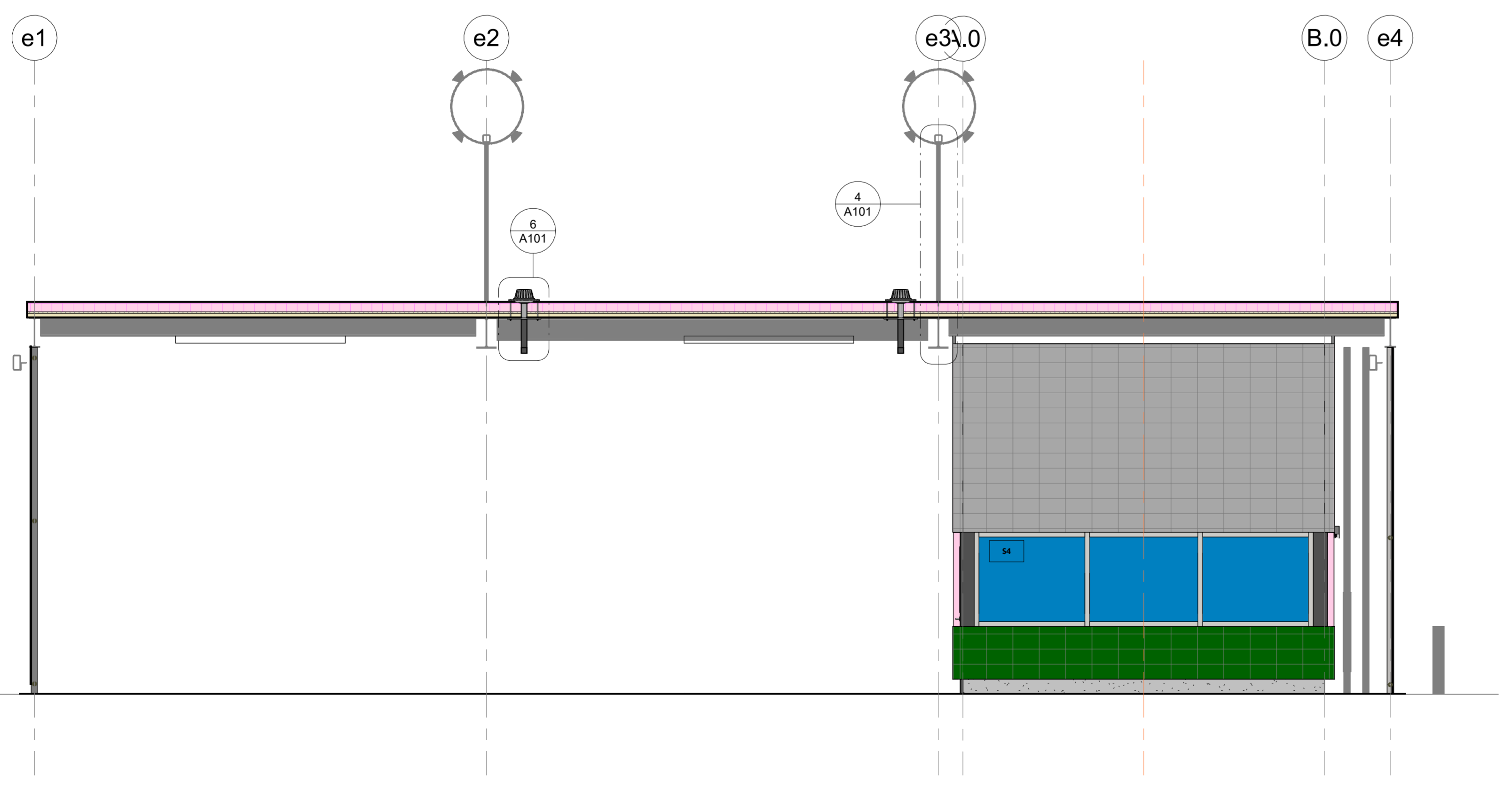
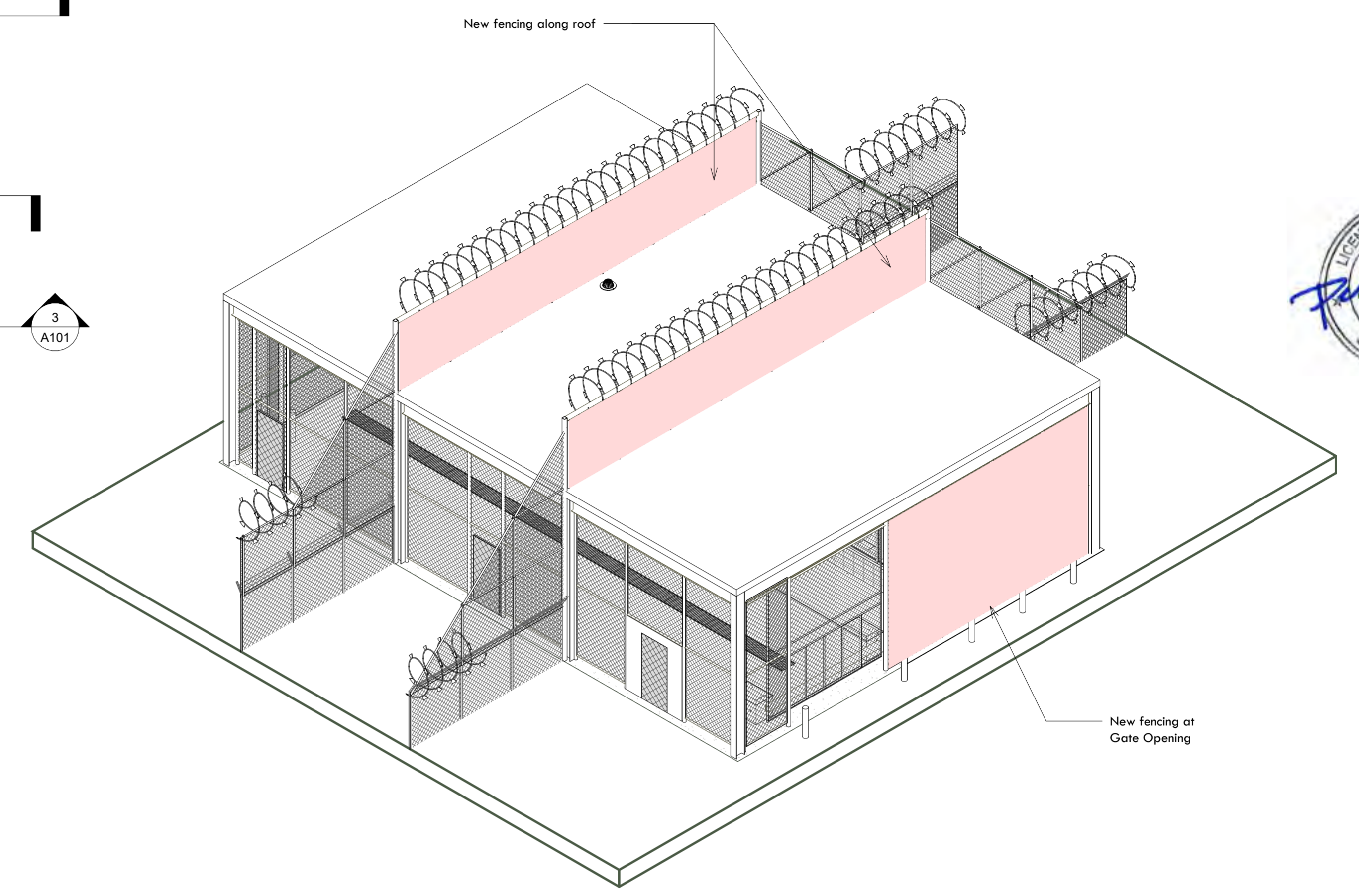


5 Section - New Trench Drain  
3/4" = 1'-0"

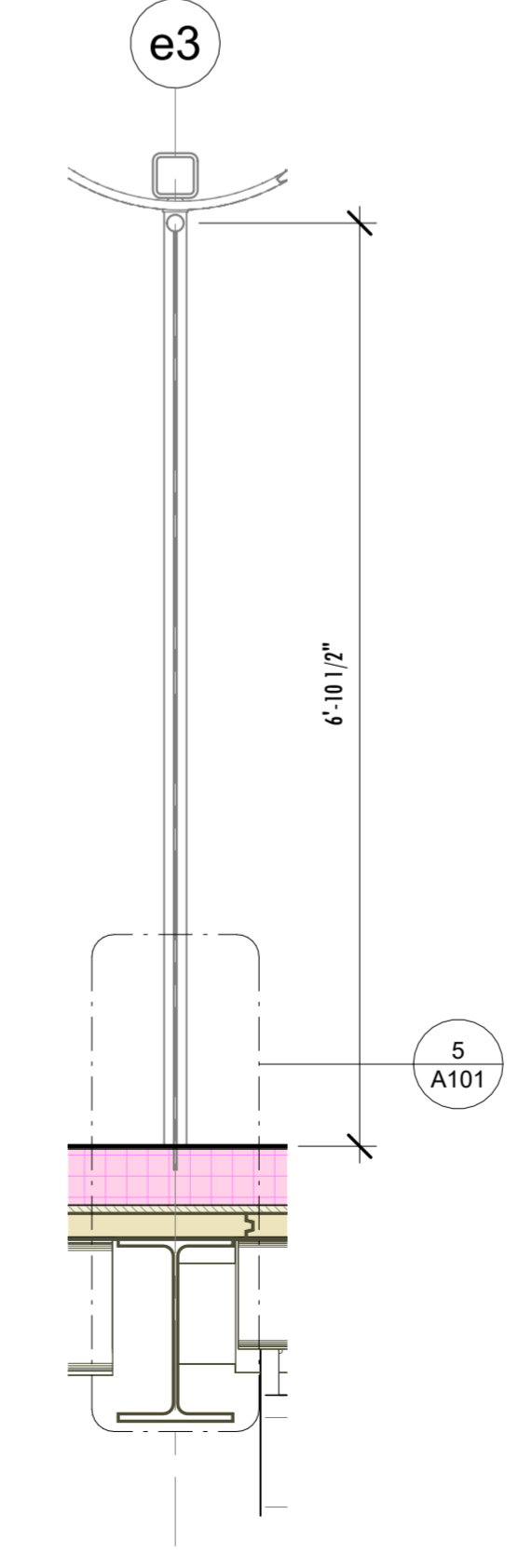
5/26/2026 1:47:25 PM © 2025 Paul Designs Project Sheet Size: D 34 in x 36 in



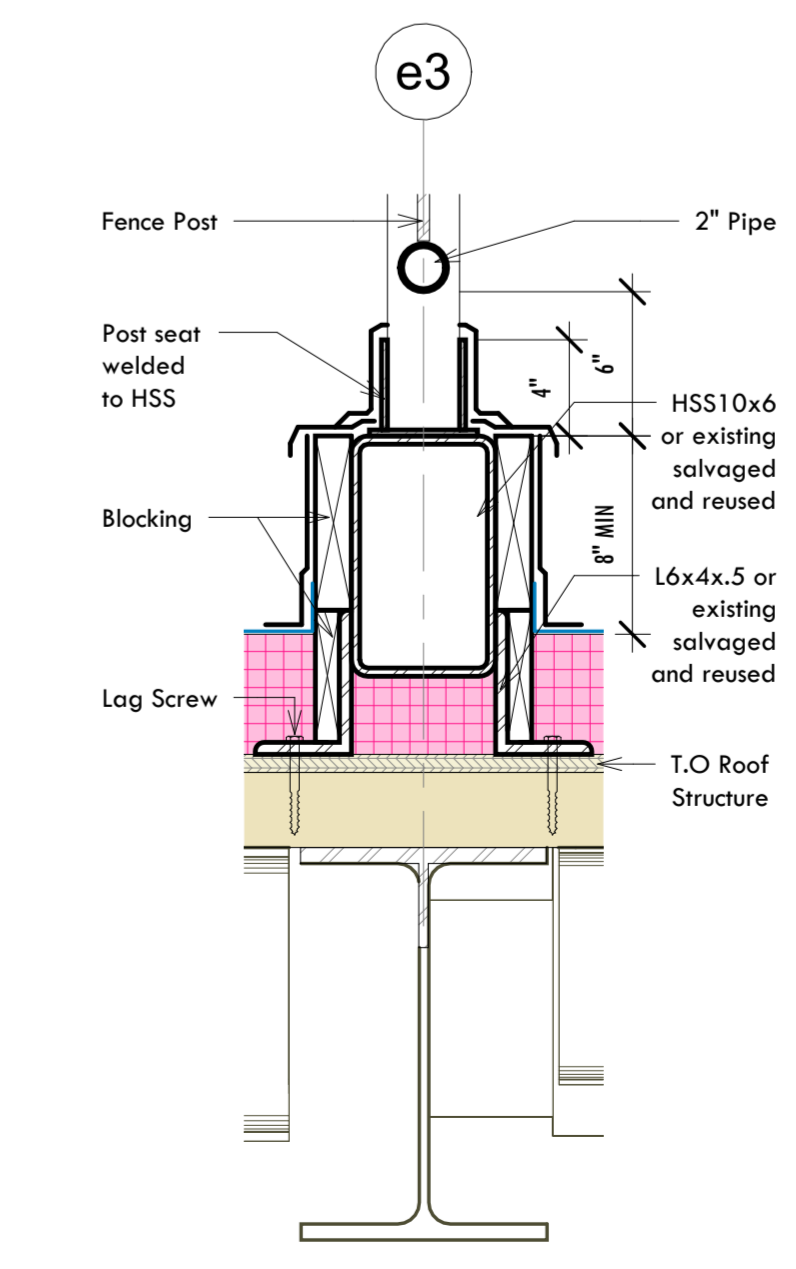
2 Roof Plan  
1/4" = 1'-0"



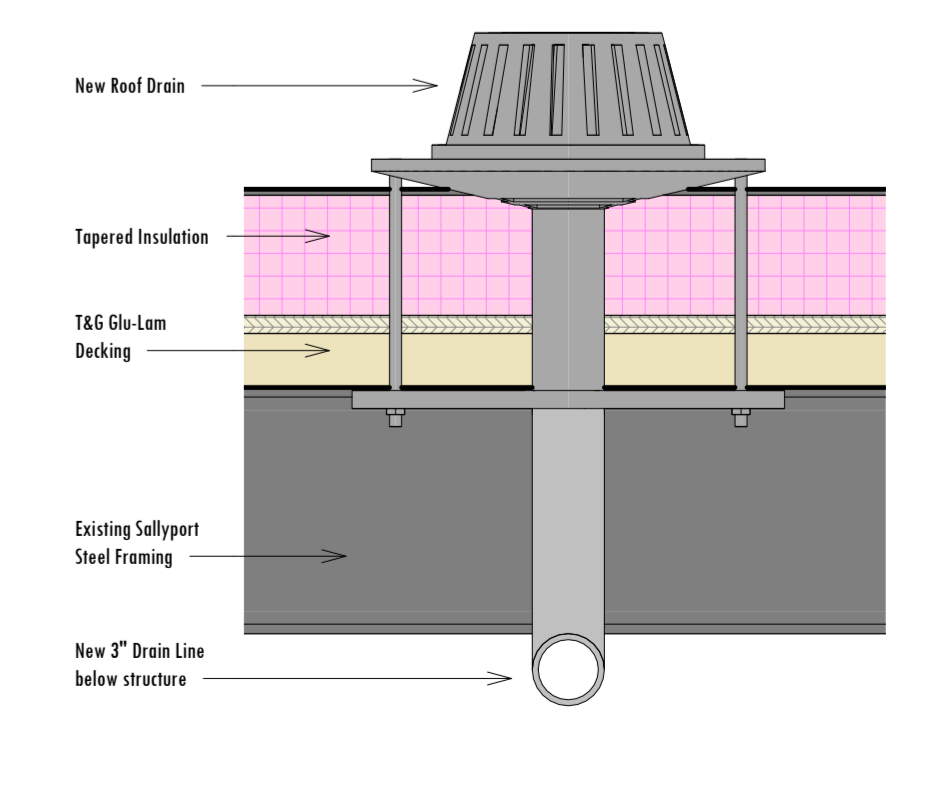
3 Section - Cross Roof  
1/4" = 1'-0"



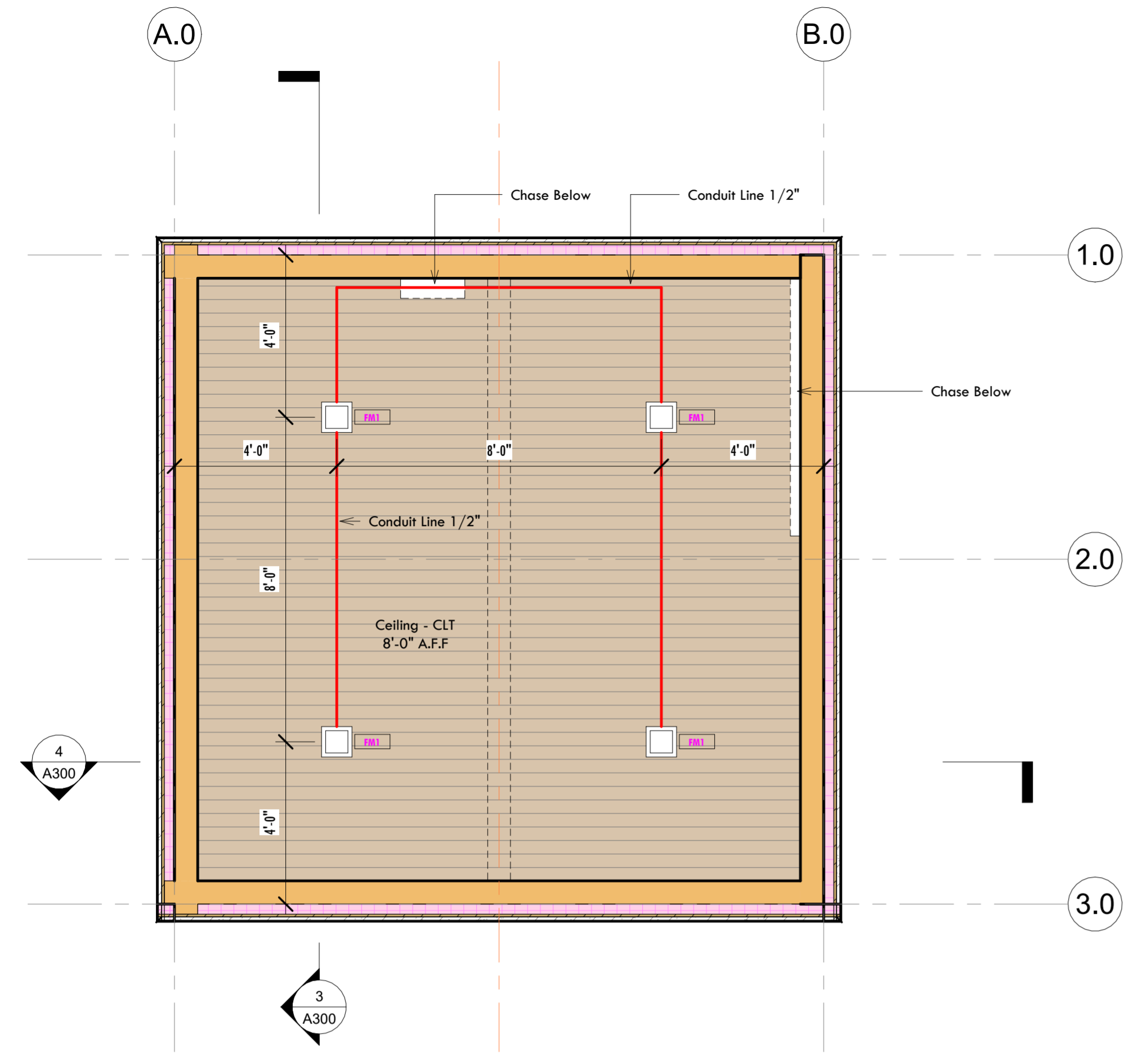
4 Section - Roof Fencing Typ.  
3/4" = 1'-0"



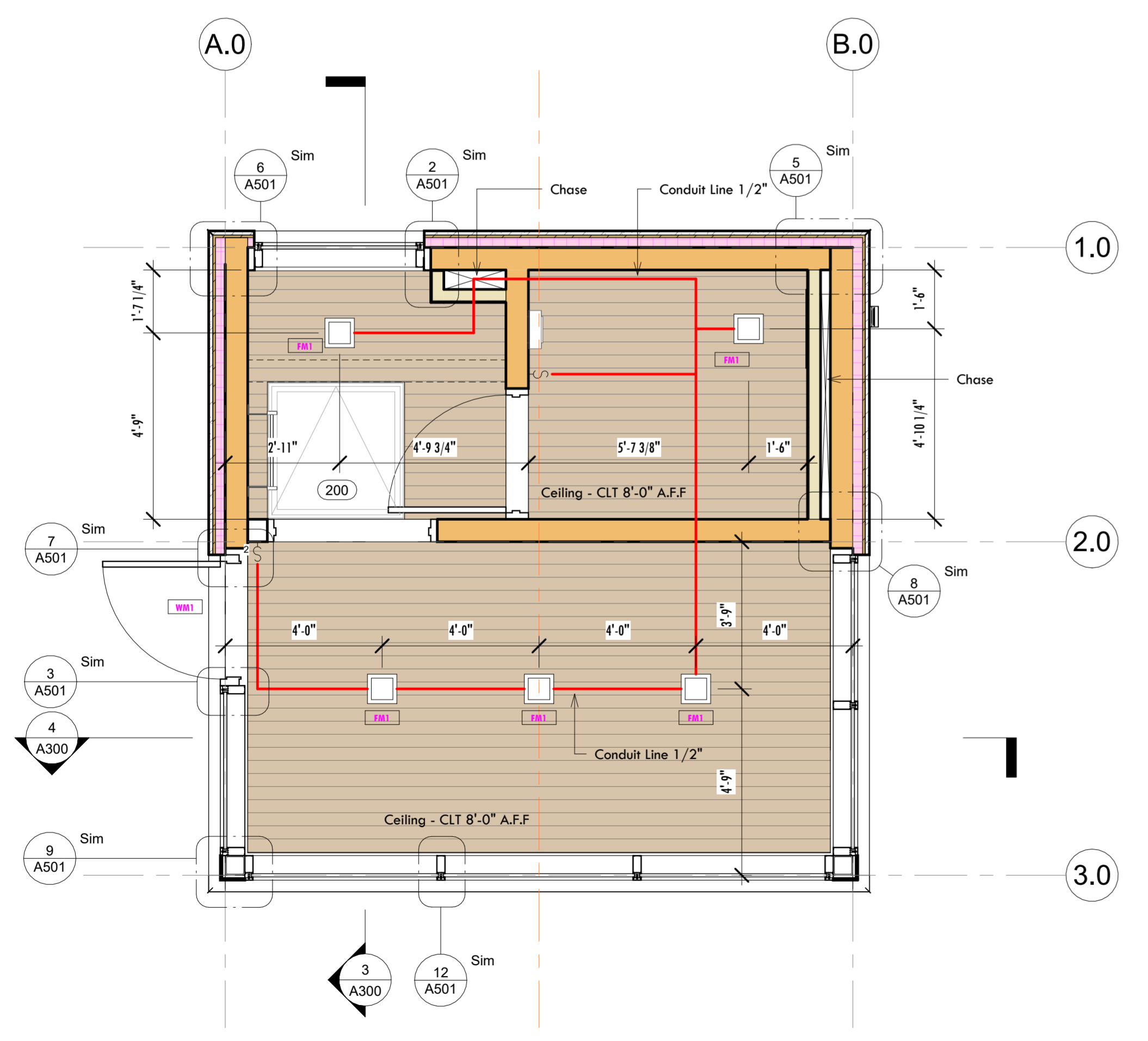
5 Section - Fencing to Roof Connection  
1 1/2" = 1'-0"



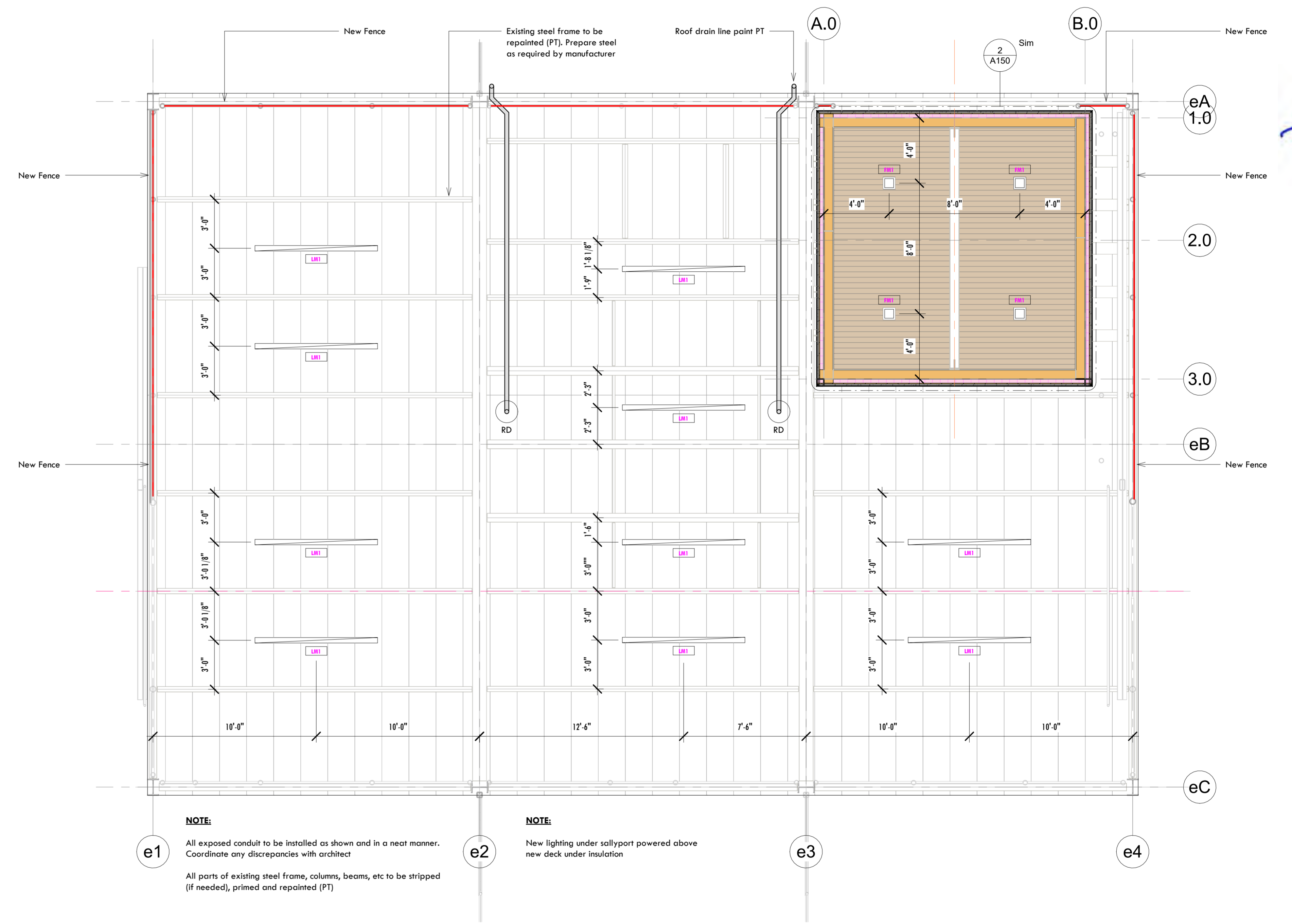
6 Section - Roof Drain  
1 1/2" = 1'-0"



③ 02 Second Level - Reflected Ceiling Plan  
 3/8" = 1'-0"



② 01 First Level - Reflected Ceiling Plan  
 3/8" = 1'-0"



**NOTE:**  
 All exposed conduit to be installed as shown and in a neat manner. Coordinate any discrepancies with architect.  
 All parts of existing steel frame, columns, beams, etc to be stripped (if needed), primed and repainted (P1)

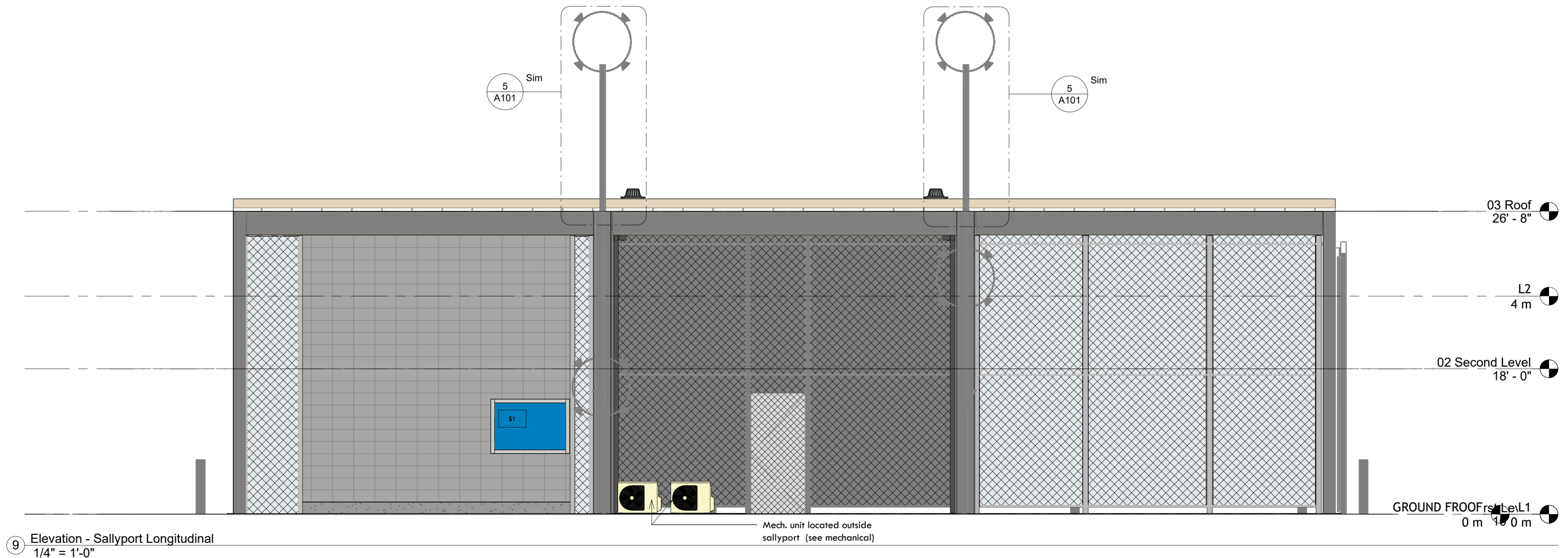
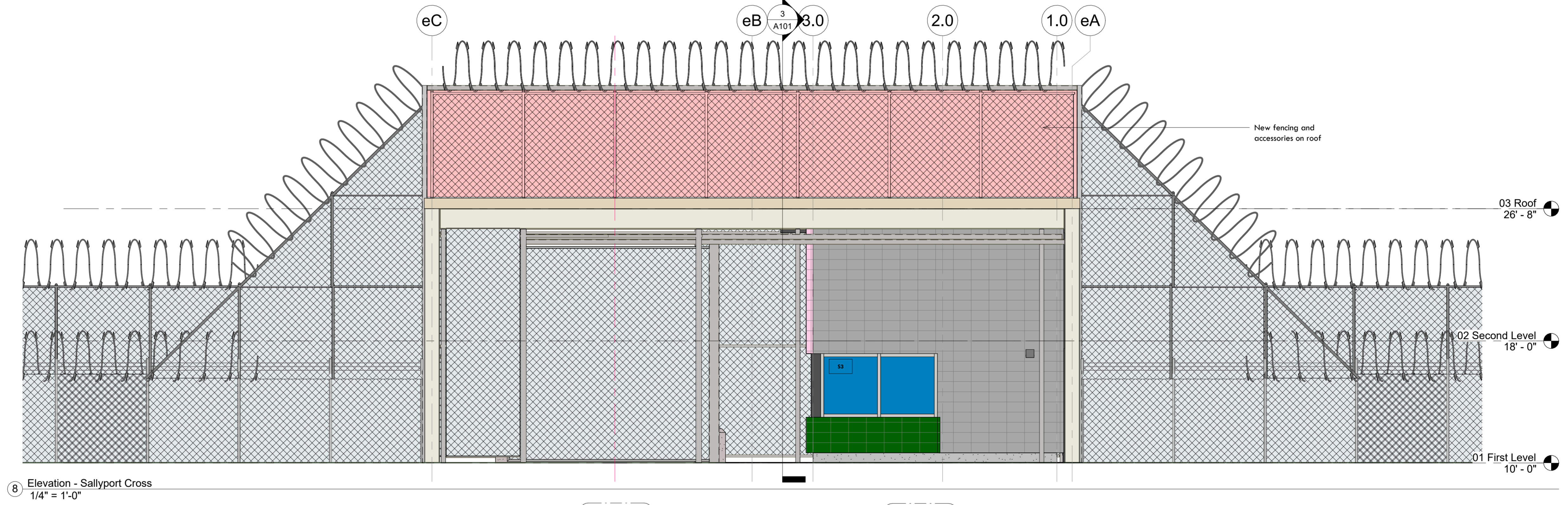
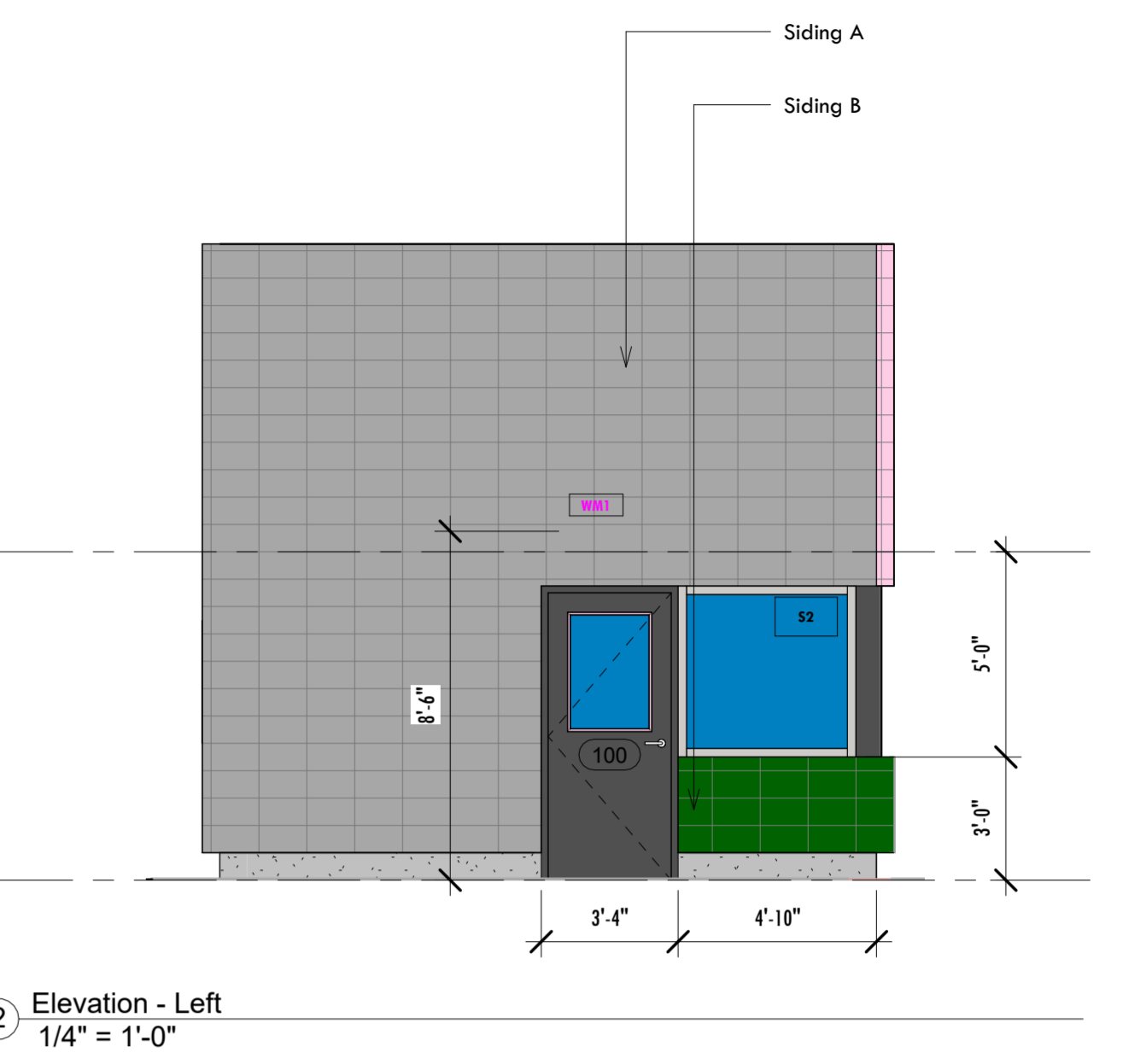
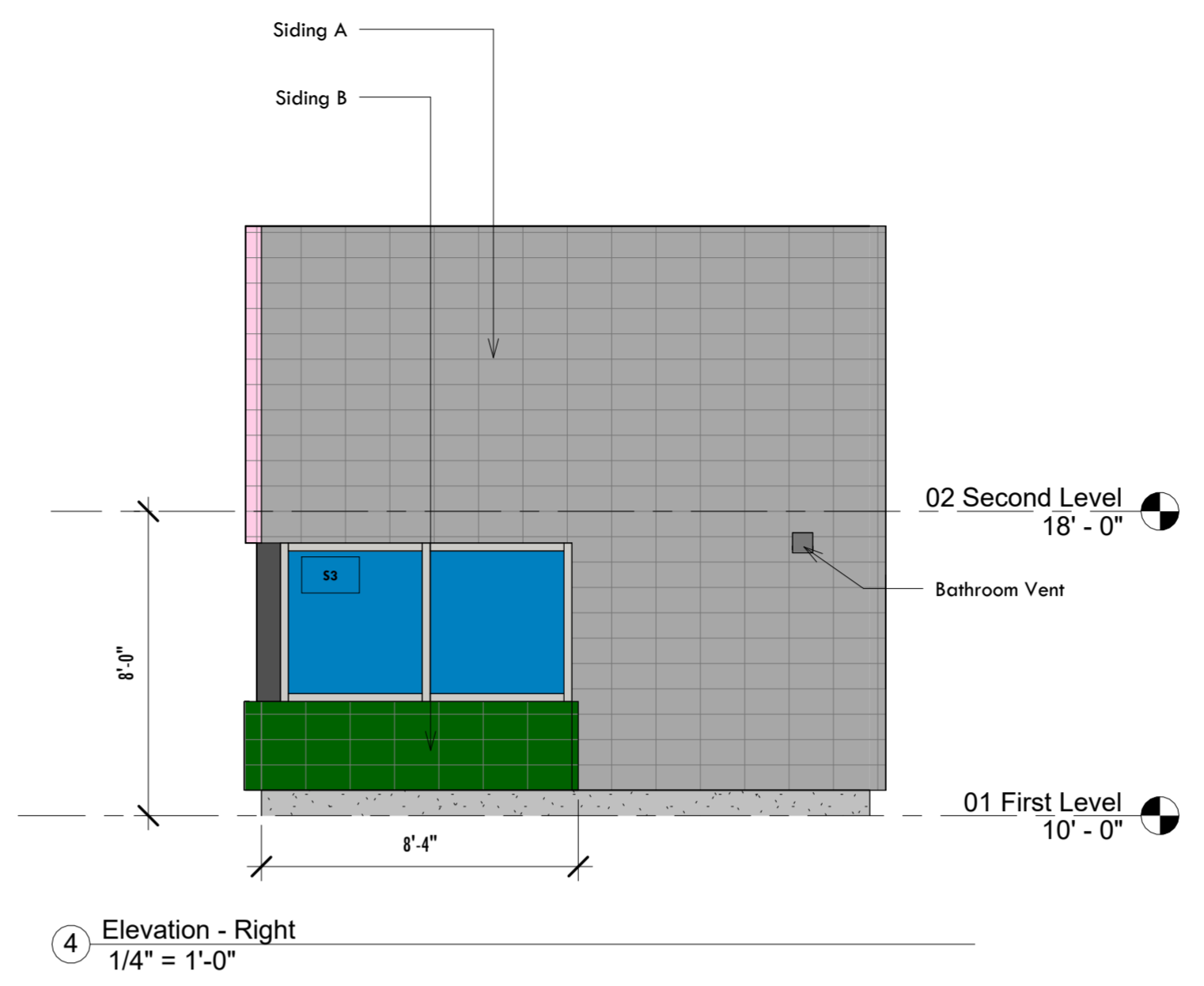
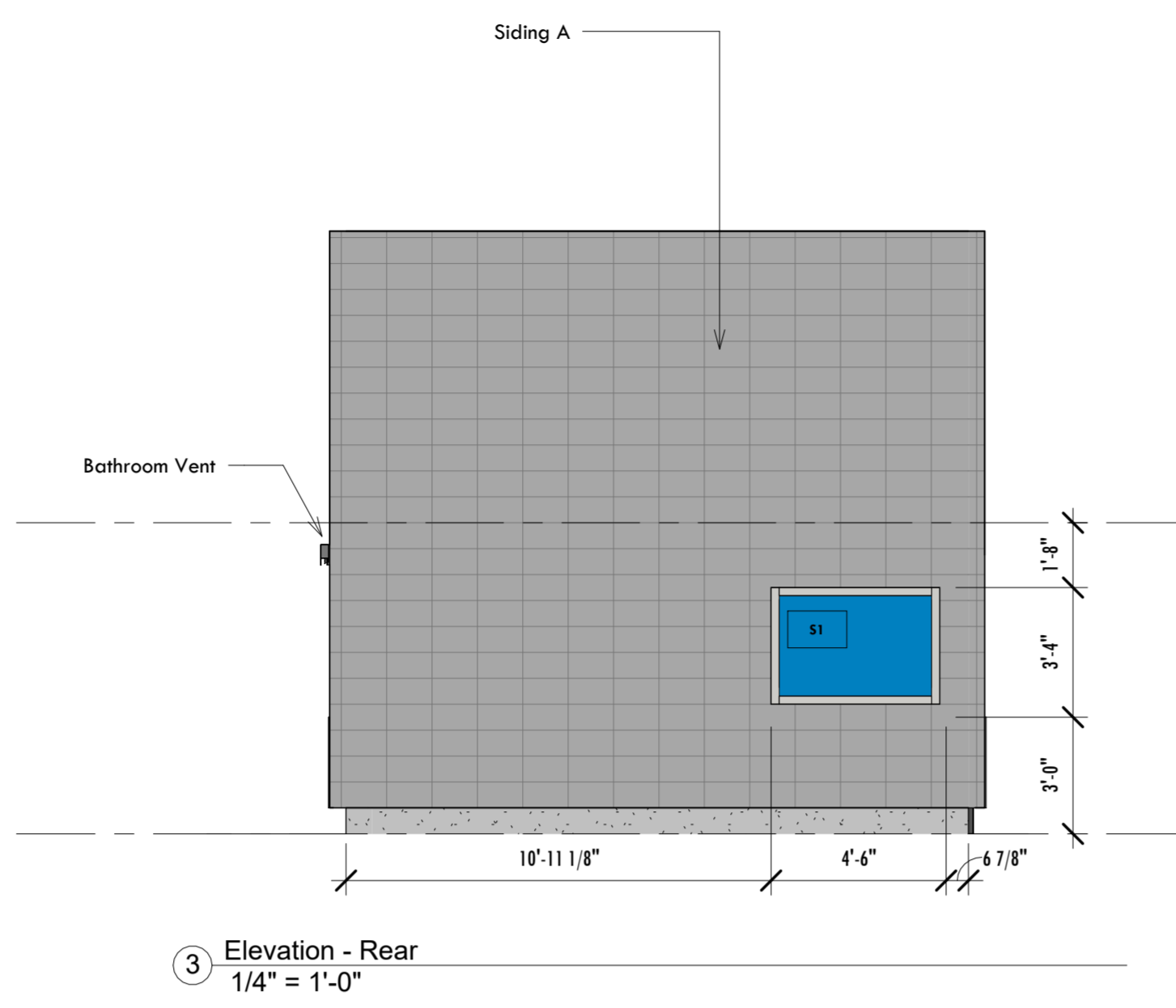
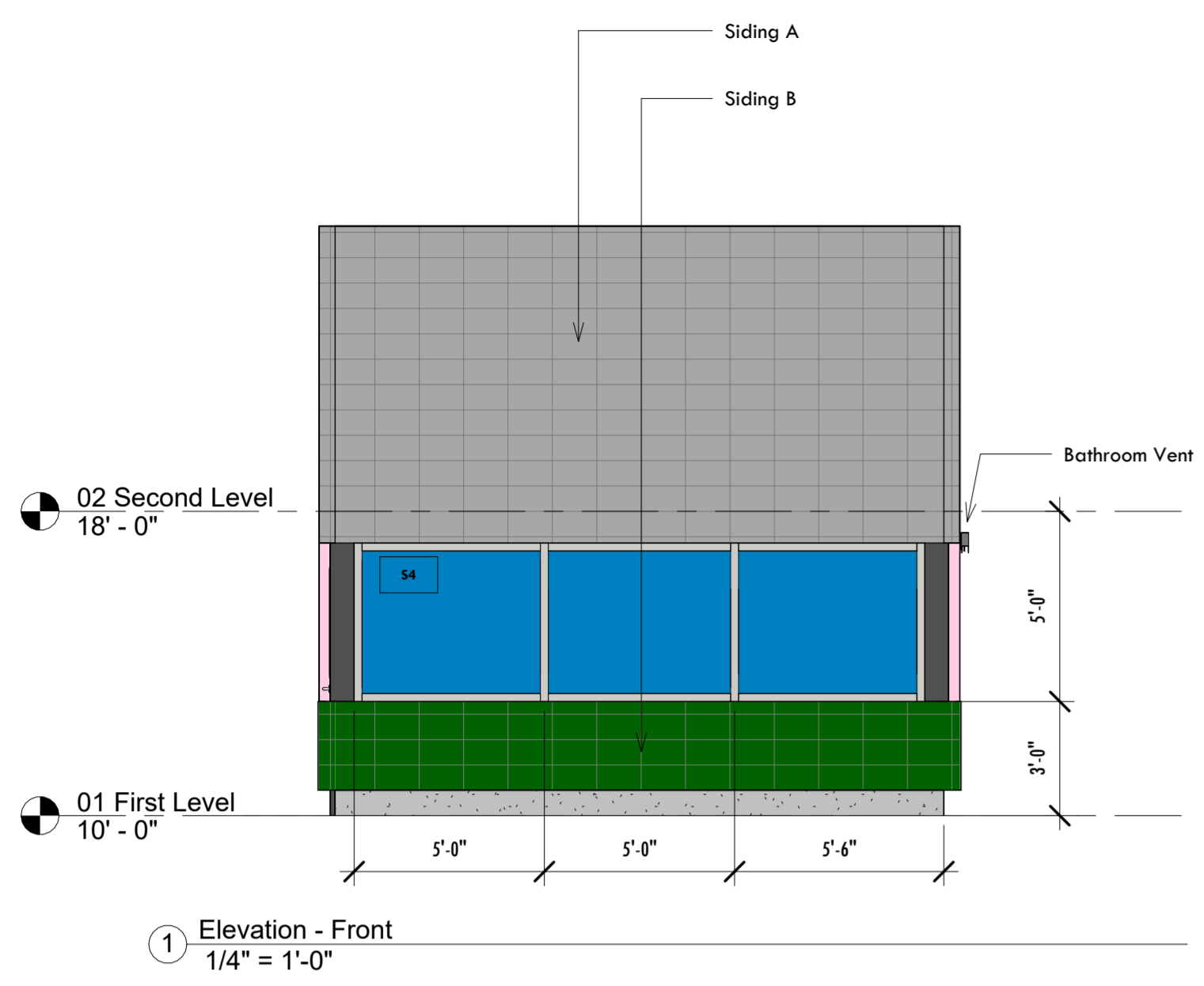
**NOTE:**  
 New lighting under sallyport powered above new deck under insulation

① 02 Second Level - Reflected Ceiling Plan  
 Sallyport  
 1/4" = 1'-0"

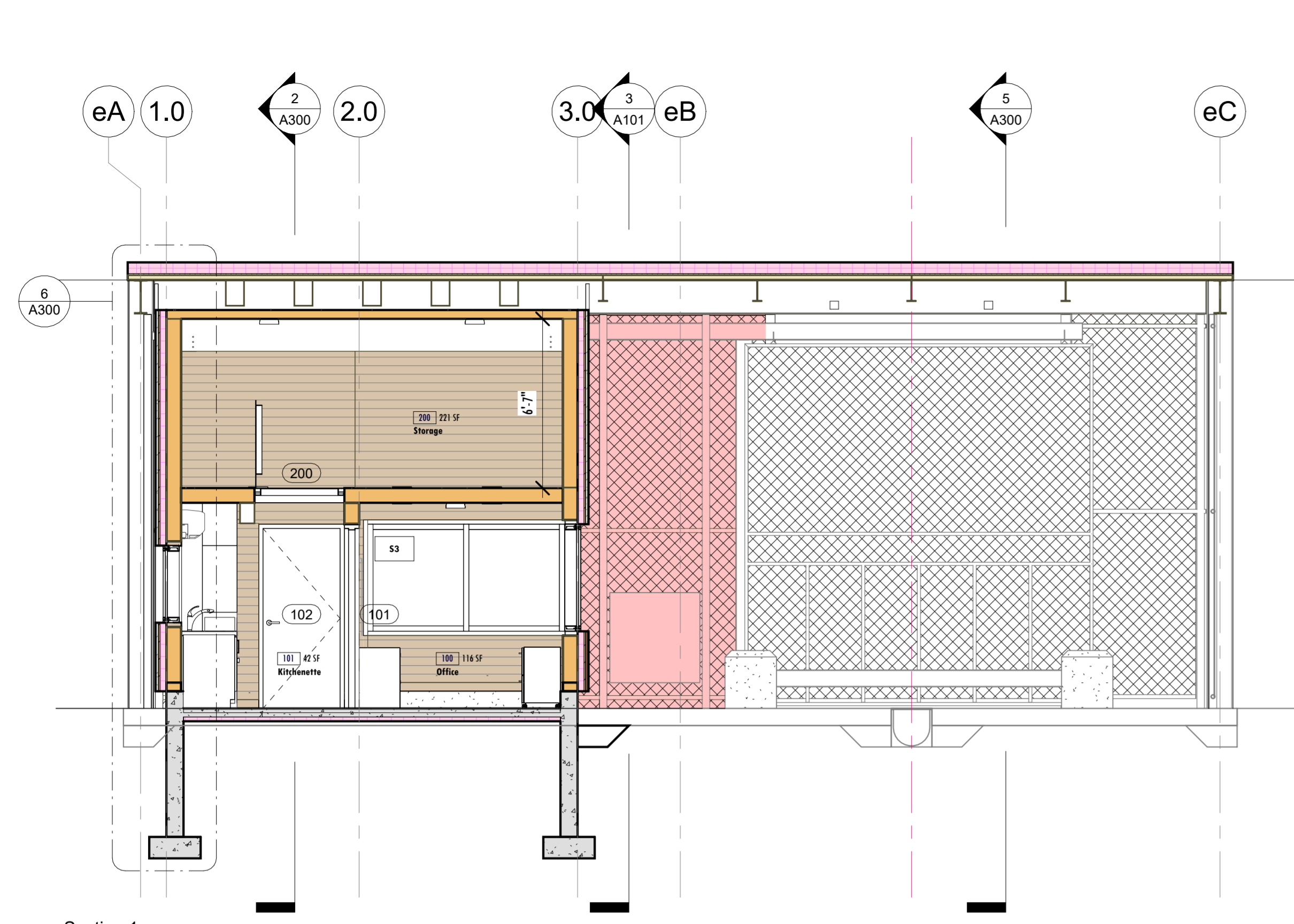
Sheet Size: D 34 in x 36 in

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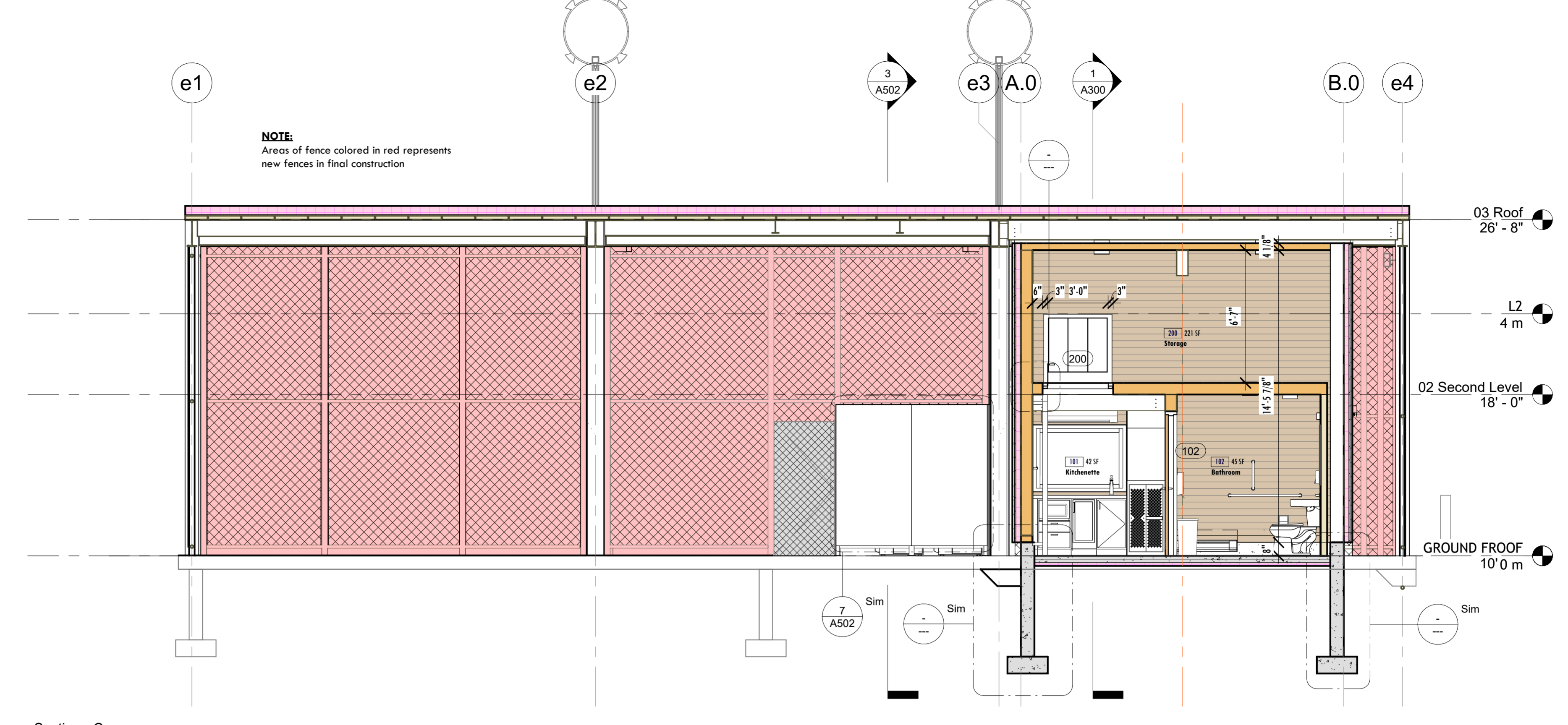
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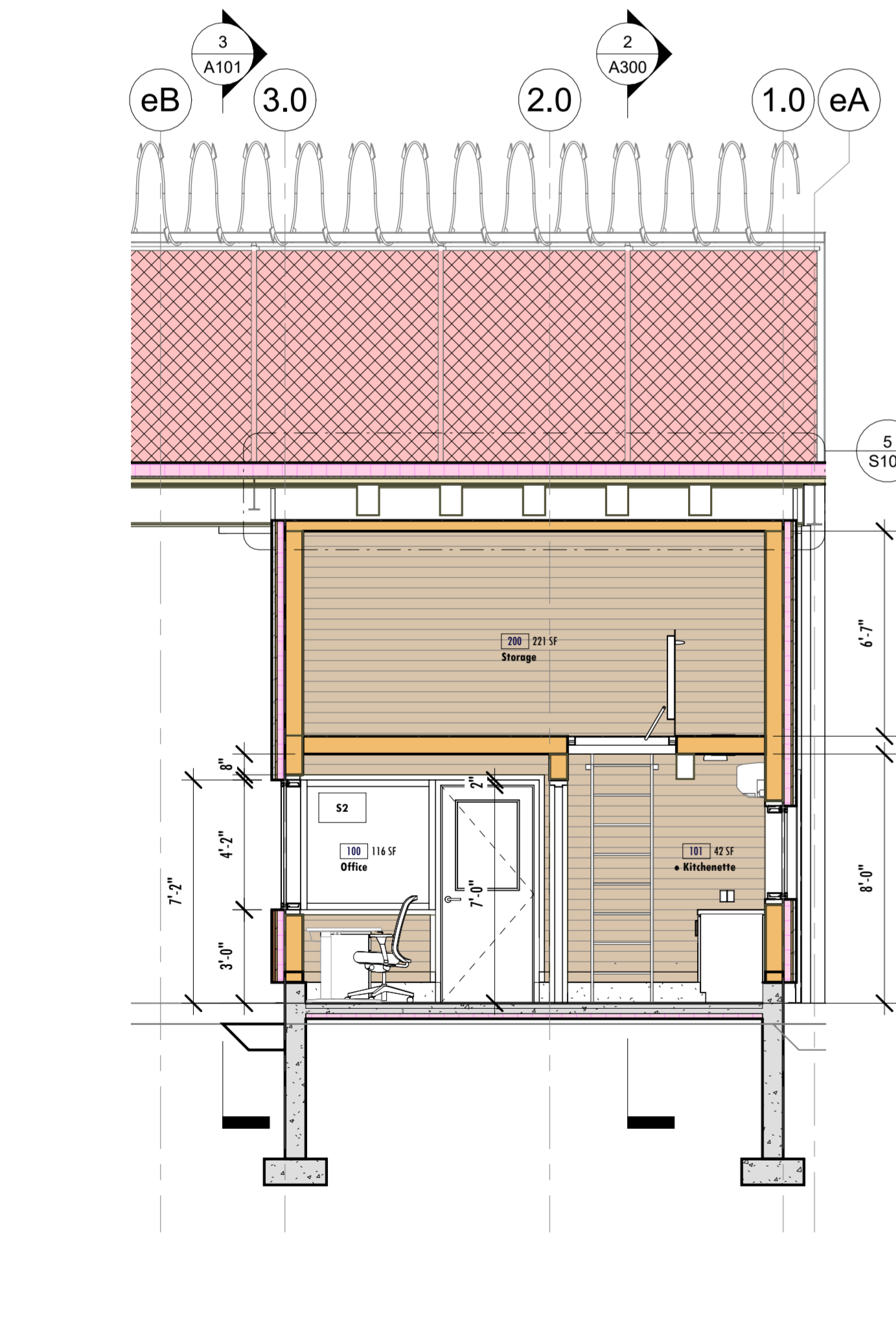
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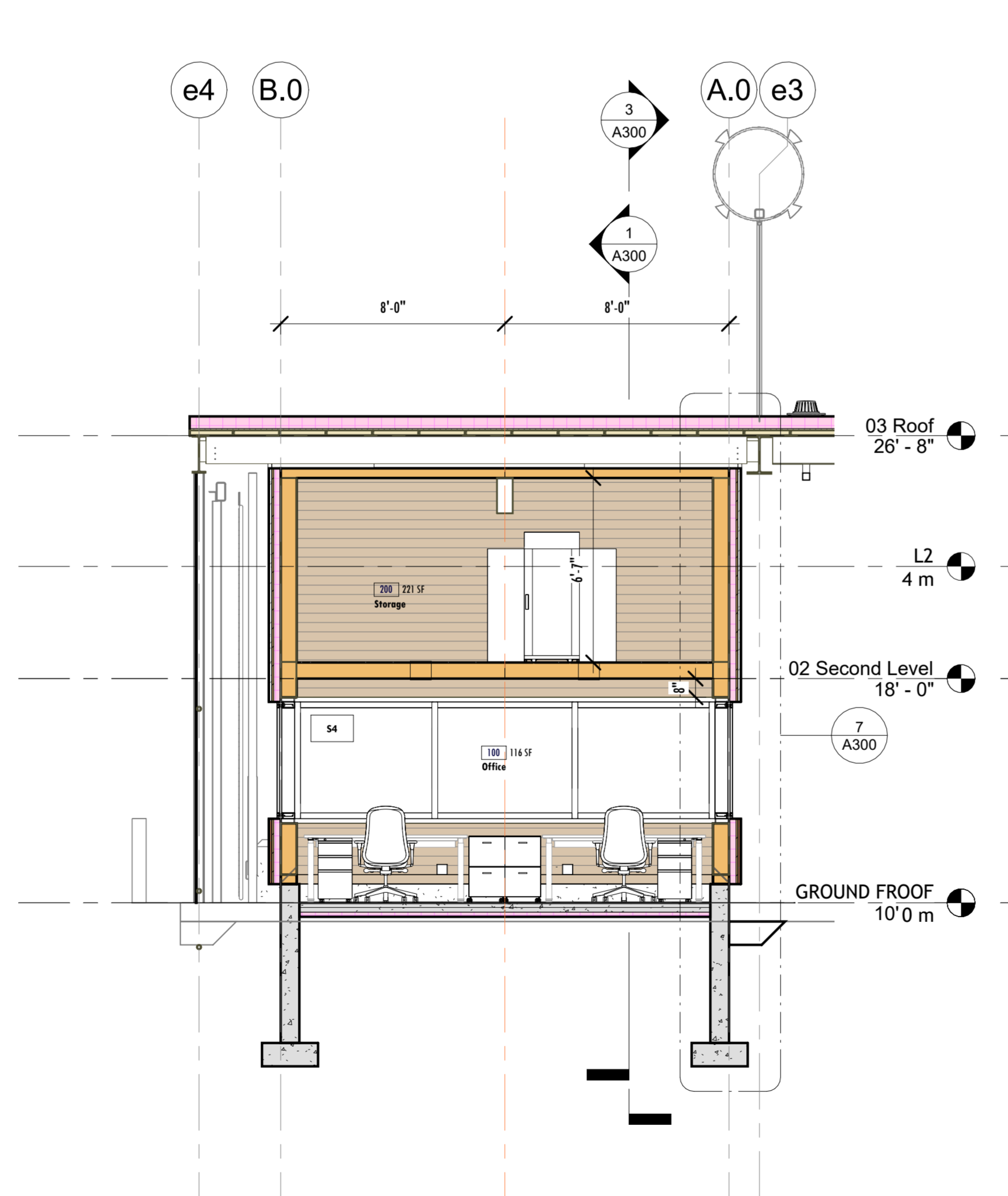
1 Section 1  
1/4" = 1'-0"



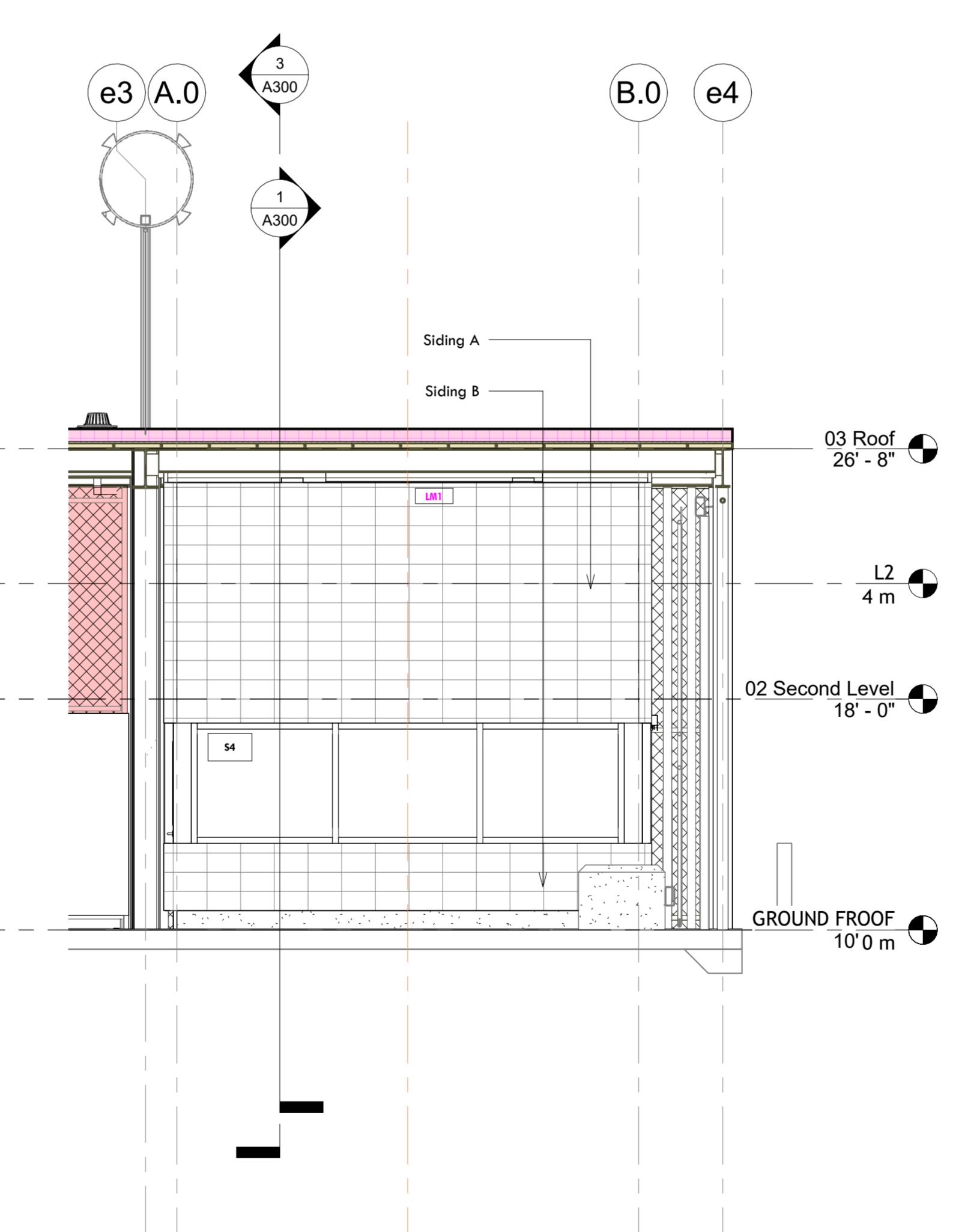
2 Section - Cross  
1/4" = 1'-0"



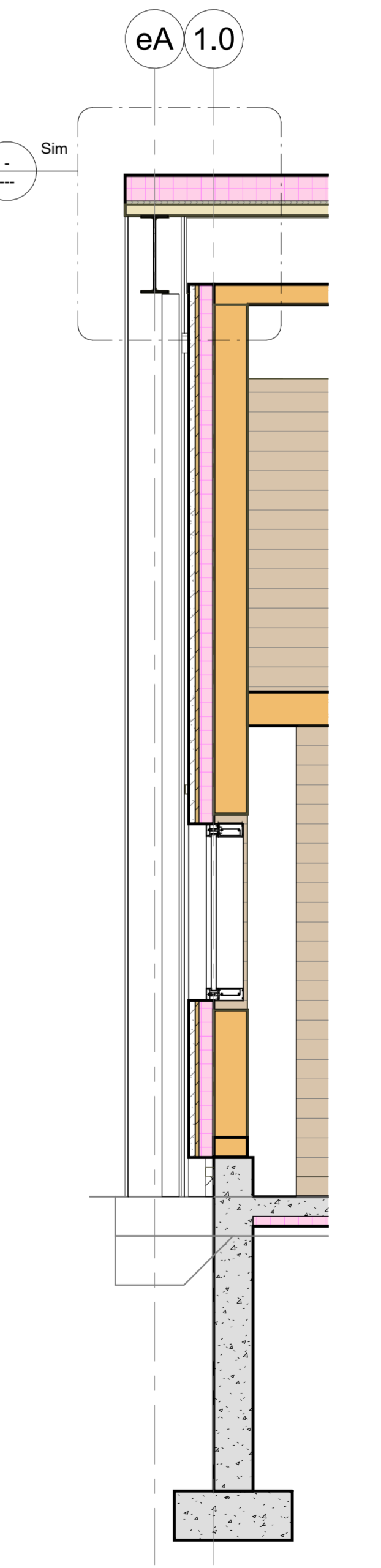
3 Section - Longitudinal  
1/4" = 1'-0"



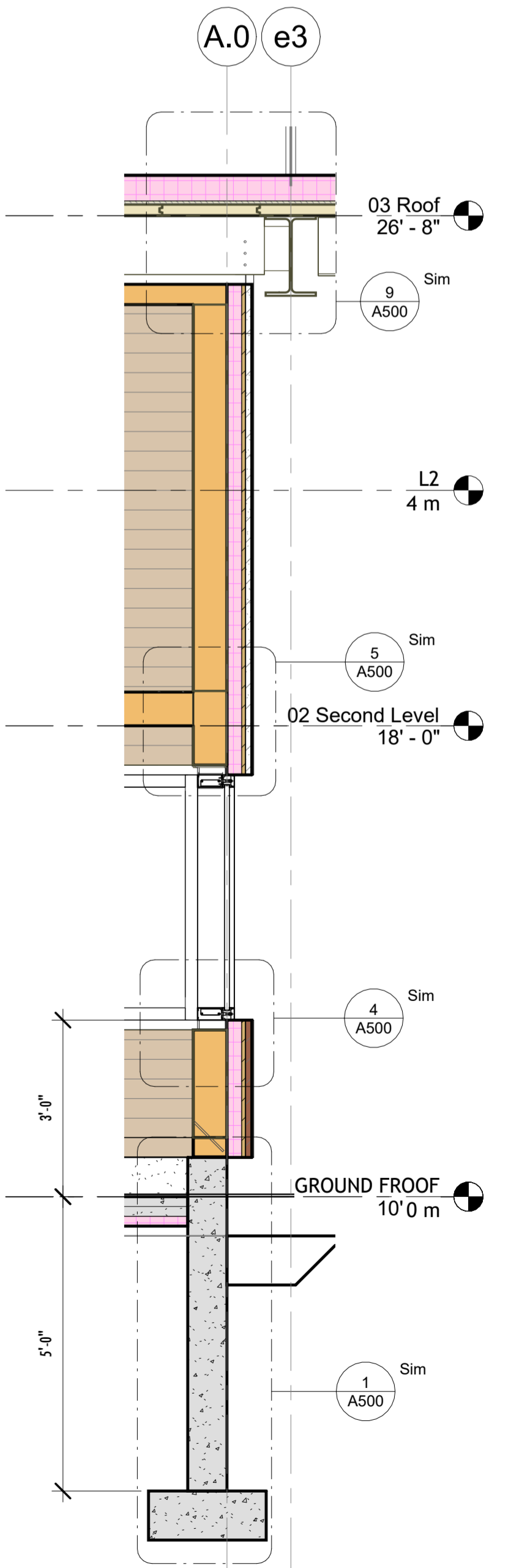
4 Section - Cross1  
1/4" = 1'-0"



5 Section - Cross2  
1/4" = 1'-0"



6 Section 1 - Callout 1  
1/2" = 1'-0"



7 Section - Cross1 - Callout 1  
1/2" = 1'-0"

A300

Scale As Indicated

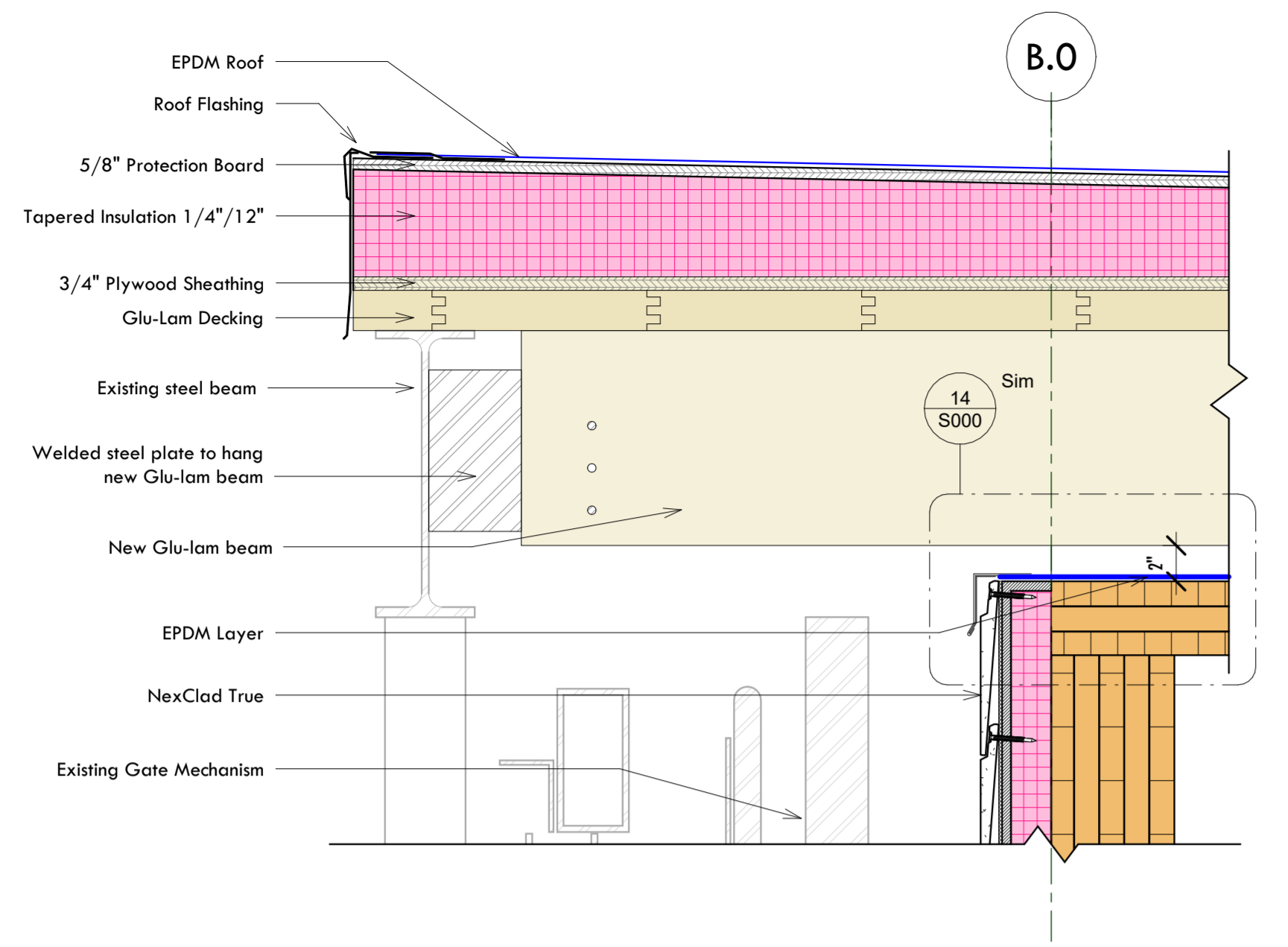


Gatehouse - Sallyport  
Maine State Prison - 807 Cushing Rd, Warren, ME 04864  
BUILDING SECTIONS

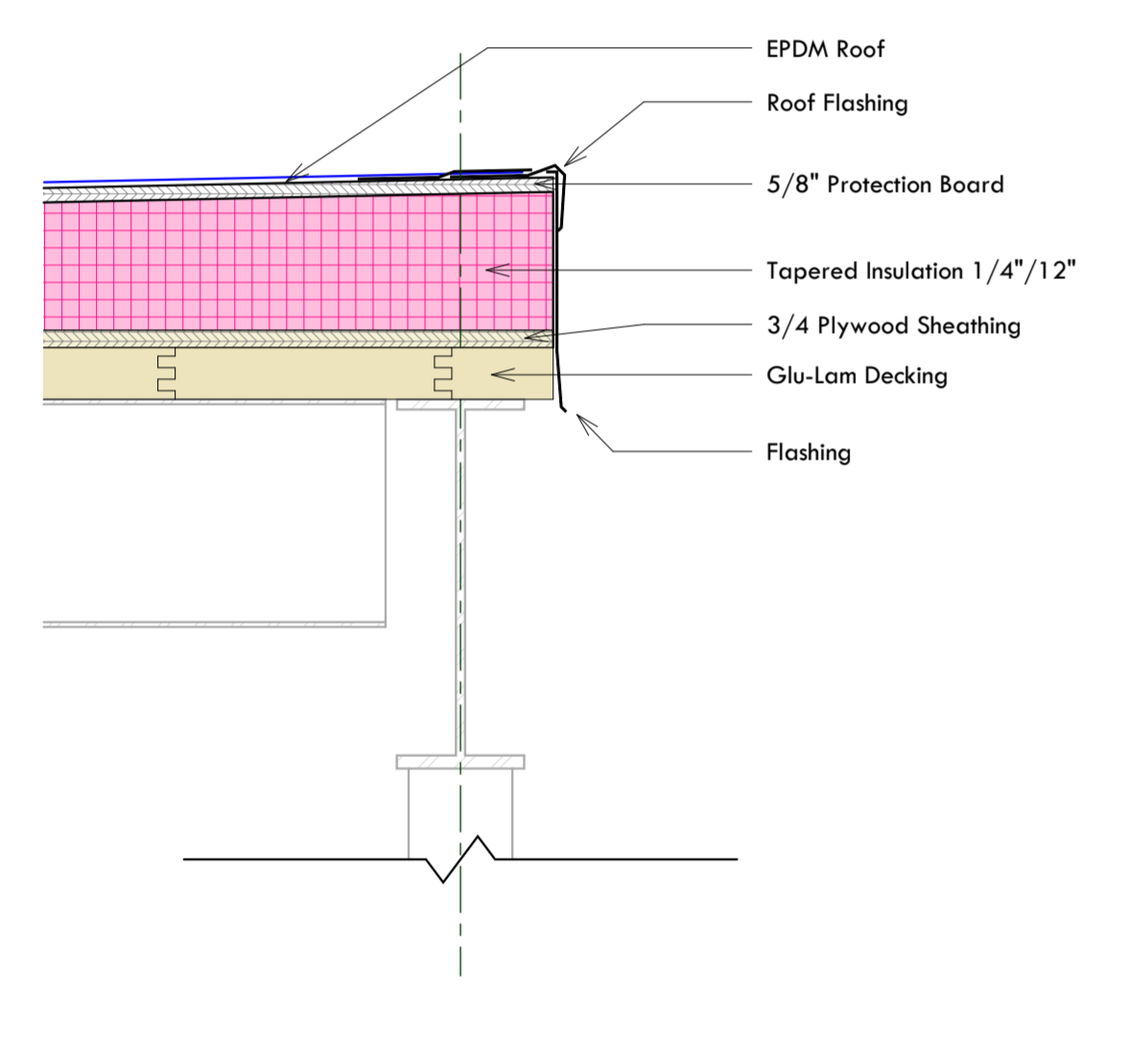
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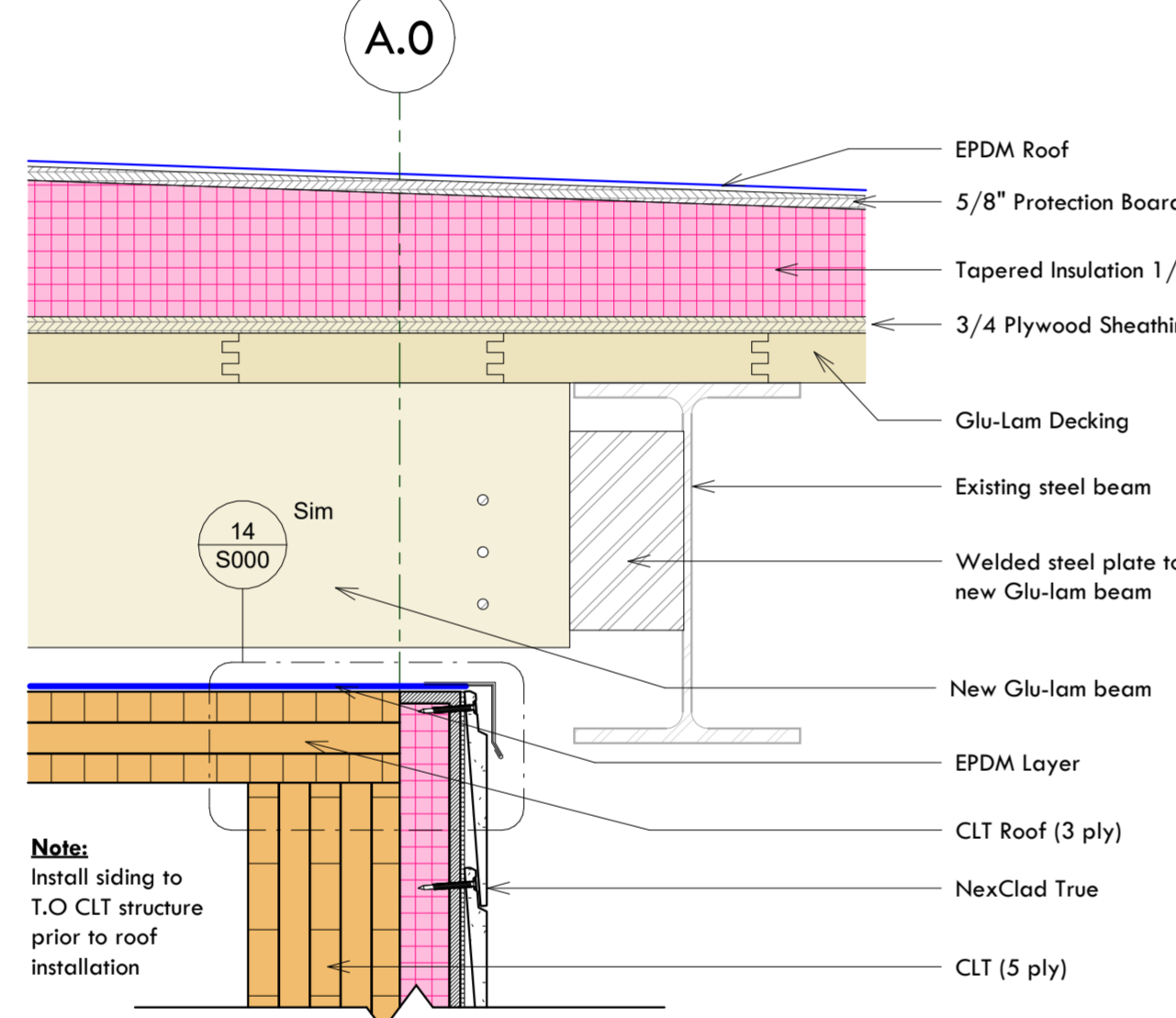




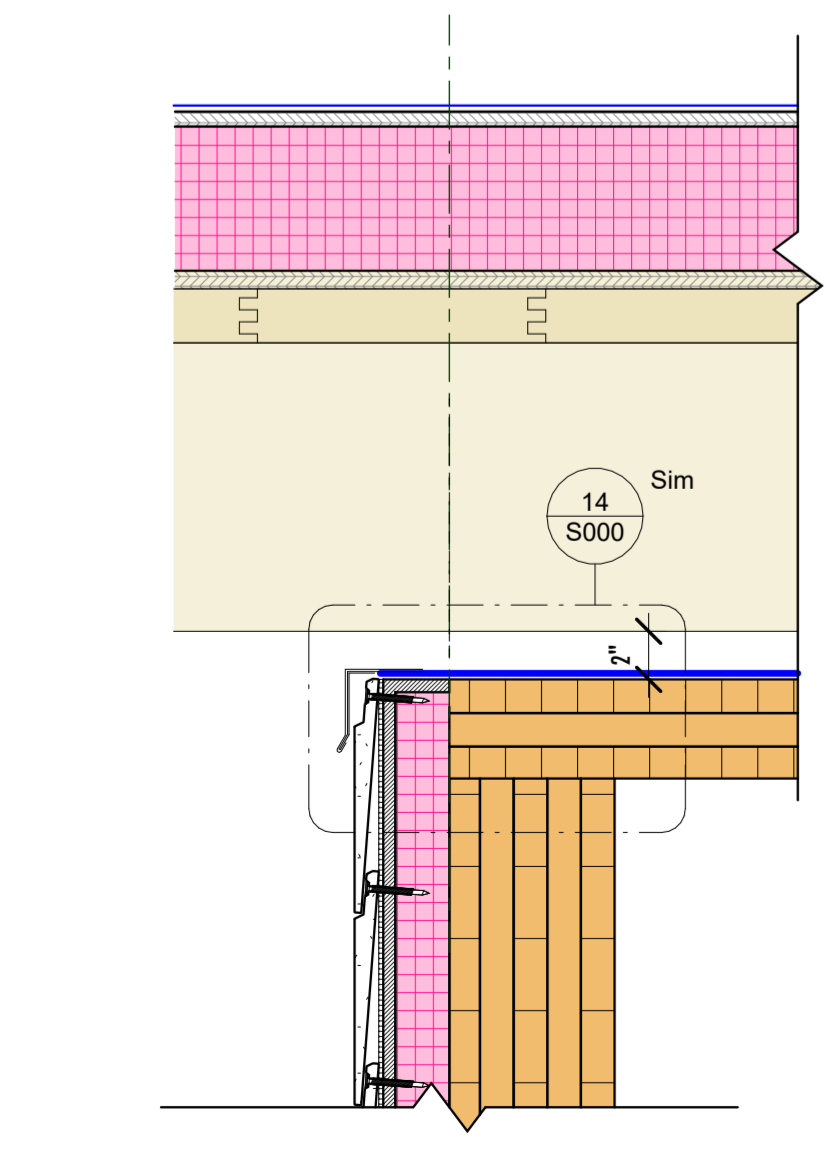
7 Detail - Foundation - Roof GLULAM 2  
1 1/2" = 1'-0"



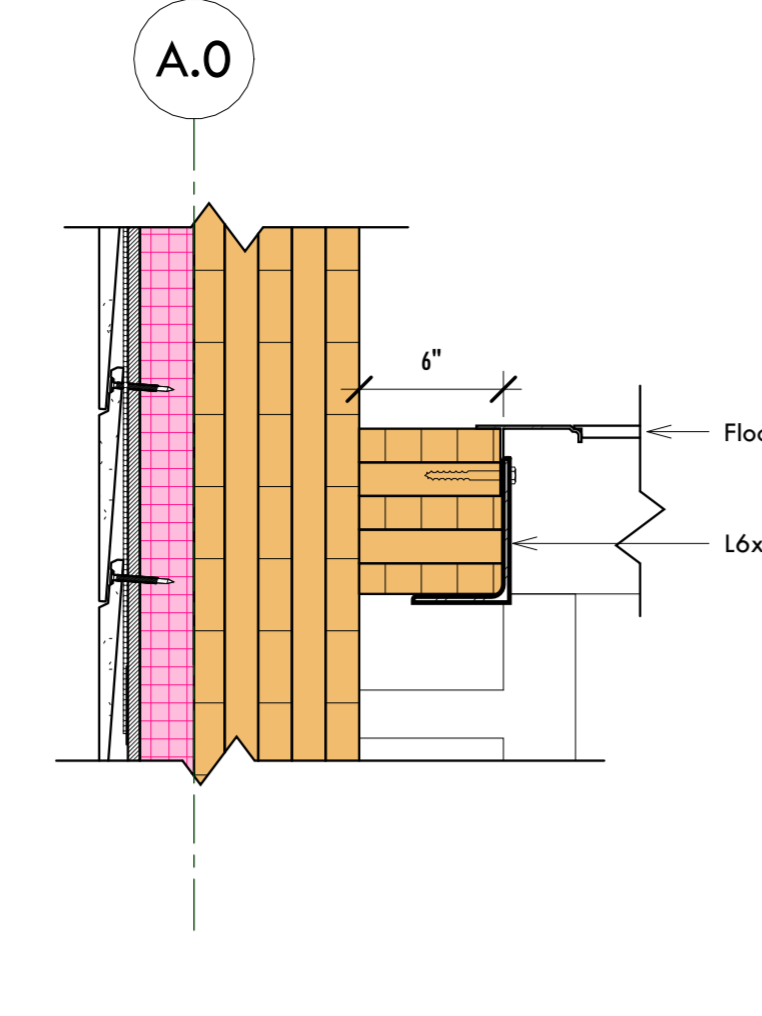
6 Detail - Foundation - Roof GLULAM 1  
1 1/2" = 1'-0"



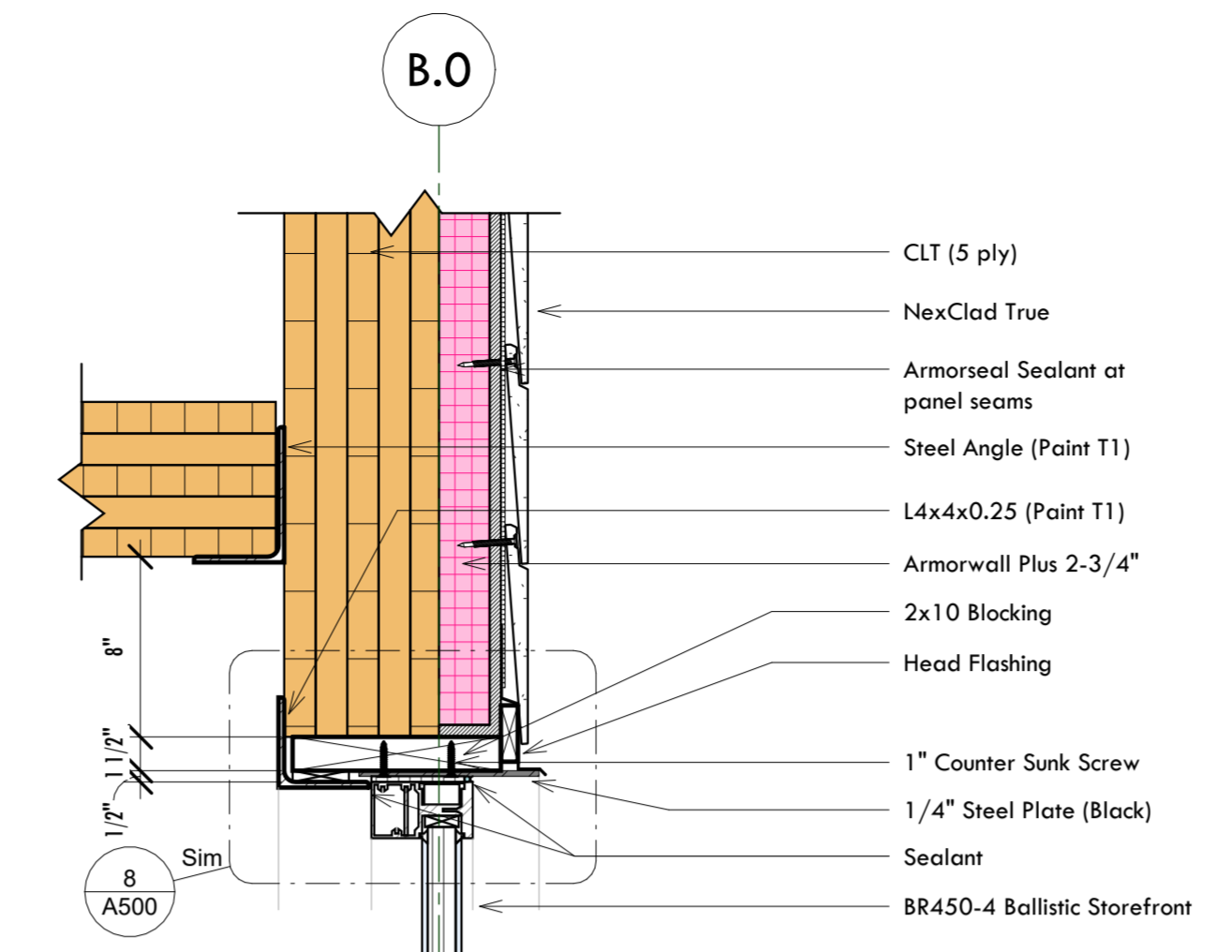
9 Detail - Foundation - Roof CLT & GLULAM  
1 1/2" = 1'-0"



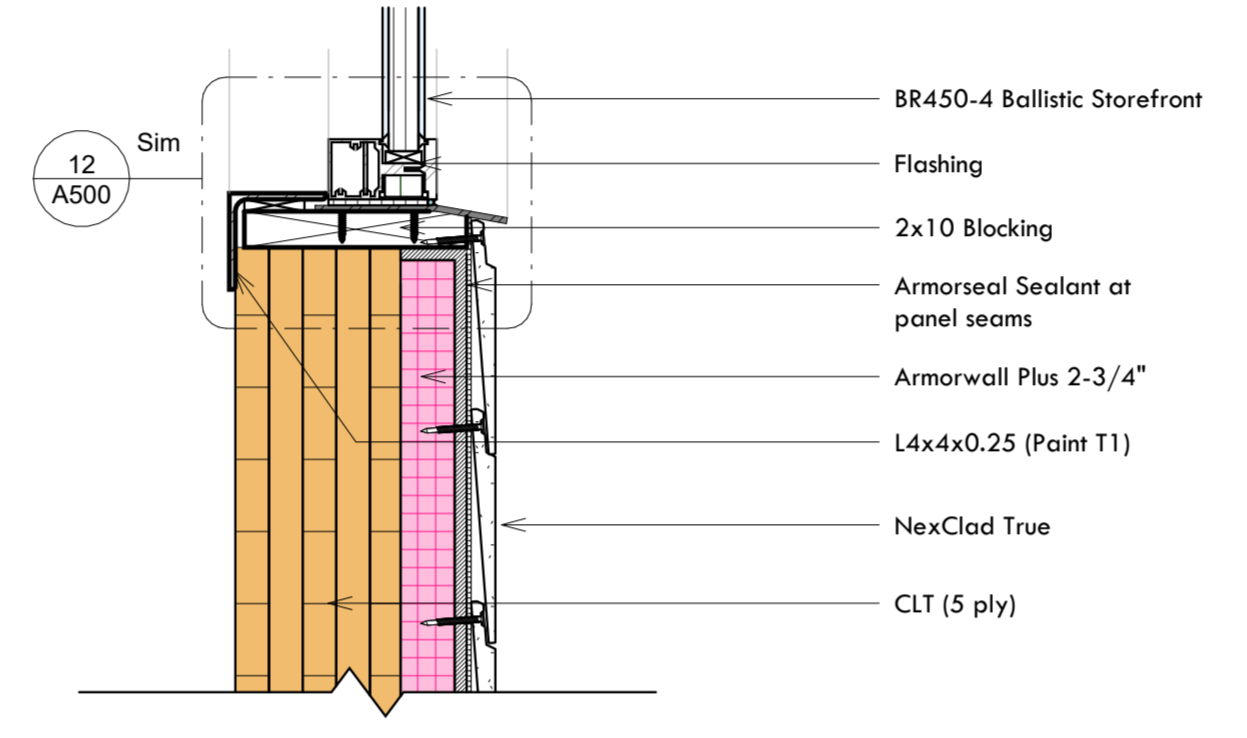
10 Detail - Foundation - Roof CLT & GLULAM Below w/ EPDM  
1 1/2" = 1'-0"



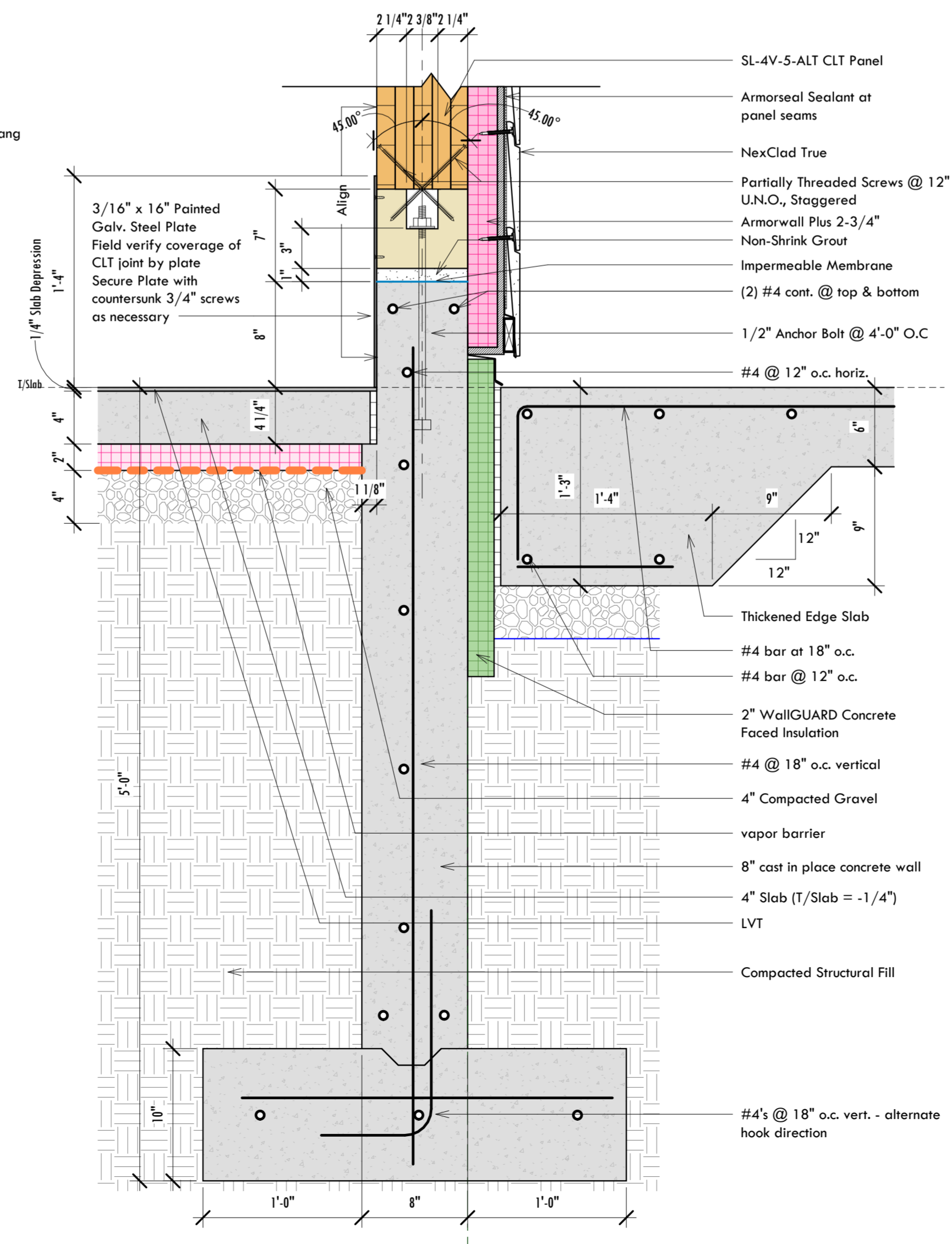
2 Detail - CLT - Hatch Door Opening  
1 1/2" = 1'-0"



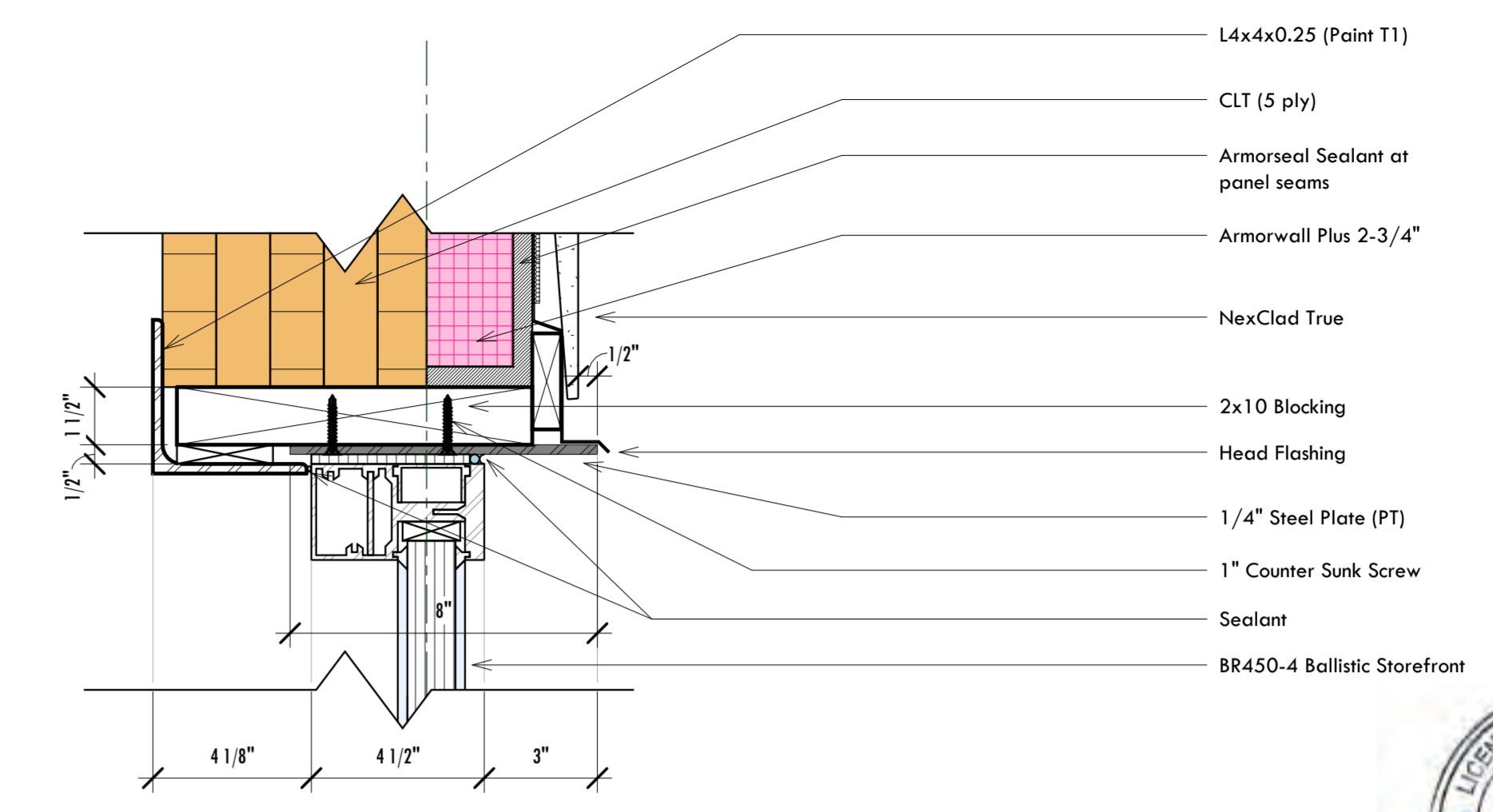
5 Detail - Foundation - Glazing Head  
1 1/2" = 1'-0"



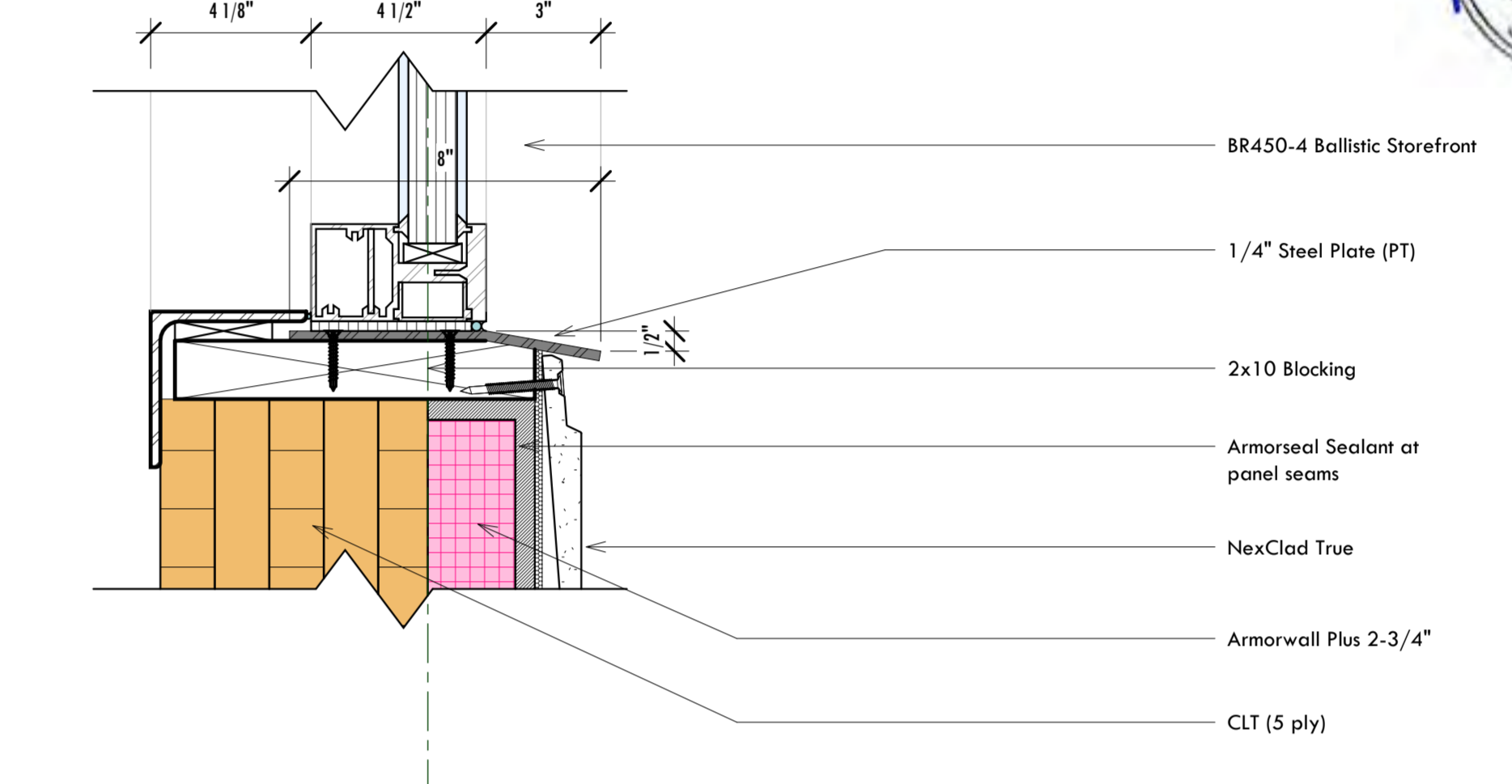
4 Detail - Foundation - Glazing Sill  
1 1/2" = 1'-0"



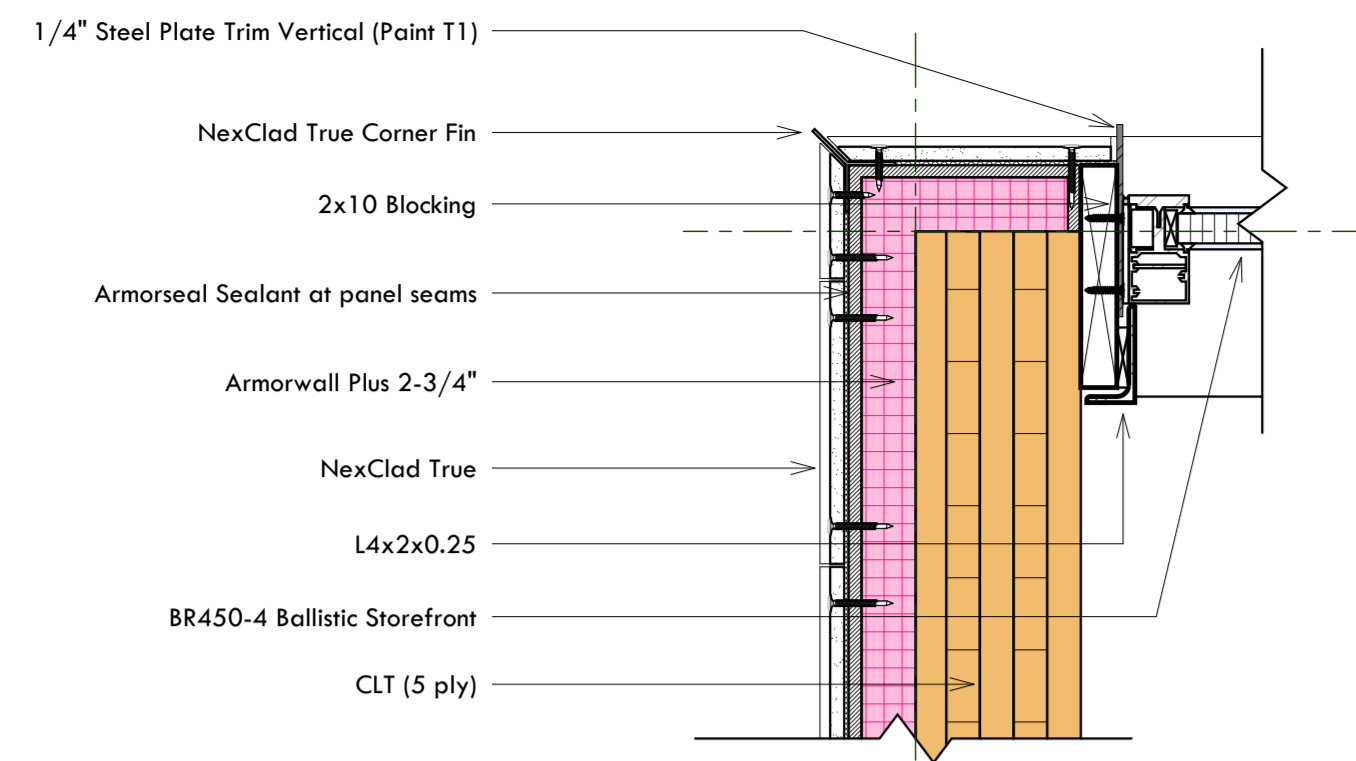
1 Detail - Foundation - Foundation to Thickened Edge  
1 1/2" = 1'-0"



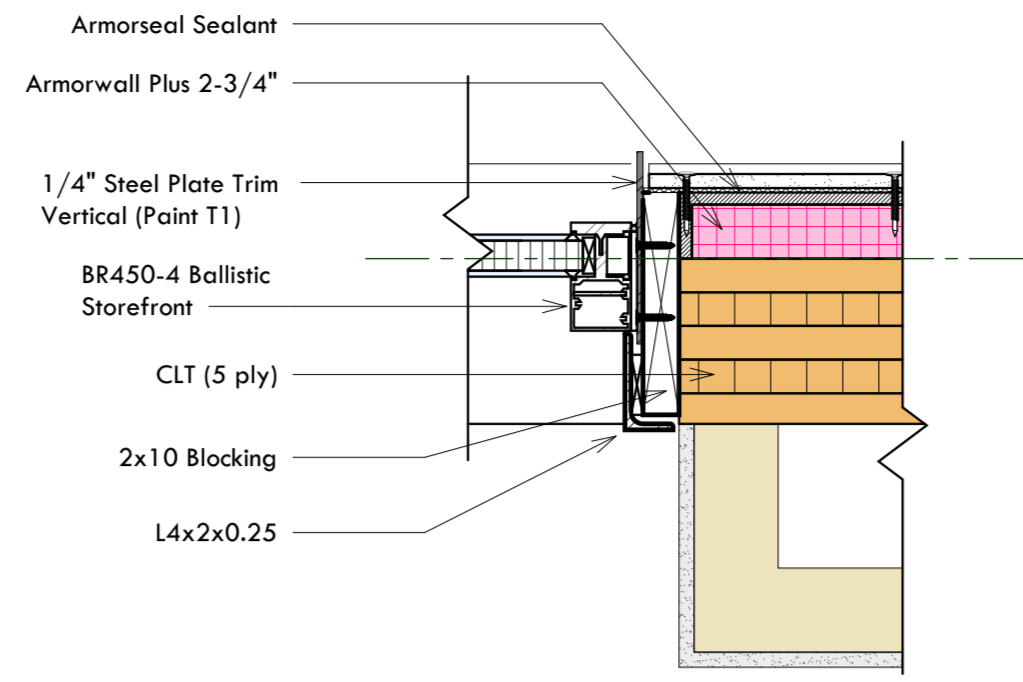
8 Detail - Foundation - Glazing Head 3  
3" = 1'-0"



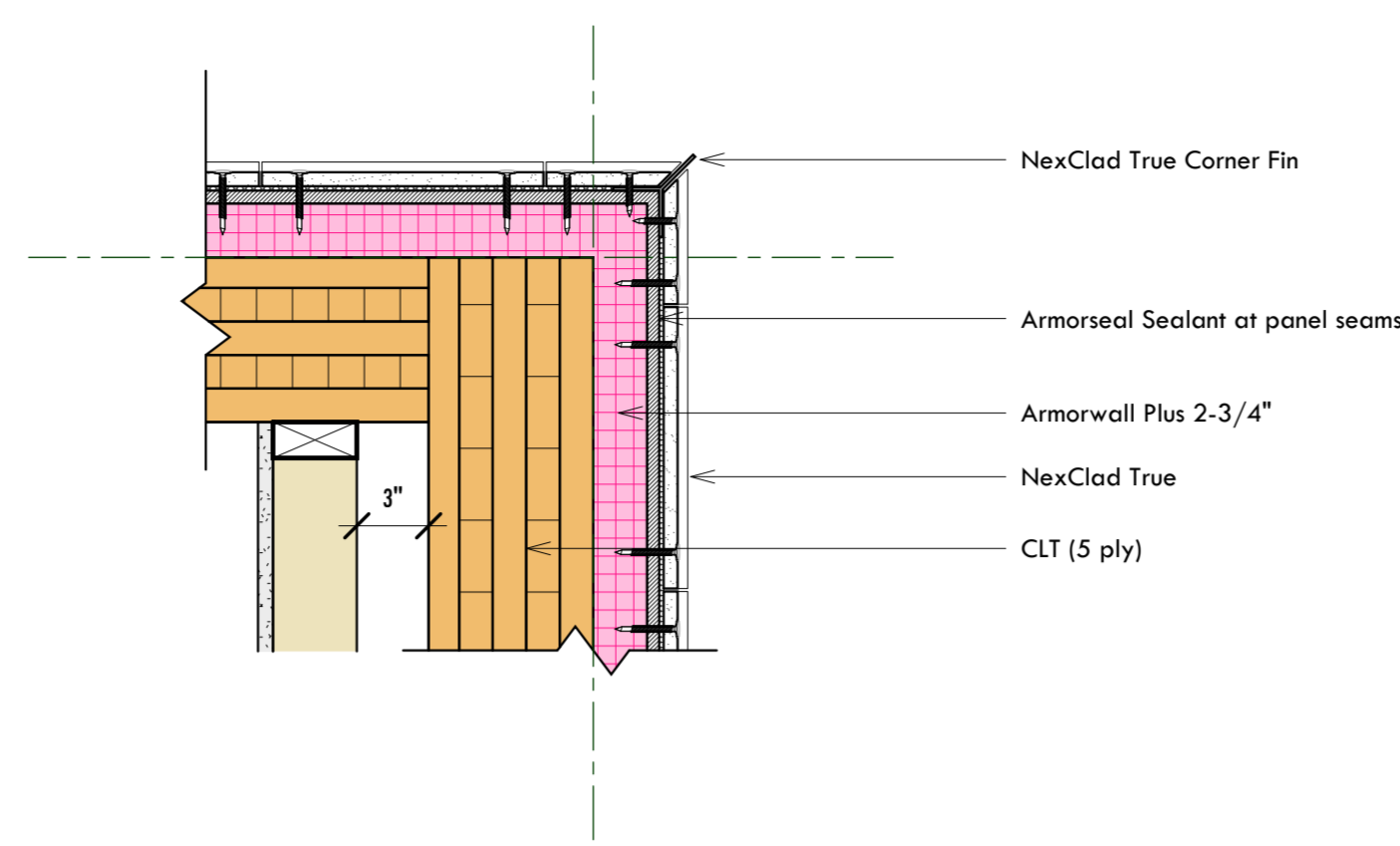
12 Detail - Foundation - Glazing Sill 3  
3" = 1'-0"



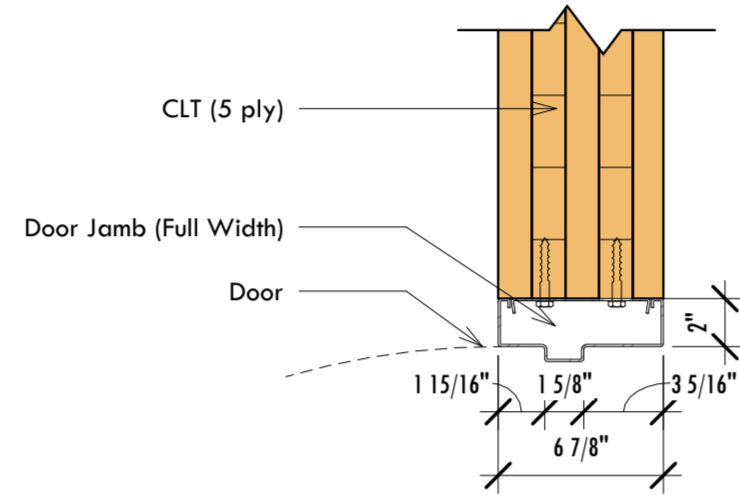
⑥ Detail - Plan - Gatehouse Corner w/ Storefront  
1 1/2" = 1'-0"



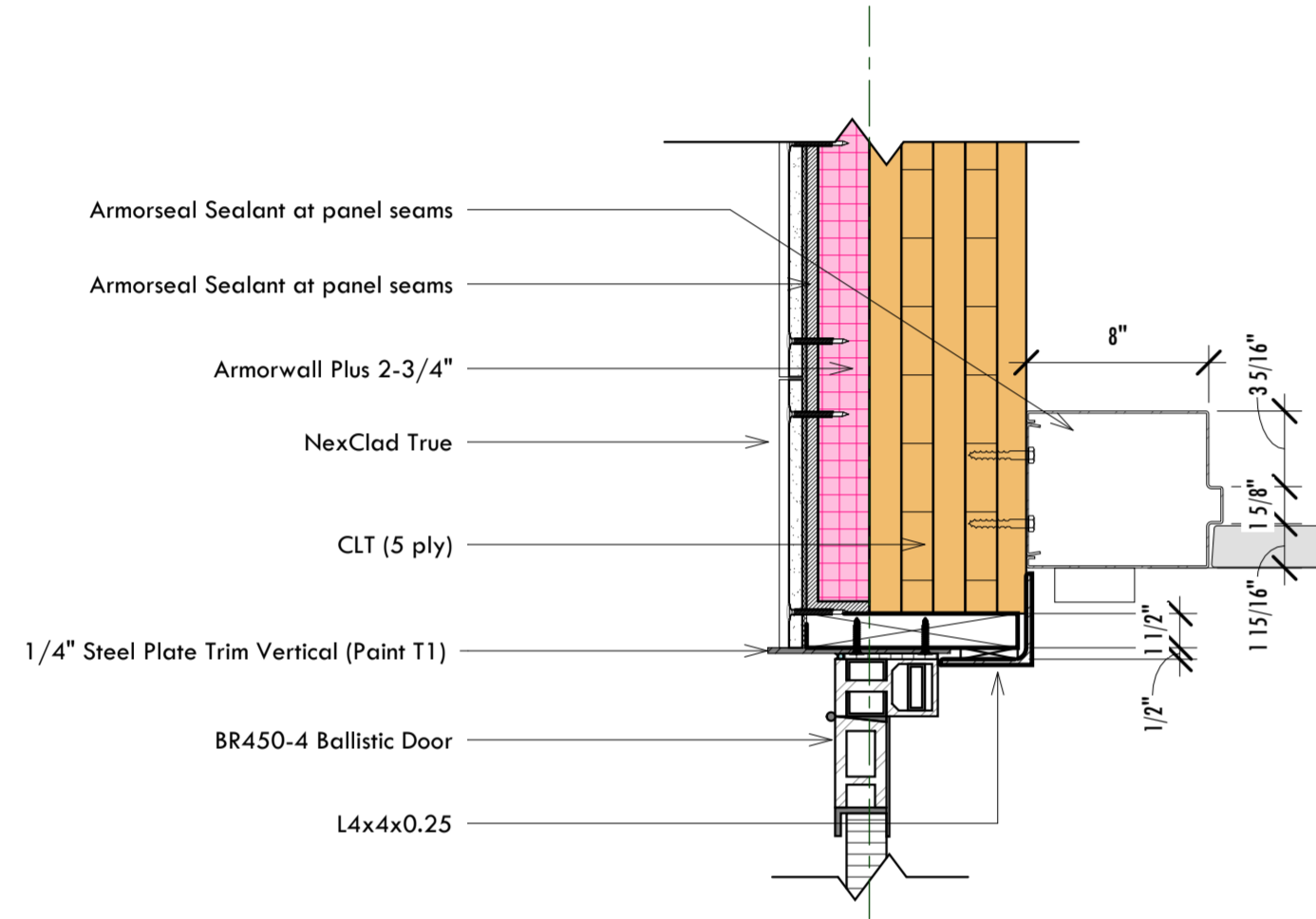
② Detail - Plan - Gatehouse Back Window  
1 1/2" = 1'-0"



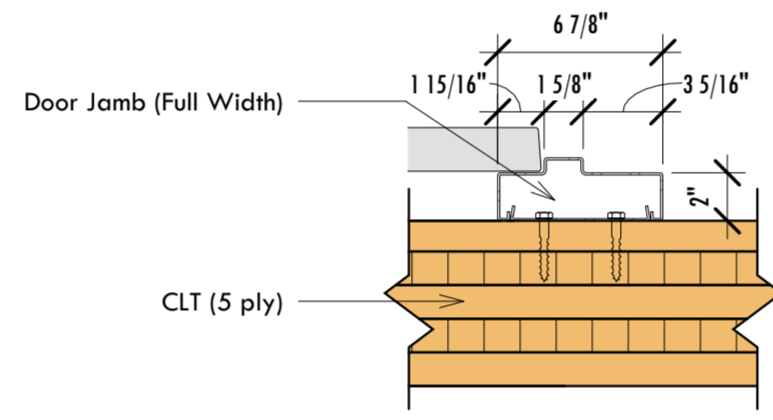
⑤ Detail - Plan - Gatehouse Corner Bathroom  
1 1/2" = 1'-0"



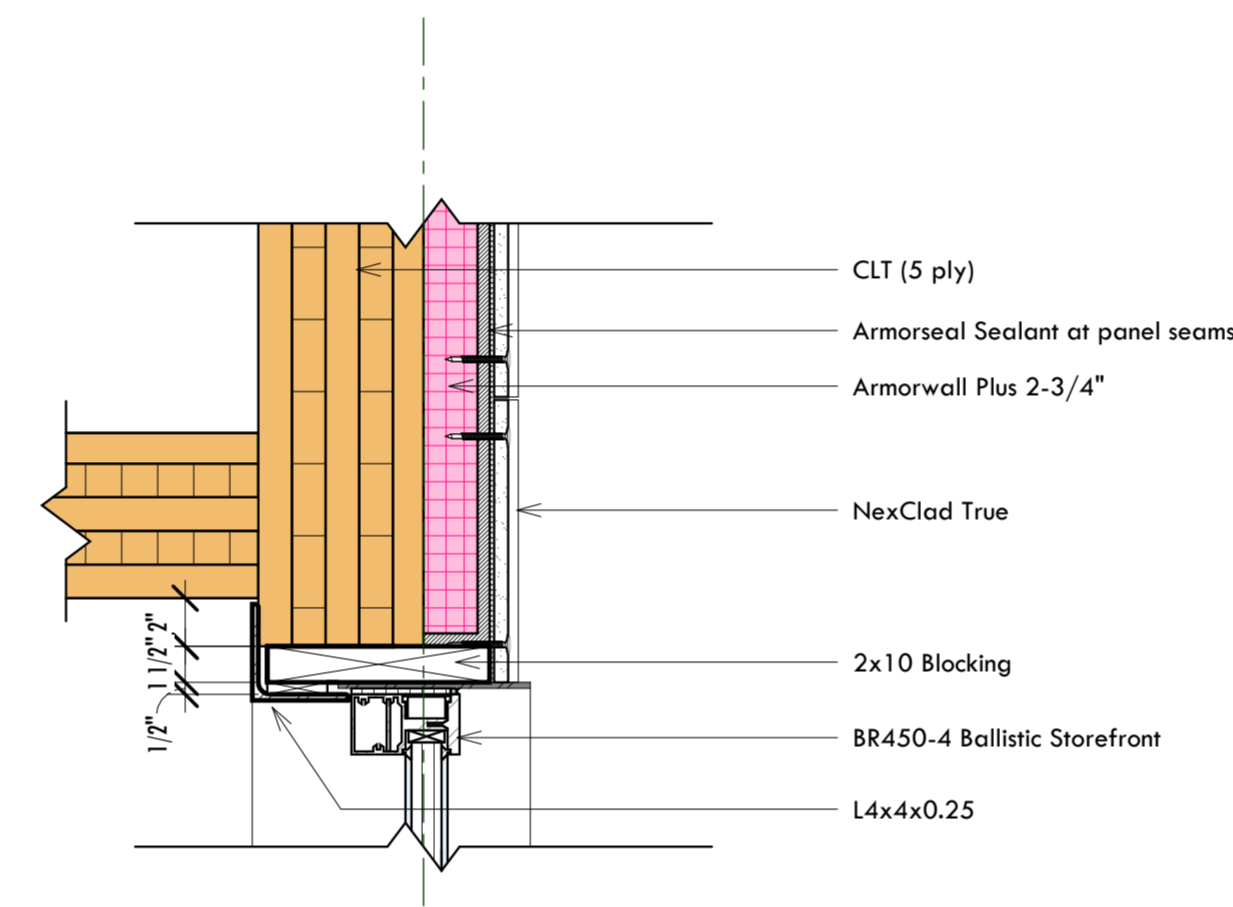
① Detail - Plan - Gatehouse Bathroom Door  
1 1/2" = 1'-0"



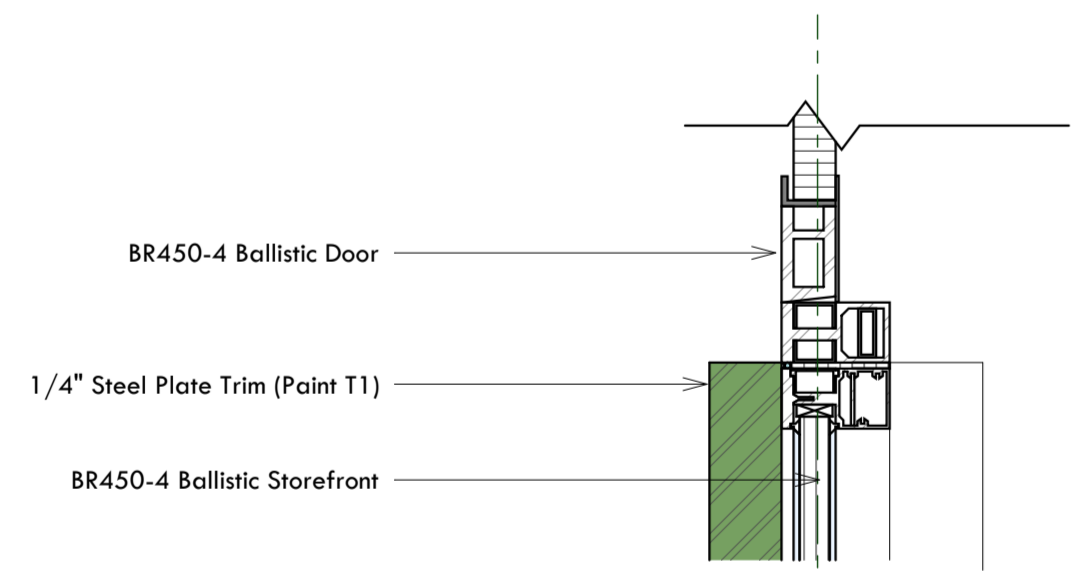
⑦ Detail - Plan - Gatehouse Door  
1 1/2" = 1'-0"



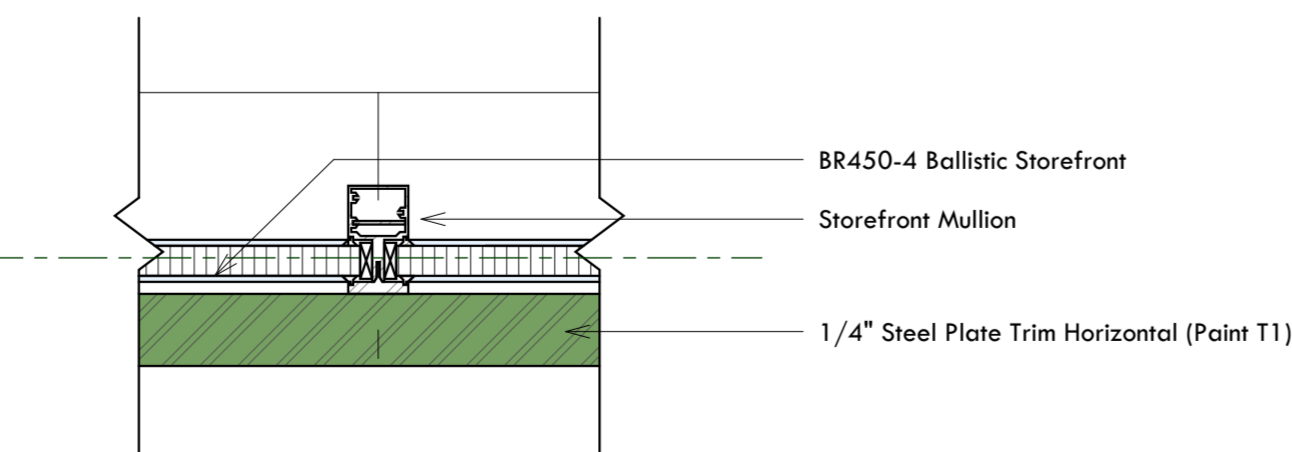
④ Detail - Plan - Gatehouse Bathroom Door 2  
1 1/2" = 1'-0"



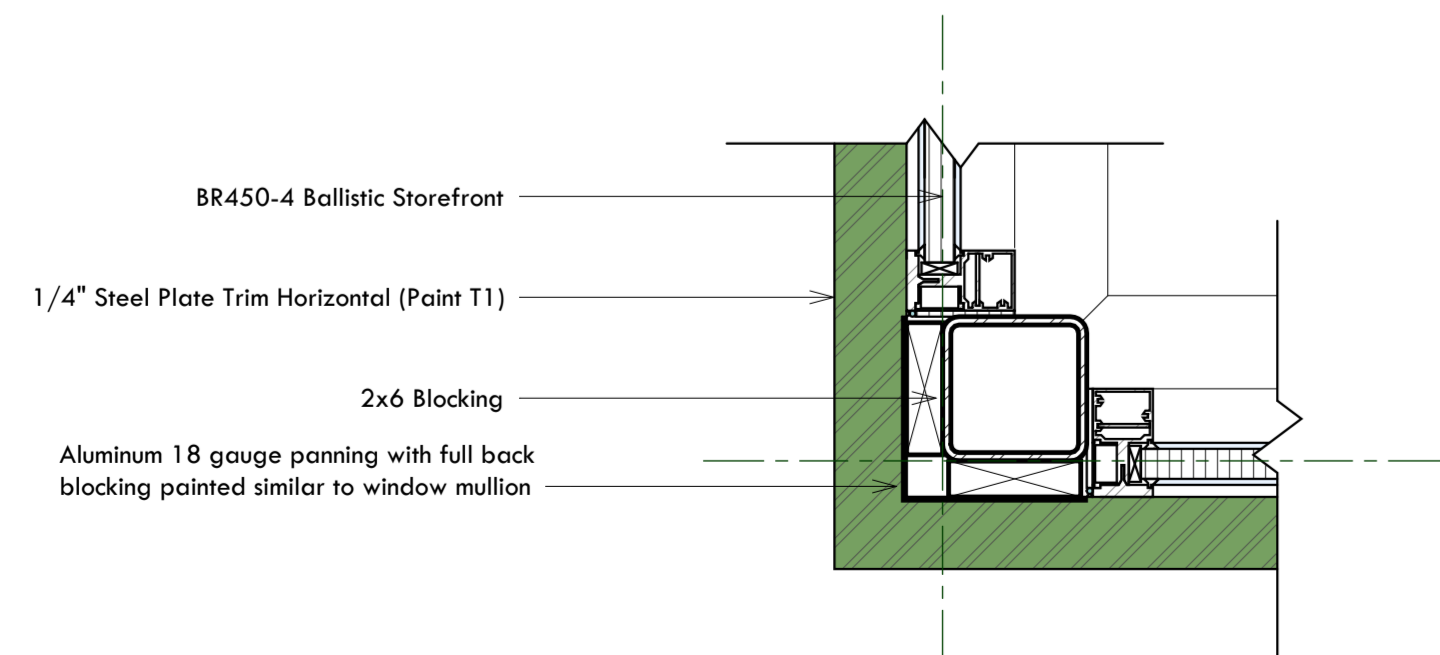
⑧ Detail - Plan - Gatehouse Storefront  
1 1/2" = 1'-0"



③ Detail - Plan - Gatehouse Storefront to Door  
1 1/2" = 1'-0"

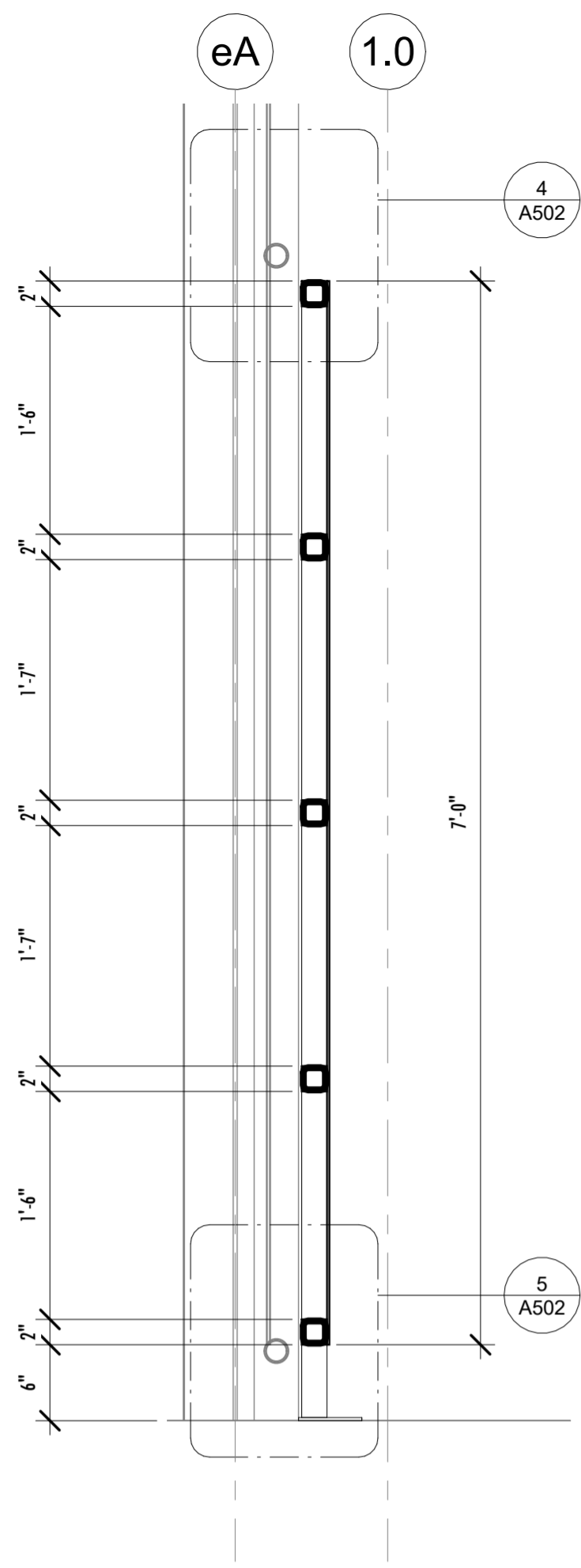


⑫ Detail - Plan - Gatehouse Storefront Mullion  
1 1/2" = 1'-0"

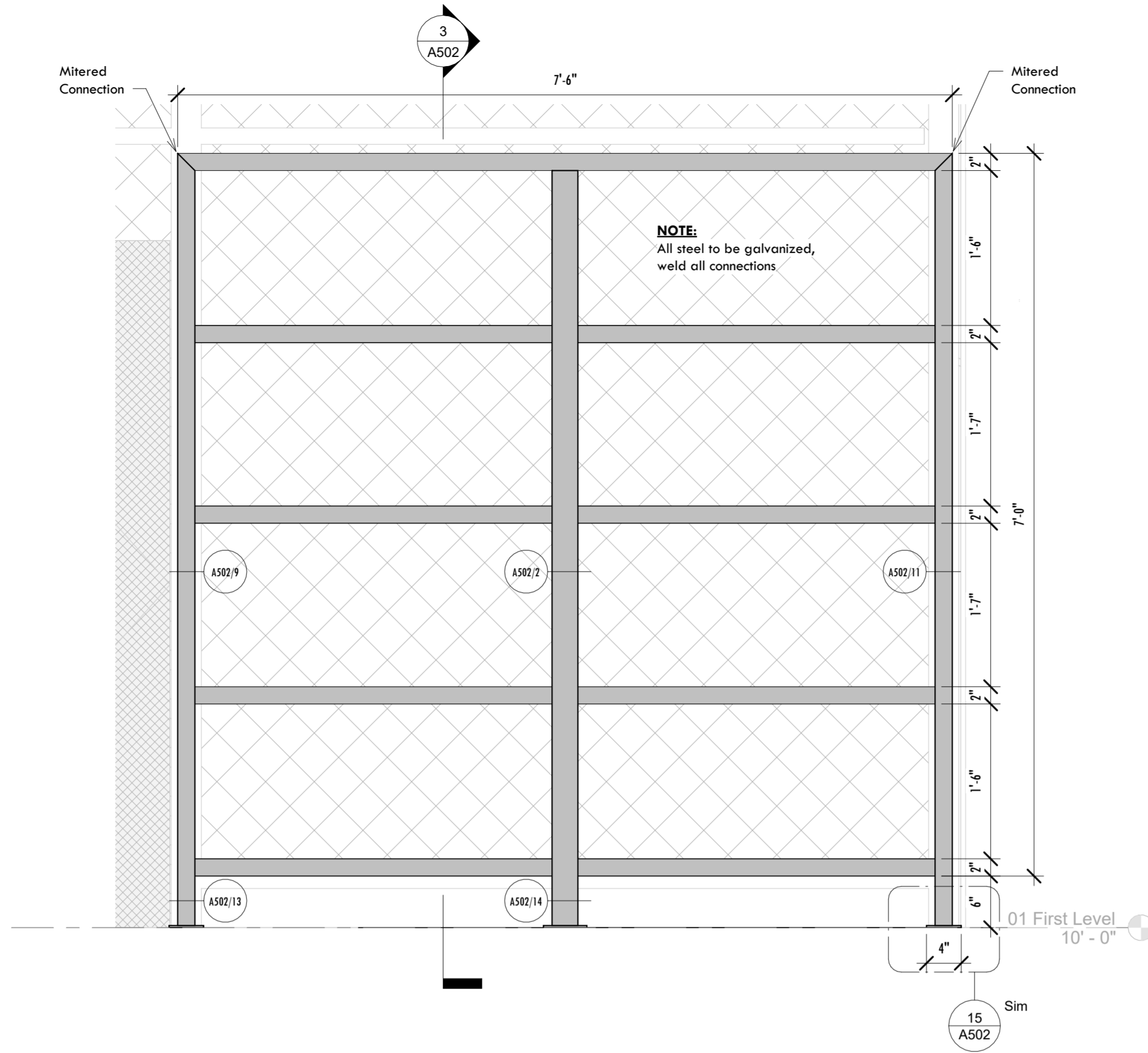


⑨ Detail - Plan - Gatehouse Storefront Corner  
1 1/2" = 1'-0"

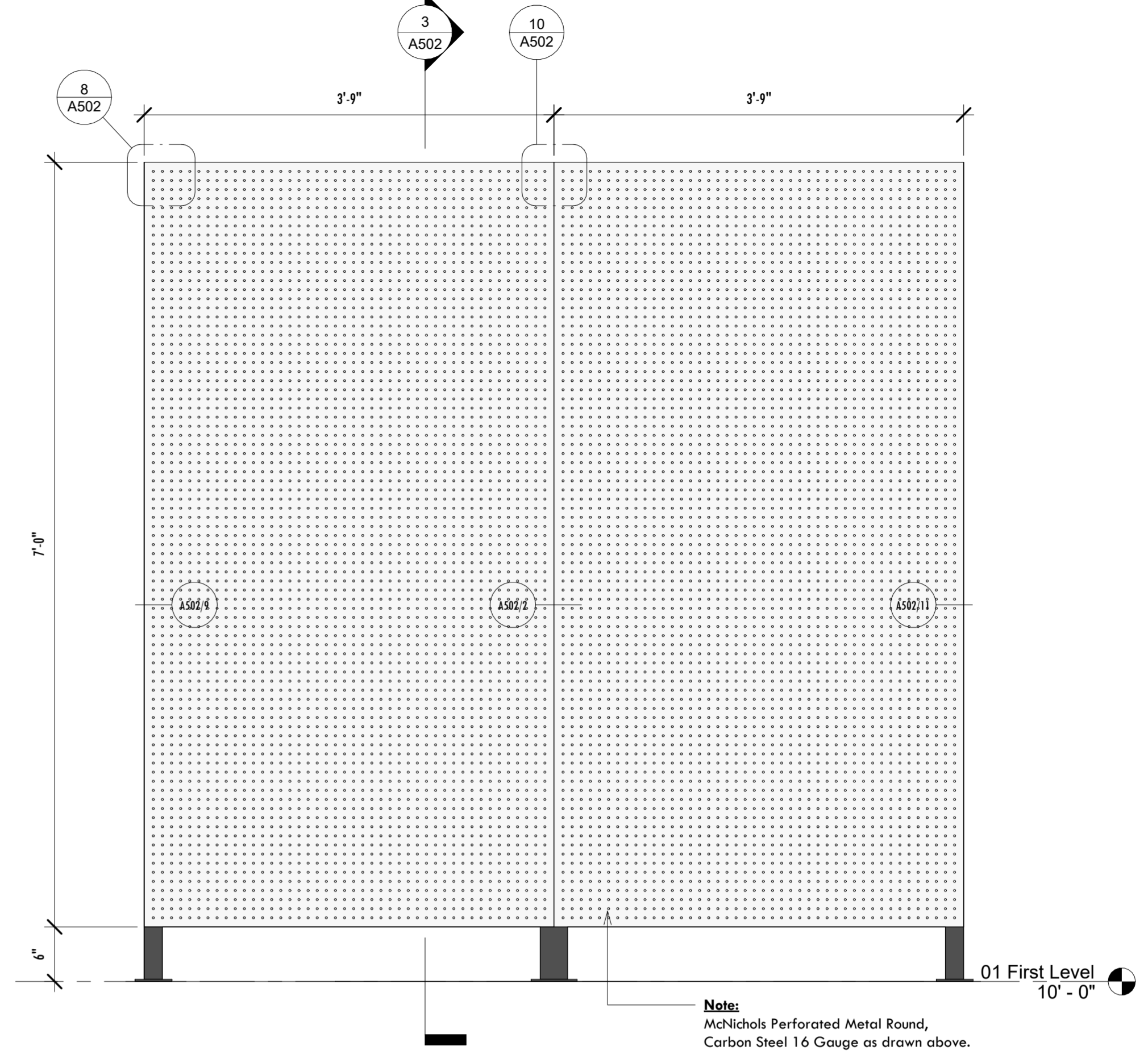




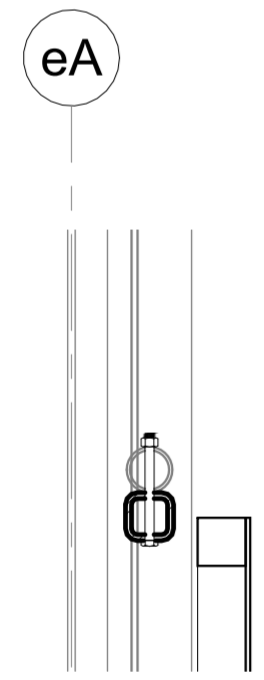
3 Section - Chainlink Hanging Wall Add.  
1" = 1'-0"



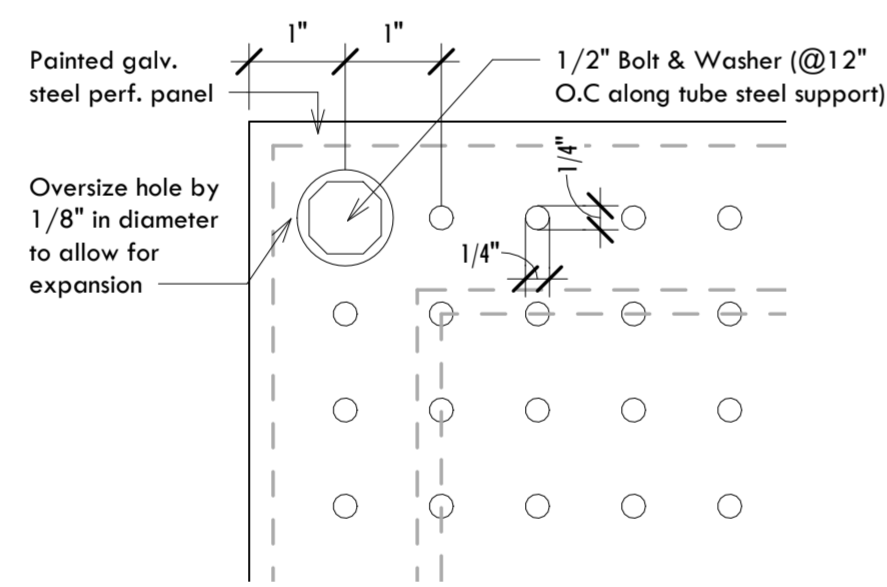
12 Elevation - Peg Board Back Structure1  
1" = 1'-0"



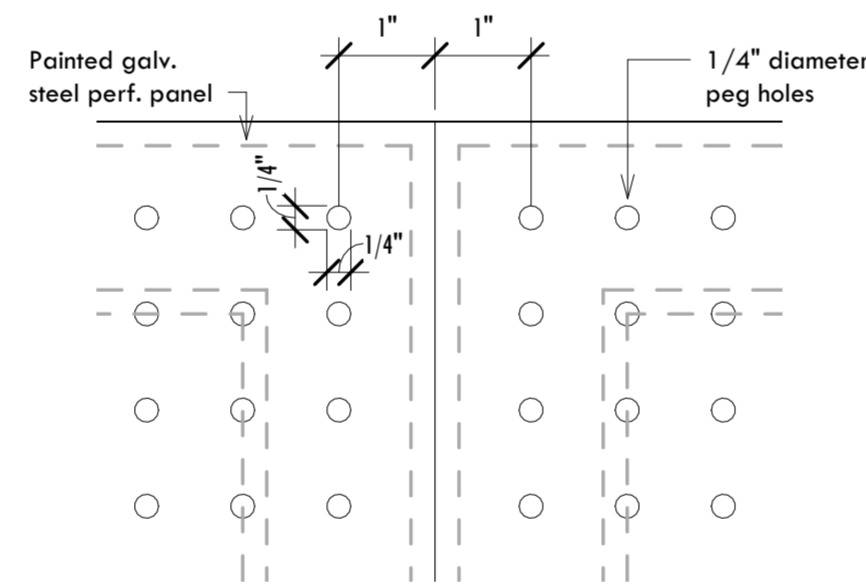
7 Elevation - Peg Board  
1" = 1'-0"



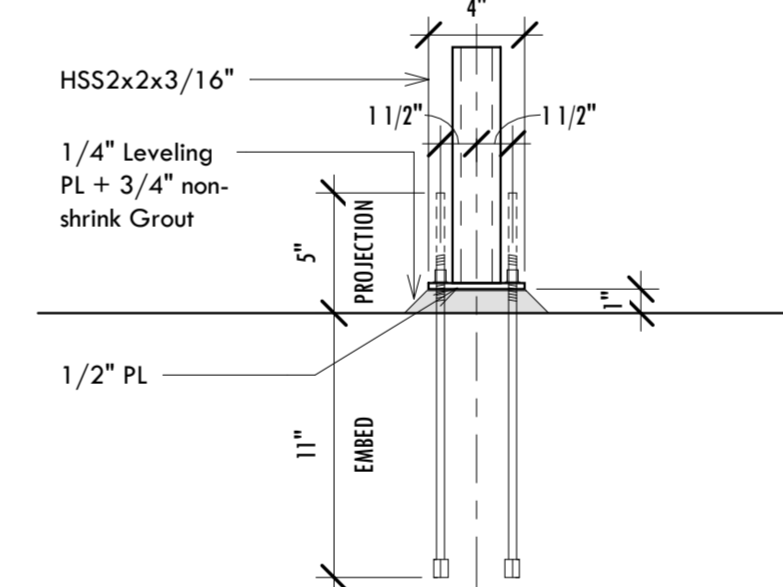
4 Section - Chainlink Hanging Wall Top  
1 1/2" = 1'-0"



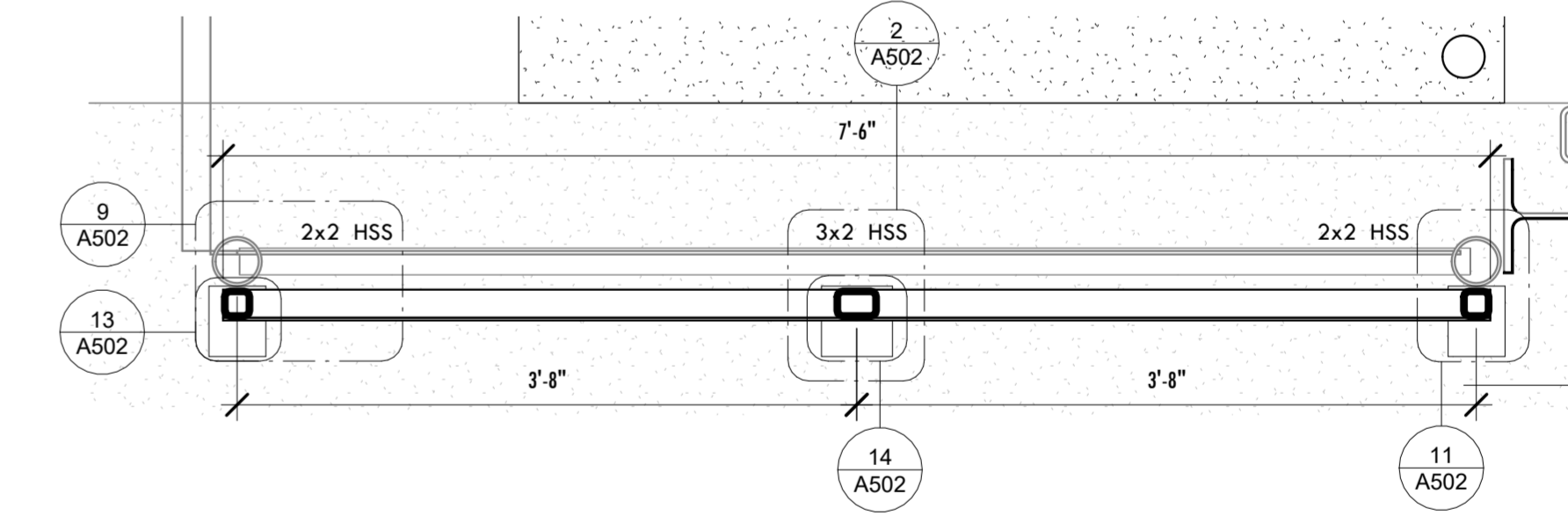
8 Elevation - Peg Board - Top Left  
6" = 1'-0"



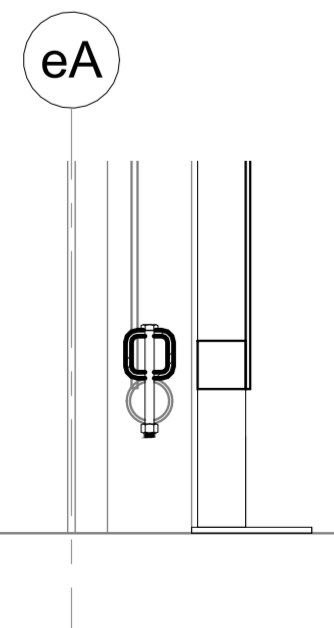
10 Elevation - Peg Board - Top Middle  
6" = 1'-0"



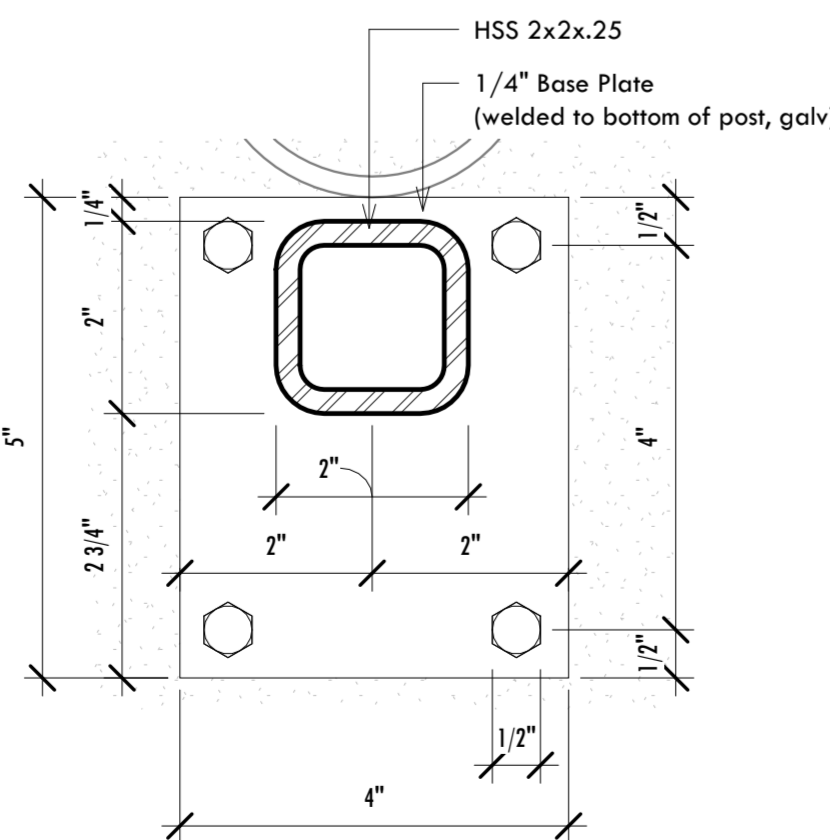
15 Detail - Typical Tube Steel Column  
1 1/2" = 1'-0"



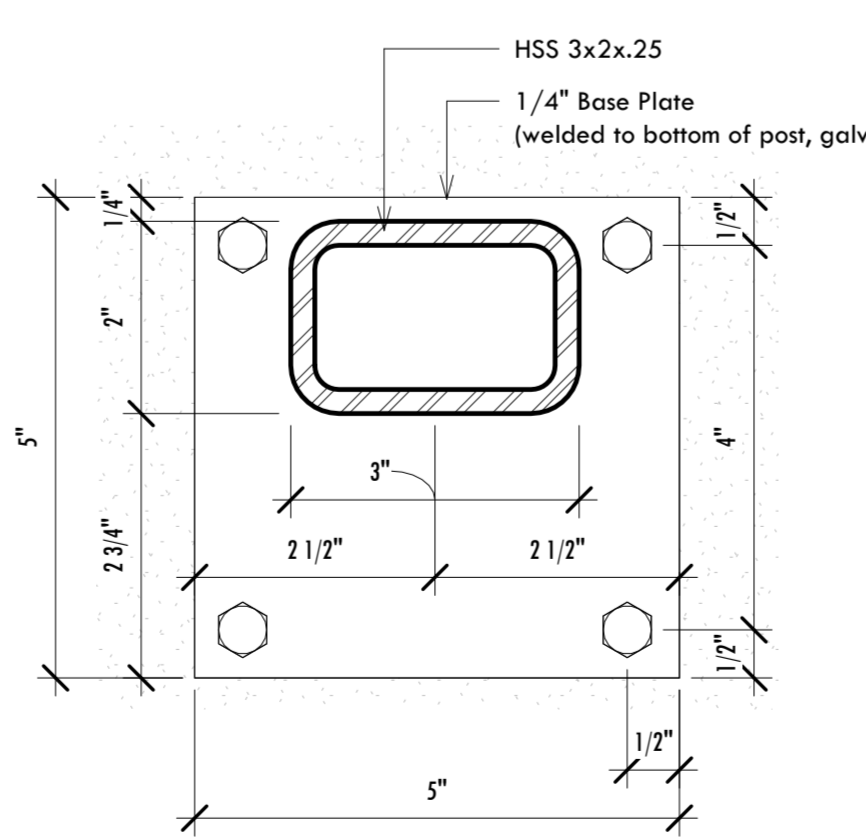
6 01 First Level - Peg Board Dimensions  
1" = 1'-0"



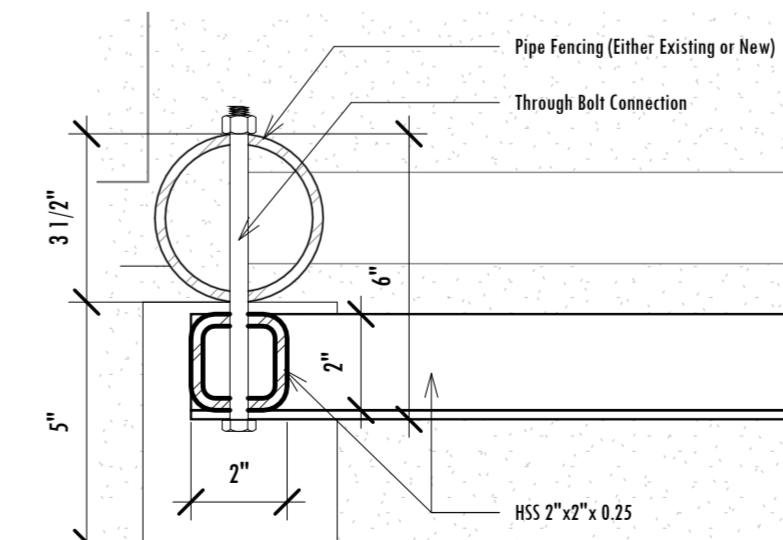
5 Section - Chainlink Hanging Wall Bottom  
1 1/2" = 1'-0"



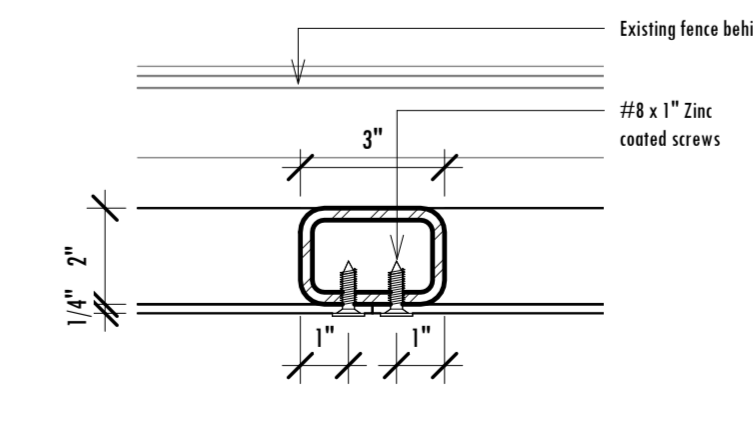
13 01 First Level - Peg Board Base 2x2 Typ.  
6" = 1'-0"



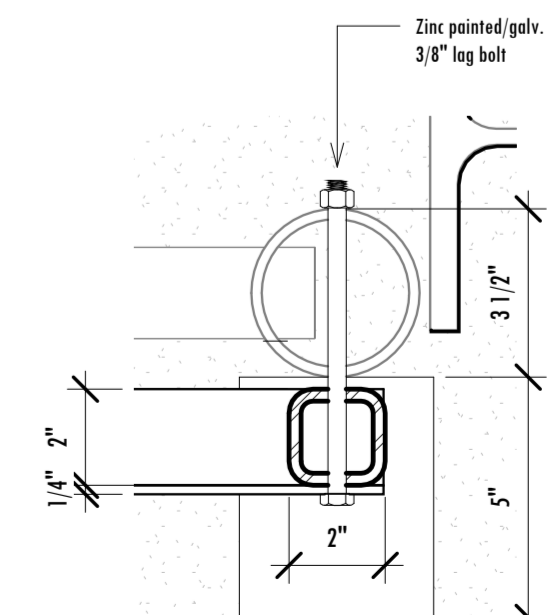
14 01 First Level - Peg Board Base 3x2 Typ.  
6" = 1'-0"



9 01 First Level - Peg Board Connection  
3" = 1'-0"



2 01 First Level - Peg Board Dimensions Center  
3" = 1'-0"



11 01 First Level - Peg Board HSS Screws Typ.  
3" = 1'-0"



A502

Scale As Indicated

Gatehouse - Sallyport  
Maine State Prison - 807 Cushing Rd, Warren, ME 04864  
FENCING DETAILS

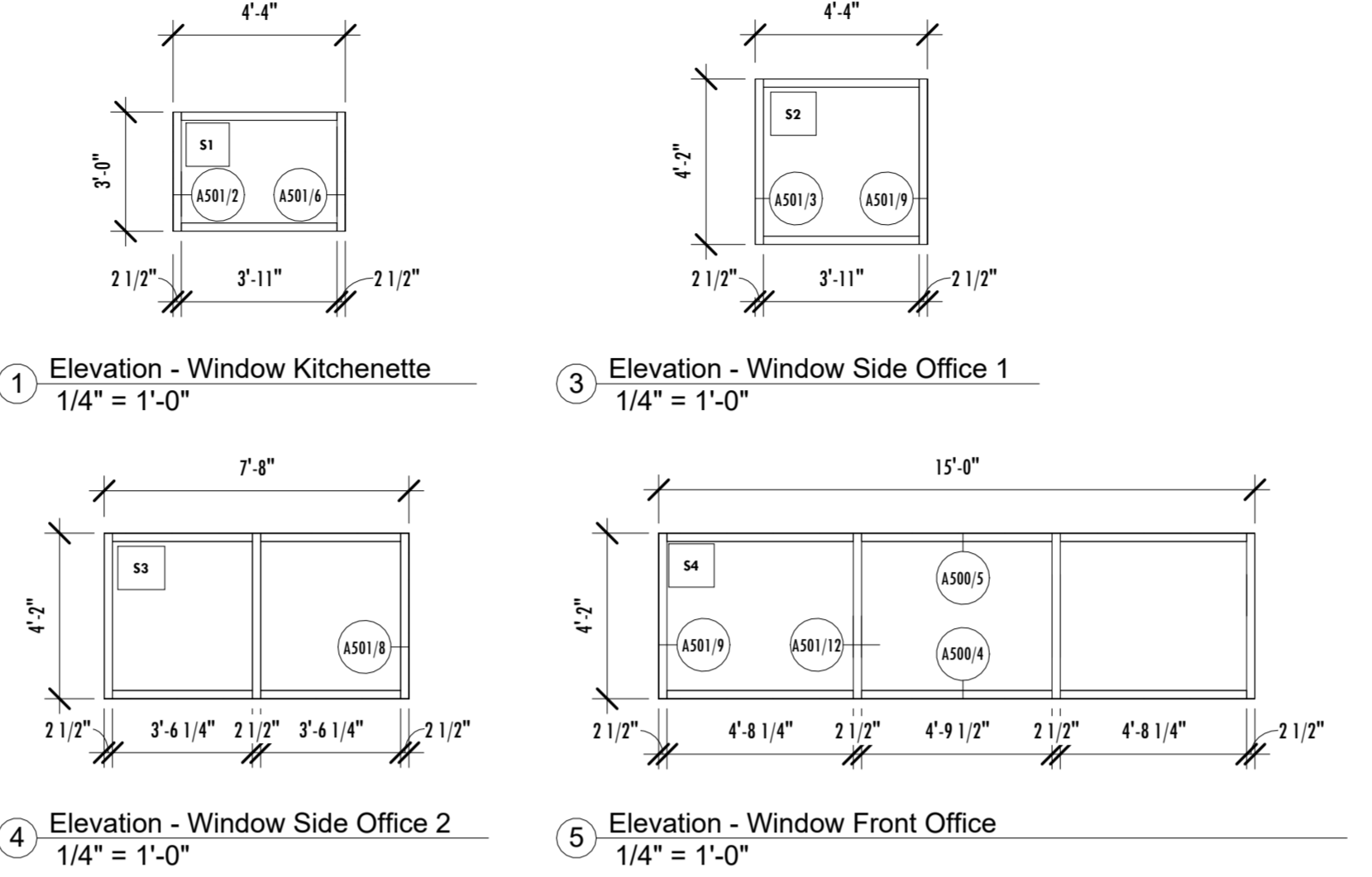
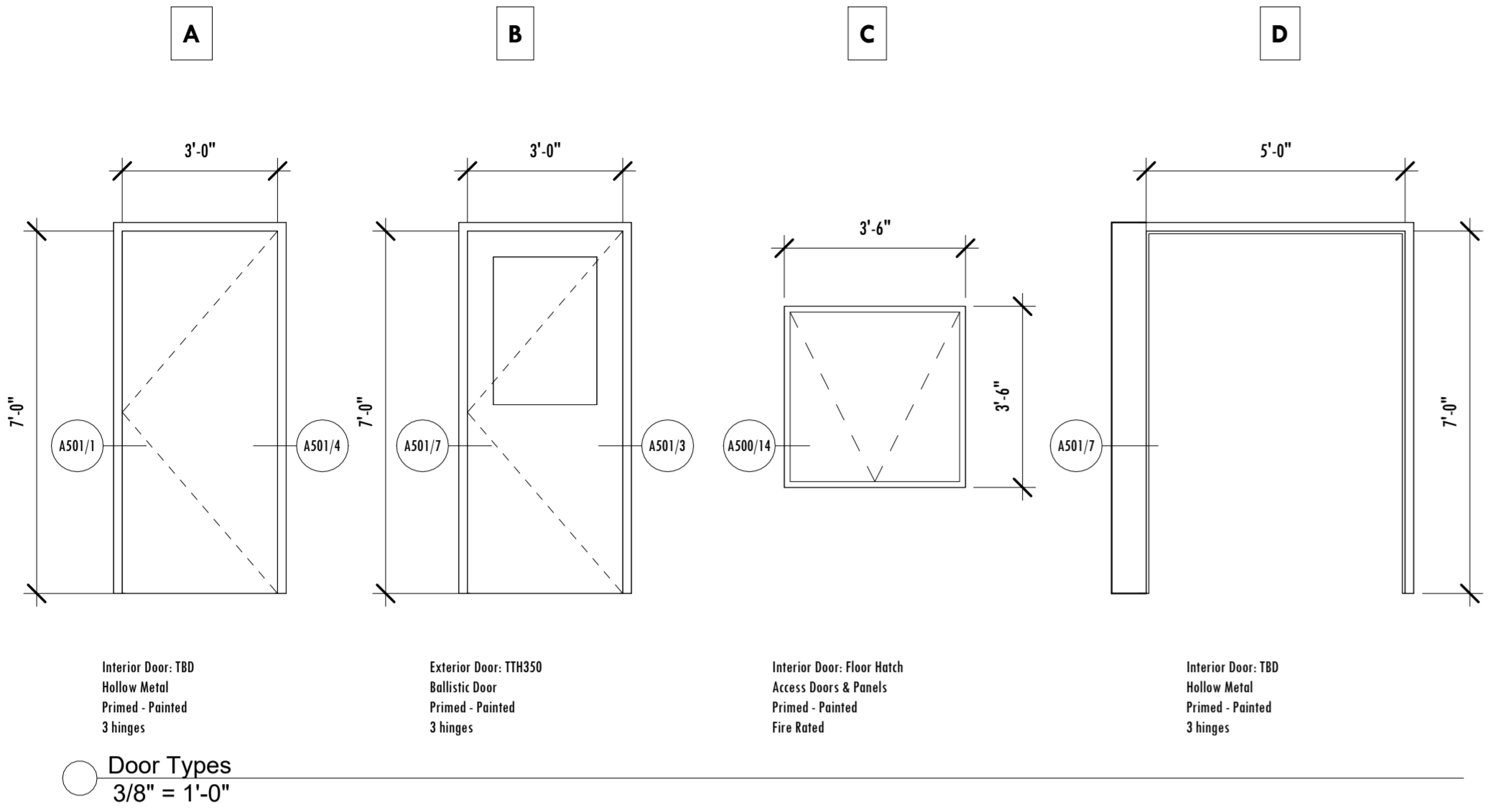
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Door Schedule							
Door #	Door Style	Mat'l	Function	Width	Height	Thickness	Comments
100	B	Aluminum	Entry Lock	3'-0"	7'-0"	0" - 1 3/4"	Bullet resistant glass and impact resistance
101	D	Hollow Metal	N/A	4'-0"	7'-0"	0" - 1 3/4"	
102	A	Hollow Metal	Privacy Lock	3'-0"	7'-0"	0" - 1 3/4"	
200	C	Steel	Hatch	3'-0"	1'-0"		Hatch Door

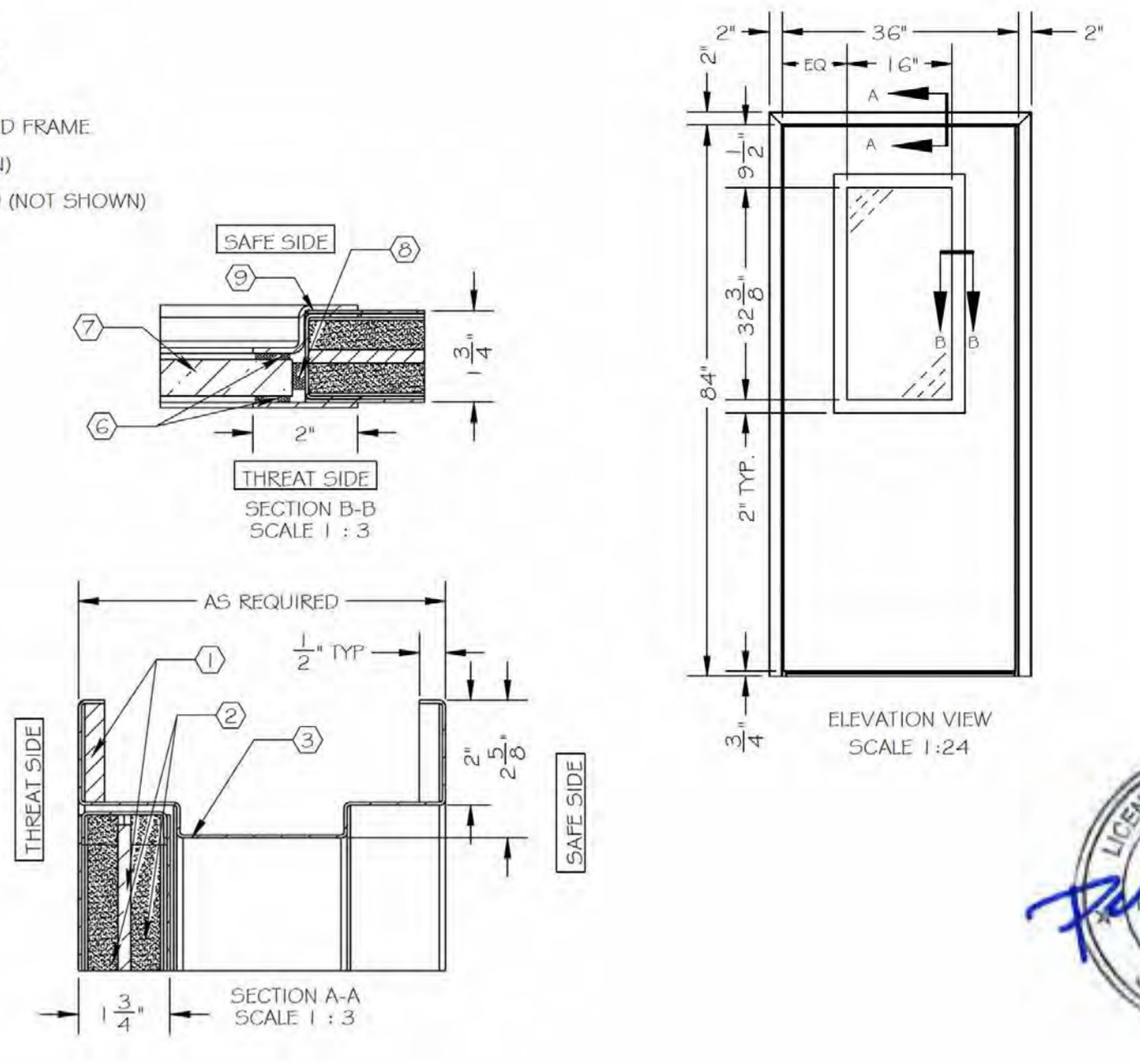
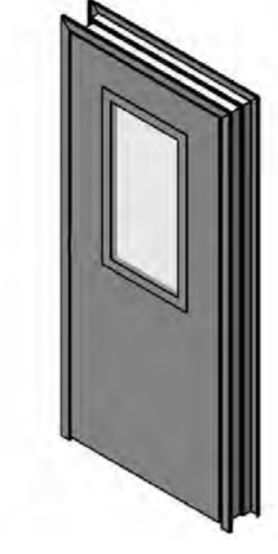
Room Finish Schedule							
Num.	Name	Area	Ceiling Height	Ceiling Mat'l	Floor Mat'l	Base Mat'l	Wall Finish
100	Office	116 SF	8'-0"	CLT	LVT	Steel Plate (PT)	CLT
101	Kitchenette	42 SF	8'-0"	CLT	LVT	Steel Plate (PT)	CLT
102	Bathroom	45 SF	8'-0"	CLT	LVT	Steel Plate (PT)	CLT
200	Storage	221 SF					

**WINDOW TYPES - STOREFRONT**



**NOTES:**

- ① BULLET RESISTANT ARMOR
- ② FOAMED INSULATION
- ③ 1 G GA. PRIME PAINTED STEEL DOOR AND FRAME
- ④ CONTINUOUS GEAR HINGE (NOT SHOWN)
- ⑤ HARDWARE PREPARATION AS REQUIRED (NOT SHOWN)
- ⑥ GLAZING TAPE
- ⑦ BULLET RESISTANT GLAZING
- ⑧ NEOPRENE SETTING BLOCK
- ⑨ LITE KIT

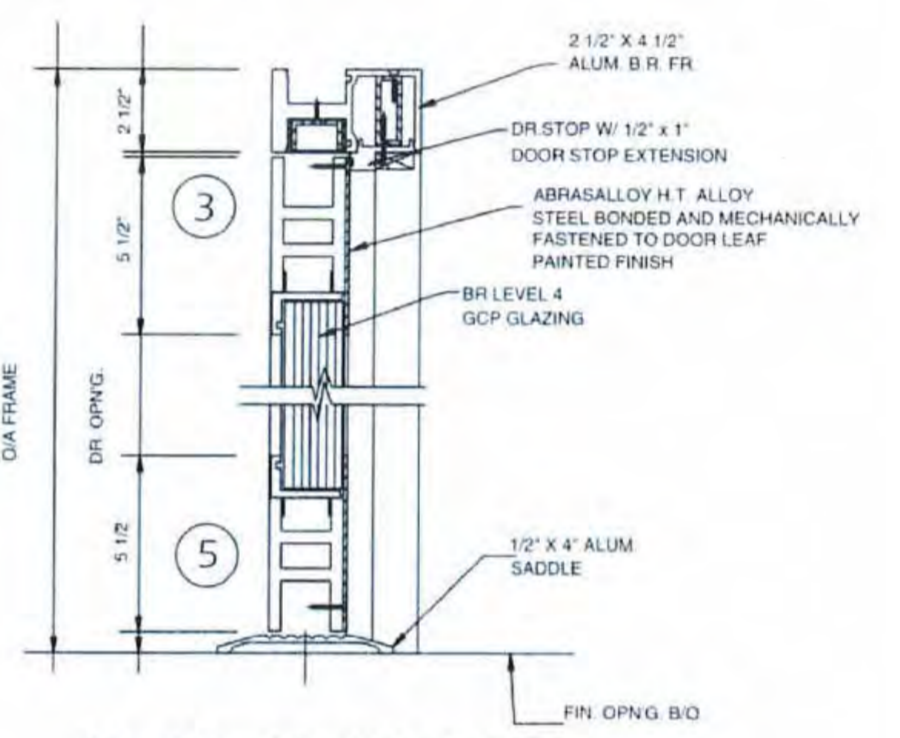


Furniture Schedule					
Model	Model Type	Manufacturer	Finish	Count	Comments
C1	Chair	Buzz Seating		2	See Exterus
F1	File Cabinet			3	See Exterus
F2	File Cabinet			2	See Exterus
F3	File Cabinet			2	See Exterus
T1	Table			2	See Exterus
WHTB	Whiteboard			1	See Exterus

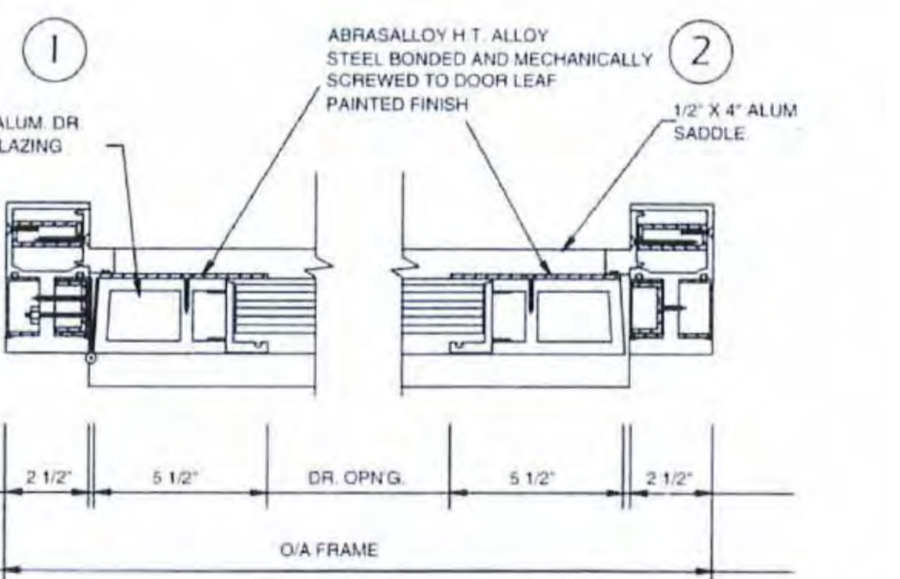
Specialty Equipment Schedule					
Type Mark	Manufacturer	Finish	Count	Comments	
HVAC	Seiko		1	See specifications	
LADDER			1	See specifications	
STOR	Spacesaver		1	See specifications	
R.LOCK	Spacesaver		1	See specifications	
FRDG			1	See specifications	
MICRO			1	See specifications	

Plumbing Fixture Schedule						
Type Mark	Type	Count	Model	Finish	Manufacturer	Comments
BF1	Bathroom Faucet	1	B-8898	Polished Chrome	Bobrick	Coordinate with P501 in MEP
KF1	Kitchen Faucet	1	K-10433-BN	Polished Chrome	KOHLER Co.	Coordinate with P501 in MEP
KS1	Kitchen Sink	1	NA	Stainless Steel	Kohler Co.	Coordinate with P501 in MEP
MIRROR	Bathroom Mirror	1	B-165 1836	Stainless Steel	Bobrick	Coordinate with P501 in MEP
PT	Paper Towel Dispenser	1	B-9262	Stainless Steel	Bobrick	Coordinate with P501 in MEP
SBASE	Sink Base	1	NA	Stainless Steel	KOHLER Co.	Coordinate with P501 in MEP
SD	Soap Dispenser	1	B-2111	Stainless Steel	Bobrick	Coordinate with P501 in MEP
TP	Toilet Paper Dispenser	1	B-6699	Stainless Steel	Bobrick	Coordinate with P501 in MEP
WASTE	Waste Basket	1	B-2260	Stainless Steel	Bobrick	Coordinate with P501 in MEP
WC	Water Closet	1	NA	White	KOHLER Co.	Coordinate with P501 in MEP

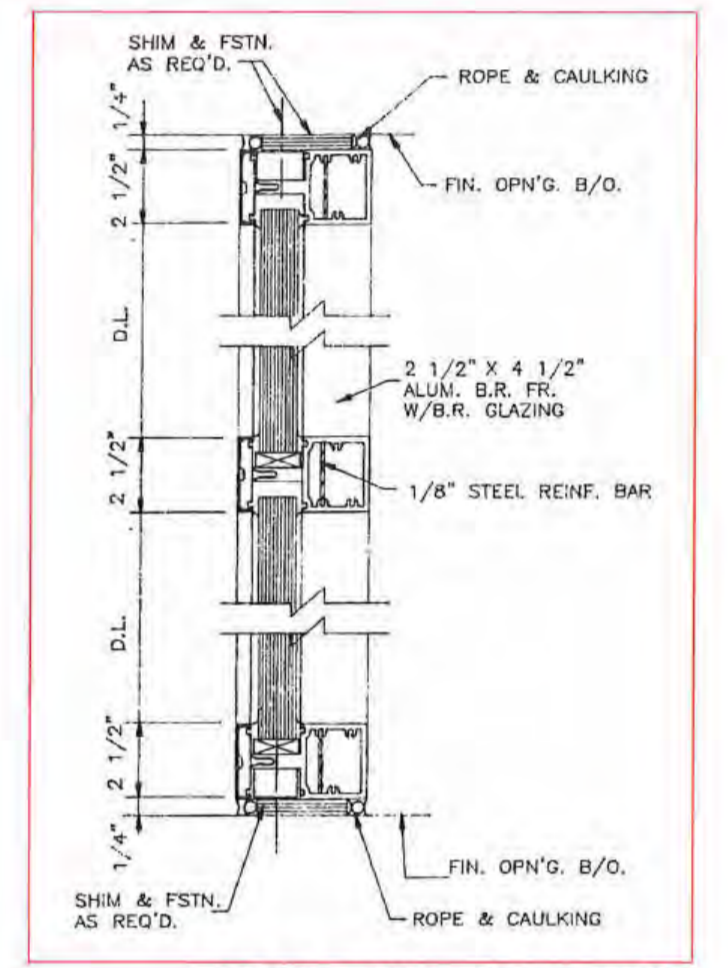
Casework Schedule							
Type Mark	Casework Type	Count	Finish	Width	Depth	Height	Comments
B1824	Base Single Swing	1	Wood Veneer	1' - 6"	2' - 0"	2' - 10"	
W2243	Tall Cabinet	1	Wood Veneer	1' - 11"	2' - 0"	2' - 7"	
B2024M	Base 2 Drawer w/ Micro	1	Wood Veneer	1' - 8"	2' - 0"	2' - 10"	
WPERF	Wall Casework w/ Perf Panel	1	Wood Veneer	1' - 11"	2' - 0"	1' - 8"	
F	Filler	1	Wood Veneer	0' - 3"	2' - 0"	2' - 10"	



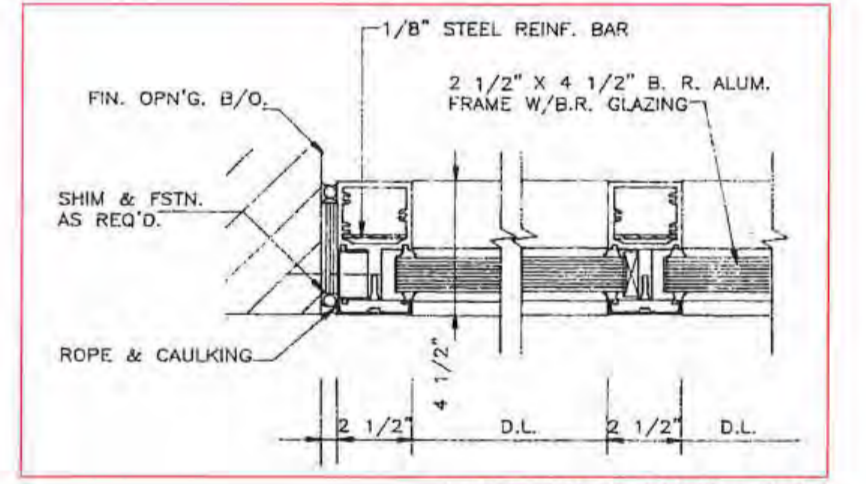
**Head And Saddle Detail**



**Door Jamb Detail**



**Head, Sill and Horizontal Mullion Detail**



**Jamb and Vertical Mullion Detail**



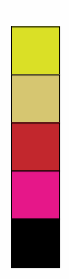
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Scale As Indicated

Gatehouse - Sallyport  
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**SCHEDULES + TYPES**

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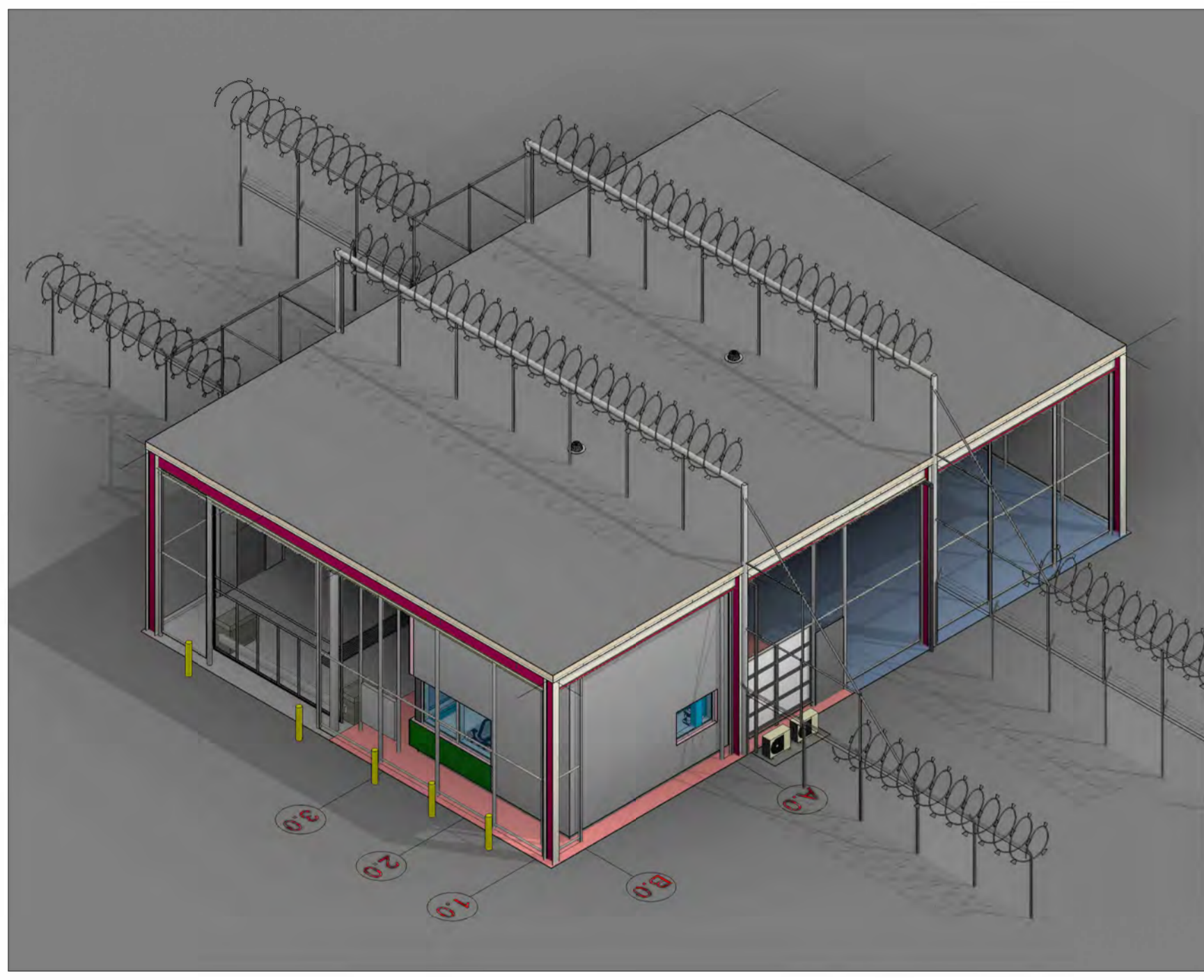
**PAULDESIGNSPROJECT**  
5-26-26



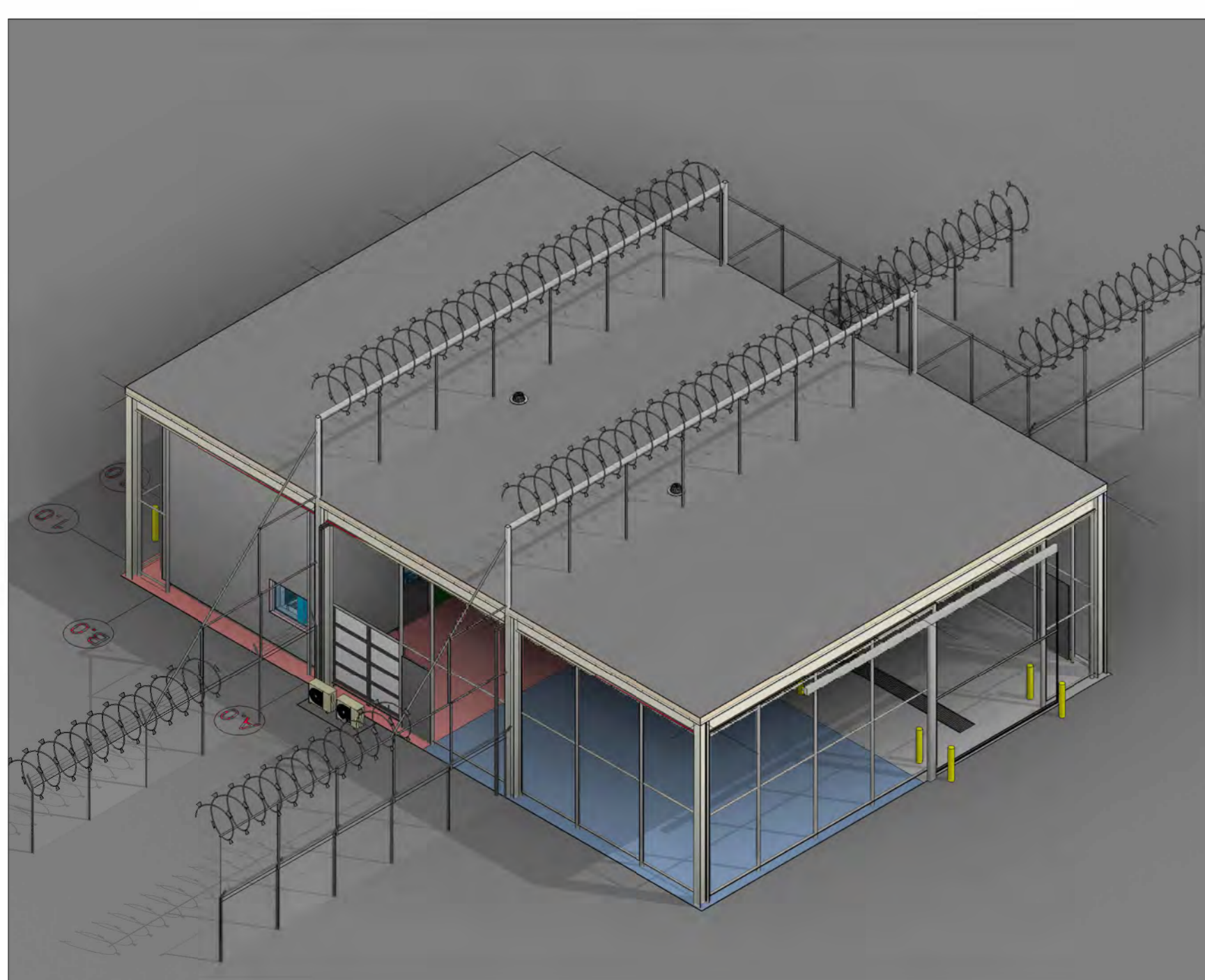
5/26/2026 1:48:00 PM © 2025 Paul Designs Project Sheet Size: D 34 in x 36 in



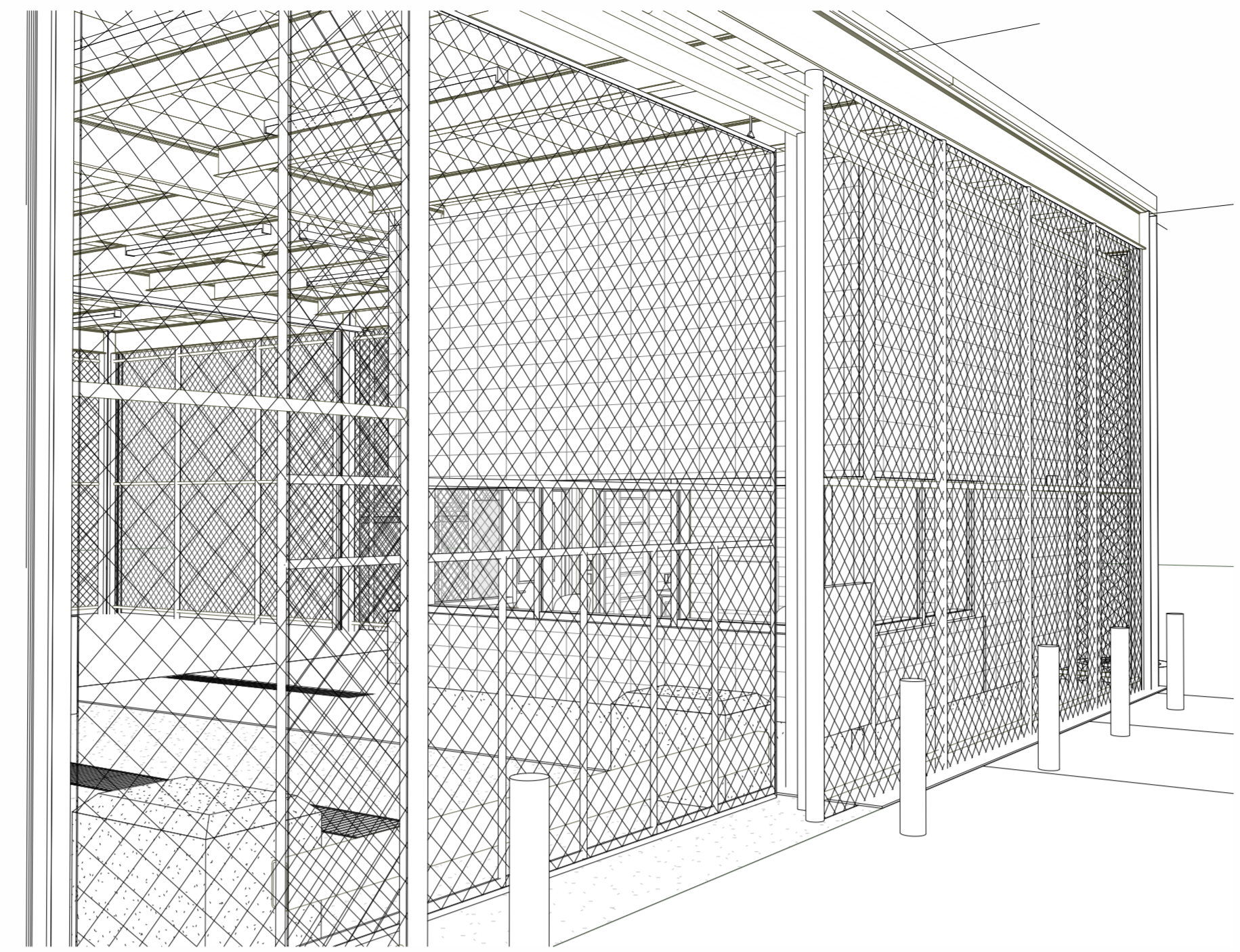
1 Axon



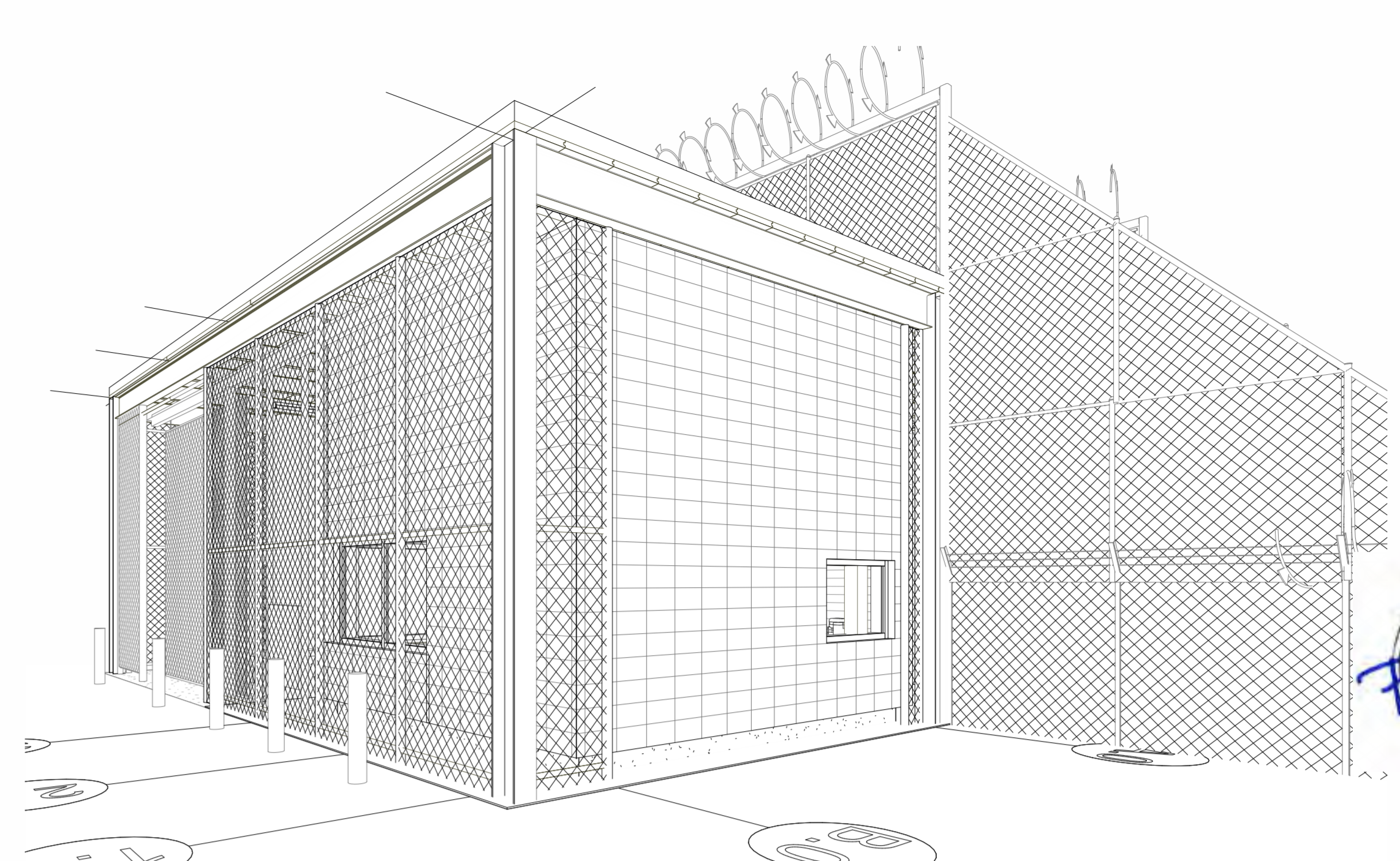
2 Axon Copy 1



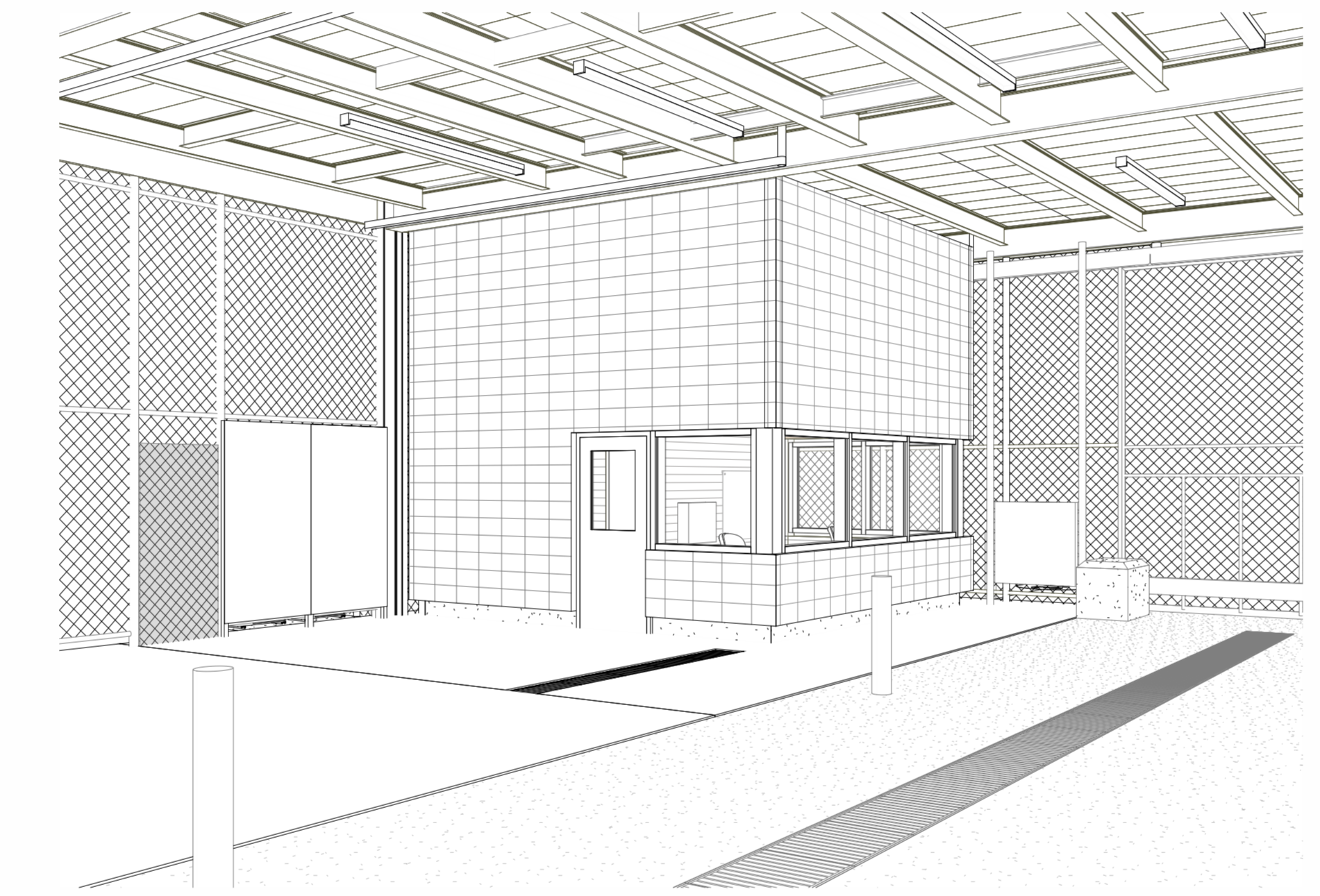
3 Axon Copy 1 Copy 1



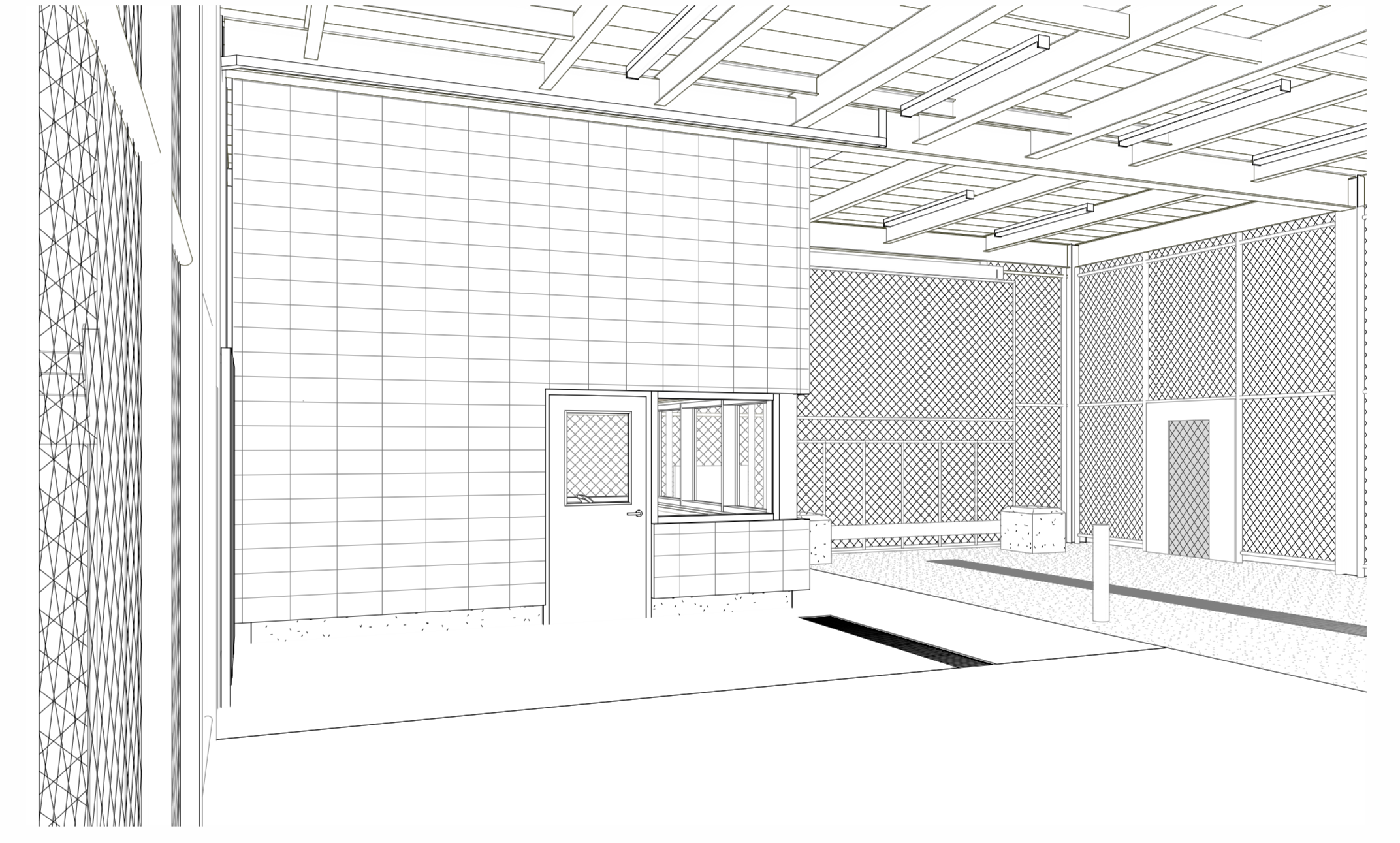
4 3D View 1



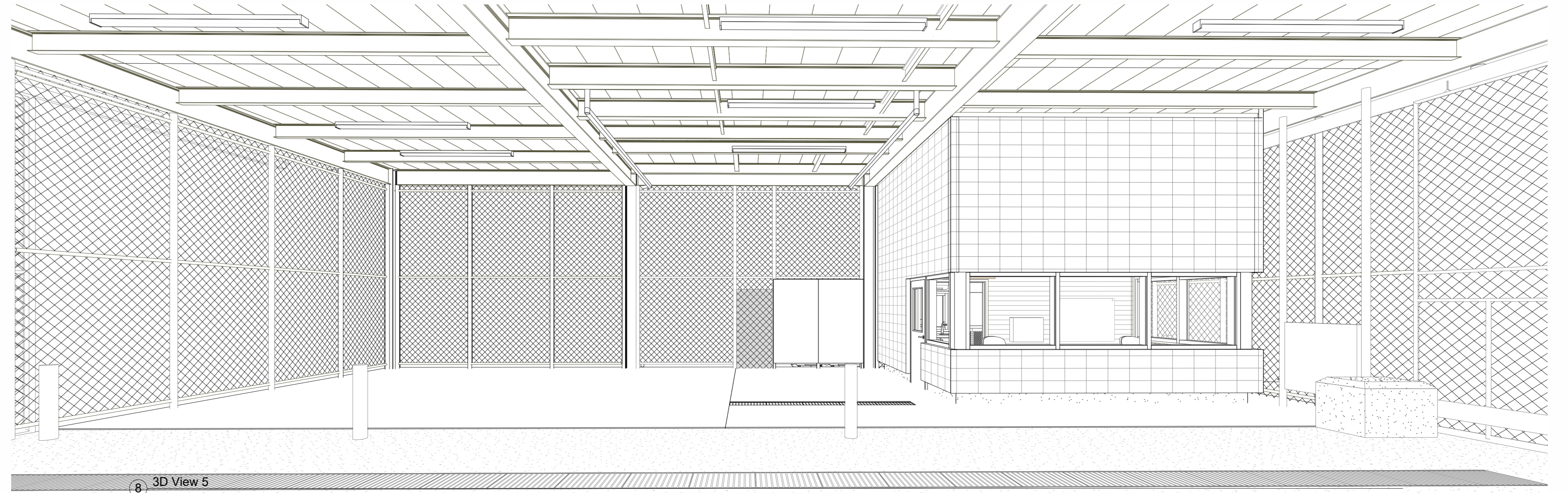
5 3D View 2



6 3D View 3



7 3D View 4



8 3D View 5

A900

Scale



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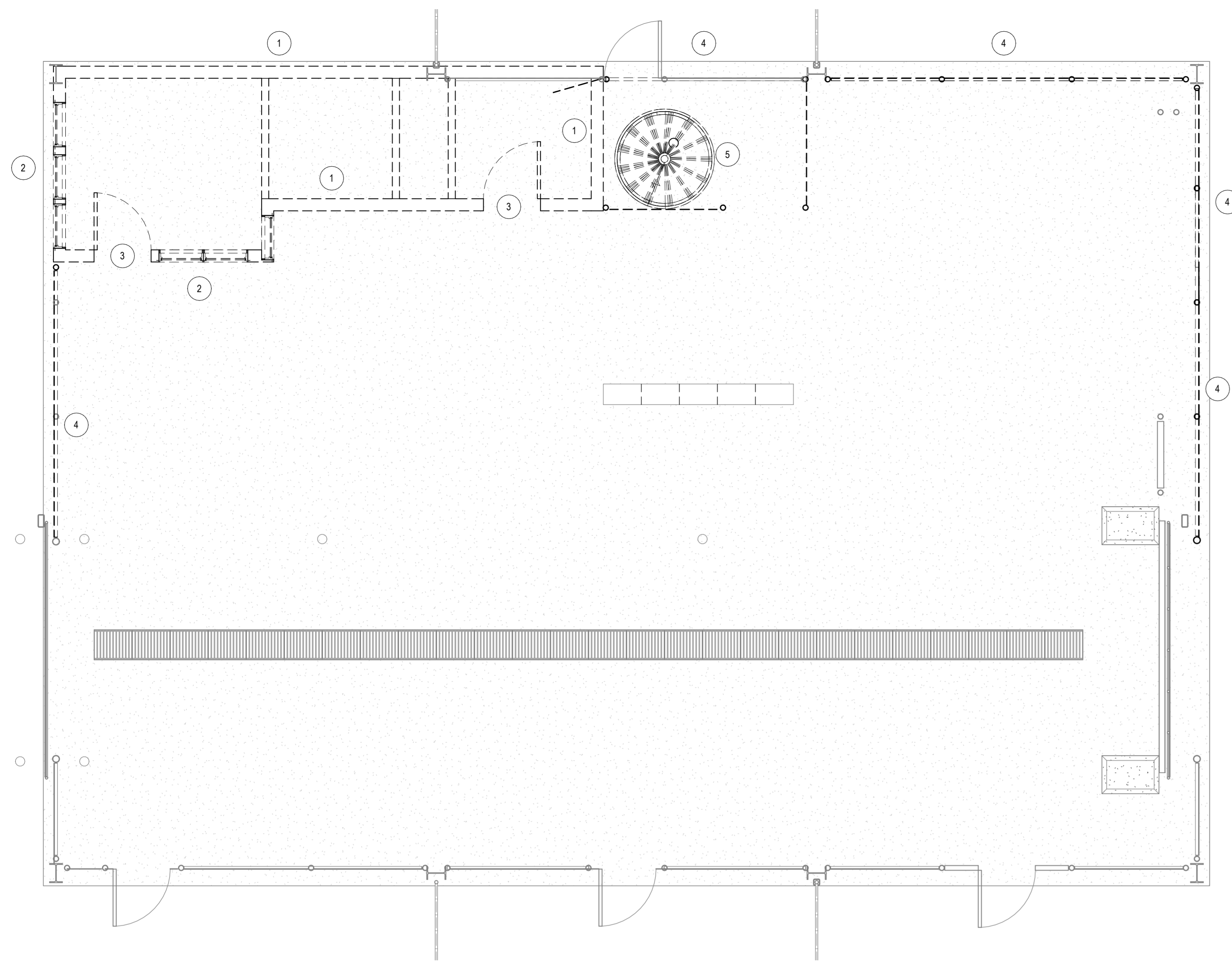
PERSPECTIVES

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1 01 First Level - Full Station Demolition  
1/4" = 1'-0"

**DEMOLITION LEGEND:**

- (S1) DEMOLITION NOTE
- EXISTING CONSTRUCTION TO REMAIN
- - - - - EXISTING CONSTRUCTION TO BE REMOVED

**DEMOLITION NOTES:**

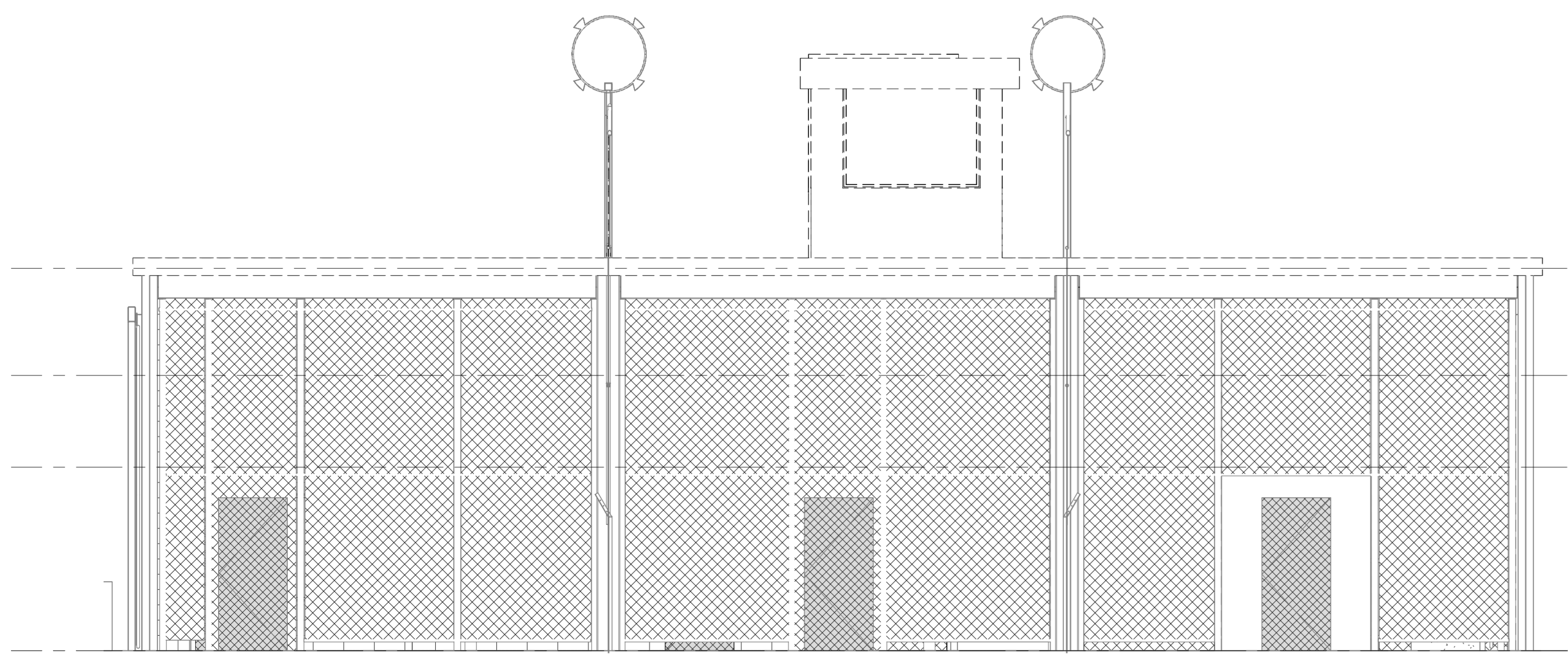
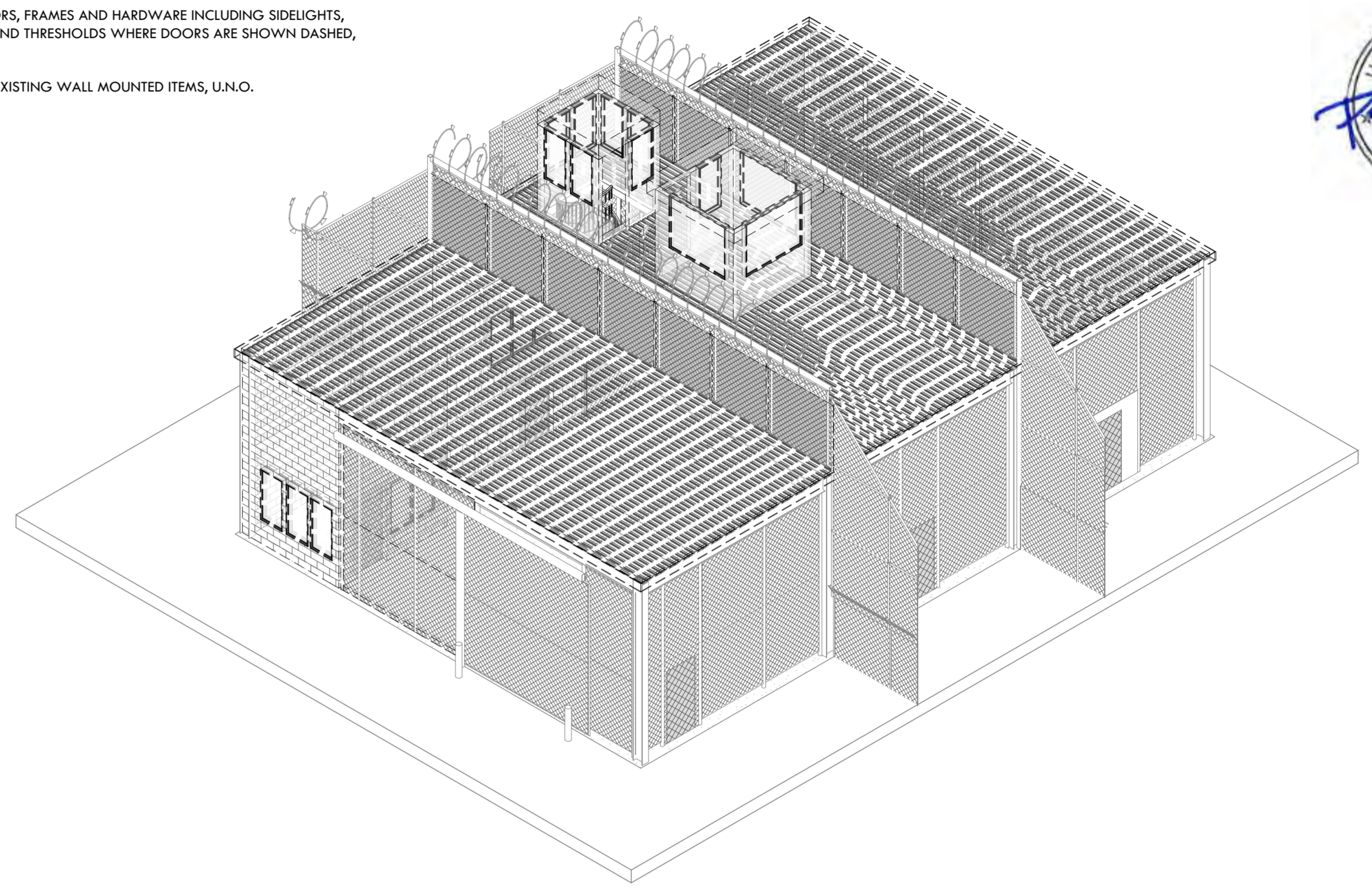
- ALL PENETRATIONS, OPENINGS, OR DAMAGE RESULTING FROM DEMOLITION TO COMPLETE THE SCOPE OF WORK SHALL BE PATCHED/REPAIRED.
- DASHED LINES REPRESENT ITEMS TO BE REMOVED, U.N.O.
- REMOVE PARTITIONS TO STRUCTURE ABOVE, U.N.O.
- REMOVE DOORS, FRAMES AND HARDWARE INCLUDING SIDELIGHTS, TRANSOMS, AND THRESHOLDS WHERE DOORS ARE SHOWN DASHED, U.N.O.
- REMOVE ALL EXISTING WALL MOUNTED ITEMS, U.N.O.

**DEMOLITION NOTE SCHEDULE:**

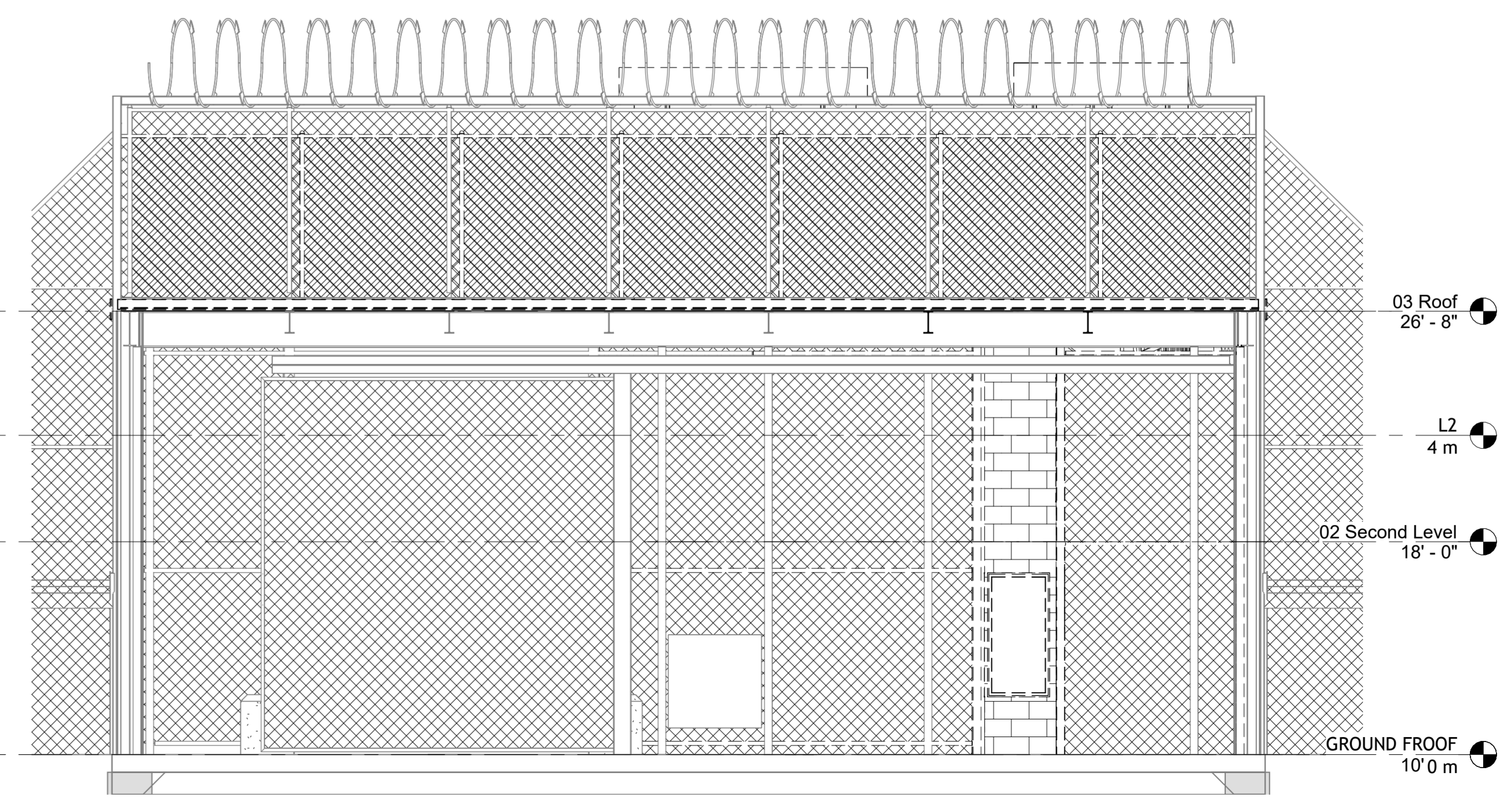
1. Remove Existing Wall/Partition
2. Remove Windows, Fill if Necessary
3. Remove Doors, Fill if Necessary
4. Remove Fencing
5. Remove Stairs
6. Remove Structural Spanning Members
7. Remove Guard Tower
8. Remove Roof and Decking
9. Remove or Replace Existing Roof Utility

- Remove all existing constructions and finishes necessary for the completion of the work as depicted on the drawings, including but not limited to, items shown on the plans with dashed lines. necessary disconnects and alterations to existing mechanical and electrical systems shall be included. patch as required all constructions to remain in accordance with the contract drawings. where contractor is designated to make removals, disposition of materials is the responsibility of the contractor. verify with owner, the disposition and removal of any components of salvageable value.

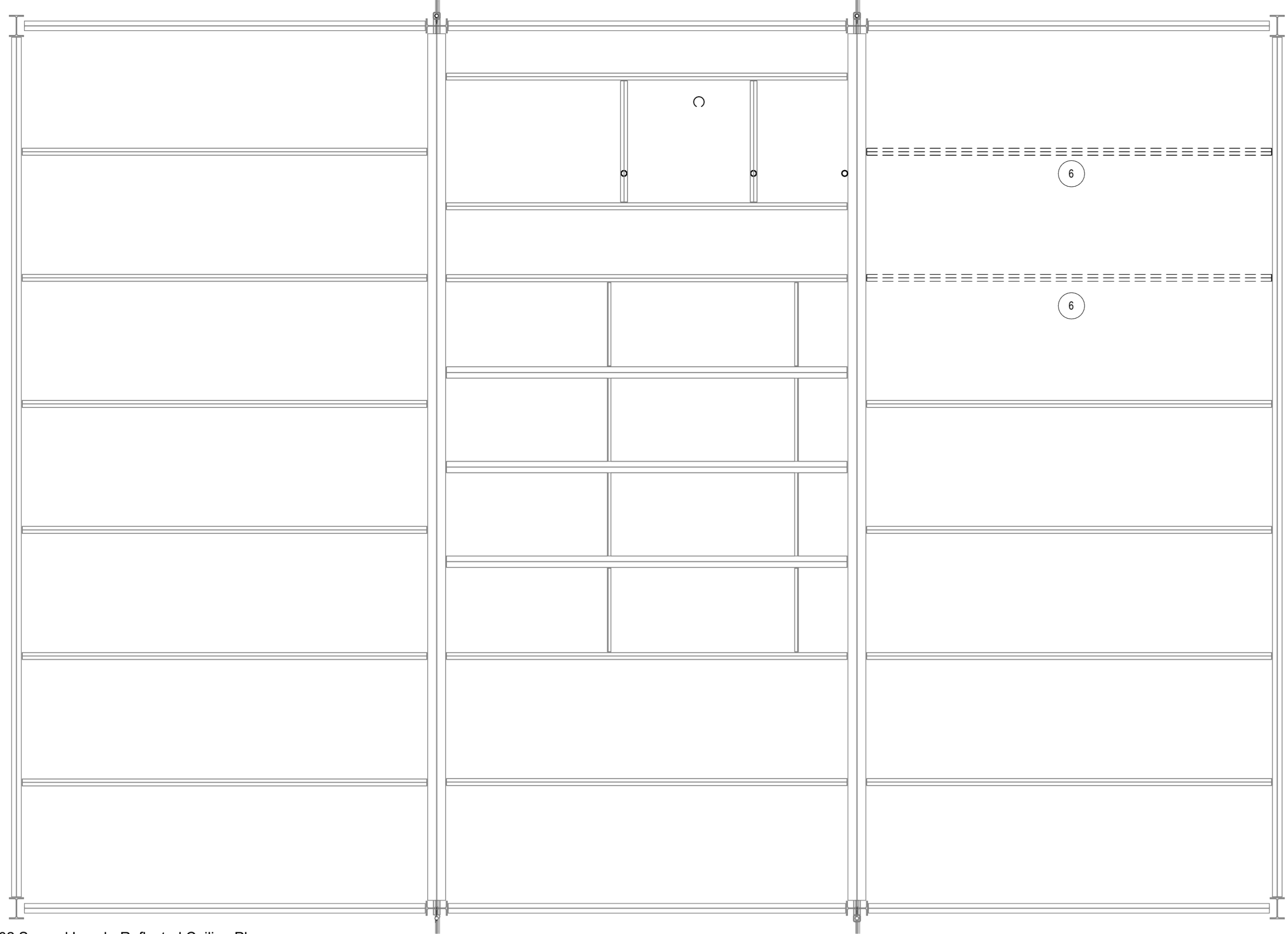
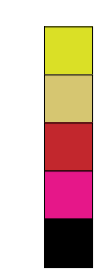
- All removals and salvage, unless specifically noted or requested by the owner shall become the property of the contractor.



2 Elevation - Sallyport Longitudinal Demo  
1/4" = 1'-0"



3 Elevation - Sallyport Cross Demo  
1/4" = 1'-0"



**DEMOLITION LEGEND:**

- (S1) DEMOLITION NOTE
- EXISTING CONSTRUCTION TO REMAIN
- - - - EXISTING CONSTRUCTION TO BE REMOVED

**DEMOLITION NOTES:**

ALL PENETRATIONS, OPENINGS, OR DAMAGE RESULTING FROM DEMOLITION TO COMPLETE THE SCOPE OF WORK SHALL BE PATCHED/REPAIRED.

DASHED LINES REPRESENT ITEMS TO BE REMOVED, U.N.O.

REMOVE PARTITIONS TO STRUCTURE ABOVE, U.N.O.

REMOVE DOORS, FRAMES AND HARDWARE INCLUDING SIDELIGHTS, TRANSOMS, AND THRESHOLDS WHERE DOORS ARE SHOWN DASHED, U.N.O.

REMOVE ALL EXISTING WALL MOUNTED ITEMS, U.N.O.

**DEMOLITION NOTE SCHEDULE:**

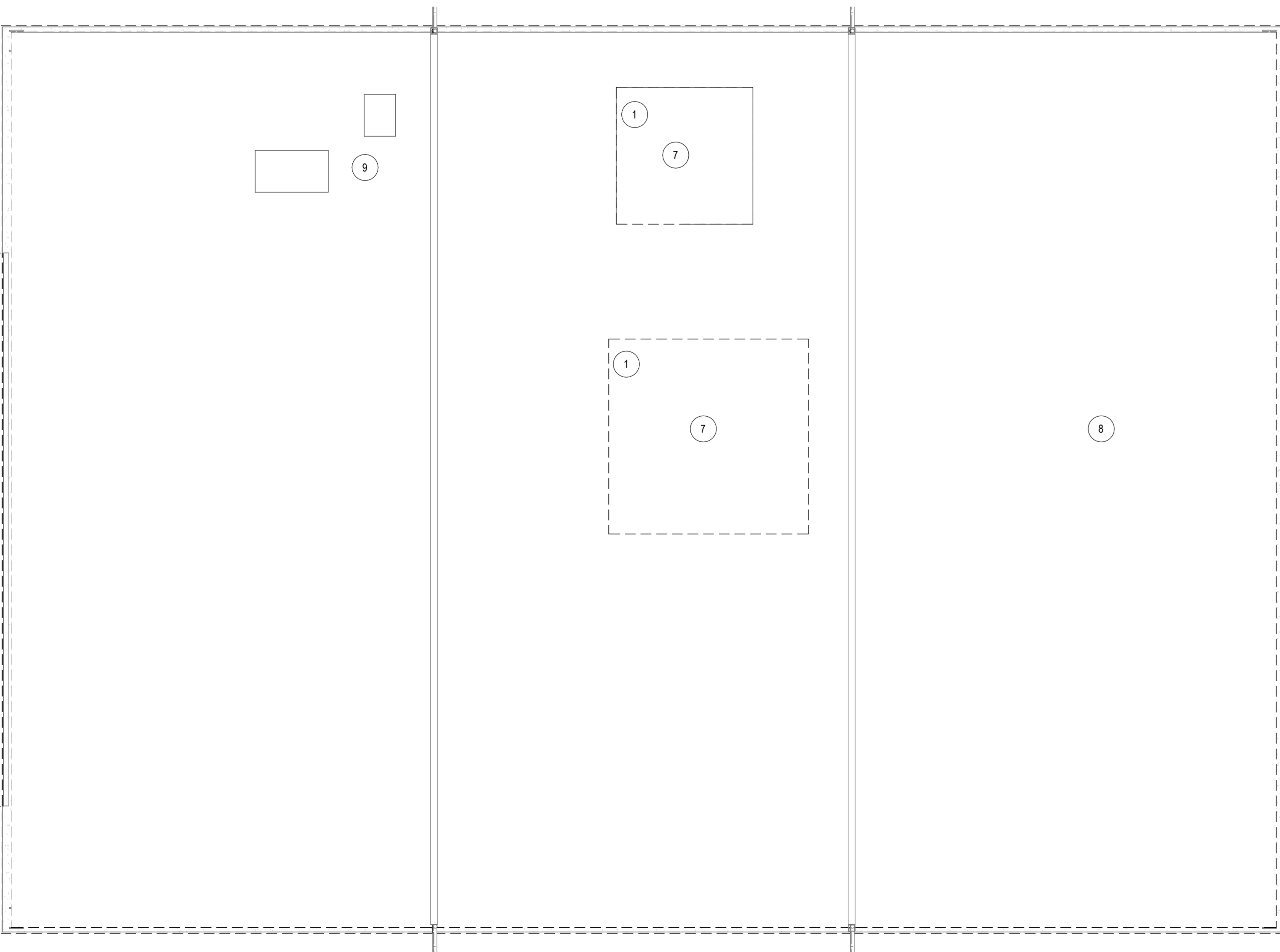
1. Remove Existing Wall/Partition
2. Remove Windows, Fill if Necessary
3. Remove Doors, Fill if Necessary
4. Remove Fencing
5. Remove Stairs
6. Remove Structural Spanning Members
7. Remove Guard Tower
8. Remove Roof and Decking
9. Remove or Replace Existing Roof Utility

- Remove all existing constructions and finishes necessary for the completion of the work as depicted on the drawings, including but not limited to, items shown on the plans with dashed lines. necessary disconnects and alterations to existing mechanical and electrical systems shall be included. patch as required all constructions to remain in accordance with the contract drawings. where contractor is designated to make removals, disposition of materials is the responsibility of the contractor. verify with owner, the disposition and removal of any components of salvageable value.

- All removals and salvage, unless specifically noted or requested by the owner shall become the property of the contractor.

02 Second Level - Reflected Ceiling Plan

1 Demo  
1/4" = 1'-0"



2 Site - Roof Demo  
1/4" = 1'-0"



**GENERAL STRUCTURAL NOTES**

- The notes on these drawings are not intended to replace specifications. See specifications for requirements in addition to general notes. Any inconsistencies between these drawings and the specifications shall be brought to the attention of the Engineer prior to proceeding with the affected portion of the work.
- Editions of material standards referenced on this drawing shall be as indicated in the building codes.
- Structural drawings shall be used in conjunction with all other project drawings and specifications. Consult all other project documents for locations and dimensions of openings, chases, inserts, reglets, sleeves, depressions, and other details not shown on structural drawings.
- All dimensions, existing conditions, and as-built conditions must be verified in the field. Any discrepancies shall be brought to the attention of the Architect/Structural Engineer before proceeding with the affected part of the work.
- Sections and details shown on any drawings shall be considered typical for similar conditions as determined by the Structural Engineer.
- All applicable federal, state, and municipal regulations shall be followed, including the Federal Department of Labor Occupational Safety and Health Act.
- The structure is designed to be self-supporting and stable only after the structural work contained in the structural drawings is completed. It is the Contractor's sole responsibility to determine erection procedures and sequencing to ensure safety during construction, including any required shoring, sheeting, temporary bracing, guys, or tie-downs. Such materials shall remain the property of the Contractor after completion of the project.
- Reference the project specifications for submittal and testing requirements.

**DESIGN LOADS**

- Building Code
  - Maine Uniform Building and Energy Code
  - International Building Code, 2015 Edition
  - International Existing Building Code, 2015 Edition
  - ASCE 7-10: Minimum Design Loads for Buildings and Other Structures
  - Risk Category: II
- Design Roof Snow Load
  - Ground snow load (Pg): 60 psf
  - Snow exposure factor (Ce): 1.0
  - Importance factor (I<sub>s</sub>): 1.0
  - Thermal factor (Ct): 1.1
  - Flat roof snow load (Pf): 46.2 psf
- Drifts and drift widths have been included in accordance with ASCE 7-10, Section 7.7.
- Design Wind Load
  - Ultimate design wind speed (Vult): 116 mph
  - Nominal design wind speed (Vasd): 90 mph
  - Exposure: B
  - Internal pressure coefficient: ±0.18
  - Components and cladding per ASCE 7-10 (see tables on this sheet)
- Design Seismic Loads
  - Procedure: Equivalent Lateral Force
  - Seismic importance factor (I<sub>s</sub>): 1.0
  - Mapped spectral accelerations:
    - S<sub>s</sub> = 0.239
    - S<sub>1</sub> = 0.079
  - Site class: C
  - Design spectral response coefficients:
    - SDS = 0.192
    - SD1 = 0.089
  - Seismic design category: B
  - Basic structural system: Bearing wall system
  - Seismic force-resisting system:
    - Light-framed wood shear walls
    - CLT shear walls (designed per AWC SDPWS-21; approved by AHJ 2/22/21)
  - Response modification factor (R): 1.5
  - Seismic response coefficient (Cs): 0.128
  - Seismic base shear (V): 32 kips

**FOUNDATION NOTES (SOIL SUPPORTED)**

- Foundation design is based on shallow spread footings bearing on new compacted structural fill over densified native soil per the geotechnical report.
- Allowable bearing capacity: 3,000 psf
- Extend bottoms of exterior footings at least 5 feet below final exterior grade for frost protection.
- No fill for building support shall be placed until subgrades have been observed and approved by the Geotechnical Engineer.
- Protect exposed soils at the base of foundation excavations from rain, frost, or disturbance. Provide drainage and dewatering as required.
- Excavations shall comply with OSHA requirements. Do not undermine adjacent foundations.

**CONCRETE NOTES**

- Materials and Placement**
- Concrete work shall conform to ACI 318, ACI 301, and the ACI Manual of Concrete Practice.
  - Minimum 28-day compressive strengths:
    - Foundations: 3,500 psi
    - Interior slabs: 3,000 psi
    - Exterior slabs-on-grade: 5,000 psi
  - Concrete shall not be placed in water or on frozen ground.
  - Reinforcing bars: ASTM A615, Grade 60, detailed per ACI 315.
  - Welded wire fabric: ASTM A185, flat sheets; lap two squares at joints; tie at 3'-0" o.c.
  - Fiber reinforcement: ASTM C1116 Type II synthetic polypropylene.
- Concrete Cover (Minimum)**
- Cast against earth: 3"
  - Formed surfaces exposed to earth or weather:
    - #5 and smaller: 1 1/2"
    - #6-#11: 2"
  - Interior surfaces:
    - Walls, slabs, joists (#11 and smaller): 1"
    - Beams, girders, columns: 1 1/2"

**Joints and Reinforcement**

- Reinforcement shall be continuous around corners and intersections. Welding is not permitted unless noted.
- Construction and contraction joints shown are mandatory.
- Joint spacing (unless noted otherwise):
  - Foundations and walls: max 40'-0" or 15'-0" from corners
  - Slabs on grade: max spacing = 36 × slab depth; plan aspect ratio ≤ 1.5

**Anchors and Accessories**

- Anchor rods:
  - Structural steel: ASTM F1554, Grade 36
  - Sill plates: ASTM A307
  - In contact with PT lumbers: hot-dip galvanized
  - Grout under base plates: 5,000-psi minimum non-shrink grout.
- Provide 20-mil polyolefin vapor retarder (ASTM E1745 Class A) where required.
- No penetrations through footings without approval.
- Wet-setting of embedments is strictly prohibited.

**STRUCTURAL STEEL NOTES**

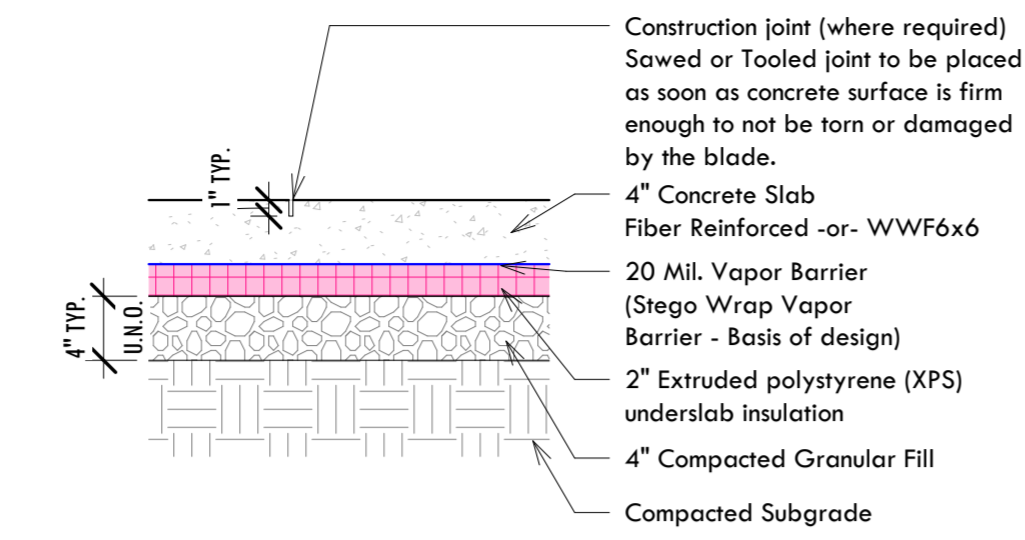
- Structural steel shall conform to ANSI/AISC 360 and AISC 303.
- Material specifications:
  - Plates, shapes, bars: ASTM A36
  - Wide-flange shapes: ASTM A992
  - HSS: ASTM A500 Grade C
  - Pipe: ASTM A53 Grade B
  - Bolted connections: 3/4" ASTM F3125 Grade A325 (U.N.O.).
  - Welding: AWS D1.1; E70XX electrodes.
  - Provide leveling plates and non-shrink grout under all base plates (U.N.O.).
  - Coat steel encased in concrete or below grade with approved bituminous coating.

**WOOD FRAMING NOTES**

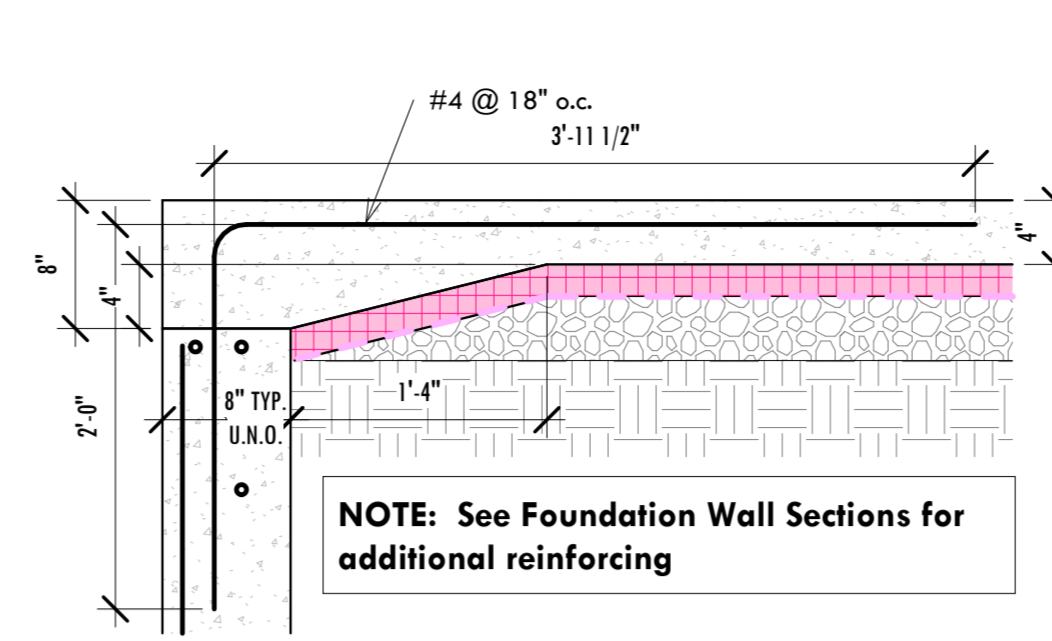
- (Formatted, clarified, and standardized for code compliance—content unchanged.)
- Design per NDS and APA standards
  - Lumber: No. 2 SPF or better, kiln-dried to 19% max moisture
  - Structural composite lumber: LVL, PS, LSL (approved manufacturers)
  - Sheathing: Rated Exposure 1; thickness and nailing per application
  - Fasteners: ASTM F1667; hot-dip galvanized or stainless where required
  - All connectors: Simpson Strong-Tie or approved equal, G-90 or G-185 as applicable

**CROSS-LAMINATED TIMBER (CLT)**

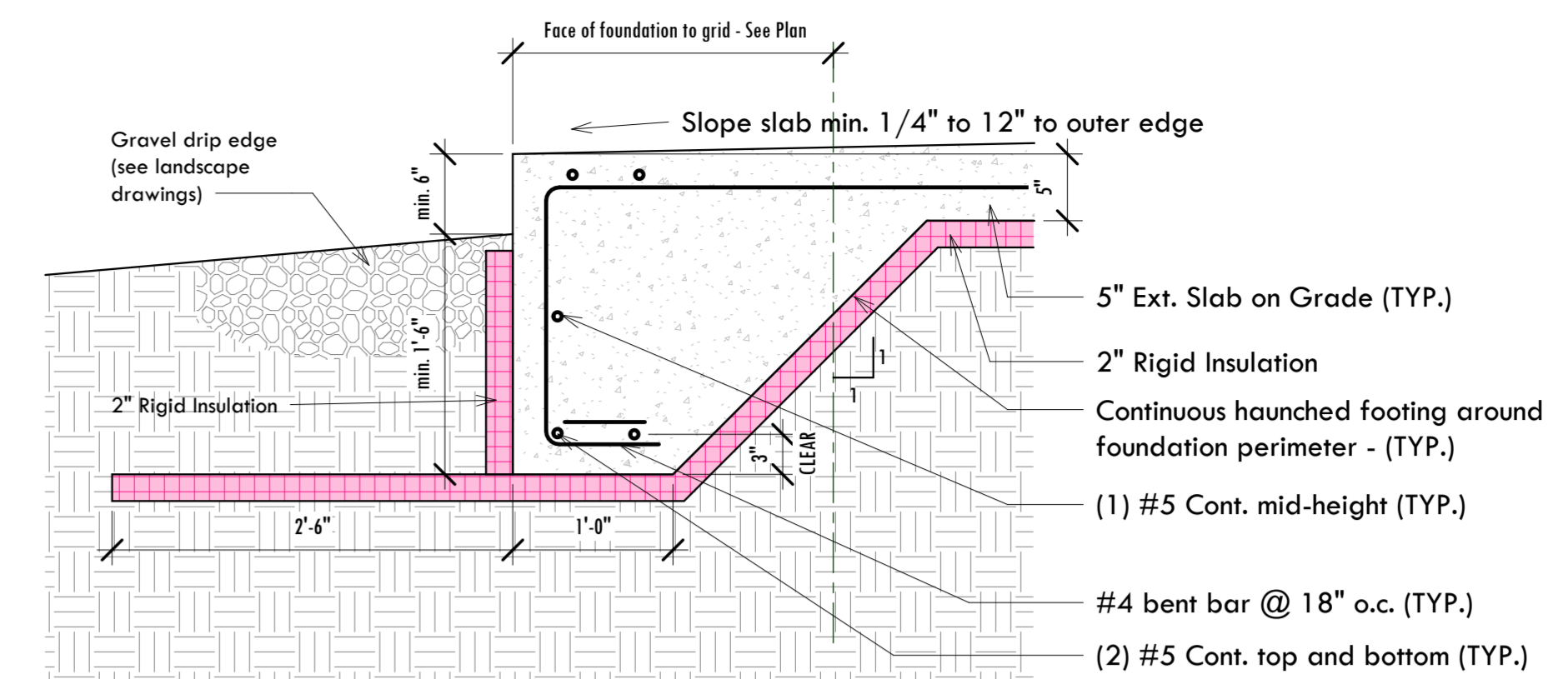
- Design and erection per AITC Timber Construction Manual and NDS.
  - CLT panels: 5-ply, SL-V4 grade, SmartLam.
  - Exposed CLT: Architectural grade (U.N.O.).
- Submit all product data for review.



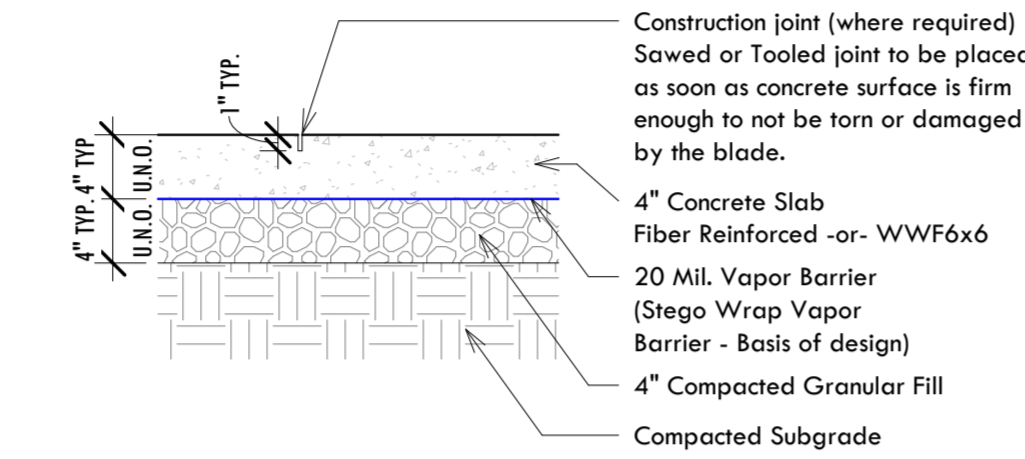
① Detail - Structural - Insulated Slab on Grade  
1" = 1'-0"



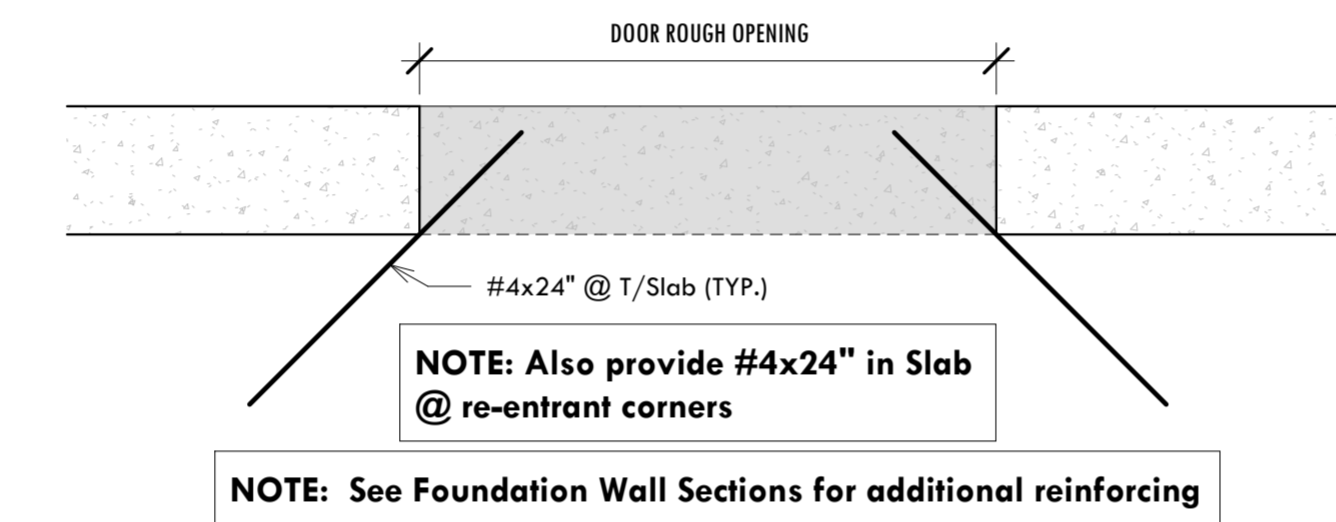
④ Detail - Structural - Typical Top of Wall Detail @ Door  
1" = 1'-0"



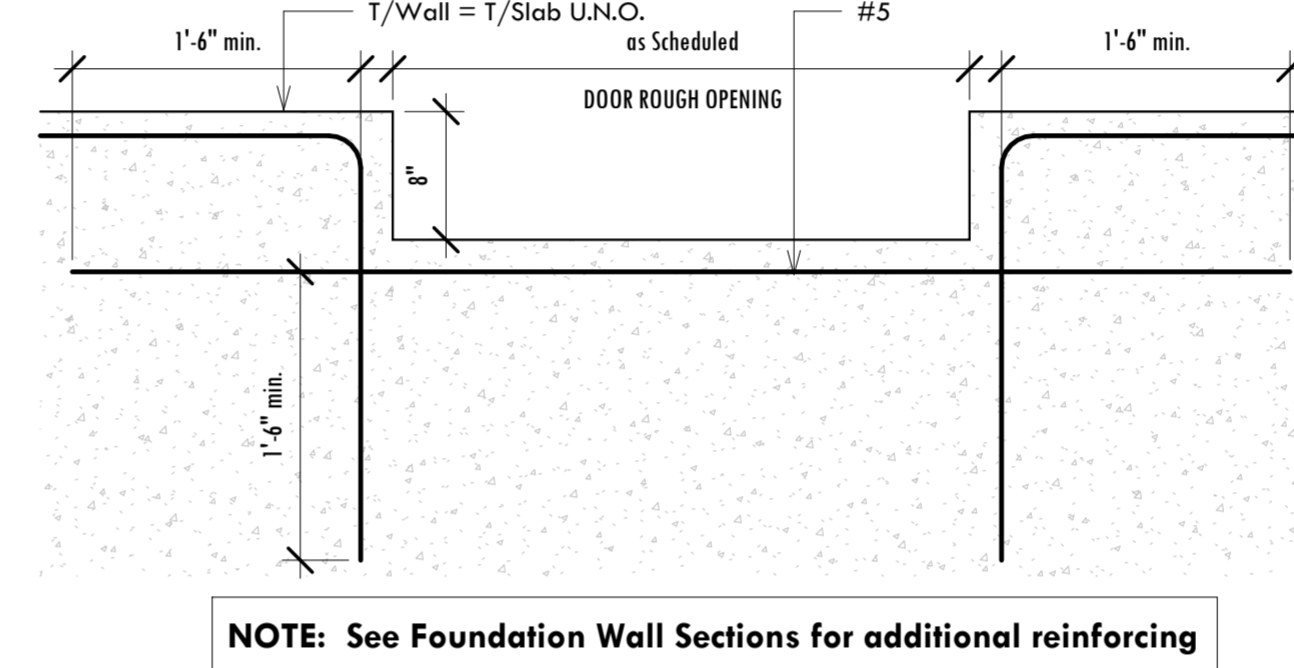
② Detail - Structural - Thickened Edge Slab  
1" = 1'-0"



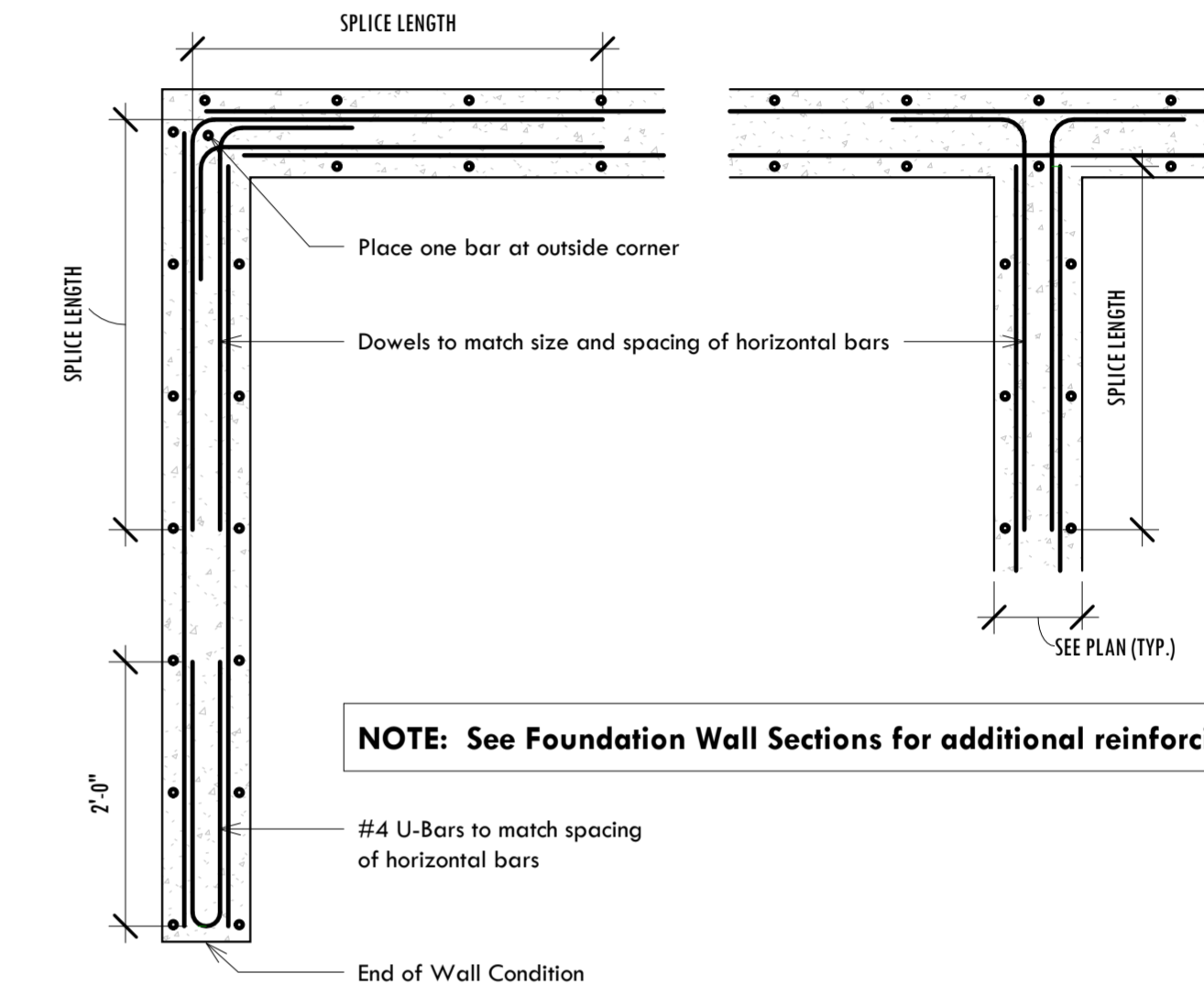
⑩ Detail - Structural - Slab on Grade  
1" = 1'-0"



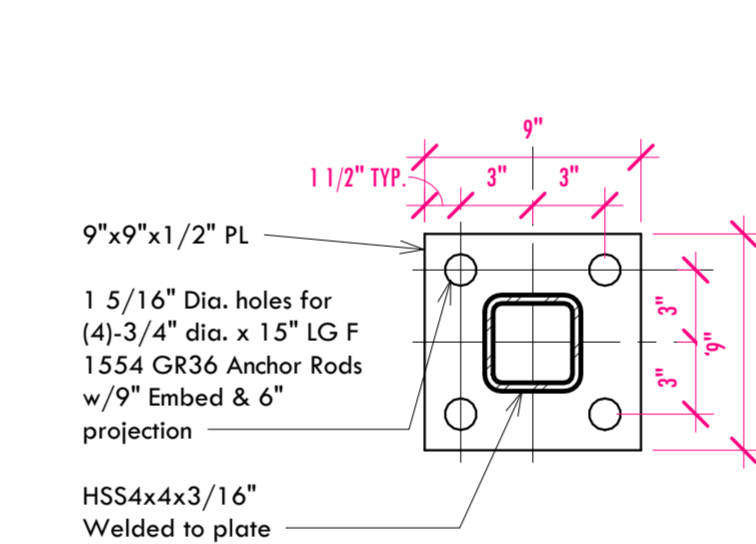
③ Detail - Structural - Typical Slab Corner Detail @ Door  
1" = 1'-0"



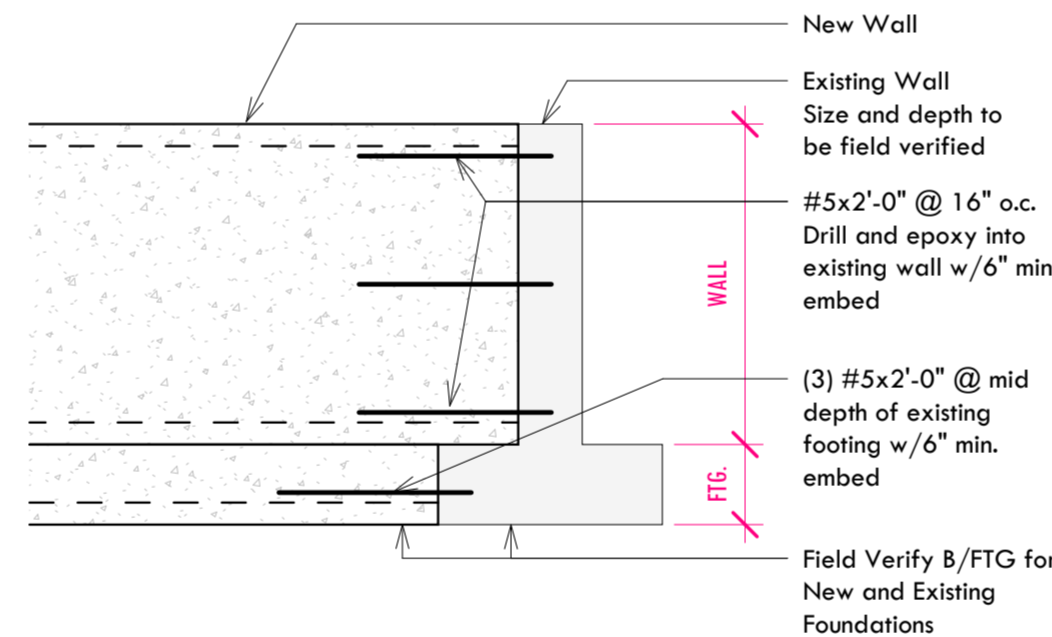
⑦ Detail - Structural - Typical Wall Depression @ Door  
1" = 1'-0"



⑧ Detail - Structural - Typical Wall Reinforcing  
3/4" = 1'-0"



⑥ Detail - Structural - Typical Tube Steel Column Base Plate  
1 1/2" = 1'-0"

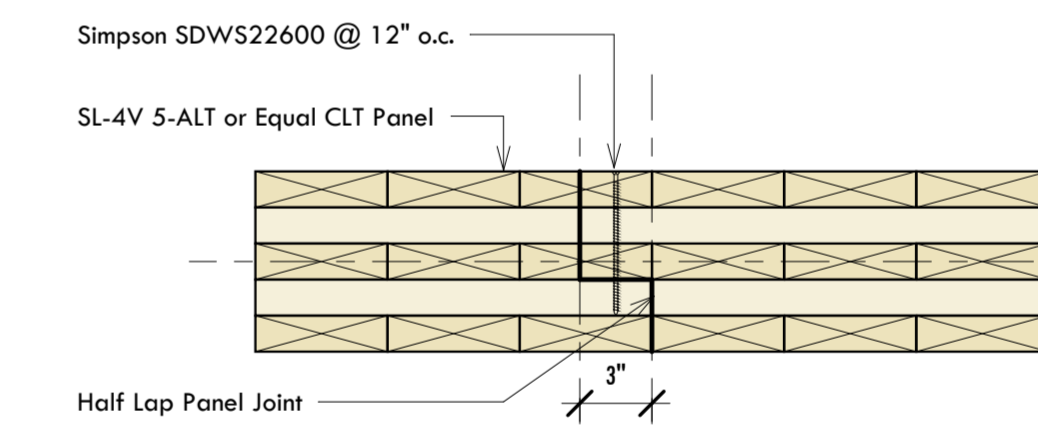


⑨ Detail - New Foundation Wall to Existing  
1/2" = 1'-0"

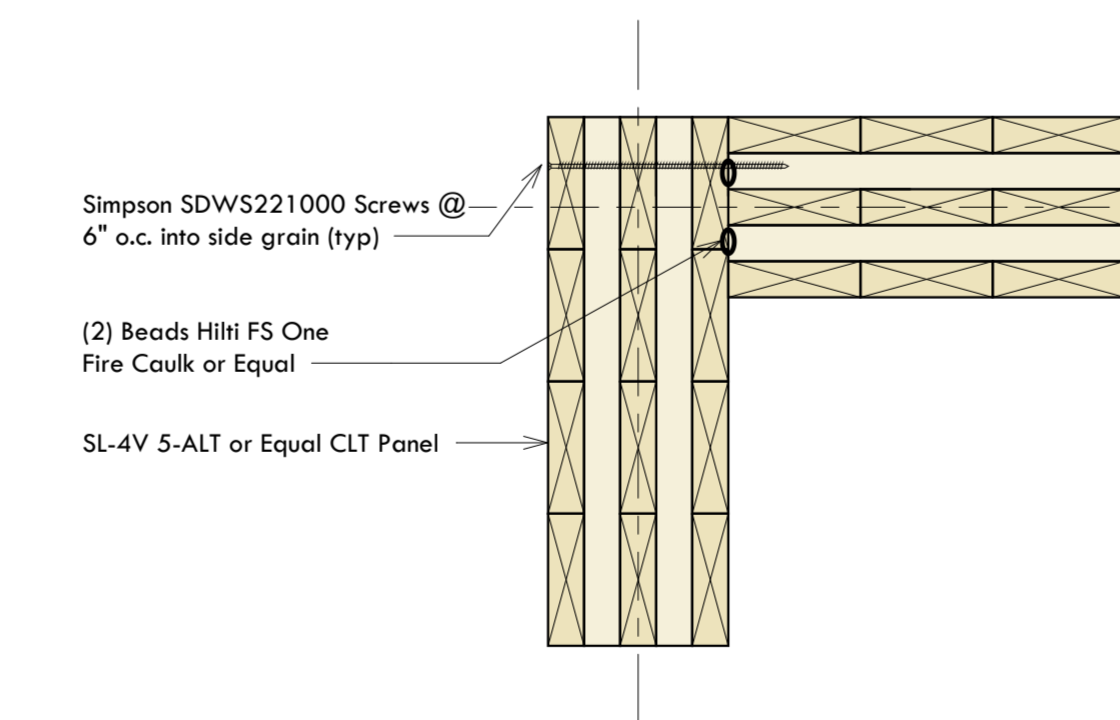
**REBAR LAP SPLICE TABLE**

Bar Size	Lap Length	
	3,500/4,000 PSI	5,000 PSI
#3	30"	24"
#4	36"	32"
#5	48"	42"
#6	56"	48"
#7	81"	72"
#8	93"	80"

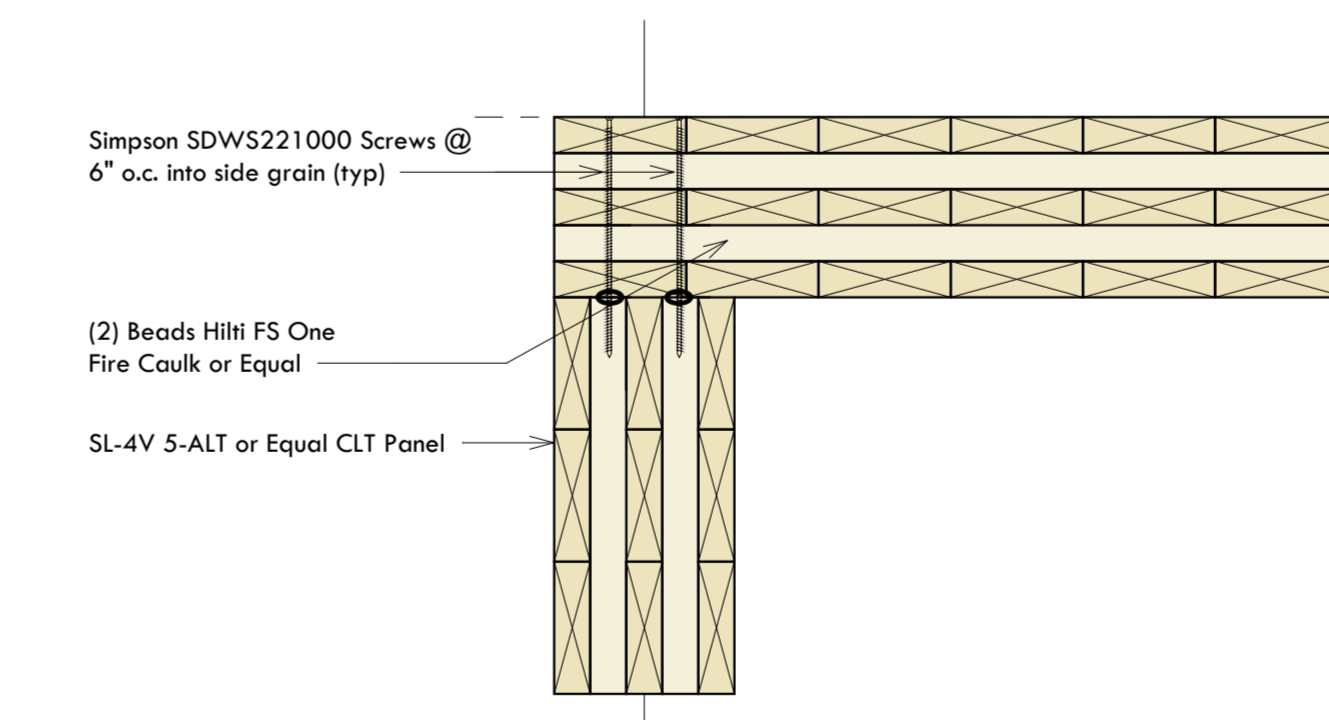
⑪ Typical Rebar Lap Splice Table  
1/4" = 1'-0"



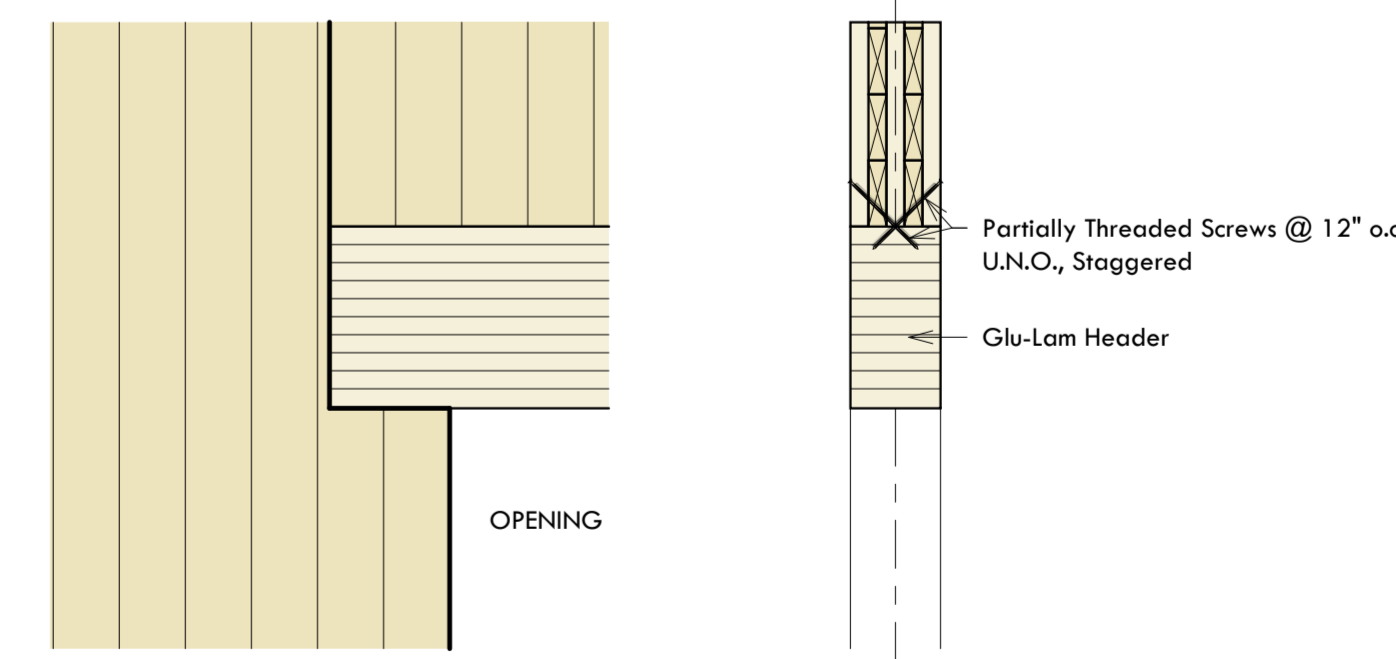
⑤ Detail - CLT Wall Panel Joint  
1 1/2" = 1'-0"



⑫ Detail - CLT Corner Connection 1  
1 1/2" = 1'-0"



⑭ Detail - CLT Wall to Ceiling/Roof  
1 1/2" = 1'-0"



⑬ Detail - CLT Wall Panel to Glu-Lam  
3/4" = 1'-0"

**\$000**

Scale As Indicated



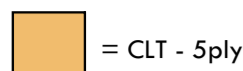
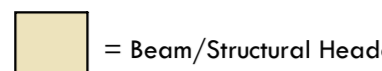

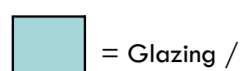

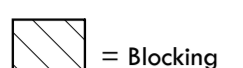

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**Structural Notes & Typical Details**

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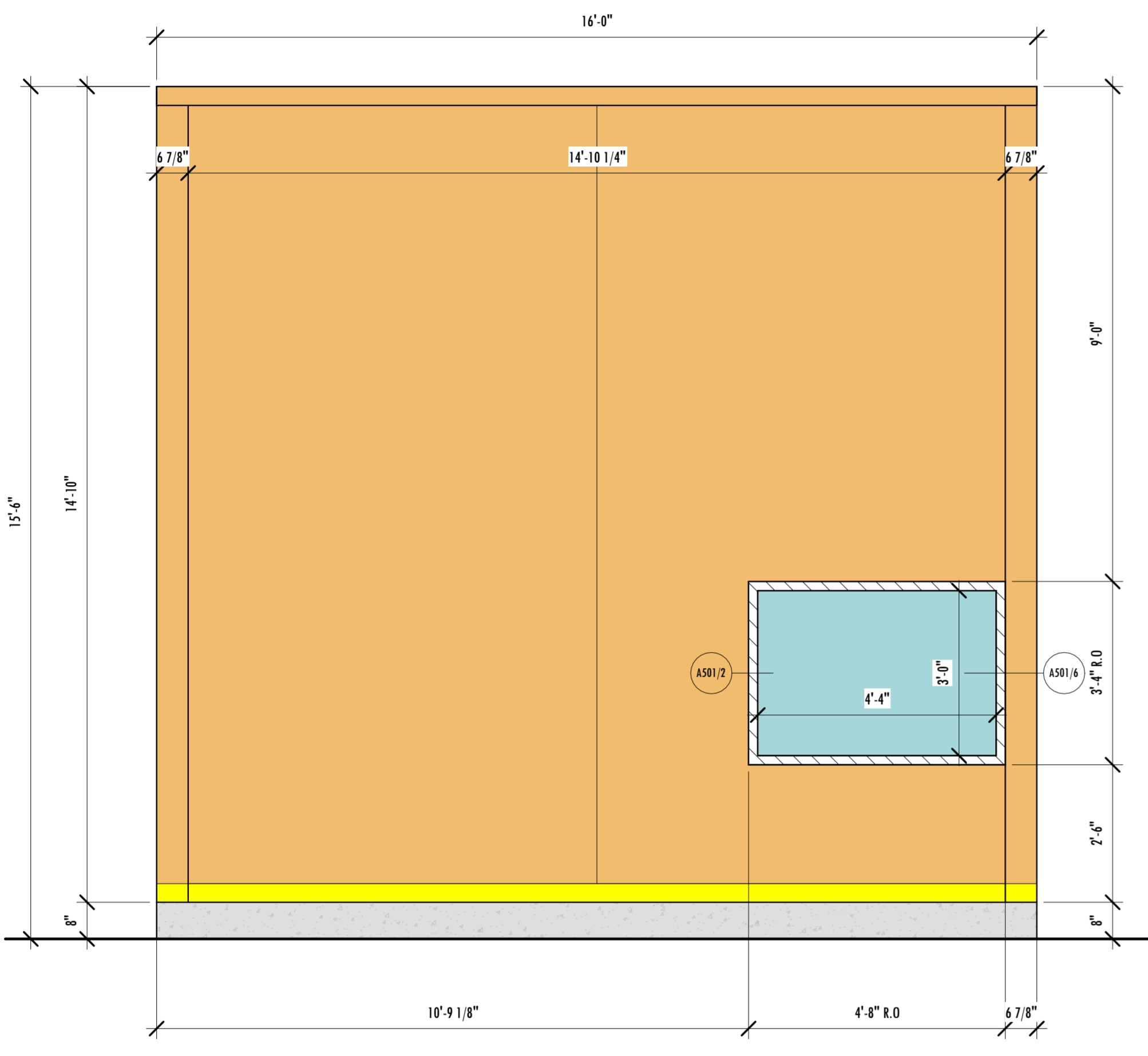
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5-26-26

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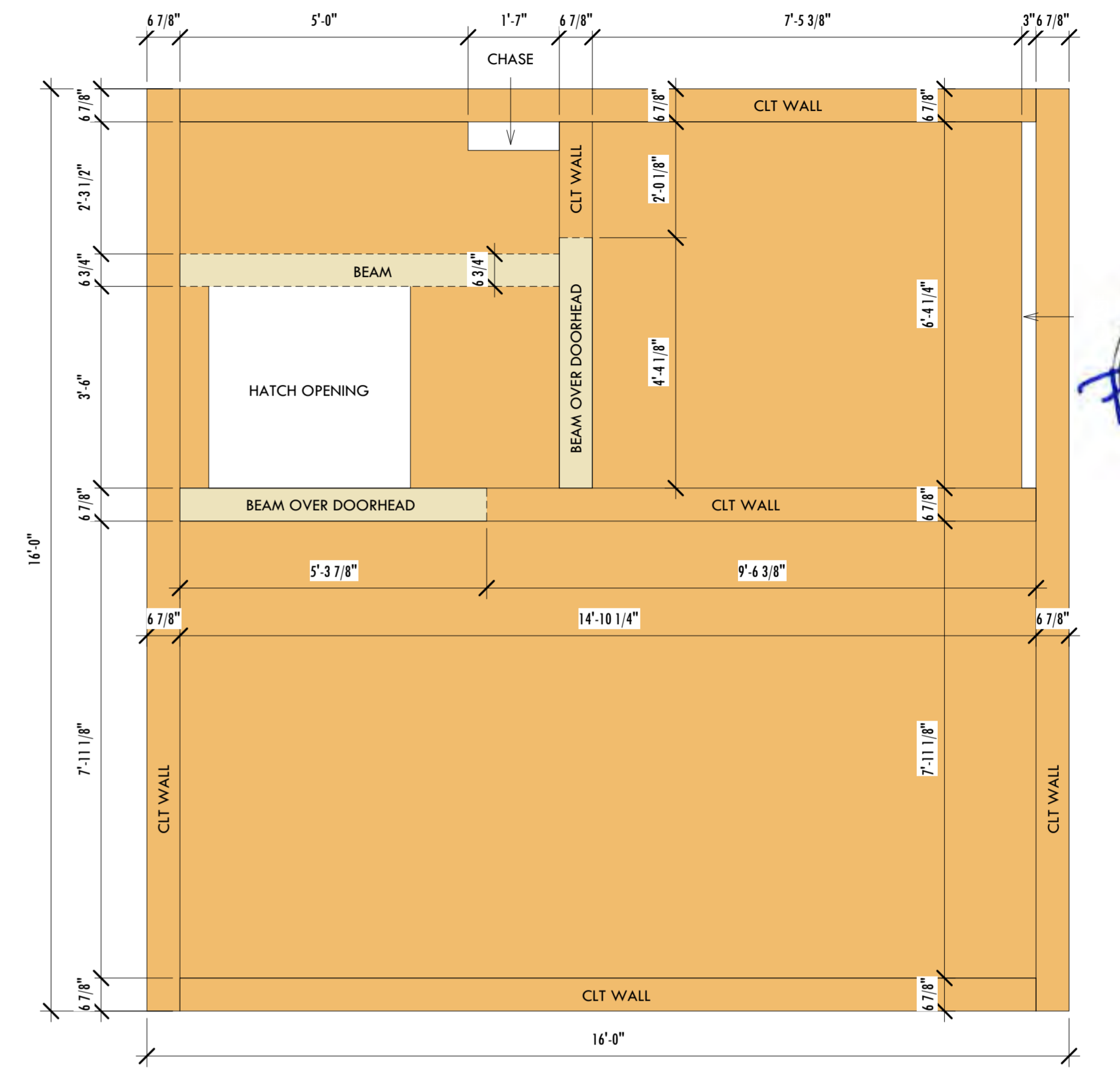
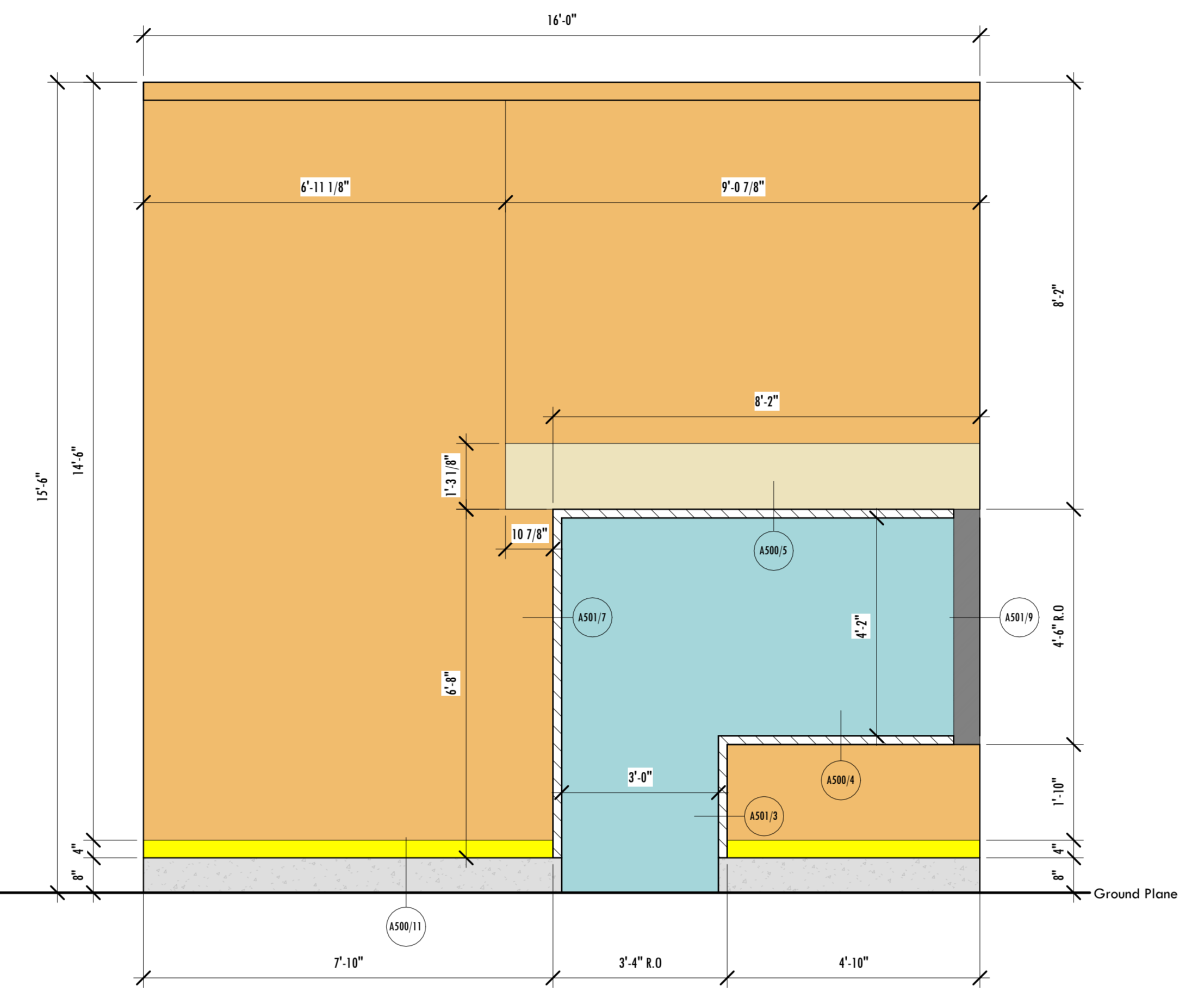
**COLOR KEY LEGEND**

	= CLT - Sply		= Beam/Structural Header		= Steel Column (HSS)
	= Glazing / Door Opening		= CLT to Foundation connecting blocking		
	= Blocking		= Foundation		

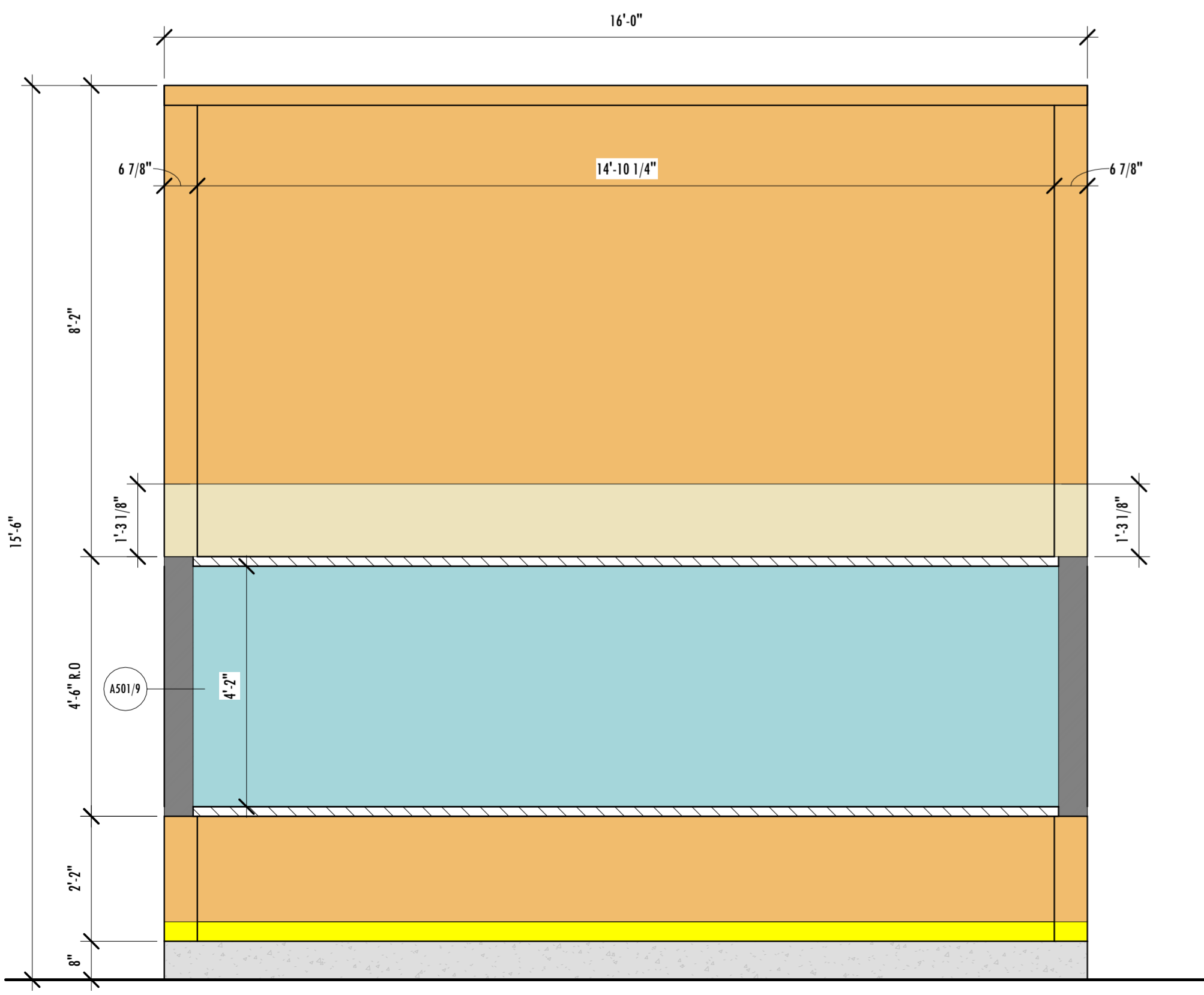
**ELEVATION SOUTH**



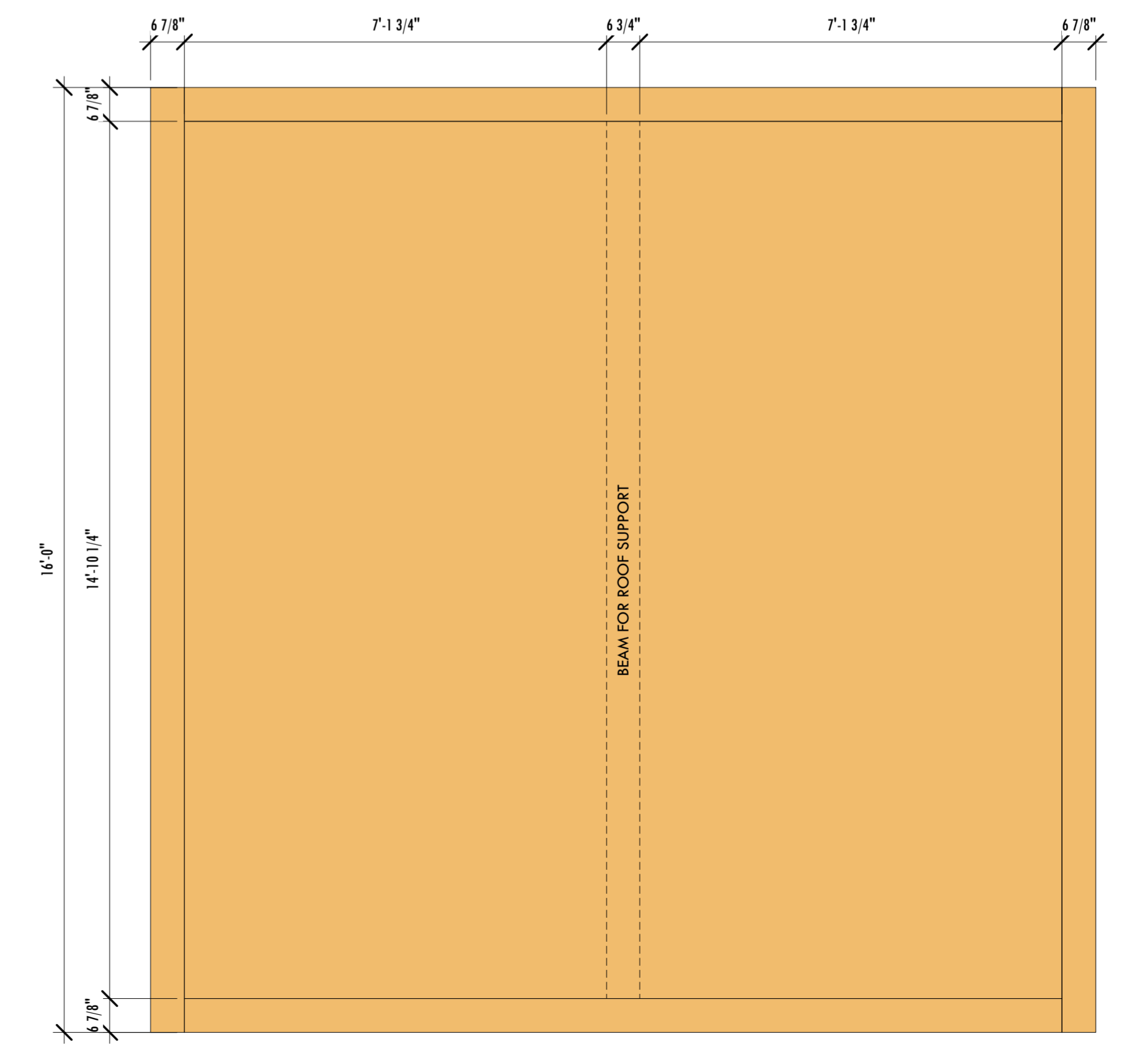
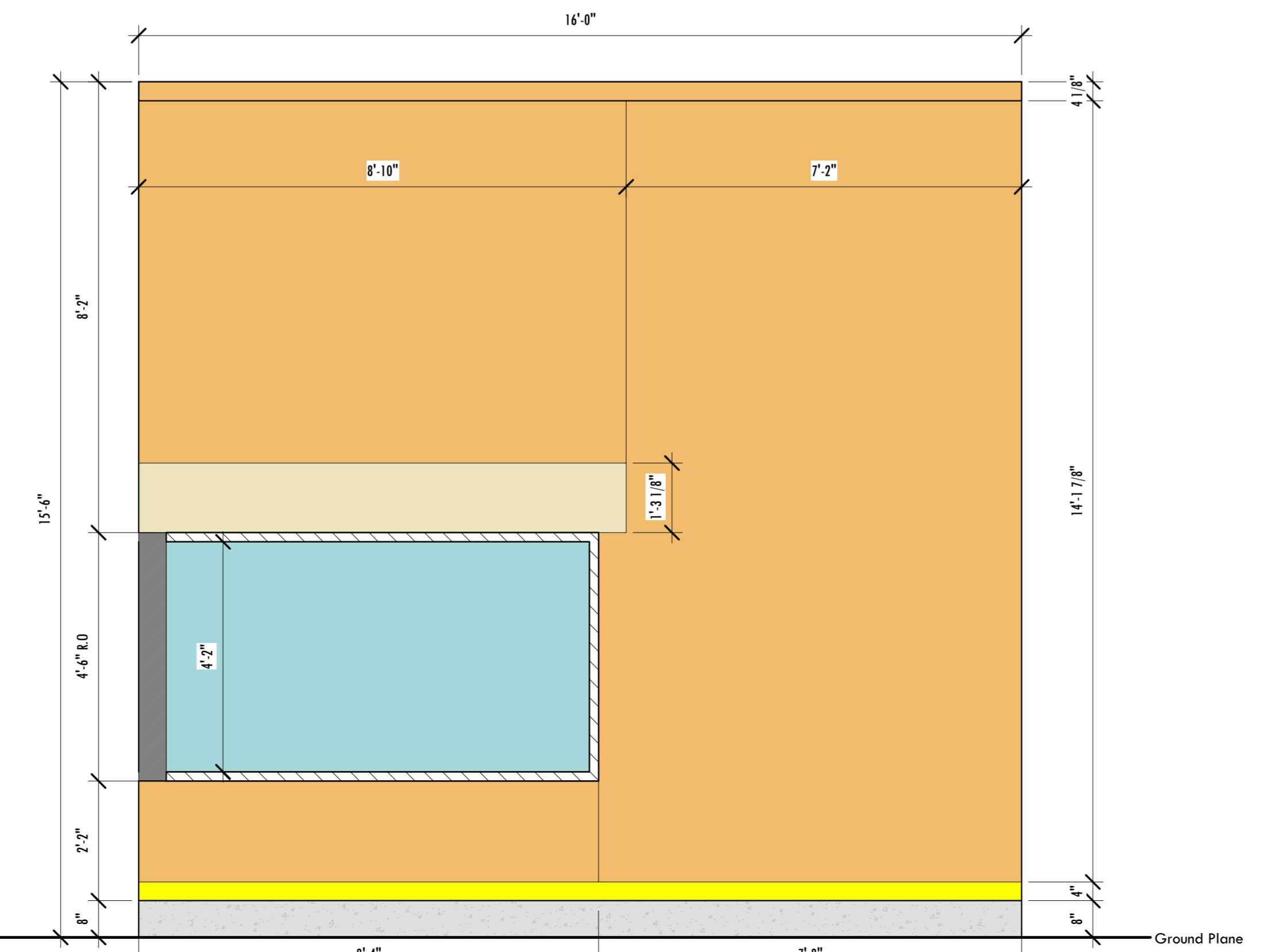
**ELEVATION WEST**



**ELEVATION NORTH**



**ELEVATION EAST**



**\$100**

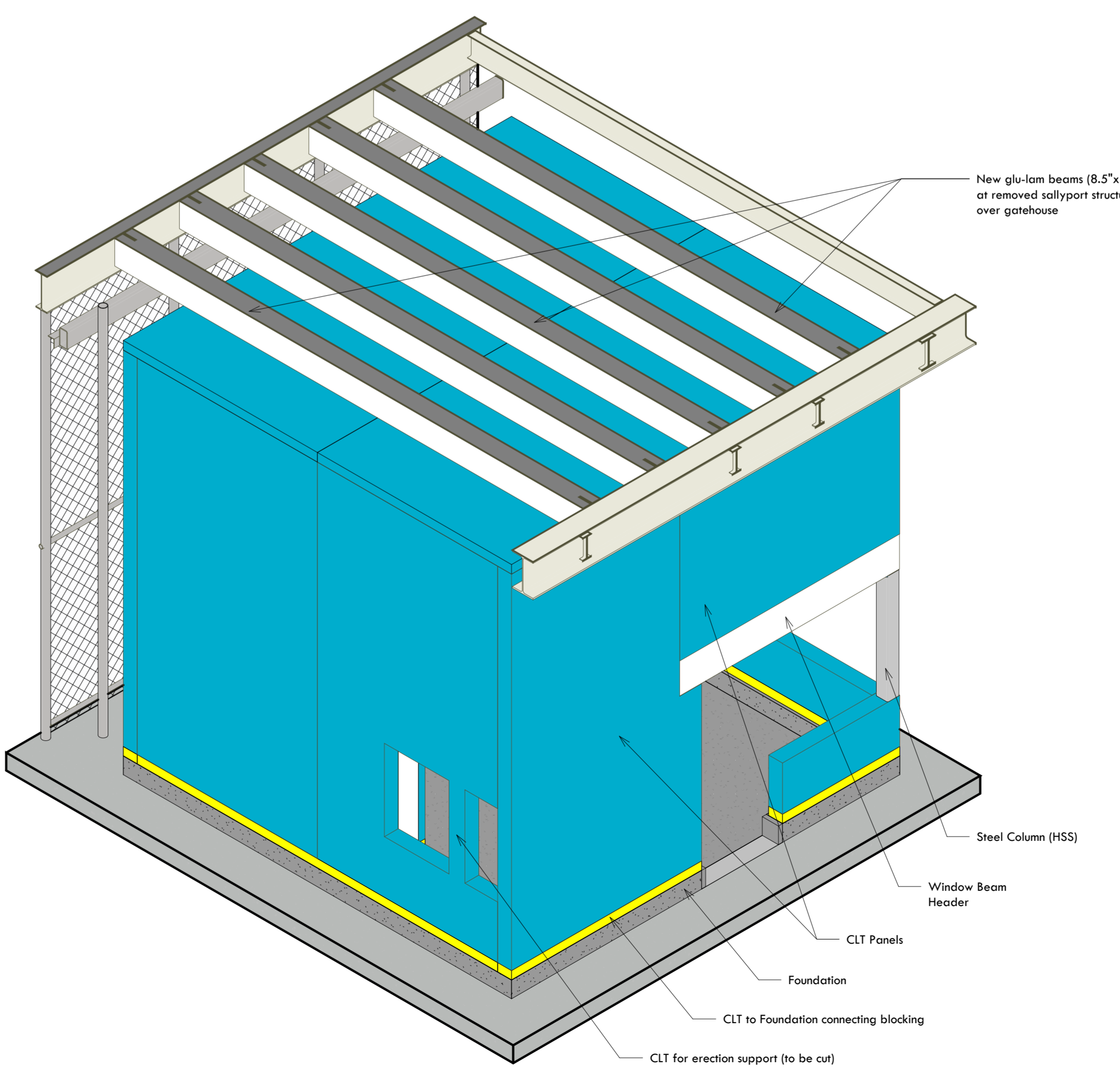
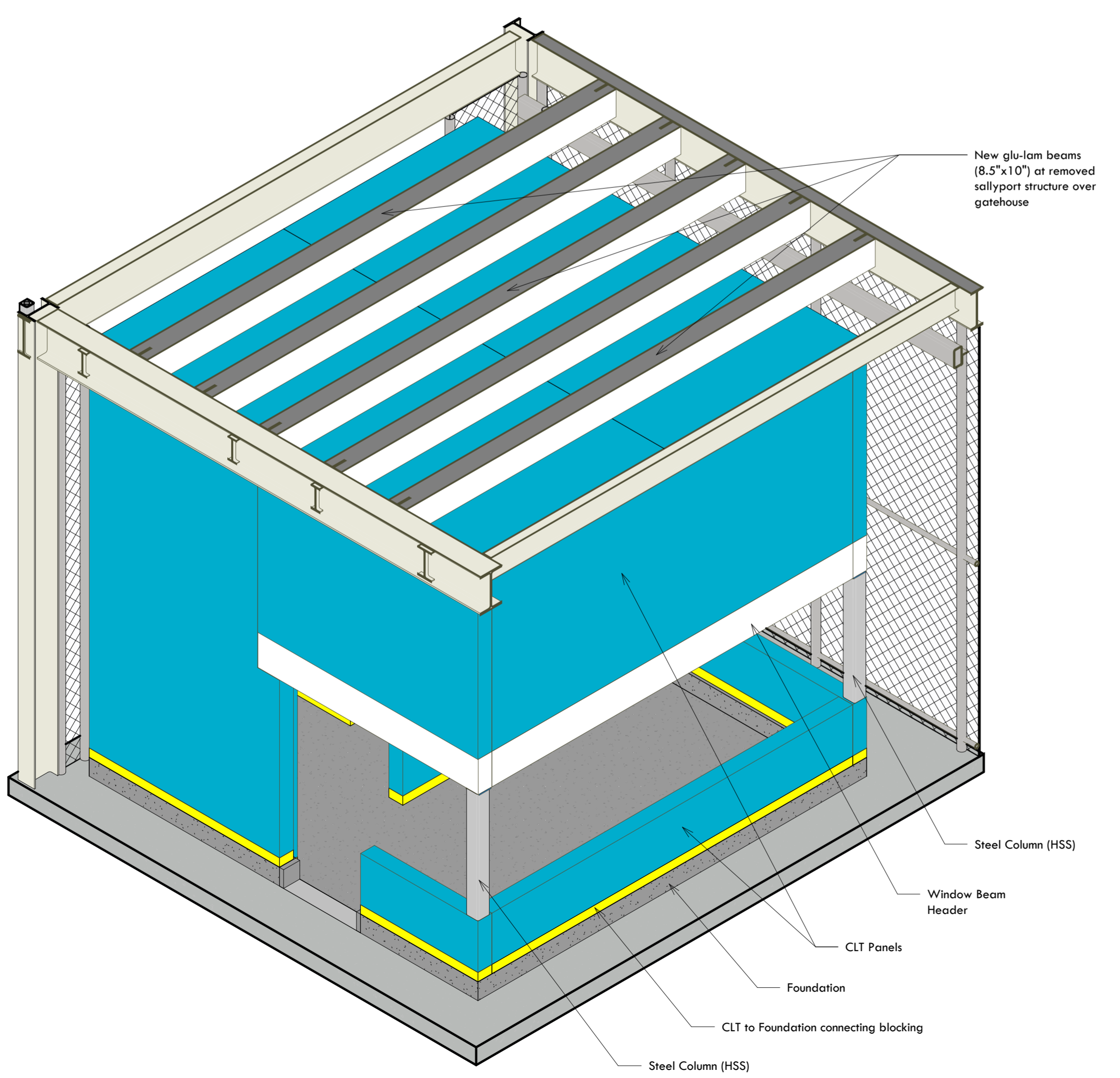
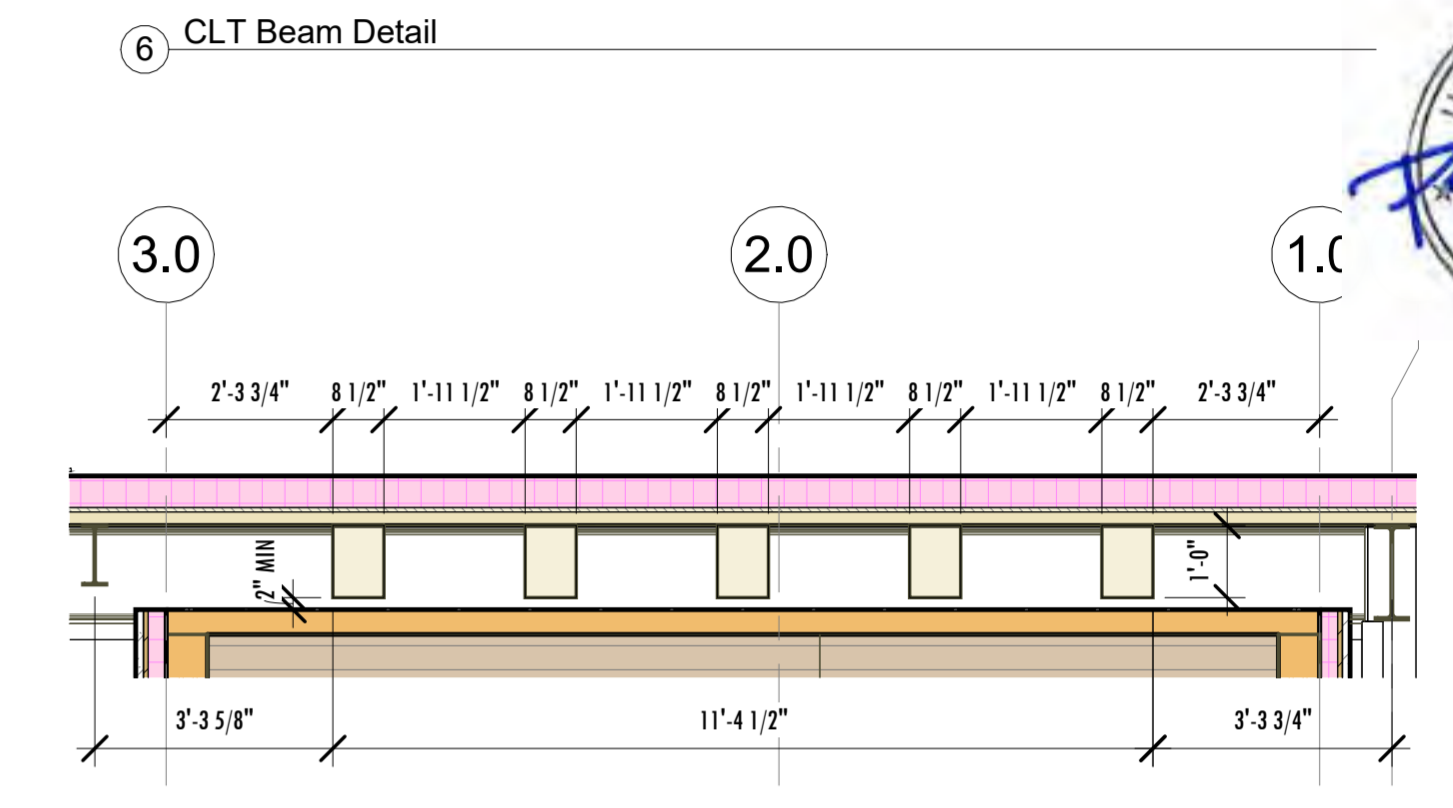
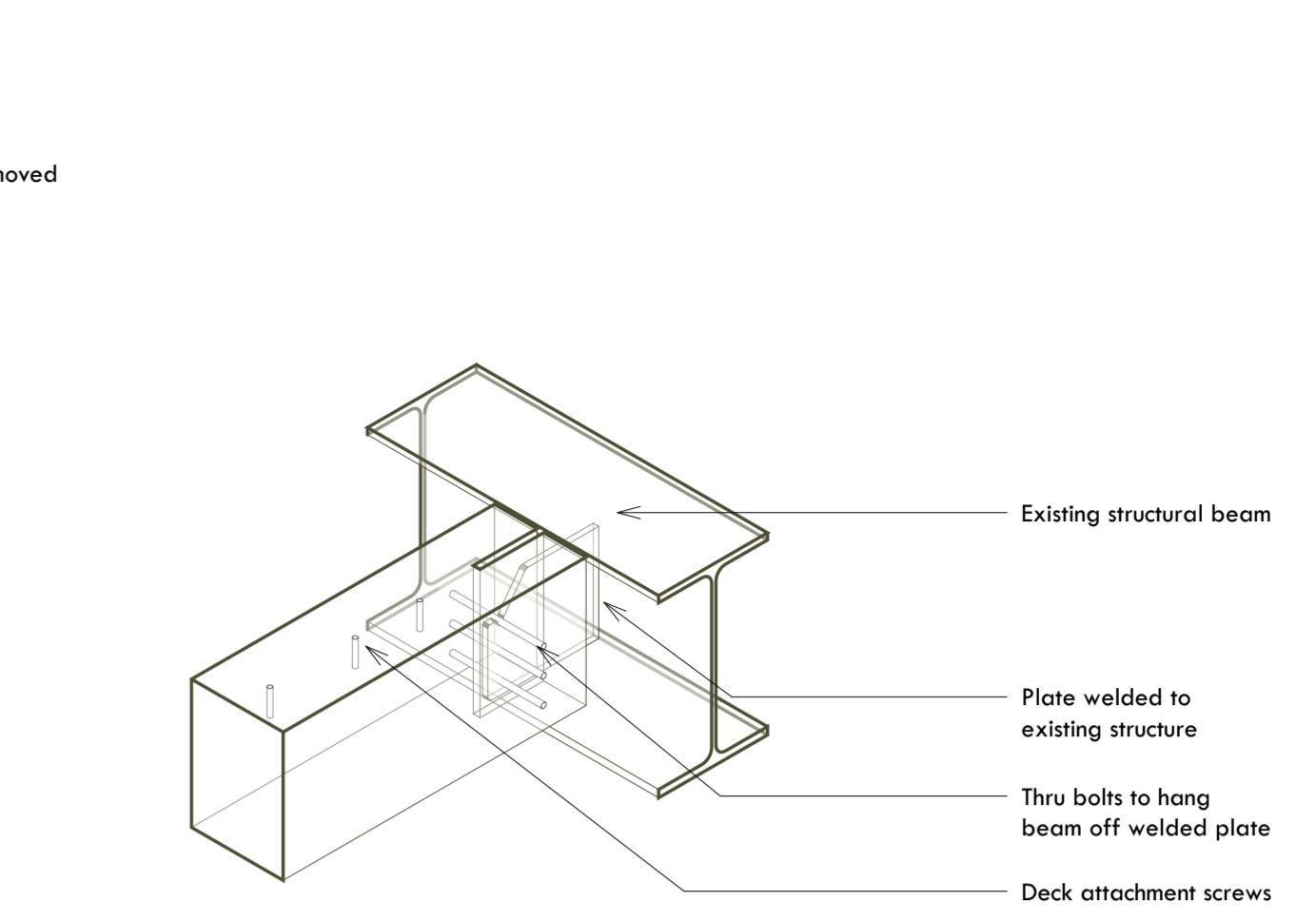
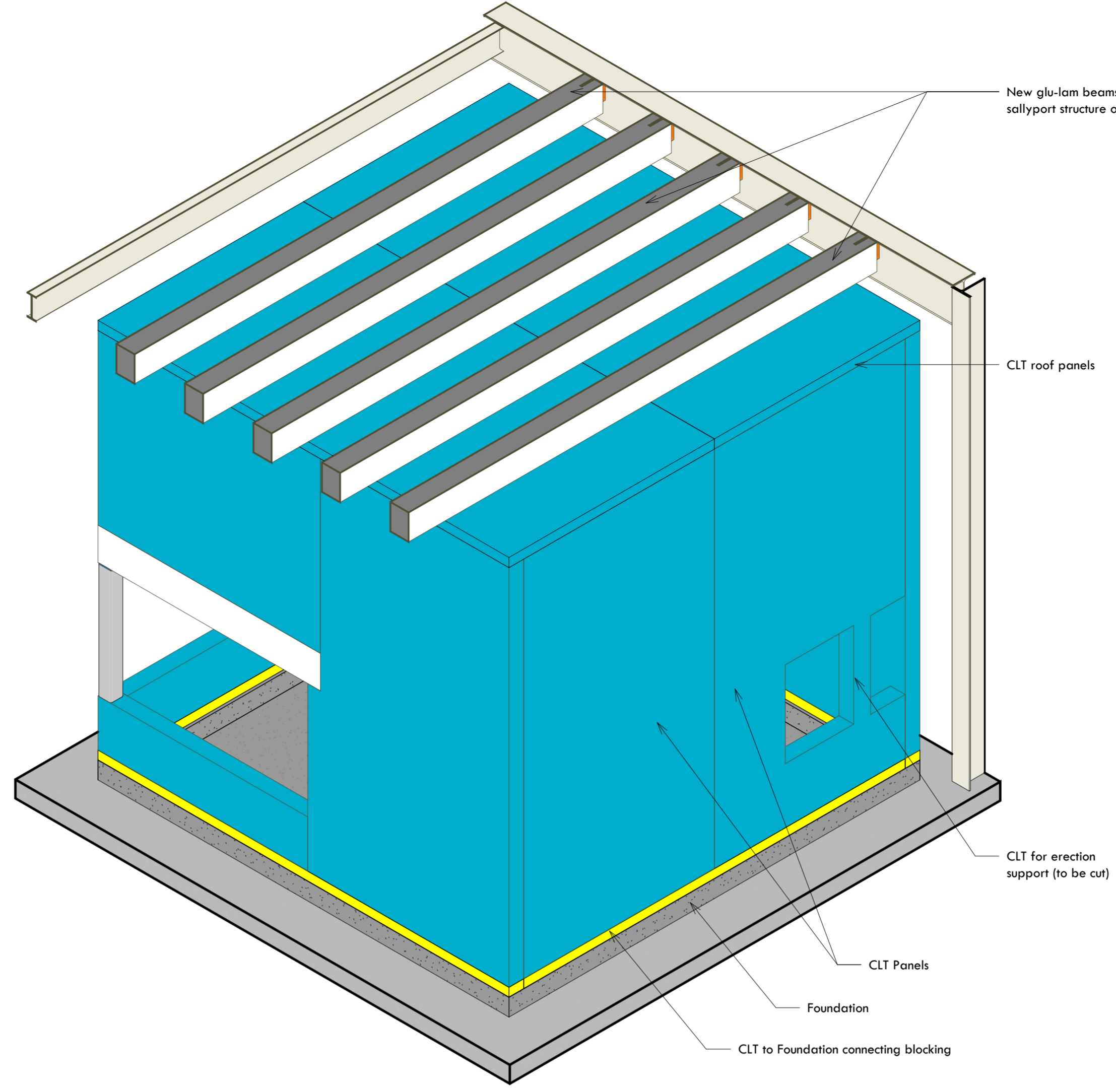
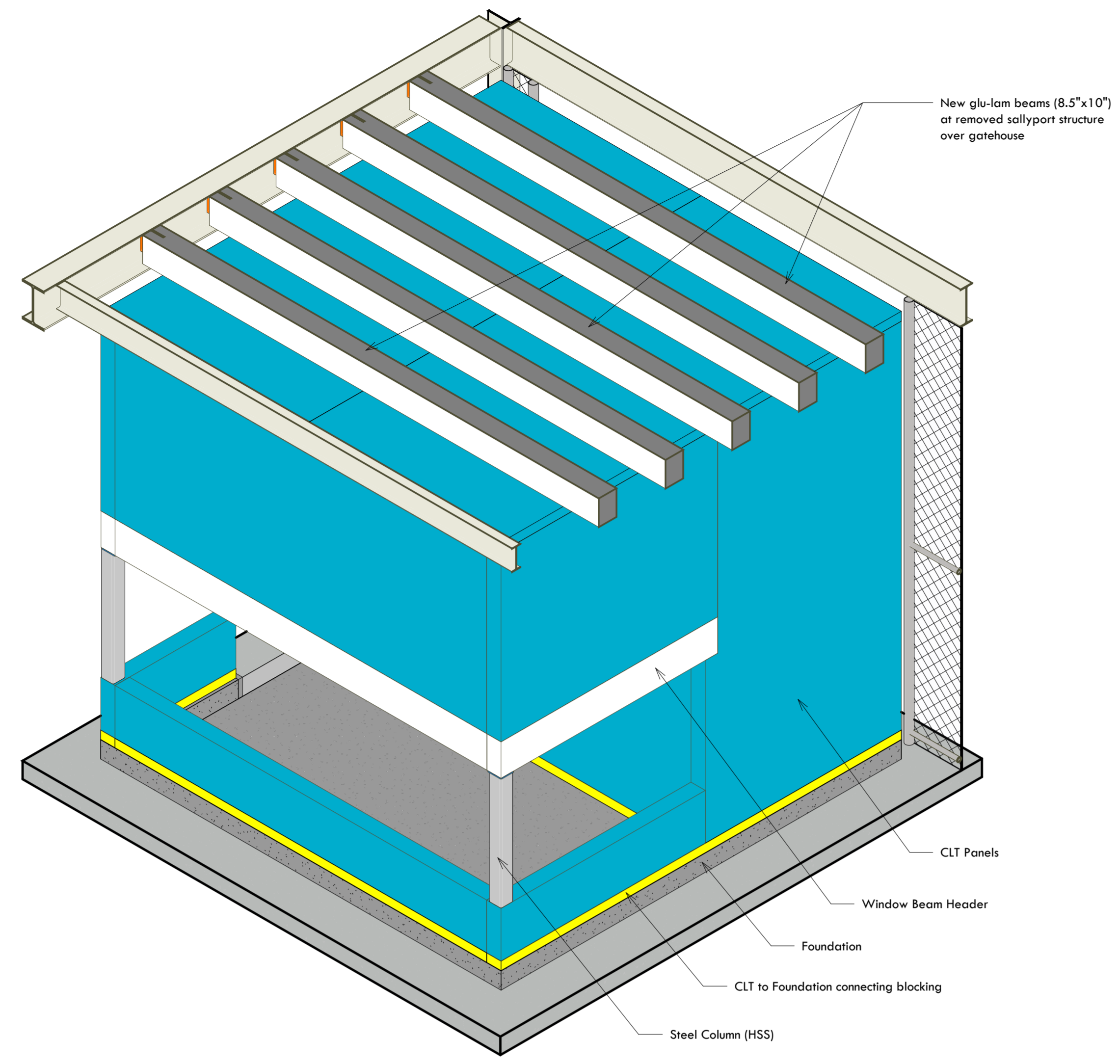
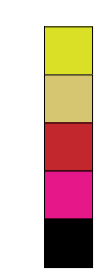
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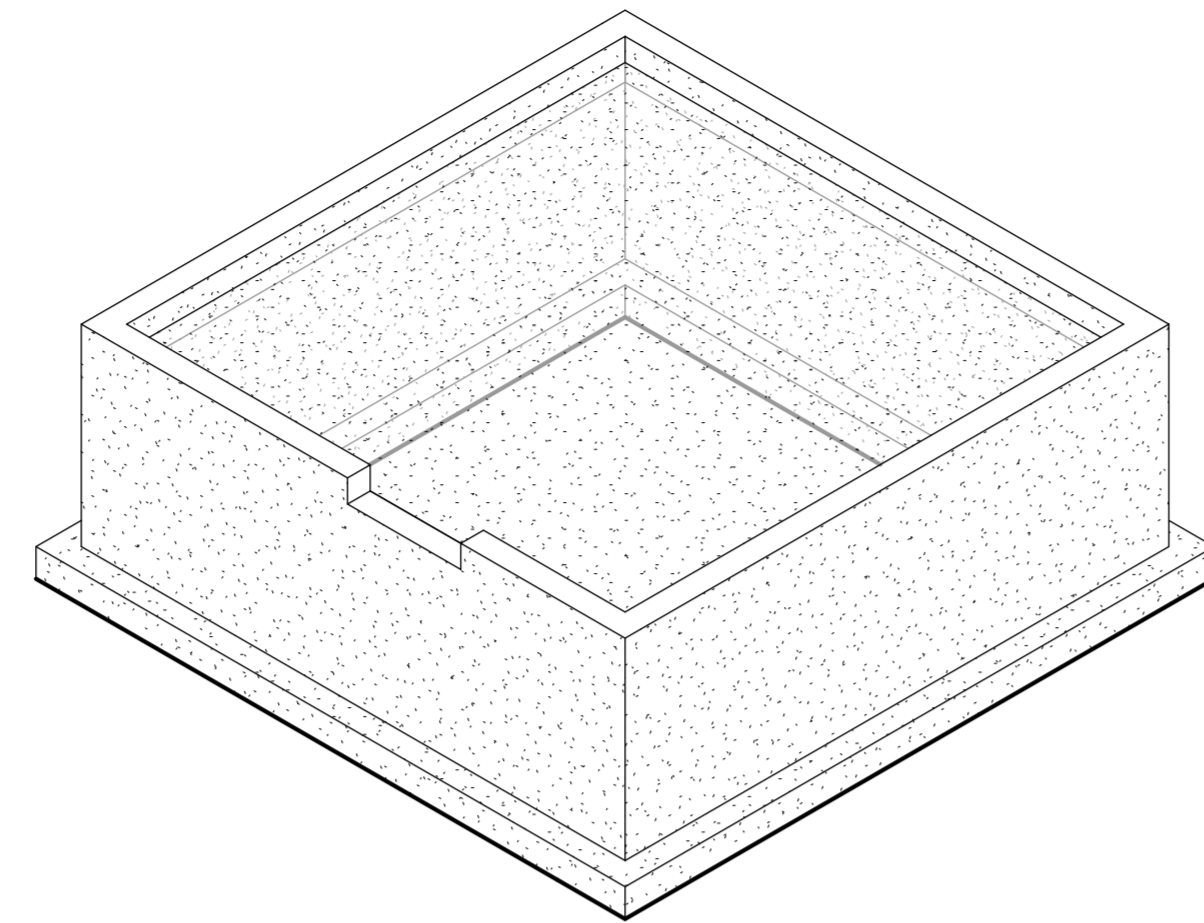
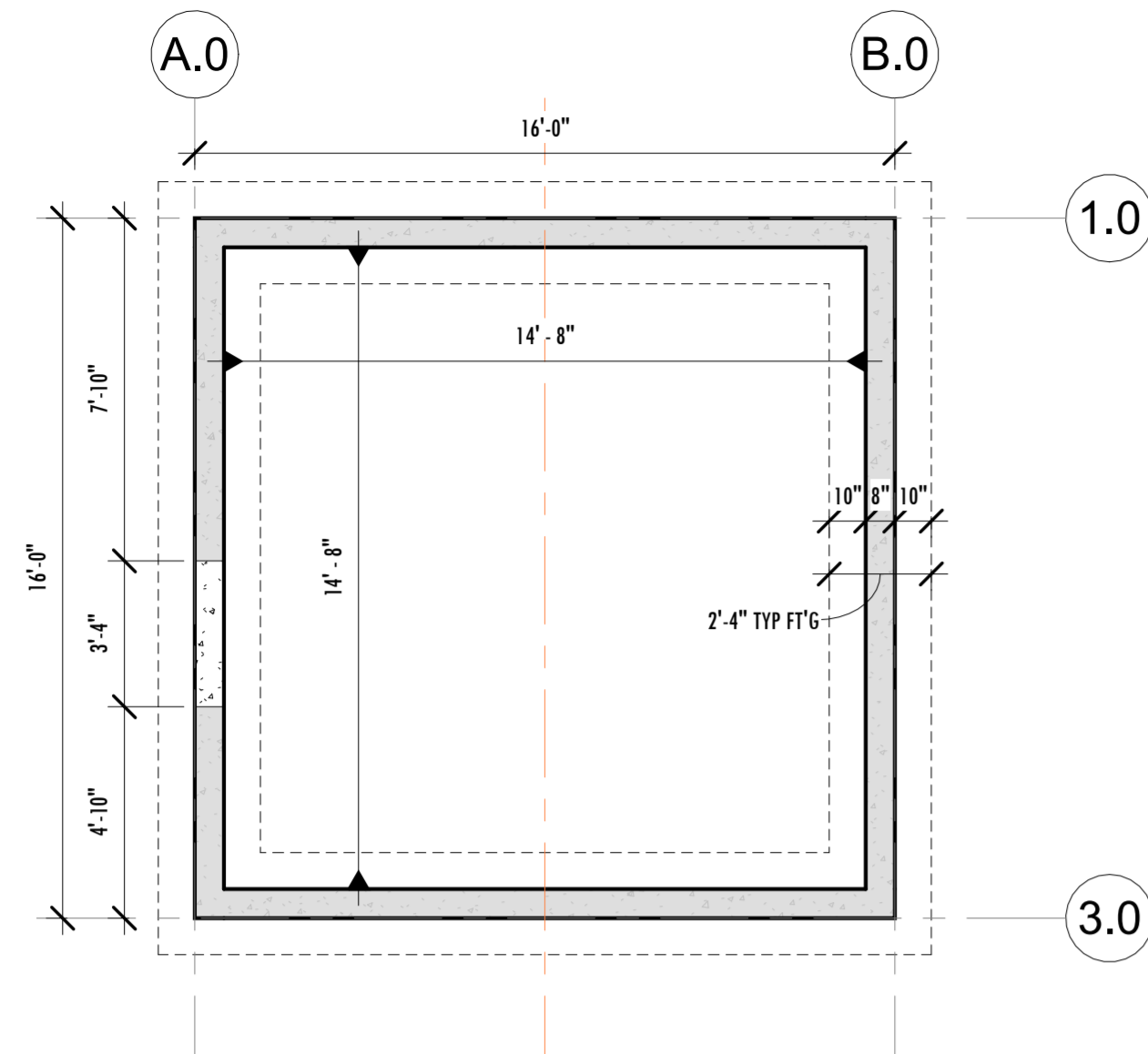
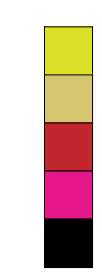


Gatehouse - Sallyport  
Maine State Prison - 807 Cushing Rd, Warren, ME 04864  
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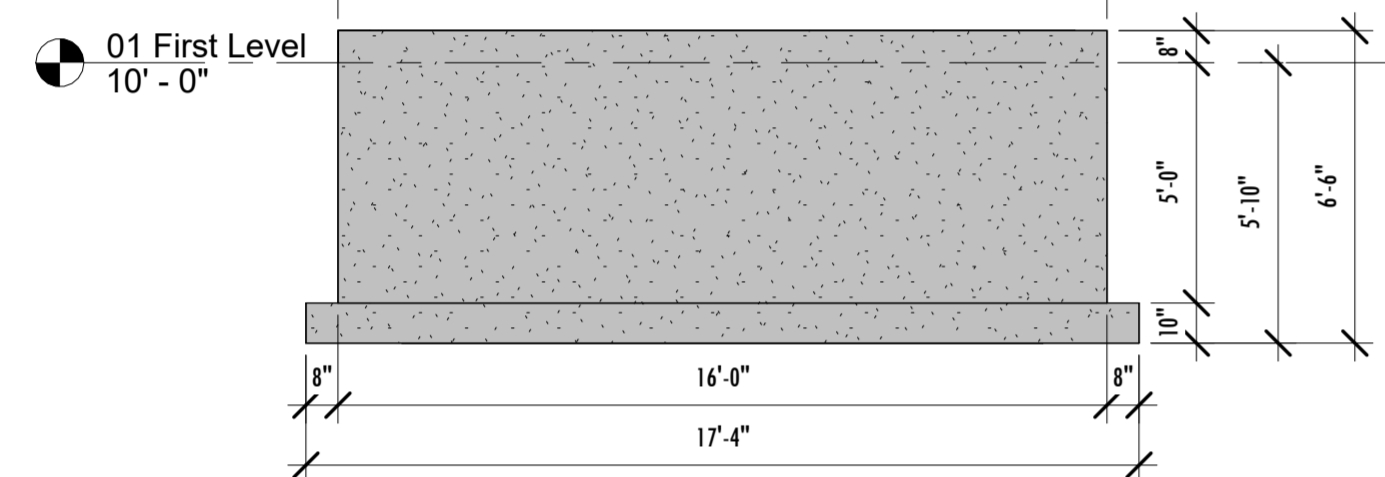
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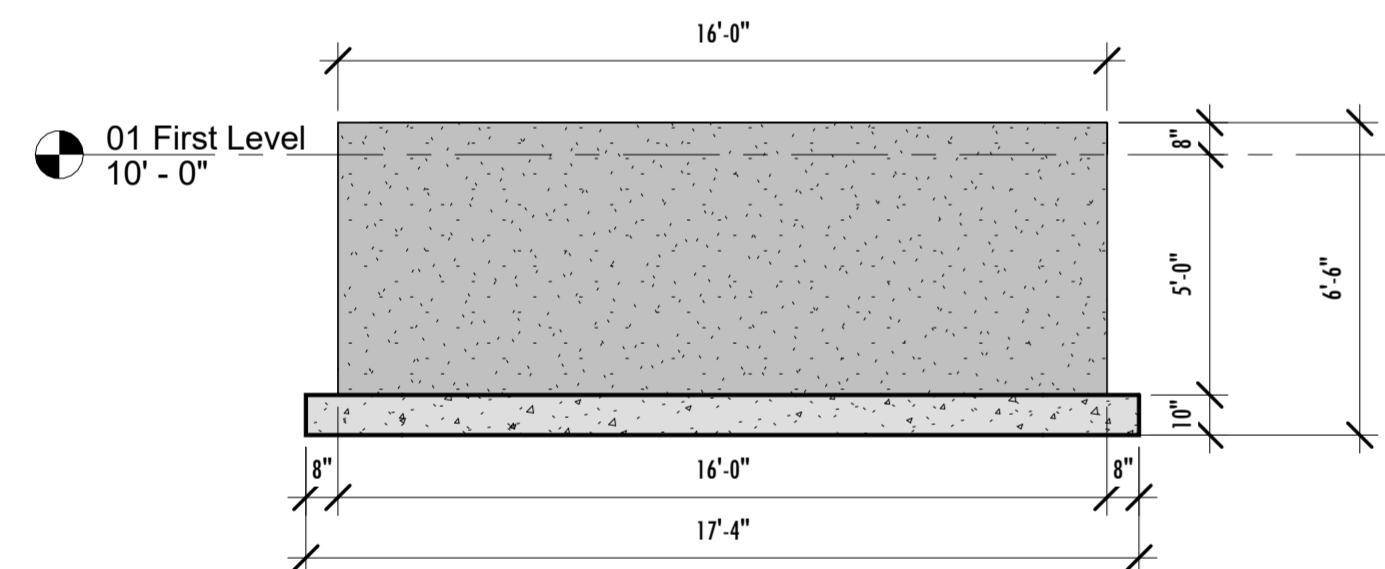


1 00 Foundation  
1/4" = 1'-0"

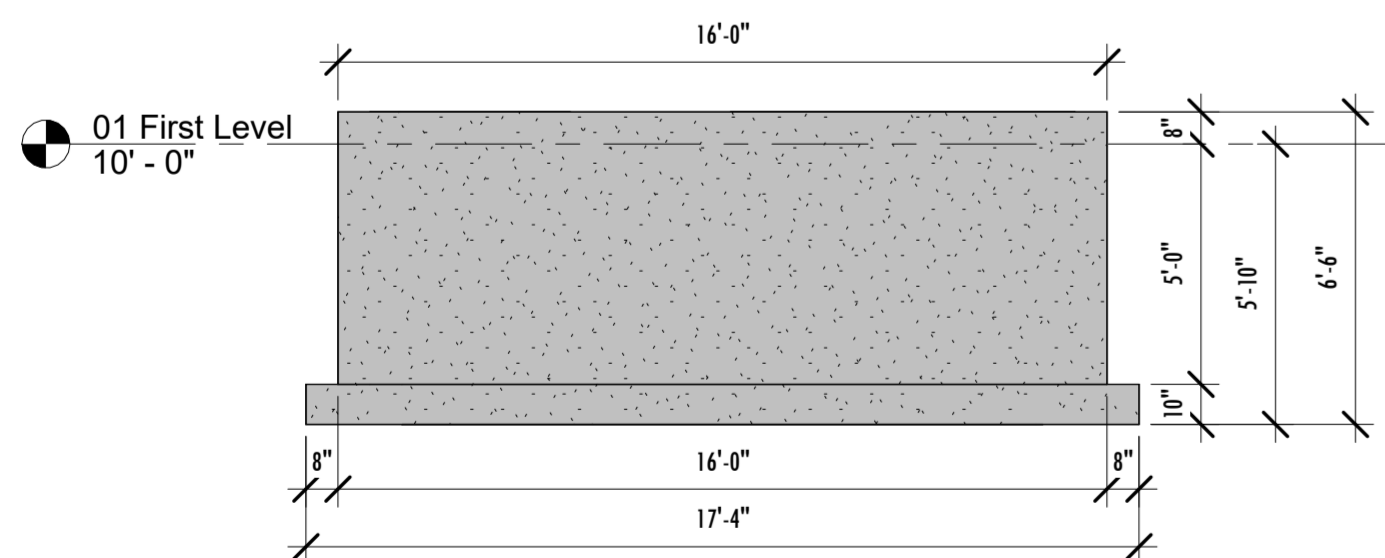
2 Axon - Foundation



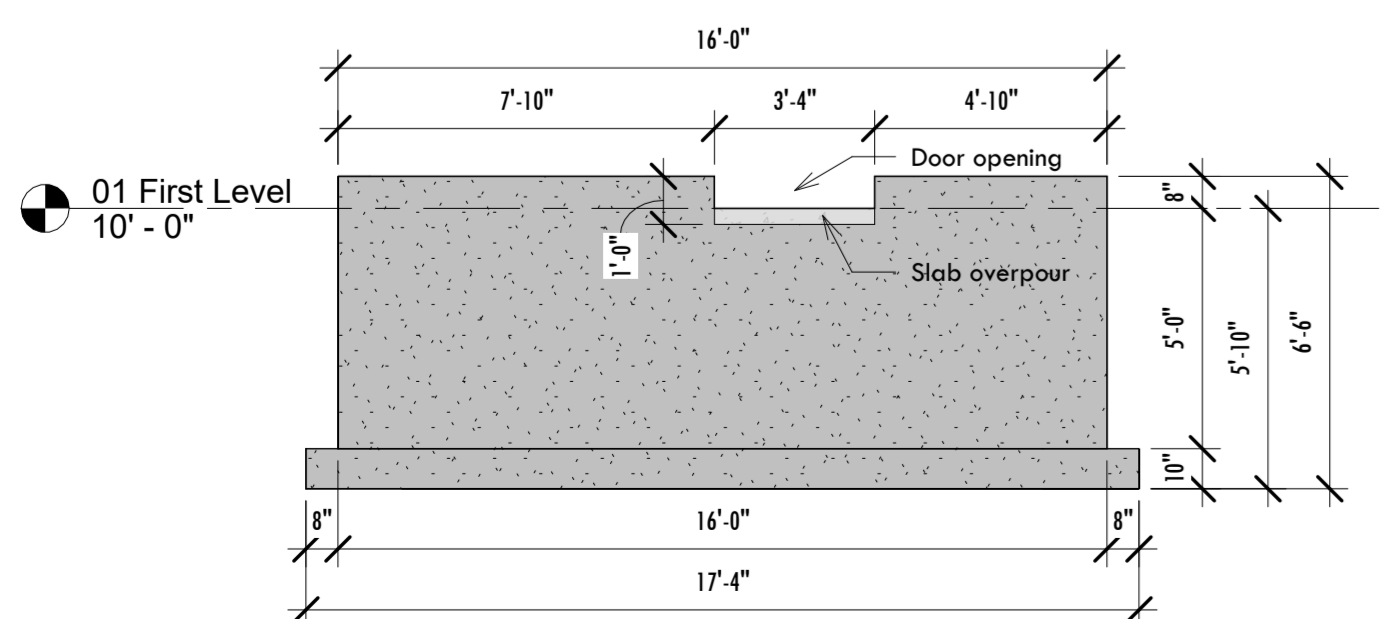
3 Elevation - Front - Foundation  
1/4" = 1'-0"



4 Elevation - Rear - Foundation  
1/4" = 1'-0"



5 Elevation - Right - Foundation  
1/4" = 1'-0"



6 Elevation - Left - Foundation  
1/4" = 1'-0"



### AIR DISTRIBUTION SYMBOLS

	RECTANGULAR DUCT (FIRST NUMBER IS SIDE SHOWN) DIMENSION IN INCHES.
	ROUND DUCT
	MOTORIZED DAMPER
	FLEXIBLE DUCT
	FLEXIBLE DUCT CONNECTOR (FC)
	DUCT DROPS AND RISES IN DIRECTION OF AIR FLOW
	RETURN DUCT TURNED UP OR DOWN (DASHED)
	SUPPLY DUCT TURNED UP OR DOWN (DASHED)
	EXHAUST DUCT TURNED UP OR DOWN (DASHED)
	ACOUSTICAL LINING (DUCT DIM. FOR NET FREE AREA)
	ROUND DUCT ELBOW DOWN
	ROUND DUCT ELBOW UP
	SQUARE TO ROUND TRANSITION
	POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS. THE NUMBER ASSIGNS PRESSURE CLASS (IN. OF WATER) WHICH WILL ACCOMMODATE MAXIMUM OPERATING PRESSURE. THE ASSIGNMENT UNTIL THE DUCT TERMINATES OR ANOTHER SYMBOL APPEARS. A "N" SUPERSCRIPIT INDICATES NEGATIVE PRESSURE.
	CAP
	INDICATES DUCT, PIPING, EQUIPMENT TO BE REMOVED.
	EA EXHAUST AIR
	RA RETURN AIR
	SA SUPPLY AIR
	OA OUTSIDE AIR
	VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	VANED ELBOW (PROVIDE FOR ALL SQUARE OR RECTANGULAR ELBOWS EVEN IF SYMBOL MISSING.)
	VANED ELBOW (SHORT RADIUS) NOTE: ADJUSTABLE ELBOWS ARE NOT ALLOWED.
	DIRECTION OF AIR FLOW (IN)
	DIRECTION OF AIR FLOW (OUT)
	HUMIDISTAT OR HUMIDITY SENSOR
	THERMOSTAT (T'STAT) OR TEMP. SENSOR
	SMOKE DETECTOR
	CEILING RETURN GRILLE
	CEILING SUPPLY DIFFUSER
	CEILING EXHAUST GRILLE
	DYNAMIC PRESSURE SENSOR
	CARBON MONOXIDE DETECTOR

### GENERAL SYMBOLS

	LIMITS OF DEMOLITION
	CONNECT TO EXISTING
	EQUIPMENT ABBREVIATION (EF=EXHAUST FAN) EQUIPMENT NO.
	EQUIPMENT TAG
	DETAIL NO.
	SHEET NO. WHERE DETAIL IS LOCATED
	KEYED NOTE

### PIPING SYMBOLS

	UNION		PRESSURE GAUGE AND COCK
	FLANGE		THERMOMETER AND WELL
	PIPE ANCHOR		TEMPERATURE & PRESSURE TAP (PETE'S PLUG)
	PIPE GUIDE OR SLEEVES		HOSE END DRAIN VALVE WITH CAP
	PIPE ELBOW TURNED DOWN		ORIFICE FLOWMETER
	PIPE ELBOW TURNED UP		FLEXIBLE PIPE CONNECTOR
	PIPING TEE-DOWN		EXPANSION JOINT
	PIPING TEE-UP		CONCENTRIC REDUCER/INCREASER
	PIPE RISER		ECCENTRIC REDUCER/INCREASER
	PIPE PITCHES DOWN		DIRECTION OF FLOW
	GENERIC VALVE. SEE SPECIFICATIONS FOR TYPE		PUMP
	GATE VALVE		FINNED TUBE BASEBOARD
	BALL VALVE		HUMIDIFIER
	BUTTERFLY VALVE (MANUAL)		DIFFERENTIAL PRESSURE TRANSMITTER
	2-WAY CONTROL VALVE		FINNED TUBE TAG
	3-WAY CONTROL VALVE		LENGTH OF FINNED ELEMENT (FT)
	BALANCING VALVE (CIRCUIT SETTER)		DIFFUSER, REGISTER OR GRILLE TAG
	CHECK VALVE		AIR FLOW (CFM)
	PLUG VALVE		
	GLOBE VALVE		
	NEEDLE VALVE		
	BACK FLOW PREVENTER		
	SOLENOID VALVE		
	PRESSURE REDUCING OR REGULATING VALVE		
	PRESSURE RELIEF VALVE		
	STRAINER		
	STRAINER W/BLOWDOWN		
	MANUAL AIR VENT		
	AUTOMATIC AIR VENT		
	PRESSURE SWITCH		
	FLOW SWITCH		

### GENERAL NOTES

- IT IS THE INTENT OF THESE DRAWINGS TO SHOW COMPLETE AND FUNCTIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL INDUSTRY STANDARDS AND APPLICABLE CODES. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION.
- ALL MECHANICAL SYSTEMS WORK SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION AND ALL APPLICABLE CODES. ALL WORK SHALL CONFORM TO EQUIPMENT MANUFACTURER'S INSTRUCTIONS AND INDUSTRY STANDARDS.
- ALL WORKMANSHIP SHALL BE OF THE HIGHEST STANDARDS. INSTALL ALL WORK IN A NEAT, SYSTEMATIC AND ORDERLY ARRANGEMENT. ALL MATERIAL SHALL BE NEW AND OF THE BEST QUALITY AVAILABLE. FREE FROM DEFECTS. THE CONTRACTOR SHALL GUARANTEE THE MATERIALS AND INSTALLATION FOR ONE YEAR FROM THE PROJECT ACCEPTANCE DATE AGAINST ANY DEFECTS DUE TO FAULTY MATERIALS, EQUIPMENT, WORKMANSHIP, OR INSTALLATION. UPON NOTICE OF THE DEFECT, THE CONTRACTOR SHALL REPLACE OR REPAIR THE DEFECTIVE ITEM AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL VISIT THE JOB SITE TO VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS AND OBSTRUCTIONS.
- ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY. PIPING AND SYSTEMS SHALL FOLLOW ARRANGEMENT AS MUCH AS POSSIBLE, HOWEVER, ACTUAL FIELD CONDITIONS SHALL DICTATE. CAREFULLY COORDINATE THE SPACE REQUIREMENTS AND LOCATIONS OF ALL DUCTWORK WITH ALL OTHER TRADES. GIVE PRIORITY TO GRAVITY DRAINAGE PIPING.
- DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLAN FOR EXACT LOCATION OF WALLS, DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE WORK OF ALL OTHER TRADES. SHOULD ANY DISCREPANCIES BE DISCOVERED IN ANY OF THE BID DOCUMENTS, (INCLUDING ALL OTHER DIVISIONS) THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK. OTHERWISE THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COST INVOLVED WITH THE CORRECTION OF THE CONSTRUCTION INSTALLATION.
- ALL EQUIPMENT, DUCTWORK, PIPING, ETC. SHALL BE SUPPORTED FROM THE BUILDING'S STRUCTURAL FRAME AND MEMBERS. ALL DUCT SIZES ARE NET DIMENSIONS AND DO NOT INCLUDE AND INSULATION, SUPPORT OR REINFORCEMENT DIMENSIONS. ALL WORK SHALL BE NEW UNLESS OTHERWISE NOTED AS EXISTING.
- THE CONTRACTOR SHALL PERFORM TESTS ON ALL MECHANICAL SYSTEMS AS REQUIRED BY FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. ALL TESTS SHALL BE WITNESSED AND ACCEPTED BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL SERVICES AND MATERIALS REQUIRED BY THE TEST AND CERTIFY IN WRITING THAT ALL WORK HAS PASSED ALL REQUIRED TESTS.
- THE MECHANICAL SYSTEMS SHALL BE BALANCED, COMPLETE WITH A WRITTEN REPORT BY AN INDEPENDENT AIR BALANCE FIRM WITH A MINIMUM OF 3 YEARS EXPERIENCE.
- WHERE PIPES AND DUCTS PENETRATE WALLS OR FLOOR, THE SPACE BETWEEN THE STRUCTURE AND THE DUCT OR PIPE SHALL BE SEALED AIRTIGHT WITH AN APPROVED MATERIAL. PROVIDE FIRE STOPS AND/OR SEALANT AROUND ALL PENETRATIONS THAT HAVE A FIRE RATING GREATER THAN OR EQUAL TO THE FIRE RATING OF THE WALL, FLOOR OR ENCLOSURE.
- PROVIDE ACCESS PANELS FOR ALL VALVES, DAMPERS, CLEANOUTS, ETC. THAT REQUIRE ACCESS.
- ALL DUCT SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES. WITH THE SUPPLY DUCT WRAPPED WITH 1 1/2" FOIL-FACED FIBERGLASS DUCT WRAP IN UNCONDITIONED AREAS AND ABOVE SUSPENDED CEILINGS. OUTSIDE AIR DUCT AND ALL DUCT LOCATED IN THE "COLD" ATTIC SPACE SHALL BE INSULATED WITH 2" FOIL-FACED FIBERGLASS DUCT WRAP. FLEXIBLE DUCT RUNS SHALL BE LIMITED TO 6'-0" AND BE UL181 LISTED.

### PIPING SYSTEMS

	(E) EXISTING PIPING TO REMAIN
	(R) EXISTING PIPING TO BE REMOVED
	HWS HOT WATER SUPPLY
	HWR HOT WATER RETURN
	RL/RS INDICATES TWO REFRIGERANT PIPES. (1) REFRIGERANT LIQUID AND (1) REFRIGERANT SUCTION
	RL REFRIGERANT LIQUID
	RS REFRIGERANT SUCTION
	RH REFRIGERANT HOT GAS
	CHWS CHILLED WATER SUPPLY
	CHWR CHILLED WATER RETURN
	CD CONDENSATE DRAIN
	CA ACID DRAIN
	AD ACID DRAIN (BELOW SLAB)
	AV ACID VENT
	CWS CONDENSER WATER SUPPLY
	CWR CONDENSER WATER RETURN
	FOR FUEL OIL RETURN
	FOS FUEL OIL SUPPLY
	FOV FUEL OIL VENT
	GYL GLYCOL
	Gyls GLYCOL SUPPLY
	GylR GLYCOL RETURN
	HCR HIGH PRESSURE CONDENSATE RETURN
	HLP HIGH PRESSURE LIQUID PROPANE
	HNG HIGH PRESSURE NATURAL GAS
	HPS HIGH PRESSURE STEAM
	LPS LOW PRESSURE STEAM
	LPR LOW PRESSURE RETURN
	MPS MEDIUM PRESSURE STEAM
	MPR MEDIUM PRESSURE RETURN
	NPW NON POTABLE COLD WATER
	PCWS PROCESS COOLING WATER SUPPLY
	PCWR PROCESS COOLING WATER SUPPLY
	PC PUMP STEAM CONDENSATE
	PD PUMP DISCHARGE
	PW POTABLE WATER
	R RELIEF LINE

### ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	ENC	ENCLOSURE	PSE	PROCESS SOLVENT EXHAUST
ACC	AIR COOLED CONDENSER	ER	EXHAUST REGISTER	PP	POLY-PROPYLENE
ACU	AIR CONDITIONING UNIT	(E)	EXISTING	PPE	PREPURCHASED EQUIPMENT
AD	ACCESS DOOR	EXIST.	EXISTING	PRS	PRESSURE REDUCING STATION
AE	ACID EXHAUST	FBO	FURNISHED BY OWNER	PRV	PRESSURE REDUCING VALVE
AFF	ABOVE FINISHED FLOOR	FBP	FACE AND BYPASS	PVD	PNEUMATIC VOLUME DAMPER
AFMS	AIR FLOW MEASURING STATION	FC	FLEXIBLE CONNECTOR	(R)	REMOVE
AHU	AIR HANDLING UNIT	FD	FIRE DAMPER	RA	RETURN AIR
ATC	AUTOMATIC TEMPERATURE CONTROL	FG	FIBERGLASS	(REL)	RELOCATED
AV	AIR VENT	F&T	FLOAT AND THERMOSTATIC	RF	RETURN FAN
BB	BASEBOARD	FO	FLAT OVAL	RG	RETURN GRILLE
BDD	BACKDRAFT DAMPER	FTR	FINNED TUBE RADIATION	RHC	REHEAT COIL
BG	BLAST GATE	FS	FLOW SWITCH	RM	ROOM
BLDG	BUILDING	GC	GENERAL CONTRACTOR	RR	RETURN REGISTER
BOD	BOTTOM OF DUCT	GPM	GALLONS PER MINUTE	RV	RELIEF VALVE
BOP	BOTTOM OF PIPE	H	HUMIDIFIER	SA	SUPPLY AIR
BTU	BRITISH THERMAL UNIT	HB	HOSE BIBB	SCV	SELF CONTAINED VALVE
CBD	COUNTER BALANCED DAMPER	HRU	HEAT RECOVERY UNIT	SD	SMOKE DETECTOR
CD	CEILING DIFFUSER	HTR	HEATER	SF	SUPPLY FAN
CFF	CAPPED FOR FUTURE	H&V	HEATING AND VENTILATING	SG	SUPPLY GRILLE
CFM	CUBIC FEET PER MINUTE	HVAC	HVAC	SR	SUPPLY REGISTER
CLG	CEILING	HW	HOT WATER	SS	STAINLESS STEEL
CONT	CONTINUATION	HX	HEAT EXCHANGER	TE	TEMPERATURIZED ELEMENT (SENSOR)
COORD	COORDINATION	IN WG	INCHES WATER GAUGE	TG	TRANSFER GRILLE
CT	COOLING TOWER	MAU	MAKEUP AIR UNIT	TOD	TOP OF DUCT
CTE	CONNECT TO EXISTING	MAX	MAXIMUM	TOP	TOP OF PIPE
CU	COPPER	MBH	1000 BTU/HR	TTS	TIGHT TO STEEL
CUH	CABINET UNIT HEATER	MD	MOTORIZED DAMPER	TV	TURNING VANE(S)
CV	CONTROL VALVE	ME	MECHANICAL ENGINEER	TYP	TYPICAL
CW	COLD WATER	MFR	MANUFACTURER	UH	UNIT HEATER
DC	DOUBLE CONTAINED	MIN	MINIMUM	UIC	UP IN CHASE
DDC	DIRECT DIGITAL CONTROL	MPV	MULTI-PURPOSE VALVE	UIW	UP IN WALL
DIA	DIAMETER	MTD	MOUNTED	UV	UNIT VENTILATOR
DIC	DOWN IN CHASE	MUA	MAKE UP AIR	VAV	VARIABLE AIR VOLUME BOX
DIW	DOWN IN WALL	NPW	NON-POTABLE WATER	VB	VACUUM BREAKER
DN	DOWN	NTS	NOT TO SCALE	VCFE	VALVED AND CAPPED FOR FUTURE
DT	DROP AND TRANSITION	OA	OUTSIDE AIR	VD	MANUAL VOLUME DAMPER
DWG	DRAWING	OB	OPPOSED BLADE DAMPER	VFD	VARIABLE FREQUENCY DRIVE
DWH	DOMESTIC WATER HEATER	OED	OPEN END DUCT	VRF	VARIABLE REFRIGERANT FLOW
EA	EXHAUST AIR	PAE	PROCESS ACID EXHAUST	VOC	VOLITILE ORGANIC COMPOUND
EF	EXHAUST FAN	PHE	PROCESS HEAT EXHAUST	VTR	VENT THROUGH ROOF
				W/	WITH

REV.	DESCRIPTION	DATE
<b>ISSUED FOR 90% REVIEW FEBRUARY 9, 2026</b>		
CURRENT ISSUE STATUS:		
		RJ ENGINEERING, LLC
117 NORTH GORHAM RD. GORHAM, MAINE 04038 C: (207) 572-7970 / C: (207) 318-1446		
<b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b>		
PROJECT: WARREN, ME		
<b>MECHANICAL LEGEND &amp; ABBREVIATIONS</b>		
DATE		SCALE
		AS NOTED
DRAWN BY	DESIGNED BY	A/E
JPB	JPB	RMW
PROJECT No. 10003_001		
DRAWING No.		REV
<b>M001</b>		

**BASIC MECHANICAL REQUIREMENTS**

- MECHANICAL, ELECTRICAL AND ASSOCIATED SYSTEMS SHALL BE SAFE, RELIABLE, EFFICIENT, DURABLE, EASILY AND SAFELY OPERABLE AND MAINTAINABLE. EASILY AND SAFELY ACCESSIBLE, AND IN COMPLIANCE WITH APPLICABLE CODES AS SPECIFIED. THE SYSTEMS SHALL BE COMPRISED OF HIGH QUALITY COMMERCIAL-CLASS PRODUCTS OF MANUFACTURERS THAT ARE EXPERIENCED SPECIALISTS IN THE REQUIRED PRODUCT LINES.
- STANDARD PRODUCTS: MATERIAL AND EQUIPMENT SHALL BE NEW AND OF STANDARD PRODUCTS OF A MANUFACTURER REGULARLY ENGAGED IN THE MANUFACTURE OF THE PRODUCTS FOR AT LEAST 3 YEARS (OR LONGER AS SPECIFIED ELSEWHERE). THE DESIGN, MODEL AND SIZE OF EACH ITEM SHALL HAVE BEEN IN SATISFACTORY AND EFFICIENT OPERATION ON AT LEAST THREE INSTALLATIONS FOR APPROXIMATELY THREE YEARS.
- ALL ITEMS FURNISHED SHALL BE FREE FROM DEFECTS THAT WOULD ADVERSELY AFFECT THE PERFORMANCE, MAINTAINABILITY AND APPEARANCE OF INDIVIDUAL COMPONENTS AND OVERALL ASSEMBLY.
- CONFORM TO LOCAL CODES, IF REQUIRED BY LOCAL AUTHORITIES SUCH AS THE GAS SUPPLIER, IF THE LOCAL CODES ARE MORE STRINGENT THAN THOSE SPECIFIED. REFER ANY CONFLICTS TO THE ENGINEER.
- MULTIPLE UNITS: WHEN TWO OR MORE UNITS OF MATERIALS OR EQUIPMENT OF THE SAME TYPE OR CLASS ARE REQUIRED, THESE UNITS SHALL BE PRODUCTS OF ONE MANUFACTURER.
- ASSEMBLED UNITS: MANUFACTURERS OF EQUIPMENT ASSEMBLIES, WHICH USE COMPONENTS MADE BY OTHERS, ASSUME COMPLETE RESPONSIBILITY FOR THE FINAL ASSEMBLED PRODUCT.
- NAMEPLATES: NAMEPLATE BEARING MANUFACTURER'S NAME OR IDENTIFIABLE TRADEMARK SHALL BE SECURELY AFFIXED IN A CONSPICUOUS PLACE ON EQUIPMENT, OR NAME OR TRADEMARK CAST INTEGRALLY WITH EQUIPMENT, STAMPED OR OTHERWISE PERMANENTLY MARKED ON EACH ITEM OF EQUIPMENT.
- ASBESTOS PRODUCTS OR EQUIPMENT OR MATERIALS CONTAINING ASBESTOS SHALL NOT BE USED.

**CONSTRUCTION/INSTALLATION:**

- APPLY AND INSTALL ALL ITEMS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER CONFLICTS BETWEEN THE MANUFACTURER'S INSTRUCTIONS AND THE CONTRACT DRAWINGS AND SPECIFICATIONS TO THE ENGINEER FOR RESOLUTION. PROVIDE WRITTEN HARD COPIES OR COMPUTER FILES OF MANUFACTURER'S INSTALLATION INSTRUCTIONS TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO COMMENCING INSTALLATION OF ANY ITEM. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS IS A CAUSE FOR REJECTION OF THE MATERIAL.
- ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE.
- INSTALLER QUALIFICATIONS: INSTALLER SHALL BE LICENSED BY THE STATE OF MAINE.
- IF AN INSTALLATION IS UNSATISFACTORY TO THE OWNER/ENGINEER, THE CONTRACTOR SHALL CORRECT THE INSTALLATION AT NO ADDITIONAL COST OR ADDITIONAL TIME TO THE OWNER.

**CLEANLINESS:**

- CARE SHALL BE EXERCISED IN THE STORAGE AND HANDLING OF EQUIPMENT AND PIPING MATERIAL TO BE INCORPORATED IN THE WORK. DEBRIS ARISING FROM CUTTING, THREADING AND WELDING OF PIPING SHALL BE REMOVED.
- PIPING SYSTEMS SHALL BE FLUSHED, BLOWN OR PIGGED AS NECESSARY TO DELIVER CLEAN SYSTEMS.
- THE INTERIOR OF ALL TANKS SHALL BE CLEANED PRIOR TO DELIVERY AND BENEFICIAL USE BY THE GOVERNMENT. ALL PIPING SHALL BE TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. ALL FILTERS, STRAINERS, FIXTURE FAUCETS SHALL BE FLUSHED OF DEBRIS PRIOR TO FINAL ACCEPTANCE.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL COSTS, DAMAGE, AND DELAY ARISING FROM FAILURE TO PROVIDE CLEAN SYSTEMS.

**PERMITS, INSPECTIONS, AND CODES:**

- THE INSTALLATION SHALL BE IN FULL COMPLIANCE WITH ALL LOCAL CODES REGARDING ALL HVAC INSTALLATIONS IN EFFECT AT THE SITE LOCATION AND REGULATIONS OF ANY OTHER AGENCY HAVING JURISDICTION AND WITH THE REGULATIONS OF THE STATE OF MAINE.
- CONFLICTS ARISING BETWEEN THE PLANS AND/OR SPECIFICATIONS WITH CODES OR LOCAL ORDINANCES. THE HVAC CONTRACTOR SHALL SUBMIT THESE CONFLICTS TO THE ARCHITECT/ENGINEER BEFORE STARTING ANY WORK. ANY WORK DONE PRIOR TO THIS SUBMITTAL, THAT NEEDS TO BE CHANGED TO CONFORM TO THESE CODES OR ORDINANCES SHALL BE MADE AT THE HVAC CONTRACTOR'S EXPENSE.
- THE HVAC CONTRACTOR SHALL ACQUIRE AND PAY FOR ALL PERMITS AND INSPECTIONS AS RELATING TO SCOPE OF WORK FOR COMPLETION OF ALL HVAC WORK AS INDICATED ON THE DRAWINGS AND HEREIN WITH THESE SPECIFICATIONS.
- AFTER COMPLETION OF THE WORK, THE CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER FOR THE OWNER, A CERTIFICATE OF FINAL INSPECTION AND ACCEPTANCE FROM THE INSPECTOR HAVING JURISDICTION.

**COORDINATION:**

- THE HVAC CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE GENERAL CONTRACTOR AS WELL AS ALL OTHER CONTRACTORS IN A TIMELY MANNER SO AS TO NOT CAUSE UNNECESSARY DELAYS IN PROJECT PROGRESS.

**HVAC PIPE AND EQUIPMENT SUPPORTS AND RESTRAINTS:**

- EQUIPMENT: EQUIPMENT RAILS SHALL BE GALVANIZED STEEL, MINIMUM 18 GAUGE, WITH INTEGRAL BASEPLATE, CONTINUOUS WELDED CORNER SEAMS. FACTORY INSTALLED 2 BY 4 TREATED WOOD NAILER, 18 GAUGE GALVANIZED STEEL COUNTER FLASHING CAP WITH SCREWS, BUILT IN CANT STRIP, (EXCEPT FOR GYPSUM OR TECTUM DECK), MINIMUM HEIGHT 11 INCHES. FOR SURFACE INSULATED ROOF DECK, PROVIDE RAISED CANT STRIP TO START AT THE UPPER SURFACE OF THE INSULATION.
- PIPE/DUCT PEDESTALS: PROVIDE A GALVANIZED UNISTRUT CHANNEL WELDED TO U-SHAPED MOUNTING BRACKETS WHICH ARE SECURED TO SIDE OF RAIL WITH GALVANIZED LAG BOLTS.
  - ATTACHMENT TO WOOD CONSTRUCTION: WOOD SCREWS OR LAG BOLTS.
  - HANGER RODS: HOT ROLLED STEEL, ASTM A36 OR A575 FOR ALLOWABLE LOAD LISTED IN MSS SP\_58, FOR PIPING, PROVIDE ADJUSTMENT MEANS FOR CONTROLLING LEVEL OR SLOPE. TYPES 13 OR 15 TURN BUCKLES SHALL PROVIDE 1/12 INCHES MINIMUM OF ADJUSTMENT AND INCORPORATE LOCKNUTS. ALL U-THREAD RODS ARE ACCEPTABLE.
  - HANGERS SUPPORTING MULTIPLE PIPES (TRAPEZE HANGERS): GALVANIZED, COLD FORMED, LIPPED STEEL CHANNEL HORIZONTAL MEMBER, NOT LESS THAN 1.5/8 INCHES BY 1.5/8 INCHES, NO. 12 GAGE, DESIGNED TO ACCEPT SPECIAL SPRING HELD, HARDENED STEEL NUTS. NOT PERMITTED FOR STEAM SUPPLY AND CONDENSATE PIPING.
  - ALLOWABLE HANGER LOAD: MANUFACTURERS RATING LESS 200 POUNDS.
  - GUIDE INDIVIDUAL PIPES ON THE HORIZONTAL MEMBER OF EVERY OTHER TRAPEZE HANGER WITH 1/4 INCH U-BOLT FABRICATED FROM STEEL ROD. PROVIDE TYPE 40 INSULATION SHIELD, SECURED BY TWO 1/2 INCH GALVANIZED STEEL BANDS, OR PREINSULATED CALCIUM SILICATE SHIELD FOR INSULATED PIPING AT EACH HANGER.

**SUPPORTS FOR PIPING SYSTEMS:**

- SELECT HANGERS SIZED TO ENCIRCLE INSULATION ON INSULATED PIPING. TO PROTECT INSULATION, PROVIDE TYPE 39 SADDLES FOR ROLLER TYPE SUPPORTS OR PREINSULATED CALCIUM SILICATE SHIELDS. PROVIDE TYPE 40 INSULATION SHIELD OR PREINSULATED CALCIUM SILICATE SHIELD AT ALL OTHER TYPES OF SUPPORTS AND HANGERS INCLUDING THOSE FOR PREINSULATED PIPING.
- CONVERTOR AND EXPANSION TANK HANGERS: MAY BE TYPE 1 SIZED FOR THE SHELL DIAMETER. INSULATION WHERE REQUIRED WILL COVER THE HANGERS.

**PIPE PENETRATIONS NOTES:**

- INSTALL SLEEVES DURING CONSTRUCTION FOR OTHER THAN BLOCKED OUT FLOOR OPENINGS FOR RISERS IN MECHANICAL BAYS.
- TO PREVENT ACCIDENTAL LIQUID SPILLS FROM PASSING TO A LOWER LEVEL, PROVIDE THE FOLLOWING:
  - FOR SLEEVES: EXTEND SLEEVE ONE INCH ABOVE FINISHED FLOOR AND PROVIDE SEALANT FOR WATERTIGHT JOINT.
  - FOR BLOCKED OUT FLOOR OPENINGS: PROVIDE 1/12 INCH ANGLE SET IN SILICONE ADHESIVE AROUND OPENING, FOR DRILLED PENETRATIONS: PROVIDE 1/12 INCH ANGLE RING OR SQUARE SET IN SILICONE ADHESIVE AROUND PENETRATION.
- PENETRATIONS ARE NOT ALLOWED THROUGH BEAMS. ANY DEVIATION FROM THESE REQUIREMENTS MUST RECEIVE PRIOR APPROVAL OF GENERAL CONTRACTOR.
- SHEET METAL, PLASTIC, OR MOISTURE RESISTANT FIBER SLEEVES: PROVIDE FOR PIPE PASSING THROUGH FLOORS, INTERIOR WALLS, AND PARTITIONS, UNLESS BRASS OR STEEL PIPE SLEEVES ARE SPECIFICALLY CALLED FOR BELOW.
- CAST IRON OR ZINC COATED PIPE SLEEVES: PROVIDE FOR PIPE PASSING THROUGH EXTERIOR WALLS BELOW GRADE. MAKE SPACE BETWEEN SLEEVE AND PIPE WATERTIGHT WITH A MODULAR OR LINK RUBBER SEAL. SEAL SHALL BE APPLIED AT BOTH ENDS OF SLEEVE.
- BRASS PIPE SLEEVES: PROVIDE FOR PIPE PASSING THROUGH QUARRY TILE, TERRAZZO OR CERAMIC TILE FLOORS. CONNECT SLEEVE WITH FLOOR PLATE.
- SLEEVE CLEARANCE: SLEEVE THROUGH FLOORS, WALLS, PARTITIONS, AND BEAM FLANGES SHALL BE ONE INCH GREATER IN DIAMETER THAN EXTERNAL DIAMETER OF PIPE. SLEEVE FOR PIPE WITH INSULATION SHALL BE LARGE ENOUGH TO ACCOMMODATE THE INSULATION. INTERIOR OPENINGS SHALL BE CAULKED TIGHT WITH FIRE STOPPING MATERIAL AND SEALANT TO PREVENT THE SPREAD OF FIRE, SMOKE, AND GASES.
- SEALANT AND ADHESIVES: SHALL BE AN APPROVED TYPE SUITABLE FOR CONSTRUCTION TYPE.

**DUCT PENETRATIONS NOTES:**

- PROVIDE CURBS FOR ROOF MOUNTED PIPING, DUCTWORK AND EQUIPMENT. CURBS SHALL BE 18 INCHES ON HIGH SIDE WITH CONTINUOUSLY WELDED SEAMS, BUILT-IN CANT STRIP, INTERIOR Baffle WITH ACOUSTIC INSULATION, CURB BOTTOM, HINGED CURB ADAPTER.
- PROVIDE AN APPROVED MEANS OF FIRESTOPPING FOR OPENINGS THROUGH FIRE AND SMOKE BARRIERS, MAINTAINING MINIMUM REQUIRED RATING OF FLOOR, CEILING OR WALL ASSEMBLY.

**WALL, FLOOR, AND CEILING PLATES NOTES:**

- MATERIAL AND TYPE: CHROME PLATED BRASS OR CHROME PLATED STEEL, ONE PIECE OR SPLIT TYPE WITH CONCEALED HINGE, WITH SET SCREW FOR FASTENING TO PIPE, OR SLEEVE. USE PLATES THAT FIT TIGHT AROUND PIPES, COVER OPENINGS AROUND PIPES AND COVER THE ENTIRE PIPE SLEEVE PROJECTION.
- THICKNESS: NOT LESS THAN 3/32 INCH FOR FLOOR PLATES, FOR WALL AND CEILING PLATES, NOT LESS THAN 00.025-INCH FOR UP TO 3 INCH PIPE, 0.035-INCH FOR LARGER PIPE.
- LOCATIONS: USE WHERE PIPE PENETRATES FLOORS, WALLS AND CEILINGS IN EXPOSED LOCATIONS, IN FINISHED AREAS ONLY. PROVIDE A WATERTIGHT JOINT IN SPACES WHERE BRASS OR STEEL PIPE SLEEVES ARE SPECIFIED.

**PIPE AND EQUIPMENT SUPPORTS NOTES**

- WHERE HANGER SPACING DOES NOT CORRESPOND WITH JOIST OR RIB SPACING, USE STRUCTURAL STEEL CHANNELS SECURED DIRECTLY TO JOIST AND RIB STRUCTURE THAT WILL CORRESPOND TO THE REQUIRED HANGER SPACING, AND THEN SUSPEND THE EQUIPMENT AND PIPING FROM THE CHANNELS. DRILL OR BURN HOLES IN STRUCTURAL STEEL ONLY WITH THE PRIOR APPROVAL OF THE GENERAL CONTRACTOR.
- USE OF CHAIN, WIRE OR STRAP HANGERS; WOOD FOR BLOCKING, STAYS AND BRACING; OR, HANGERS SUSPENDED FROM PIPING ABOVE WILL NOT BE PERMITTED. REPLACE OR THOROUGHLY CLEAN RUSTY PRODUCTS AND PAINT WITH ZINC PRIMER.
- USE HANGER RODS THAT ARE STRAIGHT AND VERTICAL. TURNBUCKLES FOR VERTICAL ADJUSTMENTS MAY BE OMITTED WHERE LIMITED SPACE PREVENTS USE. PROVIDE A MINIMUM OF 1/2 INCH CLEARANCE BETWEEN PIPE OR PIPING COVERING AND ADJACENT WORK.
- HVAC HORIZONTAL PIPE SUPPORT SPACING: PROVIDE ADDITIONAL SUPPORTS AT VALVES, STRAINERS, IN LINE PUMPS AND OTHER HEAVY COMPONENTS. PROVIDE A SUPPORT WITHIN ONE FOOT OF EACH ELBOW.
- HVAC VERTICAL PIPE SUPPORTS:
  - UP TO 6 INCH PIPE, 30 FEET LONG, BOLT RISER CLAMPS TO THE PIPE BELOW COUPLINGS, OR WELDED TO THE PIPE AND RESTS SUPPORTS SECURELY ON THE BUILDING STRUCTURE.
  - VERTICAL PIPE LARGER THAN THE FOREGOING. SUPPORT ON BASE ELBOWS OR TEES, OR SUBSTANTIAL PIPE LEGS EXTENDING TO THE BUILDING STRUCTURE.
- OVERHEAD SUPPORTS:
  - THE BASIC STRUCTURAL SYSTEM OF THE BUILDING IS DESIGNED TO SUSTAIN THE LOADS IMPOSED BY EQUIPMENT AND PIPING TO BE SUPPORTED OVERHEAD.
  - PROVIDE STEEL STRUCTURAL MEMBERS OF ADEQUATE CAPABILITY TO SUPPORT THE IMPOSED LOADS.
- FLOOR SUPPORTS:
  - PROVIDE CONCRETE BASES, CONCRETE ANCHOR BLOCKS AND PEDESTALS, AND STRUCTURAL STEEL SYSTEMS FOR SUPPORT OF EQUIPMENT AND PIPING. ANCHOR AND DOWEL CONCRETE BASES AND STRUCTURAL SYSTEMS TO RESIST FORCES UNDER OPERATING AND SEISMIC CONDITIONS (IF APPLICABLE) WITHOUT EXCESSIVE DISPLACEMENT OR STRUCTURAL FAILURE.
  - DO NOT LOCATE OR INSTALL BASES AND SUPPORTS UNTIL EQUIPMENT MOUNTED THEREON HAS BEEN APPROVED. SIZE BASES TO MATCH EQUIPMENT MOUNTED THEREON PLUS 2 INCH EXCESS ON ALL EDGES. BOILER FOUNDATIONS SHALL HAVE HORIZONTAL DIMENSIONS THAT EXCEED BOILER BASE FRAME DIMENSIONS BY AT LEAST 6 INCHES ON ALL SIDES. REFER TO STRUCTURAL DRAWINGS. BASES SHALL BE NEATLY FINISHED AND SMOOTHED. SHALL HAVE CHAMFERED EDGES AT THE TOP, AND SHALL BE SUITABLE FOR PAINTING.
  - ALL EQUIPMENT SHALL BE SHIMMED, LEVELED, FIRMLY ANCHORED, AND GROUTED WITH EPOXY GROUT. ANCHOR BOLTS SHALL BE PLACED IN SLEEVES, ANCHORED TO THE BASES. FILL THE ANNULAR SPACE BETWEEN SLEEVES AND BOLTS WITH A GRANULAR MATERIAL TO PERMIT ALIGNMENT AND REALIGNMENT.

**IDENTIFICATION SIGNS NOTES**

- PROVIDE LAMINATED PLASTIC SIGNS, WITH ENGRAVED LETTERING NOT LESS THAN 3/16-INCH HIGH, DESIGNATING FUNCTIONS, FOR ALL EQUIPMENT, SWITCHES, MOTOR CONTROLLERS, RELAYS, METERS, CONTROL DEVICES, INCLUDING AUTOMATIC CONTROL VALVES. NOMENCLATURE AND IDENTIFICATION SYMBOLS SHALL CORRESPOND TO THAT USED IN MAINTENANCE MANUAL, AND IN DIAGRAMS SPECIFIED ELSEWHERE. ATTACH BY CHAIN, ADHESIVE, OR SCREWS.

**LUBRICATION NOTES**

- LUBRICATE ALL DEVICES REQUIRING LUBRICATION PRIOR TO INITIAL OPERATION. FIELD-CHECK ALL DEVICES FOR PROPER LUBRICATION.
- EQUIP ALL DEVICES WITH REQUIRED LUBRICATION FITTINGS OR DEVICES. PROVIDE A MINIMUM OF ONE LITER (ONE QUART) OF OIL AND ONE POUND OF GREASE OF MANUFACTURER'S RECOMMENDED GRADE AND TYPE FOR EACH DIFFERENT APPLICATION; ALSO PROVIDE 12 GREASE STICKS FOR LUBRICATED PLUG VALVES. DELIVER ALL MATERIALS TO ENGINEER IN UNOPENED CONTAINERS THAT ARE PROPERLY IDENTIFIED AS TO APPLICATION.
- ALL LUBRICATION POINTS SHALL BE ACCESSIBLE WITHOUT DISASSEMBLING EQUIPMENT, EXCEPT TO REMOVE ACCESS PLATES.

**STARTUP AND TEMPORARY OPERATION NOTES**

- STARTUP EQUIPMENT AS DESCRIBED IN EQUIPMENT SPECIFICATIONS. VERIFY THAT VIBRATION IS ACCEPTABLE PRIOR TO EXTENDED OPERATION.

**OPERATING AND PERFORMANCE TESTS NOTES**

- SHOULD EVIDENCE OF MALFUNCTION IN ANY TESTED SYSTEM, OR PIECE OF EQUIPMENT OR COMPONENT PART THEREOF, OCCUR DURING OR AS A RESULT OF TESTS, MAKE PROPER CORRECTIONS, REPAIRS OR REPLACEMENTS, AND REPEAT TESTS AT NO ADDITIONAL COST TO THE OWNER.
- WHEN COMPLETION OF CERTAIN WORK OR SYSTEM OCCURS AT A TIME WHEN FINAL CONTROL SETTINGS AND ADJUSTMENTS CANNOT BE PROPERLY MADE TO MAKE PERFORMANCE TESTS, THEN MAKE PERFORMANCE TESTS FOR HEATING SYSTEMS AND FOR COOLING SYSTEMS RESPECTIVELY DURING FIRST ACTUAL SEASONAL USE OF RESPECTIVE SYSTEMS FOLLOWING COMPLETION OF WORK.

**HVAC SYSTEM BALANCING NOTES**

- TAB SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENT OF THE STANDARD UNDER WHICH TAB AGENCY IS CERTIFIED BY EITHER AAFC OR NEBB.
- GENERAL: DURING TAB ALL RELATED SYSTEM COMPONENTS SHALL BE IN FULL OPERATION. FAN AND PUMP ROTATION, MOTOR LOADS AND VIBRATION SHALL BE CHECKED AND CORRECTED AS NECESSARY BEFORE PROCEEDING WITH TAB. SET CONTROLS AND/OR BLOCK OFF PARTS OF DISTRIBUTION SYSTEMS TO SIMULATE DESIGN OPERATION OF VARIABLE VOLUME AIR OR WATER SYSTEMS FOR TEST AND BALANCE WORK.
- AIR BALANCE AND EQUIPMENT TEST: INCLUDE AIR HANDLING UNITS, FANS, TERMINAL UNITS, FAN COIL UNITS, ROOM DIFFUSERS/OUTLETS/INLETS, KITCHEN HOODS AND EXHAUST FANS.
- ARTIFICIALLY LOAD AIR FILTERS BY PARTIAL BLANKING TO PRODUCE AIR PRESSURE DROP OF MANUFACTURER'S RECOMMENDED PRESSURE DROP.
- ADJUST FAN SPEEDS TO PROVIDE DESIGN AIR FLOW. V-BELT DRIVES, INCLUDING FIXED PITCH PULLEY REQUIREMENTS.
- TEST AND BALANCE SYSTEMS IN ALL SPECIFIED MODES OF OPERATION, INCLUDING VARIABLE VOLUME, ECONOMIZER, AND FIRE EMERGENCY MODES. VERIFY THAT DAMPERS AND OTHER CONTROLS FUNCTION PROPERLY.
- VARIABLE AIR VOLUME (VAV) SYSTEMS:
  - COORDINATE TAB, INCLUDING SYSTEM VOLUMETRIC CONTROLS, WITH DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC.
  - AIR TERMINAL UNITS OR ON DRAWINGS, SPECIFIES THAT MAXIMUM AND MINIMUM FLOW RATES FOR AIR TERMINAL UNITS (VAV) BE FACTORY SET. CHECK AND READJUST VAV FLOW RATES IF NECESSARY. BALANCE AIR DISTRIBUTION FROM VAV ON FULL COOLING MAXIMUM SCHEDULED (CUBIC FEET PER MINUTE), RESET ROOM THERMOSTATS AND CHECK VAV OPERATION FROM MAXIMUM TO MINIMUM COOLING, TO THE HEATING MODE, AND BACK TO COOLING. RECORD AND REPORT THE LEAVING AIR TEMPERATURE WHEN THE VAV IS IN THE MAXIMUM HEATING MODE. RECORD AND REPORT OUTDOOR AIR FLOW RATES UNDER ALL OPERATING CONDITIONS (THE TEST SHALL DEMONSTRATE THAT THE MINIMUM OUTDOOR AIR VENTILATION RATE SHALL REMAIN CONSTANT UNDER ALL OPERATING CONDITIONS).
  - ADJUST OPERATING PRESSURE CONTROL SETPOINT TO MAINTAIN THE DESIGN FLOW TO EACH SPACE WITH THE LOWEST SETPOINT. 8. RECORD FINAL MEASUREMENTS FOR AIR HANDLING EQUIPMENT PERFORMANCE DATA SHEETS.
- WATER BALANCE AND EQUIPMENT TEST: INCLUDE CIRCULATING PUMPS, BASEBOARD, CONVECTORS, PANEL RADIATORS, COILS:
  - ADJUST FLOW RATES FOR EQUIPMENT. SET COILS AND EVAPORATOR TO VALUES ON EQUIPMENT SUBMITTALS, IF DIFFERENT FROM VALUES ON CONTRACT DRAWINGS.
  - PRIMARY, SECONDARY (VARIABLE VOLUME) SYSTEMS: COORDINATE TAB WITH THE DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC. BALANCE SYSTEMS AT DESIGN WATER FLOW AND THEN VERIFY THAT VARIABLE FLOW CONTROLS FUNCTION AS DESIGNED.
  - RECORD FINAL MEASUREMENTS FOR HYDRONIC EQUIPMENT ON PERFORMANCE DATA SHEETS. INCLUDE ENTERING AND LEAVING WATER TEMPERATURES FOR HEATING AND COOLING COILS. INCLUDE ENTERING AND LEAVING AIR TEMPERATURES (DBWB FOR COOLING COILS) FOR AIR HANDLING UNITS AND REHEAT COILS. MAKE AIR AND WATER TEMPERATURE MEASUREMENTS AT THE SAME TIME.

**HVAC INSULATION NOTES**


- REQUIRED PRESSURE TESTS OF DUCT AND PIPING JOINTS AND CONNECTIONS SHALL BE COMPLETED AND THE WORK APPROVED BY THE ENGINEER FOR APPLICATION OF INSULATION. SURFACE SHALL BE CLEAN AND DRY WITH ALL FOREIGN MATERIALS, SUCH AS DIRT, OIL, LOOSE SCALE AND RUST REMOVED.
- EXCEPT FOR SPECIFIC EXCEPTIONS, INSULATE ENTIRE SPECIFIED EQUIPMENT, PIPING (PIPE, FITTINGS, VALVES, ACCESSORIES), AND DUCT SYSTEMS. INSULATE EACH PIPE AND DUCT INDIVIDUALLY. DO NOT USE SCRAP PIECES OF INSULATION WHERE A FULL LENGTH SECTION WILL FIT.
- INSULATION MATERIALS SHALL BE INSTALLED IN A FIRST CLASS MANNER WITH SMOOTH AND EVEN SURFACES, WITH JACKETS AND FACINGS DRAWN TIGHT AND SMOOTHLY CEMENTED DOWN AT ALL LAPS. INSULATION SHALL BE CONTINUOUS THROUGH ALL SLEEVES AND OPENINGS, EXCEPT AT FIRE DAMPERS AND DUCT HEATERS (NFPA 90A). VAPOR RETARDERS SHALL BE CONTINUOUS AND UNINTERRUPTED THROUGHOUT SYSTEMS WITH OPERATING TEMPERATURE 60 DEGREES F AND BELOW. LAP AND SEAL VAPOR RETARDER OVER ENDS AND EXPOSED EDGES OF INSULATION. ANCHORS, SUPPORTS AND OTHER METAL PROJECTIONS THROUGH INSULATION ON COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED FOR A MINIMUM LENGTH OF 6 INCHES.
- INSTALL VAPOR STOPS AT ALL INSULATION TERMINATIONS ON EITHER SIDE OF VALVES, PUMPS AND EQUIPMENT AND PARTICULARLY IN STRAIGHT LENGTHS OF PIPE INSULATION.
- CONSTRUCT INSULATION ON PARTS OF EQUIPMENT SUCH AS CHILLED WATER PUMPS AND HEADS OF CHILLERS, CONVERTORS AND HEAT EXCHANGERS THAT MUST BE OPENED PERIODICALLY FOR MAINTENANCE OR REPAIR, SO INSULATION CAN BE REMOVED AND REPLACED WITHOUT DAMAGE. INSTALL INSULATION WITH BOLTED (20 GAGE GALVANIZED STEEL OR ALUMINUM COVERS AS COMPLETE UNITS, OR IN SECTIONS, WITH ALL NECESSARY SUPPORTS, AND SPLIT TO COINCIDE WITH FLANGE/SPLIT OF THE EQUIPMENT
- INSULATION ON HOT PIPING AND EQUIPMENT SHALL BE TERMINATED SQUARE AT ITEMS NOT TO BE INSULATED, ACCESS OPENINGS AND NAMEPLATES. COVER ALL EXPOSED RAW INSULATION WITH WHITE SEALER OR JACKET MATERIAL.
- PROTECT ALL INSULATIONS OUTSIDE OF BUILDINGS WITH ALUMINUM JACKET USING LOCK JOINT OR OTHER APPROVED SYSTEM FOR A CONTINUOUS WEATHER TIGHT SYSTEM. ACCESS DOORS AND OTHER ITEMS REQUIRING MAINTENANCE OR ACCESS SHALL BE REMOVABLE AND SEALABLE.
- HVAC WORK NOT TO BE INSULATED:
  - INTERNALLY INSULATED DUCTWORK AND AIR HANDLING UNITS.
  - EXHAUST AIR DUCTS
  - EQUIPMENT: EXPANSION TANKS, HOT WATER PUMPS.
  - IN HOT WATER PIPING: UNIONS, FLEXIBLE CONNECTORS, CONTROL VALVES, SAFETY VALVES AND DISCHARGE VENT PIPING, VACUUM BREAKERS, THERMOSTATIC VENT VALVES, EXPOSED PIPING THROUGH FLOOR FOR CONVECTORS AND RADIATORS. INSULATE PIPING TO WITHIN APPROXIMATELY 3 INCHES OF UNINSULATED ITEMS.
- APPLY INSULATION MATERIALS SUBJECT TO THE MANUFACTURER'S RECOMMENDED TEMPERATURE LIMITS. APPLY ADHESIVES, MASTIC AND COATINGS AT THE MANUFACTURER'S RECOMMENDED MINIMUM COVERAGE.
- ELBOWS, FLANGES AND OTHER FITTINGS SHALL BE INSULATED WITH THE SAME MATERIAL AS IS USED ON THE PIPE STRAIGHTS. THE ELBOW/FITTING INSULATION SHALL BE FIELD-FABRICATED, MITERED OR FACTORY PREFABRICATED TO THE NECESSARY SIZE AND SHAPE TO FIT ON THE ELBOW/FITTING. USE OF POLYURETHANE SPRAY-FOAM TO FIT A PVC ELBOW JACKET IS PROHIBITED ON COLD APPLICATIONS.
- FIRESTOP PIPE AND DUCT INSULATION:
  - PROVIDE FIRESTOPPING INSULATION AT FIRE AND SMOKE BARRIERS THROUGH PENETRATIONS. FIRE STOPPING INSULATION SHALL BE UL LISTED.
  - PIPE AND DUCT PENETRATIONS REQUIRING FIRE STOP INSULATION INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
    - PIPE RISERS THROUGH FLOORS
    - PIPE OR DUCT CHASE WALLS AND FLOORS
    - SMOKE PARTITIONS
    - FIRE PARTITIONS
- PROVIDE VAPOR BARRIER JACKETS OVER INSULATION AS FOLLOWS:
  - ALL PIPING AND DUCTWORK EXPOSED TO OUTDOOR WEATHER.
  - ALL INTERIOR PIPING AND DUCTS CONVEYING FLUIDS EXPOSED TO OUTDOOR AIR (I.E. IN ATTICS, VENTILATED (NOT AIR CONDITIONED) SPACES, ETC.) BELOW AMBIENT AIR TEMPERATURE.
- PROVIDE METAL JACKETS OVER INSULATION AS FOLLOWS:
  - ALL PIPING AND DUCTS EXPOSED TO OUTDOOR WEATHER.
  - A 2 INCH OVERLAP IS REQUIRED AT LONGITUDINAL AND CIRCUMFERENTIAL JOINTS.

**14. INSULATION SCHEDULE**

- SUPPLY AND RETURN AIR DUCT: 1-1/2" FLEXIBLE MINERAL FIBER BLANKET WITH FSK
- HOT WATER PIPING: 2" MINERAL FIBER WITH ASJ. ASJ WITH PREMOLEDDED PVC COVERINGS FOR FITTINGS.

**DIRECT DIGITAL CONTROL NOTES**

- BAS CONTRACTOR SHALL THOROUGHLY EXAMINE ALL PROJECT CONTRACT DOCUMENTS AND INSPECT THE SITE, IF APPLICABLE, FOR CONTROL DEVICE AND EQUIPMENT LOCATIONS TO VERIFY THAT EQUIPMENT CAN BE INSTALLED AS SHOWN.
- ANY DISCREPANCIES, CONFLICTS, OR OMISSIONS SHALL BE REPORTED TO THE ARCHITECT OR ENGINEER FOR RESOLUTION BEFORE ROUGH-IN WORK IS STARTED.
- ALL EQUIPMENT, INSTALLATION, RACEWAYS, CONTROL AND INTERLOCK WIRING, SHALL COMPLY WITH ELECTRICAL SPECIFICATIONS, AND ACCEPTABLE INDUSTRY SPECIFICATIONS AND STANDARDS FOR PERFORMANCE, RELIABILITY, AND COMPATIBILITY AND SHALL BE EXECUTED IN STRICT ADHERENCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. WHERE THE REQUIREMENTS OF THIS SECTION DIFFER WITH THOSE IN ELECTRICAL, THE REQUIREMENTS OF THIS SECTION SHALL TAKE PRECEDENCE.
- INSTALL ALL EQUIPMENT IN READILY ACCESSIBLE LOCATIONS.
- 120-VOLT POWER WIRING FOR BAS CONTROLLERS SHALL BE BY THE BAS MANUFACTURER.
- WHERE CLASS 2 WIRES ARE IN CONCEALED AND ACCESSIBLE LOCATIONS INCLUDING CEILING RETURN AIR PLENUMS, APPROVED CABLES, NOT IN RACEWAY MAY BE USED, PROVIDED THAT:
  - CIRCUITS MEET NEC CLASS 2 (CURRENT-LIMITED) REQUIREMENTS. LOW VOLTAGE POWER CIRCUITS SHALL BE SUB-FUSED WHEN REQUIRED TO MEET CLASS 2 CURRENT-LIMIT; ALL CABLES SHALL BE UL LISTED FINSTALL PLENUM-RATED WIRING INR APPLICATION, I.E. CABLES USED IN CEILING PLENUMS SHALL BE UL LISTED SPECIFICALLY FOR THAT PURPOSE.
- SLEEVES WHERE IT PASSES THROUGH WALLS AND FLOORS. MAINTAIN FIRE RATING AT ALL PENETRATIONS IN ACCORDANCE WITH LOCAL CODES. SLEEVES SHALL HAVE NYLON RINGS AT EACH END TO PROTECT WIRING JACKET.
- WHERE CLASS 2 WIRING IS RUN EXPOSED, SUCH AS IN MECHANICAL EQUIPMENT ROOMS, WIRING SHALL BE IN EMT, RUN PARALLEL TO THE SURFACE OR PERPENDICULAR TO IT. CONTROL WIRING IN WET OR EXTERIOR LOCATIONS SHALL BE IN WEATHER-PROOF EMT.
- ALL WIRING AND CABLING, INCLUDING THOSE WITHIN FACTORY-FABRICATED PANELS SHALL BE LABELED AT EACH END, WITHIN 2' OF TERMINATION, WITH A CABLE IDENTIFIER OR OTHER DESCRIPTIVE INFORMATION.
- CONNECT STARTER HAND-OFF-AUTO SELECTOR SWITCHES TO OVERRIDE AUTOMATIC CONTROLS WHEN SWITCH IN THE HAND POSITION. SAFETY SHUTDOWN INTERLOCK SHALL BE IN SERIES AT ALL TIMES.

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PROJECT:		WARREN, ME
<p><b>MECHANICAL SPECIFICATIONS</b></p>		
DATE		SCALE
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DRAWN BY	DESIGNED BY	A/E
JPB	JPB	RMW
PROJECT No. 10003_001		
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**HYDRONIC PIPING NOTES**

- THE DRAWINGS SHOW THE GENERAL ARRANGEMENT OF PIPE AND EQUIPMENT BUT DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY TO CONNECT PIPES TO EQUIPMENT, FAN-COILS, COILS, RADIATORS, ETC., AND TO COORDINATE WITH OTHER TRADES. PROVIDE ALL NECESSARY FITTINGS, OFFSETS AND PIPE RUNS BASED ON FIELD MEASUREMENTS AND AT NO ADDITIONAL COST TO THE OWNER. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATION OF HVAC EQUIPMENT AND ACCESSORIES TO BE CONNECTED ON CEILING GRID. PIPE LOCATION ON THE DRAWINGS SHALL BE ALTERED BY CONTRACTOR WHERE NECESSARY TO AVOID INTERFERENCES AND CLEARANCE DIFFICULTIES.
- STORE MATERIALS TO AVOID EXCESSIVE EXPOSURE TO WEATHER OR FOREIGN MATERIALS. KEEP INSIDE OF PIPING RELATIVELY CLEAN DURING INSTALLATION AND PROTECT OPEN ENDS WHEN WORK IS NOT IN PROGRESS.
- SUPPORT PIPING SECURELY. REFER TO THE COMMON WORK RESULTS FOR HVAC NOTES.
- INSTALL PIPING GENERALLY PARALLEL TO WALLS AND COLUMN CENTER LINES, UNLESS SHOWN OTHERWISE ON THE DRAWINGS. SPACE PIPING, INCLUDING INSULATION, TO PROVIDE ONE INCH MINIMUM CLEARANCE BETWEEN ADJACENT PIPING OR OTHER SURFACE, UNLESS SHOWN OTHERWISE. SLOPE DRAIN PIPING DOWN IN THE DIRECTION OF FLOW NOT LESS THAN ONE INCH IN 40 FEET. PROVIDE ECCENTRIC REDUCERS TO KEEP BOTTOM OF SLOPED PIPING FLAT.
- LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, SEAT AND DISC. GENERALLY LOCATE VALVE STEMS IN OVERHEAD PIPING IN HORIZONTAL POSITION. PROVIDE A UNION ADJACENT TO ONE END OF ALL THREADED END VALVES. CONTROL VALVES USUALLY REQUIRE REDUCERS TO CONNECT TO PIPE SIZES SHOWN ON THE DRAWING. INSTALL BUTTERFLY VALVES WITH THE VALVE OPEN AS RECOMMENDED BY THE MANUFACTURER TO PREVENT BINDING OF THE DISC IN THE SEAT.
- OFFSET EQUIPMENT CONNECTIONS TO ALLOW VALVING OFF FOR MAINTENANCE AND REPAIR WITH MINIMAL REMOVAL OF PIPING. PROVIDE FLEXIBILITY IN EQUIPMENT CONNECTIONS AND BRANCH LINE TAKE-OFFS.
- TEE WATER PIPING RUNOUTS OR BRANCHES INTO THE SIDE OF MAINS OR OTHER BRANCHES.
- PROVIDE MANUAL OR AUTOMATIC AIR VENT AT ALL PIPING SYSTEM HIGH POINTS AND DRAIN VALVES AT ALL LOW POINTS.
- CONNECT PIPING TO EQUIPMENT AS SHOWN ON THE DRAWINGS.
- THERMOMETER WELLS: IN PIPES 2 1/2 INCHES AND SMALLER INCREASE THE PIPE SIZE TO PROVIDE FREE AREA EQUAL TO THE UPSTREAM PIPE AREA.
- FIRESTOPPING: FILL OPENINGS AROUND UNINSULATED PIPING PENETRATING FLOORS OR FIRE WALLS, WITH FIRESTOP MATERIAL.
- WHERE COPPER PIPING IS CONNECTED TO STEEL PIPING, PROVIDE DIELECTRIC CONNECTIONS.

**PIPE JOINTS:**

- WELDED: BEVELING, SPACING AND OTHER DETAILS SHALL CONFORM TO ASME B31.1 AND AWS B2.1.
- SCREWED: THREADS SHALL CONFORM TO ASME B1.20; JOINT COMPOUND SHALL BE APPLIED TO MALE THREADS ONLY AND JOINTS MADE UP SO NO MORE THAN THREE THREADS SHOW. COAT EXPOSED THREADS ON STEEL PIPE WITH JOINT COMPOUND, OR RED LEAD PAINT FOR CORROSION PROTECTION.
- 125 POUND CAST IRON FLANGE (PLAIN FACE): MATING FLANGE SHALL HAVE RAISED FACE, IF ANY, REMOVED TO AVOID OVERSTRESSING THE CAST IRON FLANGE.
- SOLVENT WELDED JOINTS: AS RECOMMENDED BY THE MANUFACTURER.

**LEAK TESTING ABOVEGROUND PIPING:**

- INSPECT ALL JOINTS AND CONNECTIONS FOR LEAKS AND WORKMANSHIP AND MAKE CORRECTIONS AS NECESSARY, TO THE SATISFACTION OF THE ENGINEER. TESTS MAY BE EITHER OF THOSE BELOW, OR A COMBINATION, AS APPROVED BY THE ENGINEER.
- AN OPERATING TEST AT DESIGN PRESSURE, AND FOR HOT SYSTEMS, DESIGN MAXIMUM TEMPERATURE.
- A HYDROSTATIC TEST AT 1.5 TIMES DESIGN PRESSURE. FOR WATER SYSTEMS THE DESIGN MAXIMUM PRESSURE WOULD USUALLY BE THE STATIC HEAD, OR EXPANSION TANK MAXIMUM PRESSURE, PLUS PUMP HEAD. FACTORY TESTED EQUIPMENT (CONVERTORS, EXCHANGERS, COILS, ETC.) NEED NOT BE FIELD TESTED. ISOLATE EQUIPMENT WHERE NECESSARY TO AVOID EXCESSIVE PRESSURE ON MECHANICAL SEALS AND SAFETY DEVICES.

**HYDRONIC PUMPS:**

- FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PUMP MOUNTING AND START-UP. ACCESS/SERVICE SPACE AROUND PUMPS SHALL NOT BE LESS THAN MINIMUM SPACE RECOMMENDED BY PUMPS MANUFACTURER.
  - COORDINATE LOCATION OF THERMOMETER AND PRESSURE GAUGES AS PER HYDRONIC PIPING NOTES.
- START UP:
- VERIFY THAT THE PIPING SYSTEM HAS BEEN FLUSHED, CLEANED AND FILLED.
  - PRIME THE PUMP, VENT ALL AIR FROM THE CASING AND VERIFY THAT THE ROTATION IS CORRECT. TO AVOID DAMAGE TO MECHANICAL SEALS, NEVER START OR RUN THE PUMP IN DRY CONDITION.

**REFRIGERANT PIPING NOTES**

- INSTALL REFRIGERANT PIPING AND REFRIGERANT CONTAINING PARTS IN ACCORDANCE WITH ASHRAE STANDARD 15 AND ASME B31.5
  - INSTALL PIPING AS SHORT AS POSSIBLE, WITH A MINIMUM NUMBER OF JOINTS, ELBOW AND FITTINGS.
  - INSTALL PIPING WITH ADEQUATE CLEARANCE BETWEEN PIPE AND ADJACENT WALLS AND HANGERS TO ALLOW FOR SERVICE AND INSPECTION. SPACE PIPING, INCLUDING INSULATION, TO PROVIDE 25 MM (1 INCH) MINIMUM CLEARANCE BETWEEN ADJACENT PIPING OR OTHER SURFACE. USE PIPE SLEEVES THROUGH WALLS, FLOORS, AND CEILINGS, SIZED TO PERMIT INSTALLATION OF PIPES WITH FULL THICKNESS INSULATION.
  - LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, SEAT AND DISC. GENERALLY LOCATE VALVE STEMS IN OVERHEAD PIPING IN HORIZONTAL POSITION. PROVIDE A UNION ADJACENT TO ONE END OF ALL THREADED END VALVES. CONTROL VALVES USUALLY REQUIRE REDUCERS TO CONNECT TO PIPE SIZES SHOWN ON THE DRAWING.
  - USE COPPER TUBING IN PROTECTIVE CONDUIT WHEN INSTALLED BELOW GROUND.
  - INSTALL HANGERS AND SUPPORTS PER ASME B31.5 AND THE REFRIGERANT PIPING MANUFACTURER'S RECOMMENDATIONS.

**JOINT CONSTRUCTION:**

- BRAZED JOINTS: COMPLY WITH AWS "BRAZING HANDBOOK" AND WITH FILLER MATERIALS COMPLYING WITH AWS A5.8/A5.8M.
  - USE TYPE BCUP, COPPER-PHOSPHORUS ALLOY FOR JOINING COPPER SOCKET FITTINGS WITH COPPER TUBING.
  - USE TYPE BAG, CADMIUM-FREE SILVER ALLOY FOR JOINING COPPER WITH BRONZE OR STEEL.
  - SWAB FITTINGS AND VALVES WITH MANUFACTURER'S RECOMMENDED CLEANING FLUID TO REMOVE OIL AND OTHER COMPOUNDS PRIOR TO INSTALLATION.
  - PASS NITROGEN GAS THROUGH THE PIPE OR TUBING TO PREVENT OXIDATION AS EACH JOINT IS BRAZED. CAP THE SYSTEM WITH A REUSABLE PLUG AFTER EACH BRAZING OPERATION TO RETAIN THE NITROGEN AND PREVENT ENTRANCE OF AIR AND MOISTURE.
- PROTECT REFRIGERANT SYSTEM DURING CONSTRUCTION AGAINST ENTRANCE OF FOREIGN MATTER, DIRT AND MOISTURE; HAVE OPEN ENDS OF PIPING AND CONNECTIONS TO COMPRESSORS, CONDENSERS, EVAPORATORS AND OTHER EQUIPMENT TIGHTLY CAPPED UNTIL ASSEMBLY.
- PIPE RELIEF VALVE DISCHARGE TO OUTDOORS FOR SYSTEMS CONTAINING MORE THAN 100 LBS OF REFRIGERANT.
- FIRESTOPPING: FILL OPENINGS AROUND UNINSULATED PIPING PENETRATING FLOORS OR FIRE WALLS, WITH FIRESTOP MATERIAL.

**SYSTEM TEST AND CHARGING:**

- SYSTEM TEST AND CHARGING: AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER OR AS FOLLOWS:
  - CONNECT A DRUM OF REFRIGERANT TO CHARGING CONNECTION AND INTRODUCE ENOUGH REFRIGERANT INTO SYSTEM TO RAISE THE PRESSURE TO 10 PSI GAGE. CLOSE VALVES AND DISCONNECT REFRIGERANT DRUM. TEST SYSTEM FOR LEAKS WITH HALIDE TEST TORCH OR OTHER APPROVED METHOD SUITABLE FOR THE TEST GAS USED. REPAIR ALL LEAKING JOINTS AND RETEST.
  - CONNECT A DRUM OF DRY NITROGEN TO CHARGING VALVE AND BRING TEST PRESSURE TO DESIGN PRESSURE FOR LOW SIDE AND FOR HIGH SIDE. TEST ENTIRE SYSTEM AGAIN FOR LEAKS.
  - EVACUATE THE ENTIRE REFRIGERANT SYSTEM BY THE TRIPPLICATE EVACUATION METHOD WITH A VACUUM PUMP EQUIPPED WITH AN ELECTRONIC GAGE READING IN MICRONS. PULL THE SYSTEM DOWN TO 500 MICRONS 2245.6 INCHES OF MERCURY AT 60 DEGREES F AND HOLD FOR FOUR HOURS THEN BREAK THE VACUUM WITH DRY NITROGEN (OR REFRIGERANT). REPEAT THE EVACUATION TWO MORE TIMES BREAKING THE THIRD VACUUM WITH THE REFRIGERATION TO BE CHARGED AND CHARGE WITH THE PROPER VOLUME OF REFRIGERANT.

**PIPE INSULATION**

- INSULATE AS FOLLOWS: 1/2" TYPE I, FLEXIBLE, CLOSED CELL ELASTOMERIC INSULATION, TUBULAR, THERMAL CONDUCTIVITY OF 0.30 AT 75F WITH OPERATING TEMPERATURE RANGE OF -70F TO 180F.

**DUCT ACCESSORIES NOTES**

- INSTALL ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NFPA 90A, AND FOLLOW SMACNA HVACDCS.
- INSTALL COMPONENTS FURNISHED UNDER OTHER SECTIONS OF THESE NOTES.
- DUCT HANGERS AND SUPPORTS: SMACNA HVACDCS, SECTION 4.
  - FLEXIBLE DUCTS: SUPPORT DUCTS BY HANGERS EVERY 3 FEET, UNLESS SUPPORTED BY CEILING CONSTRUCTION. STRETCH FLEXIBLE AIR DUCTS TO SMOOTH OUT CORRUGATIONS, AND LONG RADIUS ELBOWS, WHERE POSSIBLE, USING A MINIMUM LENGTH TO MAKE CONNECTIONS.
  - FLEXIBLE CONNECTORS: PROVIDE FLEXIBLE CONNECTORS BETWEEN FANS AND DUCTS OR CASINGS AND WHERE DUCTS ARE OF DISSIMILAR METALS. FOR ROUND DUCTS, SECURELY FASTEN FLEXIBLE CONNECTORS BY ZINC-COATED STEEL CLINCH-TYPE DRAW-BANDS. FOR RECTANGULAR DUCTS, LOCK FLEXIBLE CONNECTORS TO METAL COLLARS.
- ATTACH SUPPORTS ONLY TO STRUCTURAL FRAMING MEMBERS AND NON-METAL DECK CONCRETE SLABS. DO NOT ANCHOR SUPPORTS TO METAL DECKING UNLESS A MEANS IS PROVIDED AND APPROVED FOR PREVENTING THE ANCHORS FROM PUNCTURING THE METAL DECKING. WHERE SUPPORTS ARE REQUIRED BETWEEN STRUCTURAL FRAMING MEMBER, PROVIDE SUITABLE INTERMEDIATE METAL FRAMING. WHERE C CLAMPS ARE USED, USE RETAINER CLIPS.
- ACCESS DOORS:
  - PROVIDE DUCT ACCESS DOORS IN HORIZONTAL RETURN AIR, EXHAUST AIR AND FRESH AIR INTAKE DUCTWORK TO FACILITATE THE REMOVAL OF ACCUMULATIONS OF DUST AND COMBUSTIBLE MATERIALS IN ACCORDANCE WITH NFPA 90A. INSTALL ACCESS DOORS AT MAXIMUM 20 FOOT (6 M) INTERVALS AND AT THE BASE OF EACH VERTICAL RISER.
  - PROVIDE DUCT ACCESS DOORS FOR INSPECTION, SERVICING, AND CLEANING BEFORE FILTERS, BEFORE AND AFTER COILS, BEFORE AND AFTER FANS, BEFORE AUTOMATIC DAMPERS, AT FIRE DAMPERS, AT SMOKE DAMPERS, AT COMBINATION FIRE AND SMOKE DAMPERS, AT SMOKE DETECTOR SAMPLING TUBES (UPSTREAM OF THE SAMPLING TUBE), AT MULTIPLE BLADE VOLUME DAMPERS, AT BACKDRAFT AND COUNTERBALANCED DAMPERS, AND ELSEWHERE AS SPECIFIED OR AS INDICATED ON THE DRAWINGS. PROVIDE AT CHANGES IN DIRECTION OF KITCHEN EXHAUST DUCTWORK AND AS OTHERWISE REQUIRED FOR CLEANING KITCHEN EXHAUST DUCTWORK IN ACCORDANCE WITH NFPA 96. PROVIDE MINIMUM 8 X 8 INCH SIZE FOR HAND ACCESS, 18 X 18 INCH SIZE FOR SHOULDER ACCESS, AND AS SPECIFIED OR AS INDICATED ON THE DRAWINGS. REVIEW LOCATIONS PRIOR TO FABRICATION.
  - ACCESS DOORS INSTALLED FOR ACCESS TO FIRE DAMPERS AND FIRE/SMOKE DAMPERS SHALL HAVE ONE SIDE AT LEAST 12 INCHES LONG TO ALLOW TWO HAND ACCESS. PROVIDE IDENTIFICATION WITH LETTERS OF MINIMUM 1/2 INCH HEIGHT TO INDICATE THE PRESENCE OF FIRE PROTECTION DEVICES WITHIN. CONFORM WITH NFPA 90A AND APPLICABLE CODES. REFER TO DIVISION 23 SECTION "IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT" FOR LABELING MATERIALS SPECIFICATIONS.
- PROVIDE FIRE DAMPERS AT LOCATIONS INDICATED, WHERE DUCTS AND OUTLETS PASS THROUGH FIRE RATED COMPONENTS. INSTALL WITH REQUIRED PERIMETER MOUNTING ANGLES, SLEEVES, BREAKAWAY DUCT CONNECTIONS, CORROSION RESISTANT SPRINGS, BEARINGS, BUSHINGS AND HINGES.
- INSTALL SMOKE DAMPERS AND COMBINATION SMOKE AND FIRE DAMPERS IN ACCORDANCE WITH NFPA 92A.
- FIRE DAMPER TESTING: DEMONSTRATE OPERATION AND RE-SETTING OF EACH FIRE DAMPER AND FIRE/SMOKE DAMPER TO OWNER'S REPRESENTATIVE AFTER INSTALLATION AND PRIOR TO BUILDING OCCUPANCY. REMOVE OR MELT THE FUSIBLE LINK AND ALLOW THE DAMPER TO CLOSE, THEN REOPEN THE DAMPER AND REPLACE THE LINK. REPAIR OR REPLACE ANY DAMPER WHICH DOESN'T CLOSE AND OPEN PROPERLY. COORDINATE WITH ACCESS DOOR INSTALLATION TO ENSURE THAT ACCESS DOORS ARE OF ADEQUATE SIZE AND LOCATION TO ALLOW REQUIRED REACH WITH 2 HANDS TO HOLD THE DAMPER OPEN WHILE REPLACING THE LINK.
- PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF.
- PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. WHERE BRANCH DUCT IS COMPLETELY ABOVE NON-ACCESSIBLE WALLBOARD CEILING AND THE ARCHITECT HAS NOT APPROVED THE USE OF ACCESS DOORS, DUCT MOUNTED BALANCING DAMPERS SHALL NOT BE REQUIRED.
- FOR VOLUME DAMPERS LOCATED ABOVE SUSPENDED CEILINGS AND IN AREAS THAT ARE NOT VISIBLE TO BUILDING OCCUPANTS (E.G. MECHANICAL ROOMS), PROVIDE FLUORESCENT ORANGE COLORED SURVEYOR'S TAPE. PERMANENTLY ATTACH TAPE TO DAMPER HANDLES AND RUN TAPE DOWN TO 10 IN. ABOVE CEILING OR 12 IN. BELOW DAMPER HANDLE WHERE CEILINGS DO NOT EXIST (E.G. MECHANICAL ROOMS).
- PROVIDE FLEXIBLE CONNECTIONS IMMEDIATELY ADJACENT TO EQUIPMENT IN DUCTS ASSOCIATED WITH FANS AND MOTORIZED EQUIPMENT, AND SUPPORT BY VIBRATION ISOLATORS. STAPLE AND SEAL CONNECTIONS AIRTIGHT.
- DUCT SLEEVES AND PREPARED OPENINGS: INSTALL FOR DUCTS PASSING THROUGH ROOFS, CEILINGS, WALLS AND FLOORS. FIELD DETERMINE THE PROPER SIZE AND LOCATION OF SLEEVES AND PREPARED OPENINGS.
  - DUCT SLEEVES: ALLOW ONE-INCH CLEARANCE BETWEEN DUCT AND SLEEVE OR ONE-INCH CLEARANCE BETWEEN INSULATION AND SLEEVE FOR INSULATED DUCTS, EXCEPT AT GRILLES, REGISTERS, AND DIFFUSERS.
  - PREPARED OPENINGS: ALLOW ONE-INCH CLEARANCE BETWEEN DUCT AND OPENING OR ONE-INCH CLEARANCE BETWEEN INSULATION AND OPENING FOR INSULATED DUCTS, EXCEPT AT GRILLES, REGISTERS, AND DIFFUSERS.
- CLOSURE COLLARS:
  - PROVIDE NOT LESS THAN 4 INCHES WIDE ON EACH SIDE OF WALLS OR FLOORS WHERE SLEEVES OR PREPARED OPENINGS ARE INSTALLED. FIT COLLARS SNUGLY AROUND DUCTS. GRIND SMOOTH EDGES OF COLLAR TO PREVENT TEARING OR PUNCTURING INSULATION COVERING OR VAPOR BARRIER.
  - HERE INSULATED DUCTS PENETRATE NON-FIRE-RATED WALLS, INSULATION SHALL BE CONTINUOUS THROUGH THE CLOSURE COLLARS AND THE CLOSURE COLLARS SHALL BE INSTALLED TIGHT TO THE INSULATION.
  - HERE INSULATED DUCTS PENETRATE FIRE RATED WALLS, INSULATE DUCTS ON BOTH SIDES OF CLOSURE COLLARS AND SEAL POINTS OF CONTACT BETWEEN CLOSURE COLLAR AND INSULATION WITH VAPOR PROOF ADHESIVE.
  - HERE DUCTS PENETRATE FIRE RATED WALLS, PROVIDE FIREPROOF SEALANT AT CLOSURE COLLAR. REFER TO DIVISION 07 SECTION "PENETRATION FIRESTOPPING" FOR FIREPROOF SEALANT REQUIREMENTS.
  - SECURE CLOSURE COLLARS TO DUCTS WITH SHEET METAL SCREWS AT MAXIMUM 6 INCH CENTERS AND SECURE CLOSURE COLLARS TO WALLS OR FLOORS WITH SHEETROCK SCREWS, NAILS OR OTHER APPROPRIATE FASTENER AT MAXIMUM 6 INCH CENTERS.
  - PACKING: PACK WITH NON-COMBUSTIBLE GLASS FIBER INSULATION IN SPACES BETWEEN SLEEVE/OPENING AND DUCT/DUCT INSULATION. COVER OR SEAL EDGES OF PACKING TO CONTAIN LOOSE FIBERS.


- ELIMINATORS: EQUIP EACH COOLING COIL IN CASINGS HAVING AN AIR VELOCITY OF OVER 500 FPM THROUGH THE NET FACE AREA WITH MOISTURE ELIMINATORS, UNLESS THE COIL MANUFACTURER GUARANTEES, OVER THE SIGNATURE OF A RESPONSIBLE COMPANY OFFICIAL, THAT NO MOISTURE WILL BE CARRIED BEYOND THE DRIP PANS UNDER ACTUAL CONDITIONS OF OPERATION.
- DRAIN (DRIP) PANS, DRAIN CONNECTIONS, AND DRAIN LINES: PROVIDE COILS WITH DRAIN AND DRAIN CONNECTIONS. WHERE COILS ARE SECTIONALIZED, WITH ONE SECTION ABOVE THE OTHER, PROVIDE INTERMEDIATE DRAIN PANS. THERE SHALL BE NO ENTRAINMENT OF WATER IN AIR STREAM. DRAIN CONDENSATE FROM DRAIN PANS TO THE NEAREST DISPOSAL POINTS AS SPECIFIED OR AS INDICATED ON THE DRAWINGS. EQUIP DRAIN LINES WITH U-TRAPS AND A SEAL HEIGHT ONE-INCH GREATER THAN THE MAXIMUM STATIC PRESSURE RATING OF THE FAN SYSTEM. INSURE PANS DRAIN COMPLETELY UNDER OPERATING CONDITIONS.
- PROVIDE DUCT TEST HOLES WHERE REQUIRED FOR TESTING AND BALANCING PURPOSES.

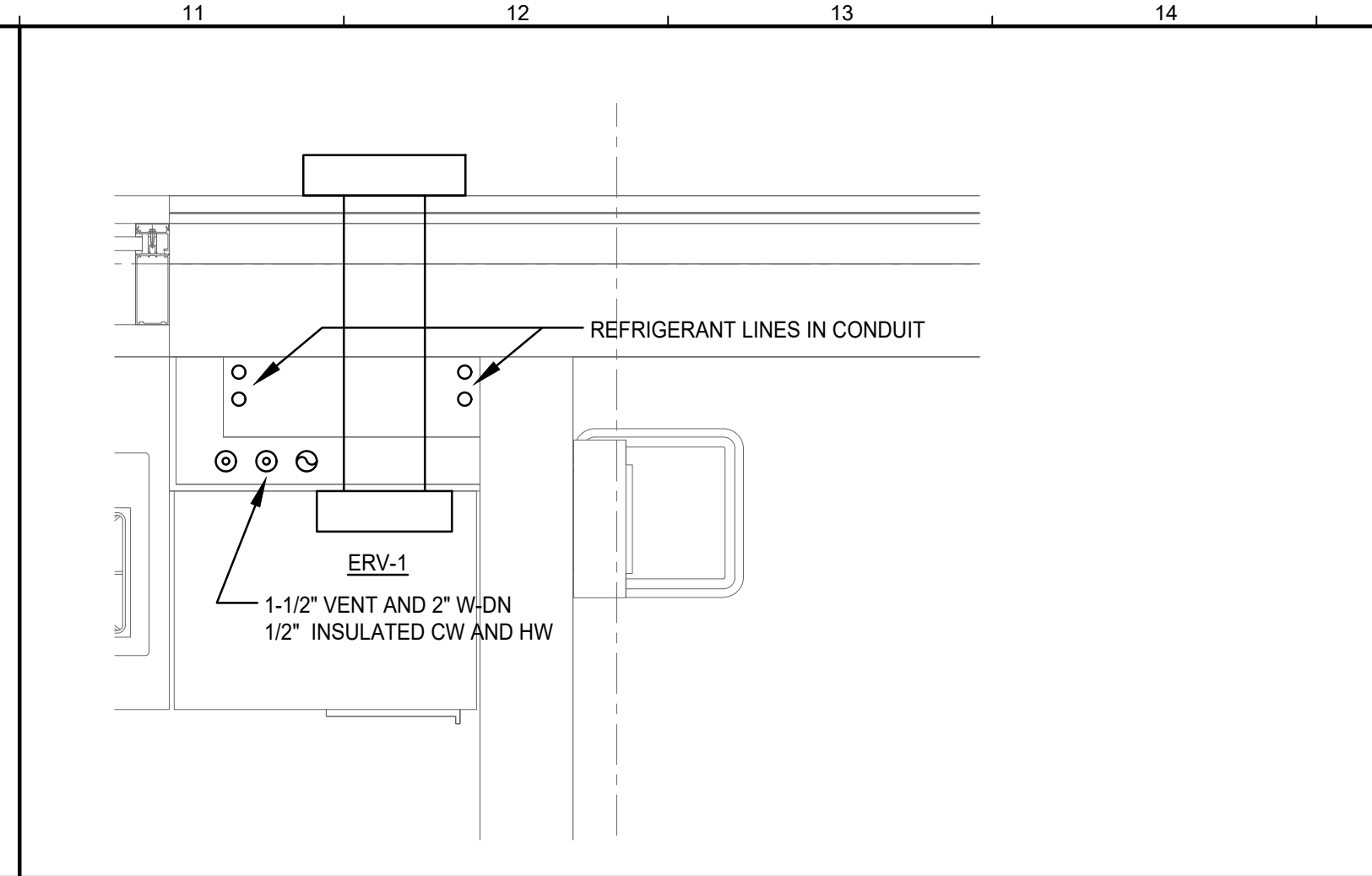
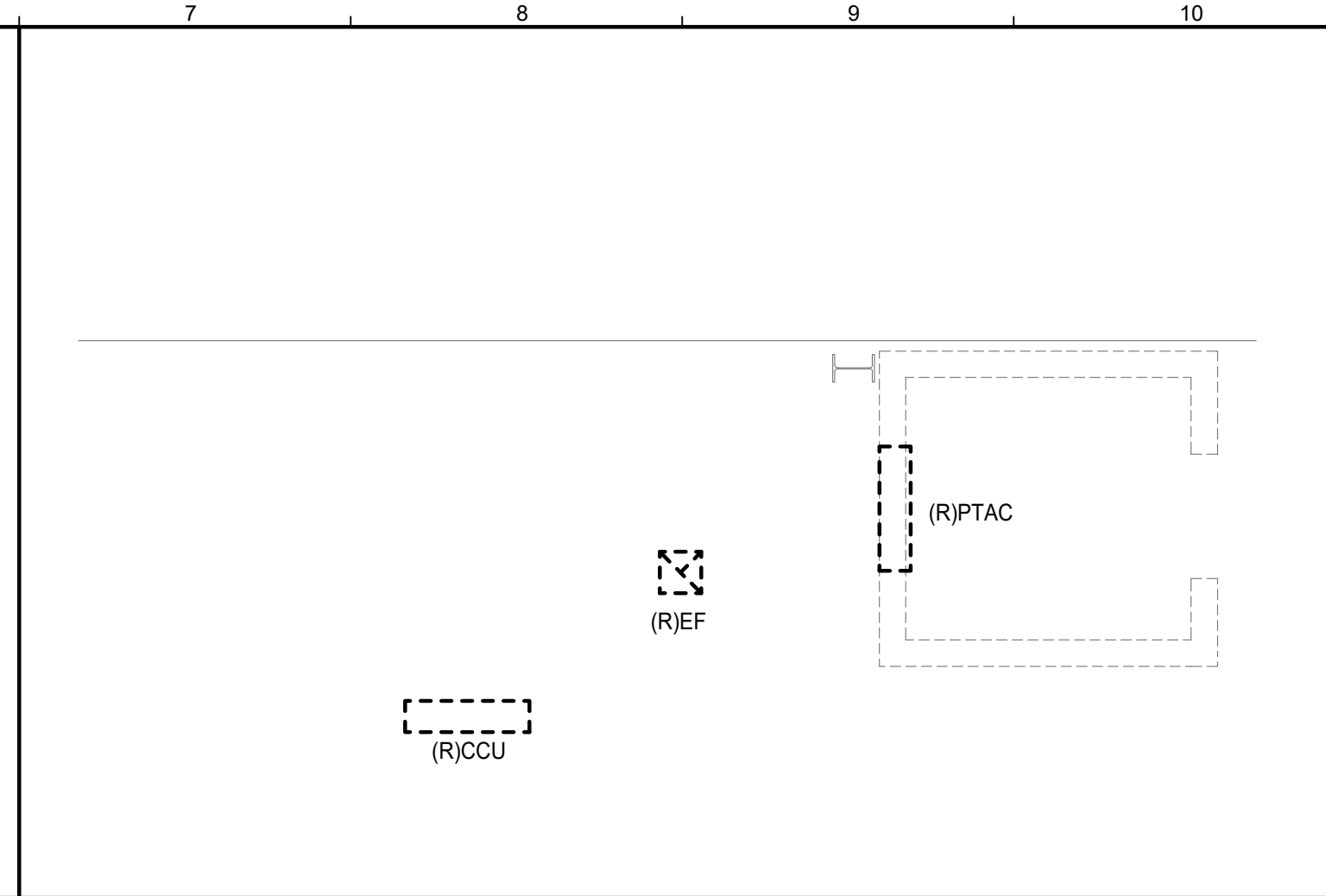
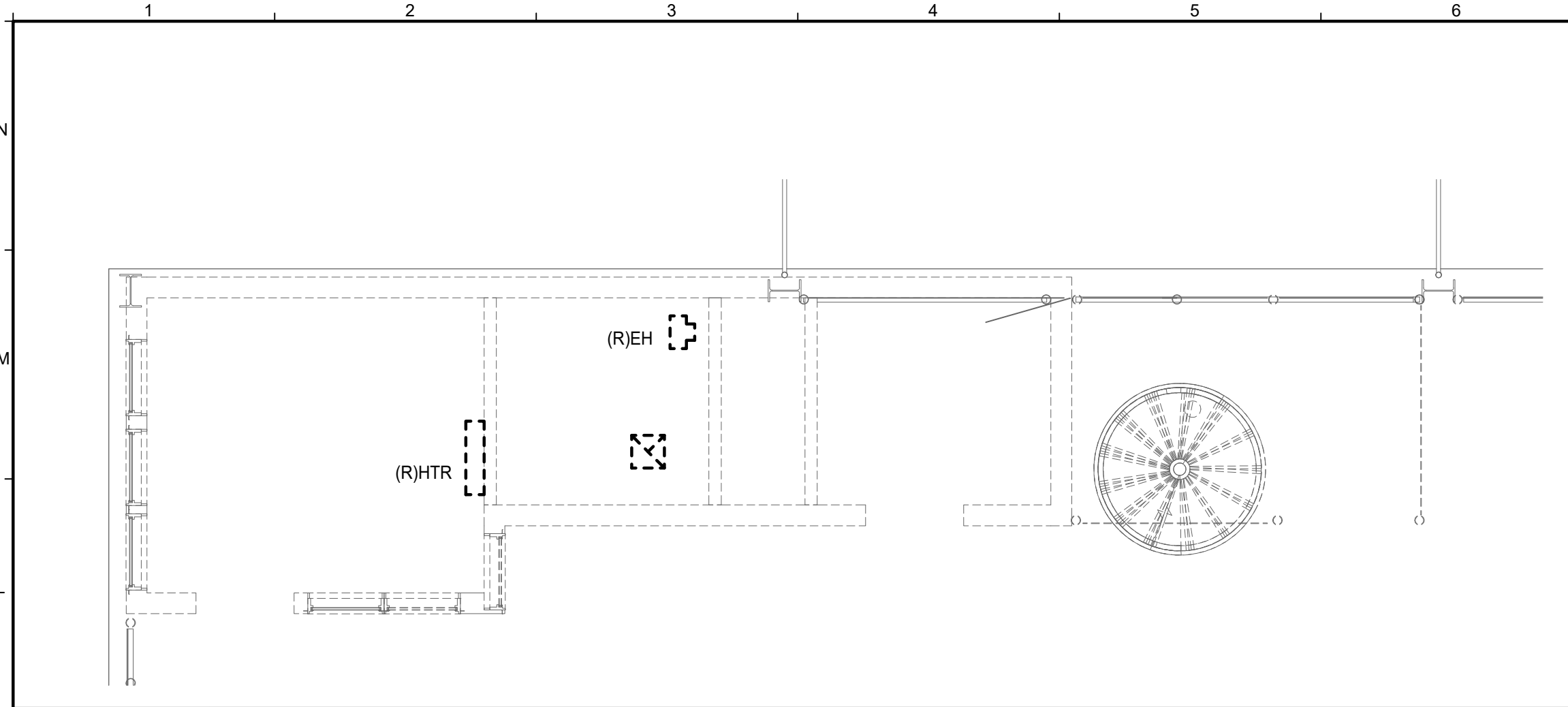
**AIR TERMINAL UNITS:**

- WORK SHALL BE INSTALLED AS SHOWN AND ACCORDING TO THE MANUFACTURER'S DIAGRAMS AND RECOMMENDATIONS.
- HANDLE AND INSTALL UNITS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- SUPPORT UNITS RIGIDLY SO THEY REMAIN STATIONARY AT ALL TIMES. CROSS BRACING OR OTHER MEANS OF STIFFENING SHALL BE PROVIDED AS NECESSARY. METHOD OF SUPPORT SHALL BE SUCH THAT DISTORTION AND MALFUNCTION OF UNITS CANNOT OCCUR.
- LOCATE AIR TERMINAL UNITS TO PROVIDE A STRAIGHT SECTION OF INLET DUCT FOR PROPER FUNCTIONING OF FLOW CONTROL.

**DIFFUSERS AND GRILLES:**

- DIFFUSERS AND GRILLES ARE TO BE ALUMINUM UNLESS NOTED OTHERWISE. EXPOSED FASTENINGS ARE TO BE THE SAME MATERIAL AS THE RESPECTIVE GRILLE OR DIFFUSER. FASTENERS FOR ALUMINUM MAY BE STAINLESS STEEL.
- PROTECT EQUIPMENT DURING CONSTRUCTION AGAINST ENTRY OF FOREIGN MATTER TO THE INSIDE AND CLEAN BOTH INSIDE AND OUTSIDE BEFORE OPERATION AND PAINTING.

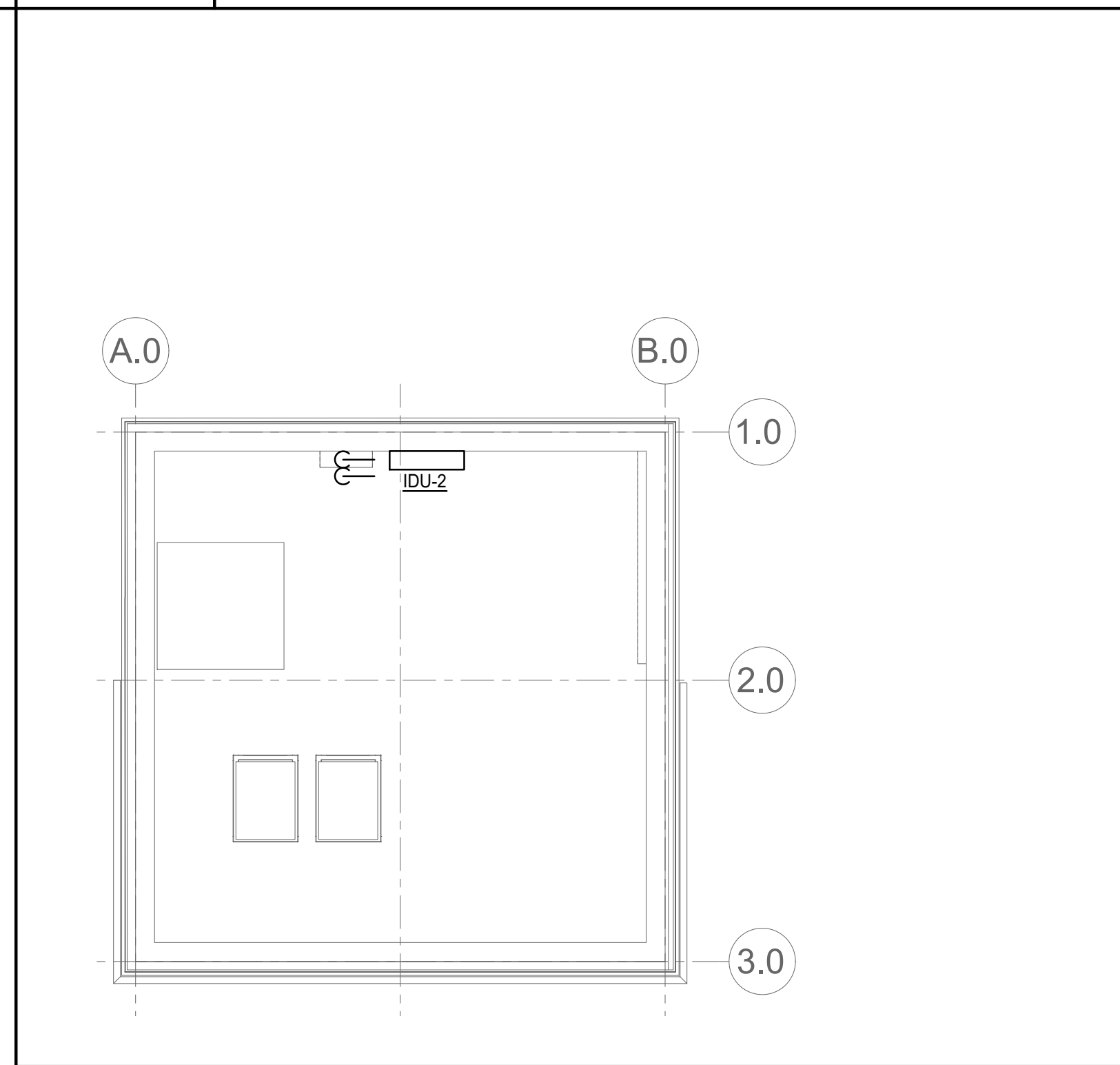
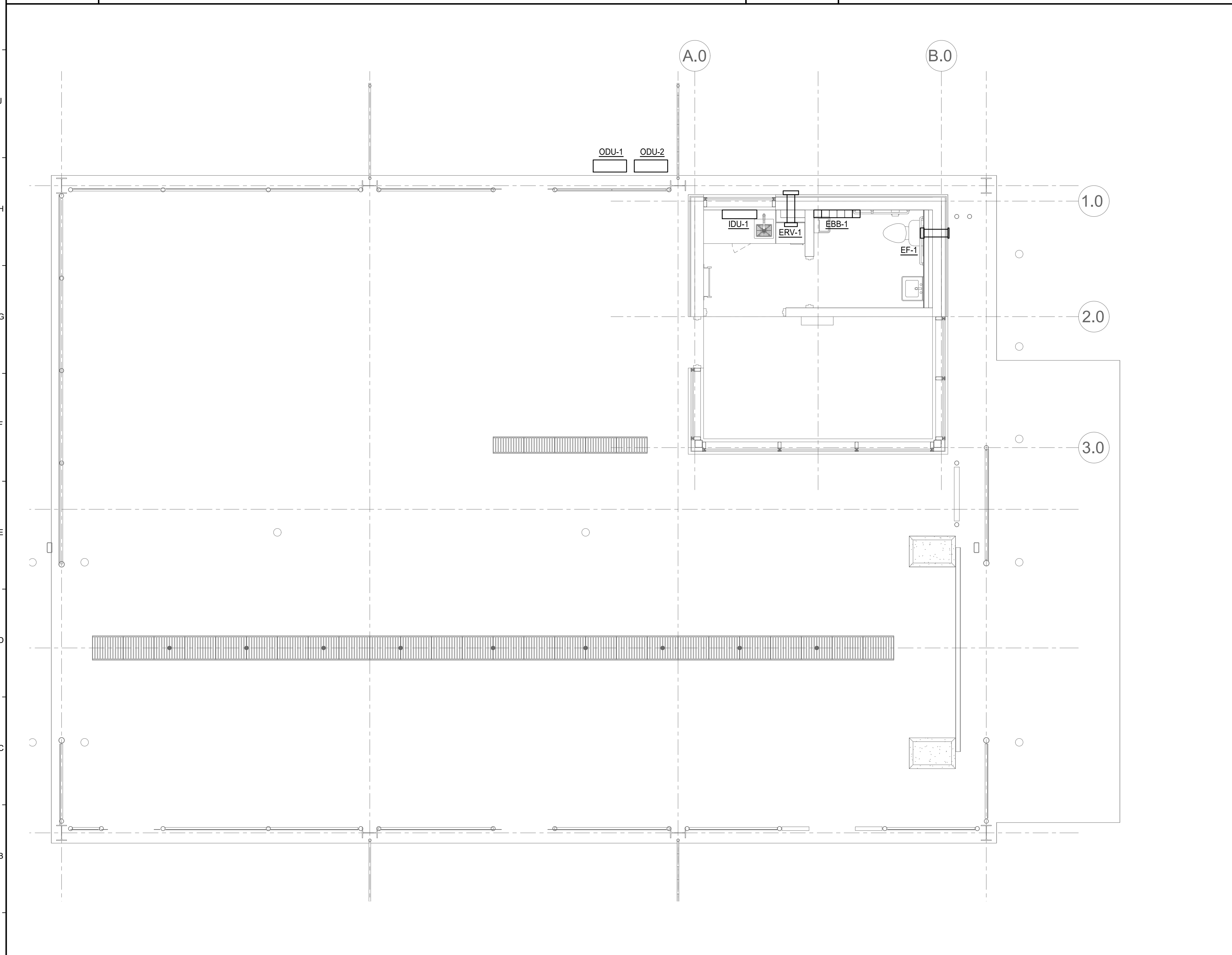
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<b>ISSUED FOR 90% REVIEW FEBRUARY 9, 2026</b>		
CURRENT ISSUE STATUS:		
		<b>RJ ENGINEERING, LLC</b> 117 NORTH GORHAM RD. GORHAM, MAINE 04038 C:(207) 572-7970 / C:(207) 318-1446
<b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b>		
PROJECT:		WARREN, ME
<b>MECHANICAL SPECIFICATIONS</b>		
DATE		SCALE
		AS NOTED
DRAWN BY	DESIGNED BY	A/E
JPB	JPB	RMW
PROJECT No.		
10003_001		
DRAWING No.		REV
<b>M003</b>		



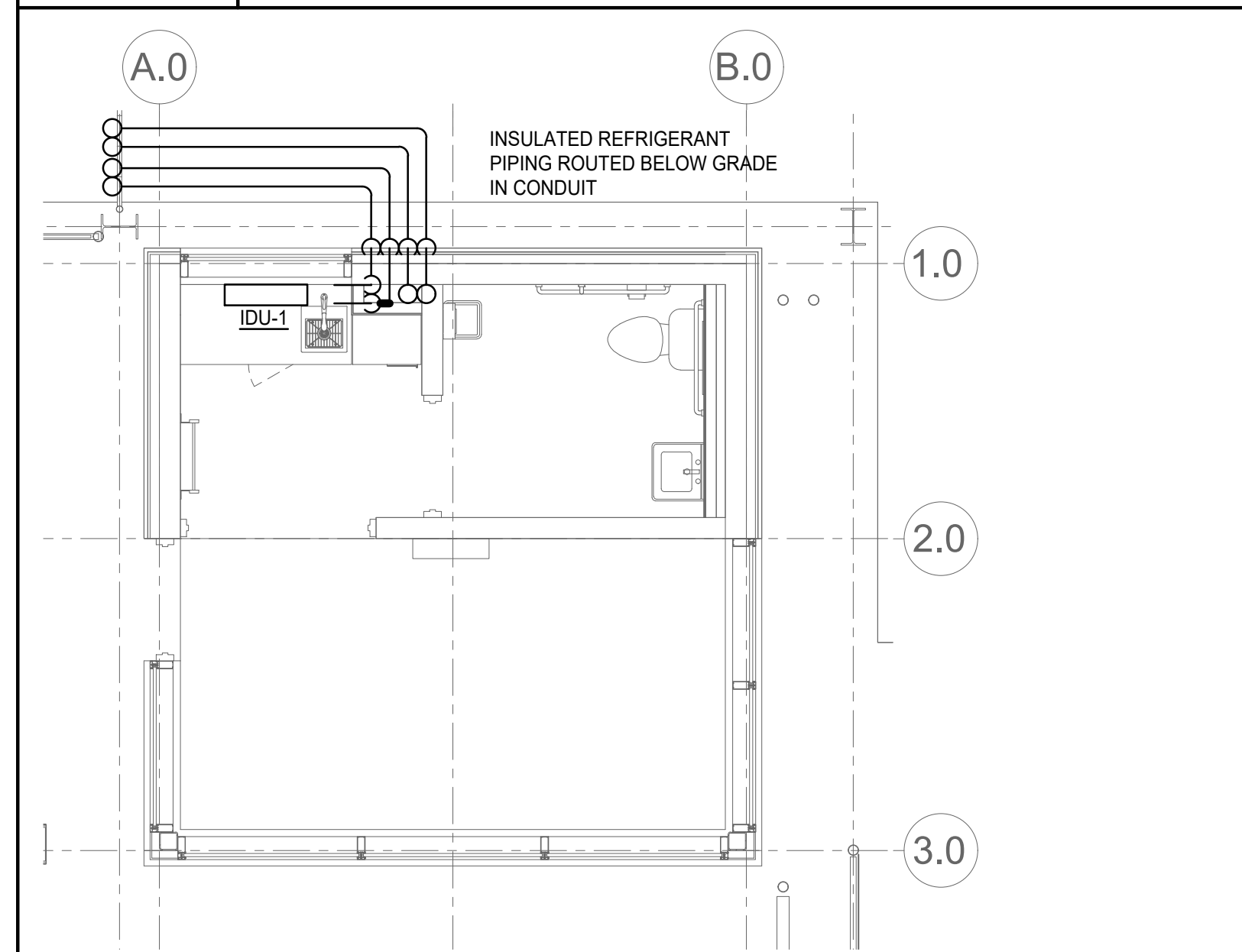
**K1** FIRST LEVEL MECHANICAL DEMOLITION PART PLAN  
1/4"=1'-0"

**K8** SECOND LEVEL DEMO PART PLAN  
1/4"=1'-0"

**K11** PIPING DETAIL AT CHASE  
1"=1'-0"




**E12** SECOND LEVEL PART PLAN  
1/4"=1'-0"



**A11** FIRST LEVEL PIPING PART PLAN  
1/4"=1'-0"

**A1** FIRST LEVEL OVERALL MECHANICAL PLAN  
1/4"=1'-0"

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 <b>RJ ENGINEERING, LLC</b> 117 NORTH GORHAM RD. GORHAM, MAINE 04038 C:(207) 572-7970 / C:(207) 318-1446		
<b>GATEHOUSE - SALLYPORT</b> <b>MAINE STATE PRISON</b> PROJECT: WARREN, ME		
<b>MECHANICAL FLOOR PLANS</b>		
DATE	SCALE	AS NOTED
DRAWN BY JPB	DESIGNED BY JPB	A/E RMW
PROJECT No. 10003_001		
DRAWING No. M101		REV

VRF/SPLIT SYSTEM INDOOR UNIT SCHEDULE																									
TAG	ROOM SERVING	OUTDOOR UNIT	SANSUNG MODEL	TYPE	NOMINAL COOLING CAPACITY(BTU/h)	NOMINAL HEATING CAPACITY(BTU/h)	COOLING DESIGN ENTERING AIR TEMP DB/WB (°F)	HEATING DESIGN ENTERING AIR TEMP DB/WB (°F)	CORRECTED CAPACITY				COOLING COIL LAT (°F)	HEATING COIL LAT (°F)	REFR. PIPE SIZE LIQUID/SUCTION (IN.)	FAN SPEED SETTING	PEAK FAN AIRFLOW (CFM)	SOUND PRESSURE PER FAN SPEED (dBA)	VOLTAGE / PHASE	POWER COOLING 208V (KW)	POWER HEATING 208V (KW)	MCA / MFS	CD REMOVAL (GAL/HR)	NOTES	
									COOLING DIVERSITY (FULL/PARTIAL)	COOLING TOTAL CAPACITY (BTU/h)	COOLING SENSIBLE CAPACITY (BTU/h)	HEATING DIVERSITY (FULL/PARTIAL)													HEATING CAPACITY (BTU/h)
IDU-1	FIRST LEVEL	ODU-1	AR12DXDABWKNVCV	WALL MOUNT	5,000	5,600	80.6 / 66.2	68.0 / 59.0	FULL DEMAND	13,800.0	11,604.0	FULL DEMAND	13,428.0	66.2	68.0	1/4 / 3/8	HIGH	*	*	208 / 1	*	*	0.3 / 15	*	1, 2, 3, 4, 5, 6
IDU-2	SECOND LEVEL	ODU-2	AR12DXDABWKNVCV	WALL MOUNT															208 / 1	*	*	0.3 / 15	*	1, 2, 3, 4, 5, 6	

NOTES:  
1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB).  
2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F (WB).  
3. SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY, AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES  
4. PROVIDE WITH SIMPLE MA CONTROLLER FOR EACH ZONE, INDOOR UNITS LOCATED WITHIN THE SAME SPACE SHALL OPERATE AS A SINGLE ZONE FROM ONE ZONE CONTROLLER.  
5. FULL DEMAND CORRECTED CAPACITY INCLUDES DE-RATE ASSOCIATED WITH INDOOR VS. OUTDOOR CONNECTED CAPACITY INDICATED ON OUTDOOR UNIT SCHEDULE FOR ASSOCIATED SYSTEM. PARTIAL CORRECTED CAPACITY ASSUMES SUFFICIENT DIVERSITY EXISTS SUCH THAT THE CONNECTED CAPACITY DE-RATE DOES NOT APPLY. IT IS THE DESIGNER'S RESPONSIBILITY TO ENSURE "DIAMOND BUILDER" IS SET IN THE APPROPRIATE OUTPUT CAPACITY SETTING (FULL DEMAND/PARTIAL DEMAND) PRIOR TO GENERATING THIS SCHEDULE.  
6. IT IS RECOMMENDED TO ALWAYS BASE HEATING CORRECTED CAPACITY ON FULL DEMAND.

VRF/SPLIT SYSTEM OUTDOOR UNIT SCHEDULE																								
TAG	SERVING	MANUFACTURER	MODEL	MODULES	NOM. COOLING CAPACITY (BTU/h)	NOM. HEATING CAPACITY (BTU/h)	COOLING EFF. IEER/IEER	HEATING COP @ 47°F	CONNECTED CAPACITY (% OF NOM)	DESIGN COOLING OUDOOR DB (°F)	DESIGN HEATING OUDOOR WB (°F)	MAX PIPE LENGTH FROM BC OR FIRST PIPE JOINT	HEATING CAPACITY (BTU/h)	REF. PIPING SIZES LIQUID/SUCTION	CORRECTED COOLING CAPACITY (BTU/h)	CORRECTED HEATING CAPACITY (BTU/h)	SOUND PRESSURE (dBA)	COMPRESSOR TYPE / QUANTITY	PRELIM. FIELD ADDED CHARGE (SEE NOTE 5)	ELECTRICAL / EACH MODULE				NOTES
																				VOLTAGE / PHASE	MCA	RFS	MOCF	
ODU-1	FIRST LEVEL	SAMSUNG	AR12DXDACWXCVCV	-	12,000.0	12,000.0	14.1	*	*	14	-5.1	25-FEET	*	1/4 / 3/8	*	*	46	SCROLL / 1	*	208 / 1	*	*	0.3 / 15	1, 2, 3, 4, 5, 6
ODU-2	SECOND LEVEL	SAMSUNG	AR12DXDACWXCVCV				*	*	*	*	*	*	*	1/4 / 1/2	*	*	46	SCROLL / 1	*	208 / 1	*	*	0.3 / 15	1, 2, 3, 4, 5, 6

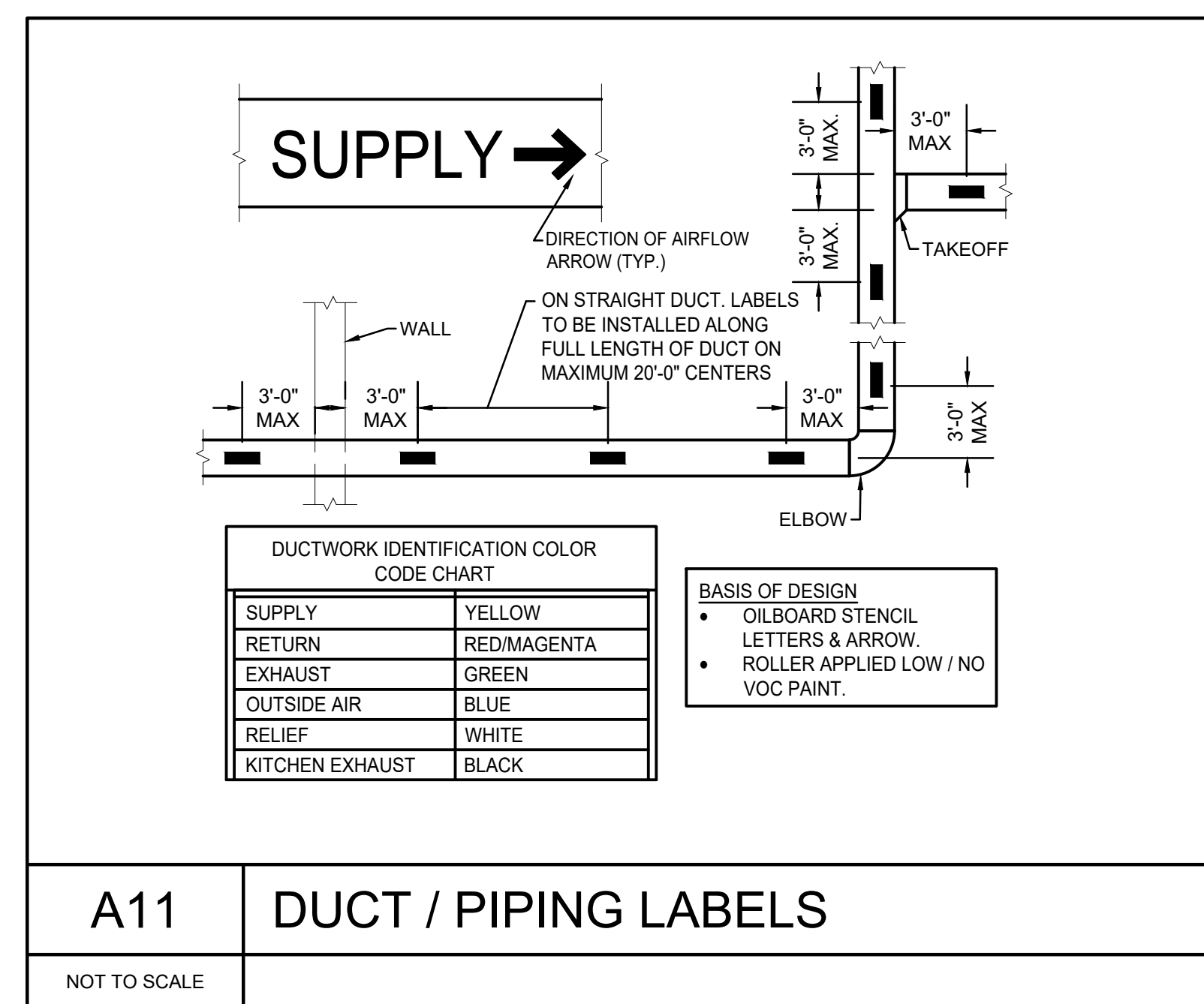
NOTES:  
1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB).  
2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F (WB).  
3. EFFICIENCY VALUES FOR IEER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS.  
4. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING.  
5. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE, THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.  
6. FACTORY REPRESENTATIVES SHALL REVIEW THE PROJECT PRIOR TO AND THROUGHOUT THE INSTALLATION OF CITY MULTI EQUIPMENT.  
7. FACTORY REPRESENTATIVES SHALL STARTUP AND COMMISSION CITY MULTI EQUIPMENT UPON COMPLETION OF EQUIPMENT INSTALLATIONS.  
8. FACTORY REPRESENTATIVES SHALL PROVIDE ON-SITE ASSISTANCE FOR THE BMS INTEGRATION OF THE CITY MULTI EQUIPMENT.  
9. FACTORY REPRESENTATIVES SHALL PROVIDE END-USER TRAINING ON THE CITY MULTI EQUIPMENT UPON COMPLETION OF THE INSTALLATION OF EQUIPMENT.  
10. PROVIDE 24" SUPER STAND KIT AND SNOW HOOD.  
11. PROVIDE WITH LOW AMBIENT COOLING KIT.

ELECTRIC BASEBOARD SCHEDULE										
TAG	OUTPUT		LENGTH (FT-IN)	ELECTRICAL DATA			MOUNTING HEIGHT (IN)	WEIGHT (LBS)	BASIS OF DESIGN	NOTES
	KW	BTUH		VOLTS/Ø	W	A				
EBB-1	0.5	-	3'-0"	208/1	450	-	3	10	INDEECO #906I SERIES	1

NOTES:  
1. PROVIDE BLACK FINISH.  
2. PROVIDE DOUBLE-POLE THERMOSTAT AND POWER ON/OFF SWITCH.

FAN SCHEDULE														
TAG	LOCATION	SERVICE	CFM	ESP (IN W.G.)	BHP / HP	RPM	ELECTRICAL DATA					BASIS OF DESIGN	NOTES	
							DRIVE TYPE	MOTOR TYPE	VOLTS/Ø	FLA	MCA			MOP
EF-1	RESTROOM	GENERAL EXHAUST	79	-	-	2400	-	-	120/1	-	-	-	HARDI "VENTS-US" #GK 125 LD	1

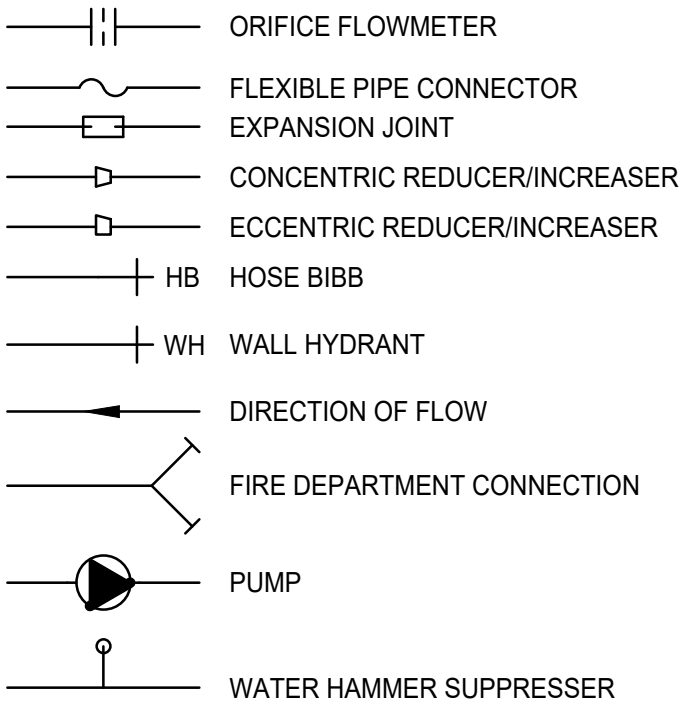
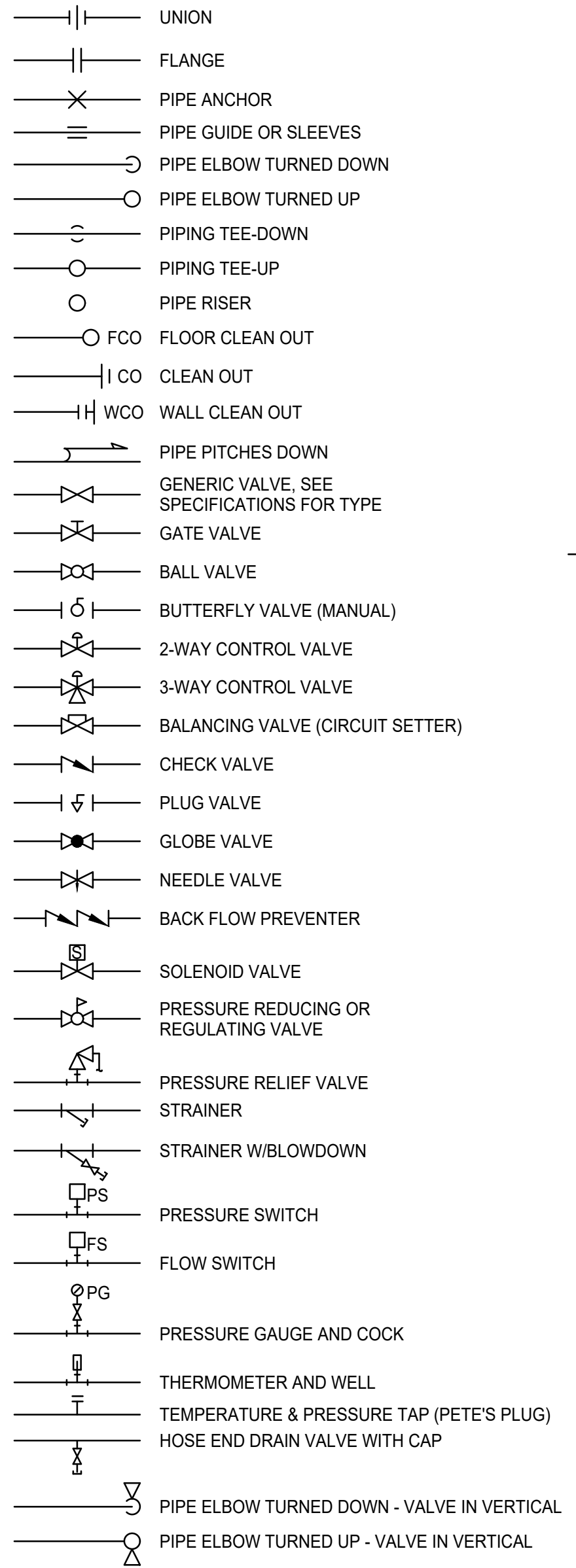
NOTES:  
1. PROVIDE BLACK FINISH.  
2. EXTEND DUCTWORK FOR COMPLETE INSTALLATION AT EXTERIOR WALL.



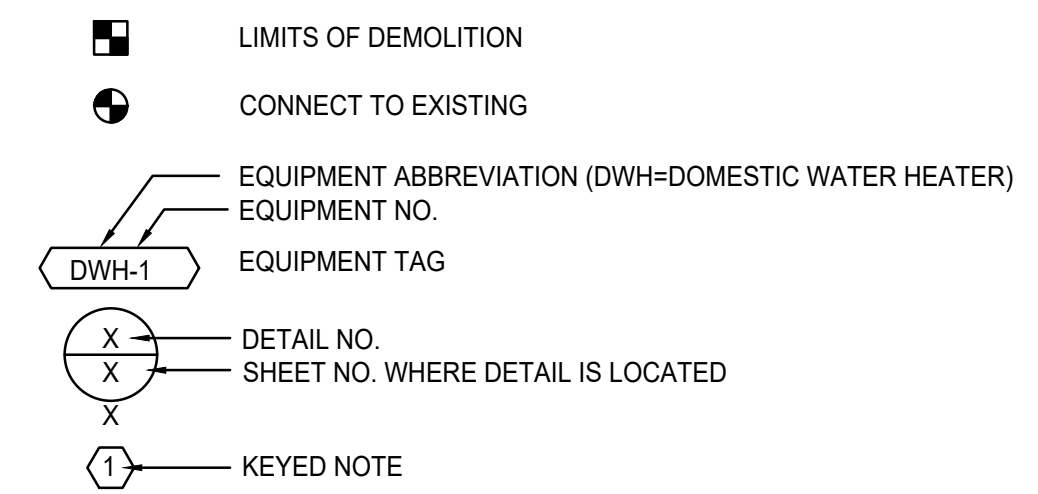
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PROJECT: WARREN, ME		
<b>MECHANICAL DETAILS AND SCHEDULES</b>		
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DRAWN BY JPB	DESIGNED BY JPB	A/E RMW
PROJECT No. 10003_001		
DRAWING No.		REV
<b>M501</b>		

**A11 DUCT / PIPING LABELS**  
NOT TO SCALE

**PIPING SYMBOLS**



**GENERAL SYMBOLS**



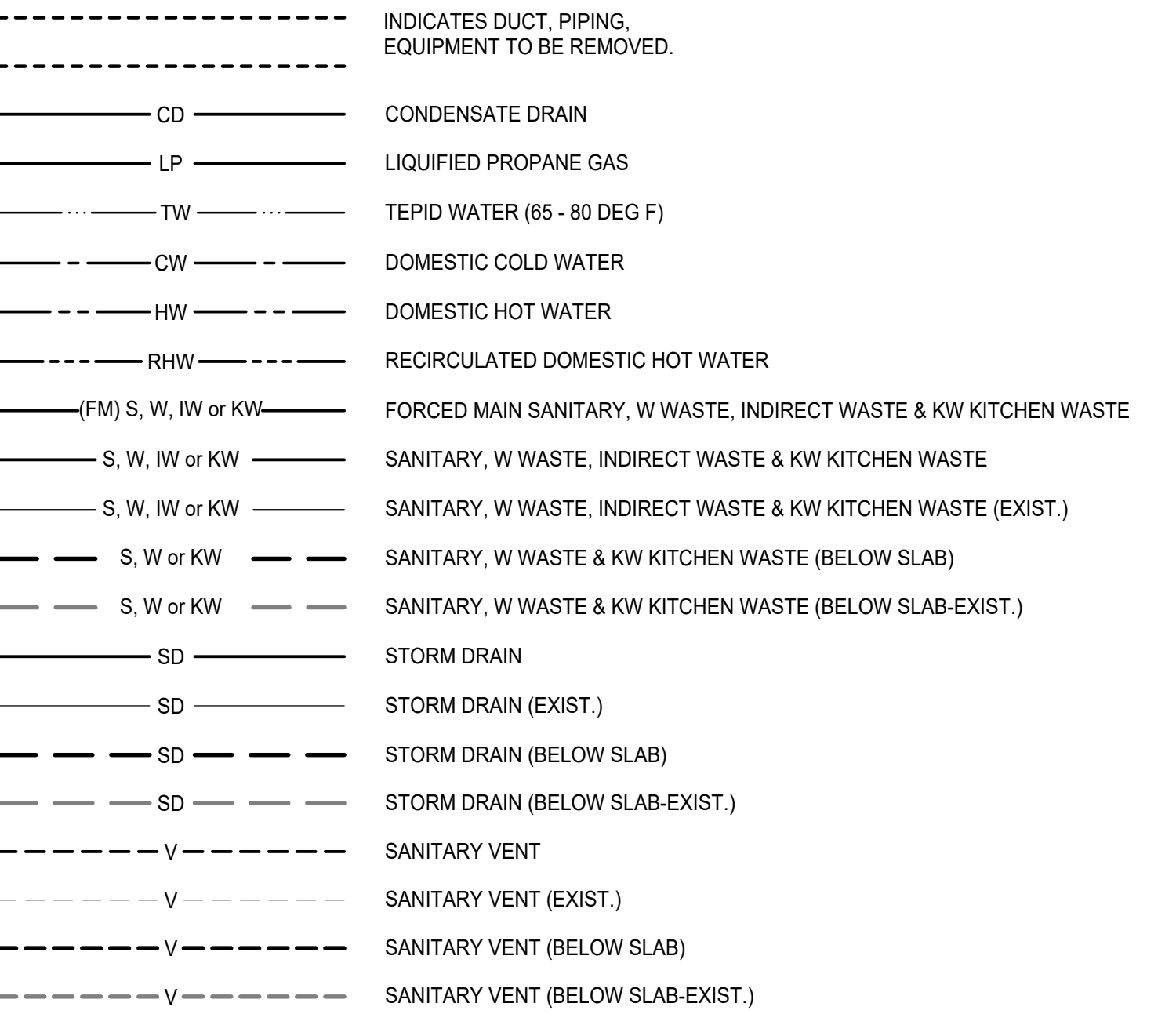
**GENERAL NOTES**

- ALL PLUMBING GENERAL NOTES, SYMBOLS, LISTS AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL PLUMBING DRAWINGS FOR THIS PROJECT.
- OBTAIN ALL PERMITS AND APPROVALS TO PERFORM THE WORK.
- PLUMBING CONTRACTOR SHALL REPORT ASBESTOS TO GENERAL CONTRACTOR.
- SAFETY CONFINED SPACE WORK: THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY LIGHTING, VENTILATION, EMERGENCY EXTRACTION EQUIPMENT, ETC. FOR ALL WORK WITHIN CONFINED SPACE (IF APPLICABLE).
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND EXACT LOCATIONS AND ARRANGEMENTS OF EXISTING AND NEW EQUIPMENT, DUCTWORK, PIPING AND OTHER COMPONENTS SHALL BE DETERMINED IN THE FIELD WITH DUE CONSIDERATION OF STRUCTURAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS. EXISTING STRUCTURAL SYSTEMS SHALL NOT BE MODIFIED WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
- THE CONTRACTOR SHALL VISIT THE SITE, BECOME FAMILIAR WITH THE EXISTING FIELD CONDITIONS, AND MAKE THEIR OWN ESTIMATE OF THE DIFFICULTIES IN EXECUTING THE WORK PRIOR TO SUBMITTING ITS BID. NO COMPENSATION WILL BE AWARDED TO THE CONTRACTOR BASED ON A CLAIM OF LACK OF KNOWLEDGE OF EXISTING FIELD CONDITIONS.
- REVIEW PROTOCOL AND PROCEDURES WITH FACILITY OWNERS AND OPERATORS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING BUILDING OWNER'S PROTOCOL AND PROCEDURES BY ITS EMPLOYEES AND SUB-CONTRACTORS.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, THE ACCEPTED PLUMBING CODE WITH STATE AMENDMENTS, THE AHJ AND THE LOCAL PLUMBING INSPECTOR.
- IF REQUIRED THE PROJECT SHALL BE PHASED IN ACCORDANCE WITH THE APPROVED PHASING PLAN. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR THE SEQUENCING AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK. SEE SPECIFICATIONS.
- CONTRACTOR IS TO MAINTAIN SERVICE TO ROOMS OUTSIDE THE PROJECT SCOPE OF WORK AND PHASING SCHEDULE. IF INTERRUPTION OF SERVICE IS REQUIRED COORDINATE SHUTDOWN WITH PROJECT ENGINEER AND OWNER.
- THE CONTRACTOR SHALL VERIFY SHUTDOWN AND ISOLATION VALVE LOCATIONS. THE CONTRACTOR SHALL COORDINATE ALL SHUTDOWN WORK WITH THE FACILITY OWNER AND OPERATOR.
- CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. RESTORE DAMAGED AREAS THAT ARE BEYOND THE SCOPE OF THIS CONTRACT TO THEIR ORIGINAL CONDITION.
- WHERE INDICATED ON THE DRAWINGS, REMOVE OR RELOCATE EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE THE NEW WORK. REMOVALS SHALL INCLUDE ALL ASSOCIATED OFF-SITE DISPOSAL COSTS.
- PIPING AND EQUIPMENT ARE NOT COMPLETELY DETAILED ON THE DIAGRAMS AND ELEVATIONS PROVIDED ON THE DRAWINGS ARE APPROXIMATE. THE DISTRIBUTION IS INTENDED AS A GENERAL ROUTING ONLY, BUT DOES ILLUSTRATE THE DESIRED LOCATION. THE CONTRACTOR SHALL AVOID INTERFERENCES WITH OTHER EQUIPMENT AND THE WORK OF OTHER DISCIPLINES.
- NOT ALL VALVES, INSTRUMENTS AND CONTROLS ARE SHOWN IN THE PLAN VIEWS. INSTALL PIPING AND VALVES AS SHOWN ON PIPING DIAGRAMS AND DETAILS. SEE DETAILS, PIPING DIAGRAMS AND MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL VALVES & FITTINGS NECESSARY FOR COMPLETE PIPING SYSTEM.
- DRAWINGS OF REVISED PIPING ARRANGEMENTS SHALL BE SUBMITTED IF ITEMS ARE NOT SHOWN ON THE DRAWINGS. REVISIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE CHANGES.
- COORDINATE REMOVALS AND RELOCATIONS INCLUDING SELECTIVE CUTTING AND PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL CONTRACTORS.
- MOST PARTITIONS ARE FULL HEIGHT AND REQUIRE UTILITIES PENETRATIONS TO BE SEALED. SEE ARCHITECTURAL DRAWINGS FOR PARTITION HEIGHTS. DUCTWORK SHOWN FOR CLARITY THAT MAY RUN PARALLEL TO WALL PARTITIONS WILL REQUIRE LOCATING IN THE FIELD TO MINIMIZE CONFLICT WITH PARTITIONS.
- FIELD VERIFY EXISTING EQUIPMENT AND PIPING PRIOR TO REMOVAL OR REUSE. CONFIRM WITH PROJECT ENGINEER THAT ALL EQUIPMENT AND PIPING DESIGNATED TO BE REMOVED IS NO LONGER IN SERVICE PRIOR TO ITS REMOVAL. PROJECT ENGINEER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL DEMO'D EQUIPMENT.
- EXISTING EQUIPMENT AND PIPING TO REMAIN IN SERVICE SHALL BE INSPECTED. REPORT INOPERABLE EQUIPMENT TO PROJECT ENGINEER.
- ALL UNUSED (ABANDONED), PIPING AND EQUIPMENT INDICATED TO BE REMOVED SHALL BE REMOVED AND CAPPED.
- TIE-IN POINT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON EXISTING CONDITIONS.
- COORDINATE THE LOCATIONS OF ALL WALL MOUNTED EQUIPMENT WITH FINAL EQUIPMENT/FURNITURE LAYOUT.
- INTENT OF PROJECT IS FOR NEW MATERIALS AND COMPONENTS TO MATCH EXISTING. ALL MATERIALS SHALL BE APPROVED BY THE FACILITY OWNERS AND OPERATORS.
- EQUIPMENT SCHEDULED IS THE BASIS OF DESIGN, OR APPROVED EQUAL.
- COORDINATE ELECTRICAL POWER REQUIREMENTS FOR ALL MOTORS.
- COORDINATE WITH OWNER FURNISHED EQUIPMENT AND SYSTEMS.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTARY STRUCTURAL SUPPORTS, ANGLE IRON, PLATES, ROD, ETC. AS NECESSARY FOR PROPER INSTALLATION OF PIPING, EQUIPMENT, AND ACCESSORIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING SUPPORTS, STRUT RACKS, TRAPEZE STEEL, PIPE SUPPORT COMPONENTS, ETC. AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE SHALL BE LEFT IN A CLEAN AND NEAT CONDITION.
- INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GOOD PRACTICE NORMAL TO THE TRADE. INSTALLATION SHALL INCLUDE PROVISIONS FOR ACCESS TO NORMAL MAINTENANCE ITEMS. PROVIDE ADEQUATE STRUCTURAL SUPPORTS AND SECURE MOUNTING METHODS WITH

- PROVISIONS FOR VIBRATION ISOLATION AND EXPANSION WHERE REQUIRED.
- COORDINATE ALL PENETRATIONS WITH GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS FOR PENETRATION DETAILS. PLUMBING CONTRACTOR SHALL PROVIDE FLASHING AND COUNTER FLASHING FOR ROOF PENETRATIONS AS REQUIRED.
- CONTRACTOR TO COORDINATE ALL WORK WITH OTHER BUILDING TRADES. RELOCATION OF EXISTING UTILITIES MAY BE NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT OR DUCTWORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE MADE BY ITS FIRM ON NEW OR EXISTING EQUIPMENT INSTALLED OR RELOCATED BY THEM UNDER THIS CONTRACT. THIS SHALL INCLUDE ALL TOUCH-UP PAINTING.
- CONTRACTOR SHALL FIELD VERIFY ALL CLEARANCES AND DIMENSIONS.
- PROVIDE ACCESS PANELS FOR ALL CONCEALED SHUT-OFF VALVES EXCEPT THOSE ABOVE SUSPENDED CEILING.
- INFILL ALL NEW OR EXISTING ABANDONED FLOOR SLAB PENETRATIONS WITH GROUT, FULL THICKNESS OF SLAB. MAINTAIN FIRE RATING. ALL EXISTING CONCRETE FLOORS AND CHASES ARE 2-HR FIRE RATED.
- ALL DOMESTIC WATER SUPPLY, VENT AND MEDICAL GAS PIPING SHALL BE RUN ABOVE CEILINGS OR WITHIN PARTITIONS UNLESS OTHERWISE NOTED.
- PLUMBING RISERS SHALL BE RUN CONCEALED WITHIN WALLS OR CHASES. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- COORDINATE FINAL LOCATIONS OF MEDICAL GAS OUTLETS. AND VALVE BOXES WITH ARCHITECT.
- SANITARY LINES SHALL SLOPE 1/4" PER FOOT UNLESS NOTED OTHERWISE.
- COORDINATE WITH BUILDING OWNER PRIOR TO CUTTING OR GRINDING FLOORS.
- INSTALLATION SHALL PERMIT ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT OF EQUIPMENT PROVIDED. PROVIDE ACCESS PANELS TO ALLOW ACCESS TO SYSTEMS COMPONENTS THAT REQUIRE INSPECTION AND MAINTENANCE ACCORDING TO MANUFACTURER'S LITERATURE.
- NEW PIPING LOCATIONS ON THE PLANS ARE DIAGRAMMATIC. TO THE EXTENT POSSIBLE THE CONTRACTOR SHALL INSTALL PIPING SYSTEMS TO MINIMIZE RUN LENGTHS TO FIXTURES.
- CONTRACTOR TO PROVIDE ALL MATERIALS NEEDED FOR CONSTRUCTION UNLESS OTHERWISE NOTED OR DIRECTED.
- DIELECTRIC UNIONS SHALL BE INSTALLED BETWEEN DISSIMILAR METALS IN SOLDERED AND THREADED PIPING SYSTEMS AND INSULATED FLANGES FOR WELDING SYSTEMS.
- OPERATIONS AND MAINTENANCE MANUALS: SUBMIT ALL TESTING DATA AND COPIES OF APPROVED PRODUCT DATA, INCLUDING MAINTENANCE INFORMATION IN A TABBED, NEATLY ORGANIZED THREE RING BINDER. INCLUDE VALVE IDENTIFICATION CHARTS PROVIDE 3 COPIES TO THE OWNER.

- PIPE IDENTIFICATION: LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS. LABELING COLOR AND SIZE SHALL BE PER OSHA SPECIFICATIONS.
- VALVE IDENTIFICATION: PROVIDE A CIRCULAR BRASS TAG AND CHAIN ON EACH VALVE. TAG TO INCLUDE A DISCRETE NUMBER AND SHALL BE COORDINATED WITH ANY CURRENT FACILITY NUMBERING SCHEME OR STANDARD.
- IF CONTRACT INCLUDES RENOVATION WORK WHICH TAKES PLACE IN AN OCCUPIED SPACE. INSTALLATIONS SHALL NOT AFFECT ONGOING OPERATIONS. COORDINATE HOURS AVAILABLE TO PERFORM WORK WITH THE OWNER AND GENERAL CONTRACTOR.
- PRIOR TO CONNECTING TO ANY EXISTING PIPING, CONFIRM TIE-IN LOCATIONS WITH THE FACILITY OWNERS AND OPERATORS.
- INSTALL ALL NEW AND RELOCATED EXISTING COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, APPLICABLE CODES AND STANDARDS.
- SEAL INTERIOR PIPE PENETRATIONS WITH FIRE SEALANT. SEAL EXTERIOR WALL PIPE PENETRATIONS WATER TIGHT.
- CUT AND PATCH SURFACES, RESTORING ORIGINAL FINISHES.
- ASTM E84 COMPLIANCE: INSULATION AND OTHER MATERIALS SHALL COMPLY WITH THE FLAME AND SMOKE SPREAD RATINGS.
- SUBMITTALS, PRE-CONSTRUCTION: SUBMIT CATALOG CUT SHEETS OF PROPOSED EQUIPMENT FOR ENGINEER REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
- SUBMITTALS, DURING CONSTRUCTIONS: SUBMIT COPIES OF PIPE ROUGH-IN PRESSURE TESTS AS COMPLETED.
- SUBMITTALS, POST CONSTRUCTION: SUBMIT COPIES OF FINAL PRESSURE TEST, FLUSHING AND PLUMBING DISINFECTION REPORTS. SUBMIT COPIES OF COMPLETED MANUFACTURER START UP REPORTS FOR EQUIPMENT.
- RECORD DRAWINGS: MAINTAIN A CURRENT SET OF MARKED UP CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES. PROVIDE A COMPLETE SET OF THESE RECORD MARK-UPS, OR AS-BUILT.
- DRAWINGS TO THE ARCHITECT AT THE END OF THE PROJECT.
- USE OF PIPE DOPE IS NOT ALLOWED.
- SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.

**PIPING SYSTEMS**



**ABBREVIATIONS**

AAV	AUTOMATIC AIR VENT	DCO	DANDY CLEANOUT	H & V	HEATING AND VENTILATION	PET	THERMAL EXPANSION TANK
AD	ACCESS DOOR	DF	DRINKING FOUNTAIN	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	PRS	PRESSURE REDUCING STATION
AFF	ABOVE FINISHED FLOOR	DIA	DIAMETER	HW	HOT WATER	PRV	PRESSURE REDUCING VALVE
AV	AIR VENT	DIC	DOWN IN CHASE	HX	HEAT EXCHANGER	PSIG	POUNDS PER SQUARE INCH (PRESSURE)
BFP	BACKFLOW PREVENTER	DIW	DOWN IN WALL	INT	INTERCEPTOR	(R)	REMOVE
BLDG	BUILDING	DN	DOWN	IN WG	INCHES WATER GAUGE	(REL)	RELOCATED
BOD	BOTTOM OF DUCT	DS	DOWNSPOUT	LAV	LAVATORY	RD	ROOF DRAIN
BOP	BOTTOM OF PIPE	DWG	DRAWING	MAU	MAKE UP AIR UNIT	RM	ROOM
BP	BOOSTER PUMP	DWH	DOMESTIC WATER HEATER	MAX	MAXIMUM	RP	RECIRCULATING PUMP
BT	BATHING TUB	DWV	DRAINAGE, WASTE & VENT	MBH	1000 BTU/HR.	RPZ	REDUCED PRESSURE ZONE BFP
BTU	BRITISH THERMAL UNIT	EE	EMERGENCY EQUIPMENT	ME	MECHANICAL ENGINEER	RV	RELIEF VALVE
CFF	CAPPED FOR FUTURE	ENC	ENCLOSURE	MFR	MANUFACTURER	SK	SINK
CFH	CUBIC FEET PER HOUR	(E)	EXISTING	MIN	MINIMUM	SS	STAINLESS STEEL
CLG	CEILING	EXIST.	EXISTING	MPV	MULTI-PURPOSE VALVE	TD	TRENCH DRAIN
CO	CLEANOUT	FBO	FURNISHED BY OWNER	MR	MOP RECEPTOR	TTS	TIGHT TO STEEL
CONT	CONTINUATION	FC	FLEXIBLE CONNECTION	MTD	MOUNTED	TYP	TYPICAL
COORD	COORDINATE	FCO	FLOOR CLEANOUT	MUA	MAKE-UP AIR UNIT	VB	VACUUM BREAKER
CP	CONDENSATE PUMP	FD	FLOOR DRAIN	MUA	MAKE UP AIR	VTR	VENT THRU ROOF
CSRO	CENTRAL STERILE PROCESS WATER	FG	FIBERGLASS	MV	MIXING VALVE	W	WITH
CTE	CONNECT TO EXISTING	GC	GENERAL CONTRACTOR	NPW	NON-POTABLE WATER	WC	WATER CLOSET
CU	COPPER	GPM	GALLONS PER MINUTE	NTS	NOT TO SCALE	WCO	WALL CLEANOUT
CW	COLD WATER	HB	HOSE BIB	P	PUMP	W&T	WASTE AND TRAP

REV.	DESCRIPTION	DATE
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<b>PLUMBING LEGEND &amp; ABBREVIATIONS</b>		
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<b>P001</b>		

**22 00 00 - BASIC PLUMBING REQUIREMENTS**

1. THE FOLLOWING APPLIES TO PLUMBING AND PROCESS PIPING TRADES.
2. OBTAIN ALL PERMITS AND APPROVALS TO PERFORM THE WORK.
3. INTENT OF PROJECT IS FOR NEW MATERIALS AND COMPONENTS TO MATCH EXISTING. ALL MATERIALS SHALL BE APPROVED BY THE FACILITY OWNERS AND OPERATORS.
4. EQUIPMENT LISTED IS THE BASIS OF DESIGN, OR APPROVED EQUAL.
5. SUBMITTALS, PRE-CONSTRUCTION: SUBMIT CATALOG CUT SHEETS OF PROPOSED EQUIPMENT FOR ENGINEER REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
6. SUBMITTALS, DURING CONSTRUCTIONS: SUBMIT COPIES OF PIPE ROUGH-IN PRESSURE TESTS AS COMPLETED.
7. SUBMITTALS, POST CONSTRUCTION: SUBMIT COPIES OF FINAL PRESSURE TEST, FLUSHING AND PLUMBING DISINFECTION REPORTS. SUBMIT COPIES OF COMPLETED MANUFACTURER START UP REPORTS FOR EQUIPMENT.
8. COORDINATE ELECTRICAL POWER REQUIREMENTS FOR ALL MOTORS.
9. COORDINATE WITH OWNER FURNISHED EQUIPMENT AND SYSTEMS.
10. REVIEW PROTOCOL AND PROCEDURES WITH FACILITY OWNERS AND OPERATORS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING BUILDING OWNERS' PROTOCOL AND PROCEDURES BY ITS EMPLOYEES AND SUB-CONTRACTORS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO ANY DEMOLITION OR NEW INSTALLATION.
12. ALL WORK SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, THE ACCEPTED PLUMBING CODE WITH STATE AMENDMENTS, THE AHJ AND THE LOCAL PLUMBING INSPECTOR.
13. THE CONTRACTOR SHALL VERIFY SHUTDOWN AND ISOLATION VALVE LOCATIONS. THE CONTRACTOR SHALL COORDINATE ALL SHUTDOWN WORK WITH THE FACILITY OWNER AND OPERATOR.
14. THE CONTRACTOR SHALL VISIT THE SITE, BECOME FAMILIAR WITH THE EXISTING FIELD CONDITIONS, AND MAKE THEIR OWN ESTIMATE OF THE DIFFICULTIES IN EXECUTING THE WORK PRIOR TO SUBMITTING ITS BID. NO COMPENSATION WILL BE AWARDED TO THE CONTRACTOR BASED ON A CLAIM OF LACK OF KNOWLEDGE OF EXISTING FIELD CONDITIONS.
15. PIPING AND EQUIPMENT ARE NOT COMPLETELY DETAILED ON THE DIAGRAMS AND ELEVATIONS PROVIDED ON THE DRAWINGS ARE APPROXIMATE. THE DISTRIBUTION IS INTENDED AS A GENERAL ROUTING ONLY, BUT DOES ILLUSTRATE THE DESIRED LOCATION. THE CONTRACTOR SHALL AVOID INTERFERENCES WITH OTHER EQUIPMENT AND THE WORK OF OTHER DISCIPLINES.
16. NOT ALL VALVES, INSTRUMENTS AND CONTROLS ARE SHOWN IN THE PLAN VIEWS. INSTALL PIPING AND VALVES AS SHOWN ON PIPING DIAGRAMS AND DETAILS.
17. DRAWINGS OF REVISED PIPING ARRANGEMENTS SHALL BE SUBMITTED IF ITEMS ARE NOT SHOWN ON THE DRAWINGS. REVISIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE CHANGES.
18. PLUMBING CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTARY STRUCTURAL SUPPORTS, ANGLE IRON, PLATES, ROD, ETC. AS NECESSARY FOR PROPER INSTALLATION OF PIPING, EQUIPMENT, AND ACCESSORIES.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING SUPPORTS, STRUT RACKS, TRAPEZE STEEL, PIPE SUPPORT COMPONENTS, ETC.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE MADE BY ITS FIRM ON NEW OR EXISTING EQUIPMENT INSTALLED OR RELOCATED BY THEM UNDER THIS CONTRACT. THIS SHALL INCLUDE ALL TOUCH-UP PAINTING.
21. RECORD DRAWINGS: MAINTAIN A CURRENT SET OF MARKED UP CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES. PROVIDE A COMPLETE SET OF THESE RECORD MARK-UPS, OR AS-BUILT DRAWINGS TO THE ARCHITECT AT THE END OF THE PROJECT.
22. CONTRACTOR TO PROVIDE ALL MATERIALS NEEDED FOR CONSTRUCTION UNLESS OTHERWISE NOTED OR DIRECTED.
23. DIELECTRIC UNIONS SHALL BE INSTALLED BETWEEN DISSIMILAR METALS IN SOLDERED AND THREADED PIPING SYSTEMS AND INSULATED FLANGES FOR WELDING SYSTEMS.
24. OPERATIONS AND MAINTENANCE MANUALS: SUBMIT ALL TESTING DATA AND COPIES OF APPROVED PRODUCT DATA, INCLUDING MAINTENANCE INFORMATION IN A TABBED, NEATLY ORGANIZED THREE RING BINDER. INCLUDE VALVE IDENTIFICATION CHARTS PROVIDE 3 COPIES TO THE OWNER.
25. PIPE IDENTIFICATION: LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS. LABELING COLOR AND SIZE SHALL BE PER OSHA SPECIFICATIONS.
26. VALVE IDENTIFICATION: PROVIDE A CIRCULAR BRASS TAG AND CHAIN ON EACH VALVE. TAG TO INCLUDE A DISCRETE NUMBER AND SHALL BE COORDINATED WITH ANY CURRENT FACILITY NUMBERING SCHEME OR STANDARD.
27. IF CONTRACT INCLUDES RENOVATION WORK WHICH TAKES PLACE IN AN OCCUPIED SPACE. INSTALLATIONS SHALL NOT AFFECT ONGOING OPERATIONS. COORDINATE HOURS AVAILABLE TO PERFORM WORK WITH THE OWNER AND GENERAL CONTRACTOR.
28. PRIOR TO CONNECTING TO ANY EXISTING PIPING, CONFIRM TIE-IN LOCATIONS WITH THE FACILITY OWNERS AND OPERATORS.
29. INSTALL ALL NEW AND RELOCATED EXISTING COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, APPLICABLE CODES AND STANDARDS.
30. SEAL INTERIOR PIPE PENETRATIONS WITH FIRE SEALANT. SEAL EXTERIOR WALL PIPE PENETRATIONS WATER TIGHT.
31. CUT AND PATCH SURFACES, RESTORING ORIGINAL FINISHES.
32. ASTM E84 COMPLIANCE: INSULATION AND OTHER MATERIALS SHALL COMPLY WITH THE FLAME AND SMOKE SPREAD RATINGS.
33. USE OF PIPE DOPE IS NOT ALLOWED.

**22 05 00 - BASIC PLUMBING MATERIALS AND METHODS**

1. PERFORM PLUMBING WORK PER THE ACCEPTED PLUMBING CODE WITH STATE AMENDMENTS, THE AHJ AND LOCAL PLUMBING INSPECTOR.
2. PROVIDE ALL PIPING COMPLETE WITH PIPE, FITTINGS, VALVES, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDES, SLEEVES AND ACCESSORIES. INCLUDE ESCUTCHEONS AT THRU-WALL AND THRU-FLOOR PENETRATIONS IN FINISHED SPACES.
3. PIPE SUPPORTS: PROVIDE ADEQUATE SUPPORT FOR THE PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, AND SWAYING AND ALLOW FOR EXPANSIONS AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS. WHERE CONNECTING TO EXISTING ROOF JOISTS, CONNECT AT TOP CHORD PANEL POINTS ONLY. HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGERS, UNLESS OTHERWISE NOTED ON DRAWINGS.
  - A. PROVIDE TRENCHING, SUITABLE FILL AND CONTINUOUS SUPPORT FOR BURIED SYSTEMS. PROVIDE WARNING TAPE IN TRENCH, ABOVE PIPING PRIOR TO COMPLETION OF BACKFILL.
  - B. PROVIDE INSULATION SHIELDS ON INSULATED LINES.
4. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE.
5. DRAINAGE AND VENT PIPING SHALL BE TESTED. CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10 FT ABOVE THE FLOOR. WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT A 2 HOUR TEST DURATION.
6. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
7. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE JOINED.
8. PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
9. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.
10. ABOVE GRADE SANITARY DRAINAGE AND VENT PIPING: HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH ANCON FOUNDRY HUSKY SERIES 4000 EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS.
11. DOMESTIC CW AND HW PIPING SHALL BE COPPER, TYPE L, HARD DRAWN IN ACCORDANCE WITH ASTM B88, AND LEAD-FREE SOLDER JOINTS.
12. INSPECTIONS AND TESTS SHALL BE PERFORMED ON THE PIPING INSTALLATION AS REQUIRED BY CODE.
13. PITCH SANITARY DRAINAGE PIPING AT 1/4" PER FT. PITCH DOMESTIC CW, HW, AND VENT PIPING TOWARDS SOURCE.

**22 05 18 - ESCUTCHEONS FOR PLUMBING PIPING**

1. ESCUTCHEONS
  - A. ONE-PIECE, STEEL TYPE: WITH POLISHED, CHROME-PLATED FINISH AND SETSCREW FASTENER.
  - B. ONE-PIECE, STAINLESS-STEEL TYPE: WITH POLISHED STAINLESS-STEEL FINISH.
  - C. ONE-PIECE, CAST-BRASS TYPE: WITH POLISHED, CHROME-PLATED FINISH AND SETSCREW FASTENER.
  - D. ONE-PIECE, DEEP-PATTERN TYPE: DEEP-DRAWN, BOX-SHAPED BRASS WITH POLISHED, CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.
  - E. ONE-PIECE, STAMPED-STEEL TYPE: WITH POLISHED, CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.
  - F. SPLIT-PLATE, STAMPED-STEEL TYPE: WITH POLISHED, CHROME-PLATED FINISH; CONCEALED HINGE; AND SPRING-CLIP FASTENERS.

**2. FLOOR PLATES**

- A. SPLIT FLOOR PLATES: STEEL WITH CONCEALED HINGE.

**22 05 29 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT**

1. PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
2. FURNISH AND INSTALL EXPANSION COMPENSATORS FOR ALL LONG, STRAIGHT RUNS OF PIPING BETWEEN ANCHORED POINTS. SUBMIT TYPE AND PERFORMANCE TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
3. HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:
  - A. COPPER 3 IN. AND SMALLER: 7 FT.
  - B. ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, RUNOUTS, AND CONCENTRATED LOADS DUE TO VALVES, ETC.
4. VERTICAL PIPING:
  - A. BASE ELBOW SUPPORT WITH BEARING PLATE ON STRUCTURAL SUPPORT.
  - B. GUIDES AT EVERY SECOND FLOOR (SPACING NOT TO EXCEED 25 FT).
  - C. TOP SUPPORT HANGER OR SADDLE IN HORIZONTAL CONNECTION WITH PROVISIONS FOR EXPANSION.
    - a. INTERMEDIATE STEEL RISER CLAMP SUPPORT BOLTED AND WELDED TO PIPE BEARING ON STRUCTURAL STEEL OR BEARING PLATE AT FLOOR.
  - D. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.
5. PROVIDE HANGERS, SUPPORTS, AND INSERTS CONFORMING TO:
  - a. MSS SP-88
  - b. MSS SP-69
  - c. ANSI B31.9
- A. PROVIDE PIPE HANGERS, SUPPORTS, AND ACCESSORIES WHICH:
  - a. PERMIT VERTICAL ADJUSTMENT AFTER INSTALLATION OF PIPING.
  - b. ARE DESIGNED FOR SUPPORT OF PIPING AND CONTENTS UNDER ALL CONDITIONS OF OPERATION INCLUDING TESTING.
  - c. WILL NOT CRUSH, INDENT, OR OTHERWISE DAMAGE PIPE, PIPE INSULATION, OR JACKETING.
- B. PROVIDE COMPLETE HANGER AND SUPPORT ASSEMBLIES, INCLUDING CLAMPS, RODS, WASHERS, NUTS, TURNBUCKLES, AND LOCKING DEVICES. CONSTRUCTED FOR COMPATIBILITY WITH ITEMS SUPPORTED AND SUPPORTING STRUCTURE.
- C. PROVIDE ALL SIMILAR SUPPORT COMPONENTS BY SAME MANUFACTURER.
- D. PROVIDE OVERSIZED CLEVIS AND/OR ROLLER HANGERS TO FIT ON OUTSIDE OF INSULATED PIPING.
- E. PROVIDE INSULATION PROTECTORS AT SUPPORT POINTS FOR ALL INSULATED UNJACKETED PIPING.
- F. SPECIAL REQUIREMENTS: ALL COMPONENTS SHALL BE SUITABLY SIZED FOR THE LOAD SUPPORTED.

**22 05 53 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT**

1. MANUFACTURED PIPE MARKERS, GENERAL: PREPRINTED, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING DIRECTION OF FLOW.
  - A. COLORS: COMPLY WITH ASME A13.1, UNLESS OTHERWISE INDICATED.
  - B. LETTERING: USE PIPING SYSTEM TERMS INDICATED AND ABBREVIATE ONLY AS NECESSARY FOR EACH APPLICATION LENGTH.
  - C. PIPES WITH OD, INCLUDING INSULATION, LESS THAN 6 INCHES: FULL-BAND PIPE MARKERS EXTENDING 360 DEGREES AROUND PIPE AT EACH LOCATION.
  - D. PIPES WITH OD, INCLUDING INSULATION, 6 INCHES AND LARGER: EITHER FULL-BAND OR STRIP-TYPE PIPE MARKERS AT LEAST THREE TIMES LETTER HEIGHT AND OF LENGTH REQUIRED FOR LABEL.
  - E. ARROWS: INTEGRAL WITH PIPING SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS; OR AS SEPARATE UNIT ON EACH PIPE MARKER TO INDICATE DIRECTION OF FLOW.
2. VALVE TAGS: STAMPED OR ENGRAVED WITH 1/4-INCH LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2-INCH NUMBERS, WITH NUMBERING SCHEME APPROVED BY ENGINEER. PROVIDE 5/32-INCH HOLE FOR FASTENER.
  - A. MATERIAL: 0.032-INCH-THICK BRASS.
  - B. VALVE-TAG FASTENERS: BRASS WIRE-LINK OR BEADED CHAIN; OR S-HOOK.

**22 07 19 - PIPE INSULATION**


1. GENERAL REQUIREMENTS
  - A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963) FLAME SPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
  - B. DEFINITIONS:
    - a. EXPOSED: PIPING LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
    - b. CONCEALED: INDOOR PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
2. PIPING INSULATION
  - A. INSULATE ALL PIPING IN ACCORDANCE WITH THE FOLLOWING:
    - a. SERVICE: PROCESS LOW TEMP PIPING, FITTINGS AND VALVES (40°F TO 60°F)
      - SIZE: UP TO 1"
      - THICKNESS: 1/2"
      - MATERIAL: ELASTOMERIC CLOSED CELL OR POLYISOCYANURATE
      - FINISH: VAPORSEAL
    - b. SERVICE: HIGH TEMP PIPING, FITTINGS AND VALVES (105°F TO 140°F)
      - SIZE: UP TO 1-1/2"
      - THICKNESS: 1"
      - MATERIAL: MOLDED FIBERGLASS OR POLYISOCYANURATE
      - FINISH: VAPOR SEAL
  - B. PIPING, VALVE AND FITTINGS TO BE INSULATED INCLUDES, BUT IS NOT LIMITED TO:
    - a. LOW TEMPERATURE PIPING SYSTEMS (40 TO 60 °F): CW.
    - b. HIGH TEMPERATURE PIPING SYSTEMS (105 TO 140 °F): HW.
  - C. MATERIAL:
    - a. ALL INSULATION( INCLUDING JACKET, FACING, AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255, AND UL 273; NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.
    - b. ELASTOMERIC CLOSED CELL, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY, ALL SERVICE JACKET, SIMILAR TO ARMACELL AP ARMAFLEX FS.
    - c. ELASTOMERIC CLOSED CELL FITTING INSERTS; MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO ARMACELL AP ARMAFLEX FS.
    - d. MOLDED FIBERGLASS, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING, ALL SERVICE JACKET. SIMILAR TO OWNENS CORNING 850 ASI.
    - e. MOLDED FIBERGLASS FITTING INSERTS; MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO MANVILLE H LO TEMP INSULATION INSERTS.
    - f. MOLDED MINERAL WOOL, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING, ALL SERVICE JACKET. SIMILAR TO JOHNS MANVILLE MINWOOL 1200.
    - g. MOLDED MINERAL WOOL FITTING INSERTS; MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO JOHNS MANVILLE MINWOOL 1200.
    - h. MOLDED POLYISOCYANURATE, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY, ALL SERVICE JACKET. SIMILAR TO SPI TRYMER.
    - i. MOLDED POLYISOCYANURATE FITTING INSERTS; MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO SPI TRYMER.
3. FINISH
  - A. INTERIOR
    - a. FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO JOHNS MANVILLE ZESTRON.
  - B. EXTERIOR
    - a. FOIL FACED, SELF ADHEARING CLADDING, UV RESISTANT VAPOR BARRIER, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO POLYGUARD ALUMAGUARD.
4. INSTALLATION:
  - A. BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
  - B. ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED.
  - C. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. SADDLES OR SHIELDS SHALL BE PROVIDED AT EACH PIPE HANGER AND SUPPORT FOR PROTECTION.
  - D. INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

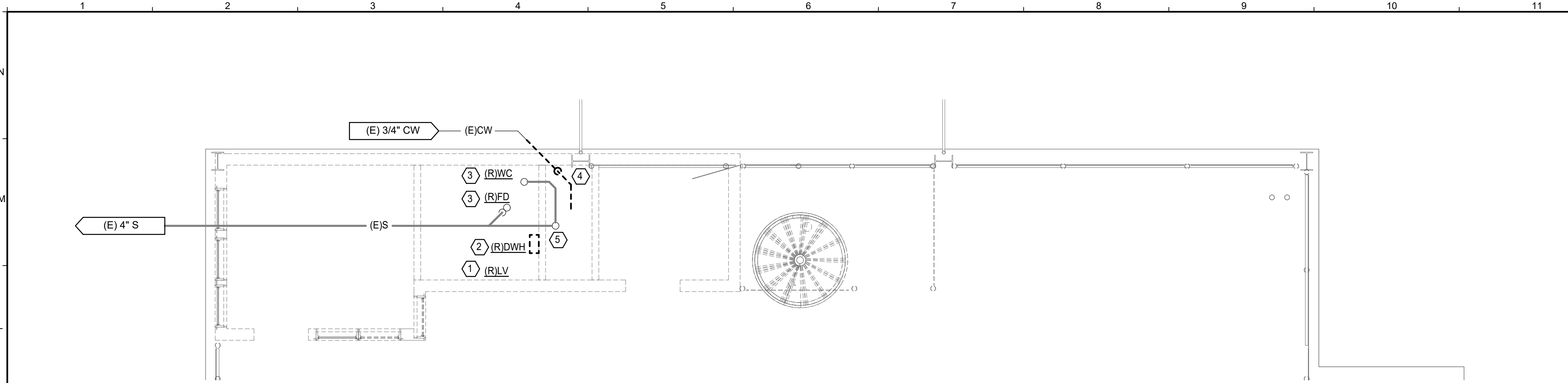
**22 11 16 - DOMESTIC AND NON-POTABLE WATER PIPING SYSTEMS**

1. APPLICABLE SYSTEMS:
  - A. DOMESTIC COLD TEMPERED WATER (CW)
  - B. DOMESTIC HOT WATER (HW)
  - C. RECIRCULATED DOMESTIC HOT WATER (RHW)
  - D. DOMESTIC TEMPERED (EMERGENCY) WATER (TW)
  - E. NON-POTABLE COLD WATER (NPW)
2. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED.
  - A. ABOVE GROUND WATER PIPING SYSTEMS: 125 PSIG
  3. ABOVE GRADE DOMESTIC AND NON-POTABLE WATER PIPING: HARD DRAWN TYPE L SEAMLESS COPPER TUBING, COPPER FITTINGS AND LEAD-FREE SOLDERED JOINTS.
  4. WATER PIPING SYSTEM VALVES: BRONZE BODIED VALVES, AS MANF BY HAMMOND, JENKINS, NIBCO.
    - A. SHUT-OFF DUTY: FULL PORT BALL VALVES
    - B. DIRECTIONAL DUTY: SWING STYLE CHECK VALVES.
    - C. HIGH-POINT VENTS AND LOW POINT DRAINS: FULL PORT BALL VALVES WITH CAP AND CHAIN.
    - D. THROTTLING DUTY: FIELD ADJUSTABLE CIRCUIT SETTERS.
  5. WATER PIPING SYSTEM SPECIALTIES: PROVIDE TEMPERATURE AND PRESSURE GAUGES AND IN-LINE SPECIALTIES AS NECESSARY.
  6. WATER PIPING SYSTEM TESTING: PRESSURIZE PIPING SYSTEMS TO 1.5 TIMES THEIR WORKING PRESSURE FOR A PERIOD OF 4 HOURS, OR AS DIRECTED BY PLUMBING OFFICIALS. MAKE CORRECTIONS AND RETEST AS NECESSARY. PROVIDE TEST REPORTS.
  7. WATER PIPING SYSTEM FLUSHING AND CLEANING: FLUSH PIPING SYSTEMS WITH WATER. DISINFECT WITH A WATER - CHLORINE SOLUTION (50 PPM CHLORINE) FOR 24 HOURS, OR AS DIRECTED BY PLUMBING OFFICIALS. FLUSH SYSTEMS AND PROVIDE WATER QUALITY REPORTING.

**22 13 16 - DRAINAGE, WASTE AND VENT PIPING SYSTEMS**

1. APPLICABLE SYSTEMS:
  - A. SANITARY WASTE (S) AND (W)
  - B. VENT (V)
  - C. INDIRECT WASTE (IW)
  - D. STORM DRAIN (SD)
  - E. CONDENSATE DRAIN (CD)
2. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED.
  - A. GRAVITY FLOW DWV PIPING SYSTEMS: 10 FT. HEAD.
  3. ABOVE GRADE SANITARY WASTE, VENT AND STORM DRAIN PIPING:
    - A. HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH ANCON FOUNDRY HUSKIE SERIES 4000 EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS
    - B. OPTION: 2" AND SMALLER: COPPER DWV TUBE; ASTM B306, DRAINAGE TUBE, DRAWIN TEMPER, COPPER DRAINAGE SOLDER-JOINT FITTINGS.
    - C. PITCH: 1/4" / FT.
  4. BELOW GRADE SANITARY WASTE, VENT AND STORM DRAIN:
    - A. SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS ASTM D 1785
    - B. PITCH: 1/4" / FT.
  5. ABOVE GRADE INDIRECT WASTE, CONDENSATE DRAIN AND FORCED MAINE CONDENSATE DRAIN PIPING:
    - A. HARD DRAWN TYPE L SEAMLESS COPPER TUBING, DRAINAGE PATTERN COPPER FITTINGS AND LEAD-FREE SOLDERED JOINTS
    - B. TYPE L SEAMLESS COPPER TUBING, COPPER AND COPPER ALLOY PRESS FITTINGS WITH "PUSH-FIT" FEATURE DESIGN.
      - a. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED.
        - 125 PSIG.
      - b. PIPING SYSTEM TESTING: PRESSURIZE PIPING SYSTEMS TO 1.5 TIMES THEIR WORKING PRESSURE FOR A PERIOD OF 4 HOURS, MAKE CORRECTIONS AND RETEST AS NECESSARY. PROVIDE TEST REPORTS.

REV.	DESCRIPTION	DATE
<p><b>ISSUED FOR 90% REVIEW FEBRUARY 9, 2026</b></p>		
CURRENT ISSUE STATUS:		
		<p><b>RJ ENGINEERING, LLC</b> 117 NORTH GORHAM RD. GORHAM, MAINE 04038 C:(207) 572-7970 / C:(207) 318-1446</p>
<p><b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b></p>		
PROJECT:		WARREN, ME
<p><b>PLUMBING SPECIFICATIONS</b></p>		
DATE		SCALE
		AS NOTED
DRAWN BY	DESIGNED BY	AE
JPB	JPB	RMW
PROJECT No. 10003_001		
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<p><b>P002</b></p>		

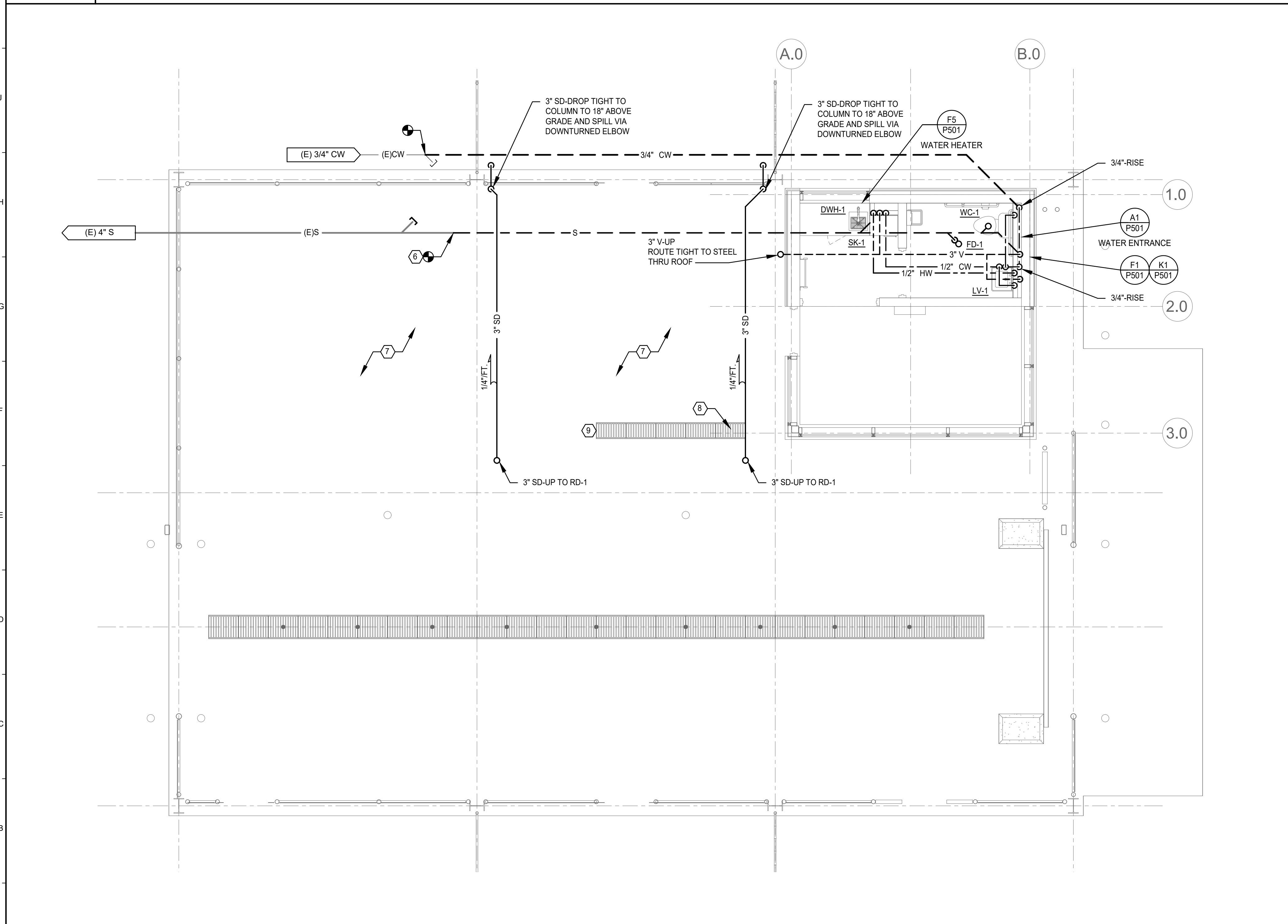


**K1** FIRST LEVEL PLUMBING DEMOLITION PART PLAN

NOT TO SCALE

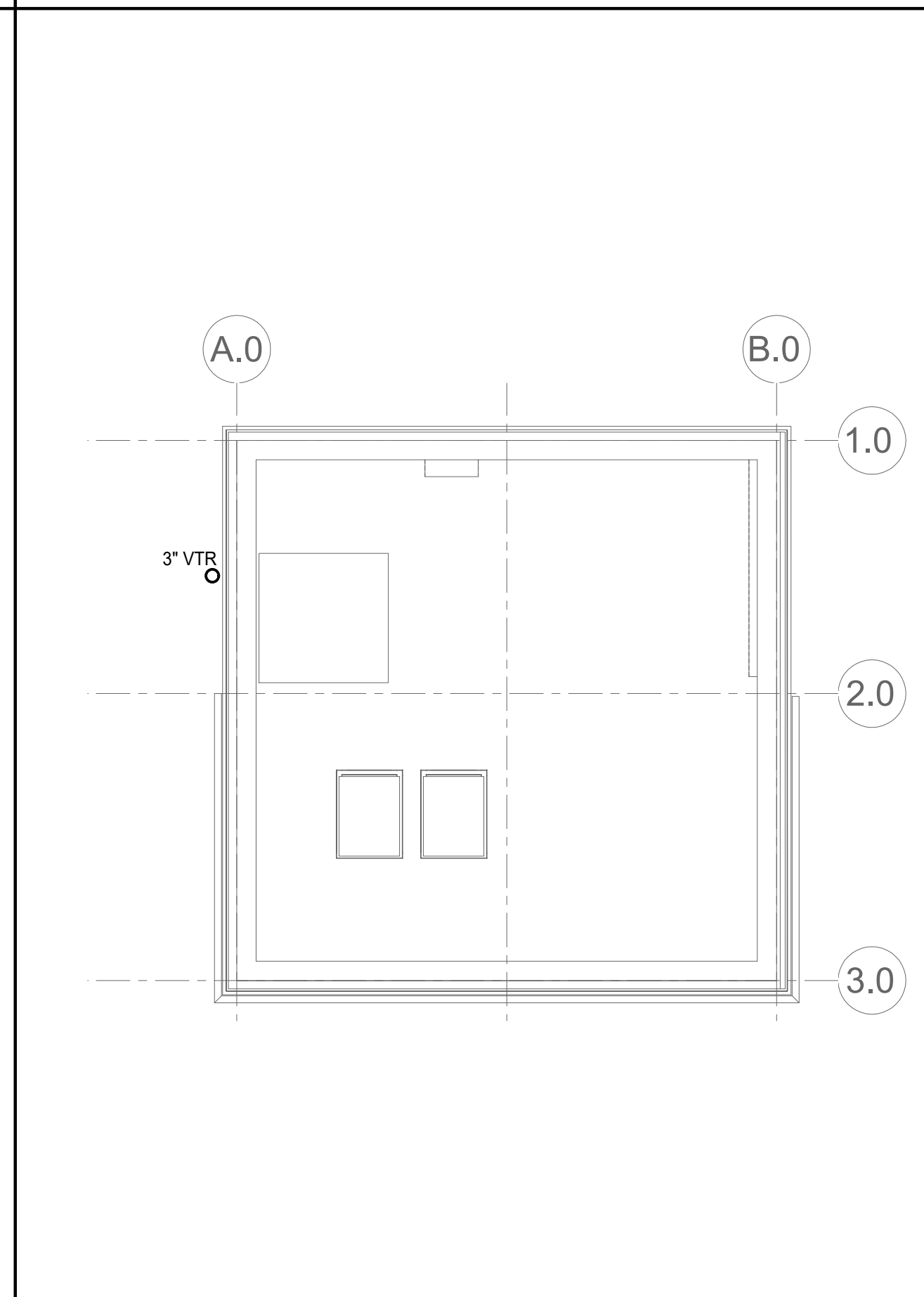
**KEYED NOTES:**

1. REMOVE FIXTURE, SUPPORT AND ALL ASSOCIATED TRIM-COMLETE. REMOVE WASTE, VENT AND DOMESTIC WATER PIPING, HANGERS AND ALL APPURTENANCES-COMLETE.
2. REMOVE DOMESTIC WATER HEATER, SUPPORT AND ALL ASSOCIATED APPURTENANCES-COMLETE.
3. REMOVE FIXTURE AND SANITARY WASTE PIPING TO A POINT BELOW SLAB AND CAP. PATCH FLOOR TO MATCH EXISTING.
4. REMOVE CW PIPING BACK TO A POINT BELOW GRADE AND PREPARE FOR CONNECTION OF NEW PIPING. REMOVE CW PIPING, SUPPORTS AND ALL ASSOCIATED APPURTENANCES WITHIN CHASE-COMLETE.
5. REMOVE 3" VENT PIPING FROM ROOF TO A POINT BELOW EXISTING FLOOR AND CAP. PATCH FLOOR AND ROOF TO MATCH EXISTING.
6. CONTRACTOR SHALL SCOPE THE EXISTING SANITARY PIPING FOR DEPTH AND CONDITION PRIOR TO ANY SLAB REMOVAL AND REPORT FINDINGS BACK TO ARCHITECT/ENGINEER.
7. CONTRACTOR SHALL UTILIZE GROUND PENETRATING RADAR (OR SIMILAR) TO IDENTIFY POTENTIAL CONFLICTS BELOW THE SLAB PRIOR TO ANY SLAB REMOVAL AND REPORT FINDINGS BACK TO ARCHITECT/ENGINEER.
8. PROVIDE LIBERTY PUMPS #260-2 SUBMERSIBLE UTILITY PUMP (1/8 HP, 115V, 25-FT POWER CORD) AND CONTINENTAL 50-FOOT COMMERCIAL GRADE RUBBER WATER HOSE WITH 3/4" THREADED CONNECTION.
9. PROVIDE ACO DRAIN TYPE 848D #142224 - 12" WIDE, STAINLESS STEEL GRATING @10'-0" LONG (RE: ARCHITECTURAL FOR TRENCH).



**A1** FIRST LEVEL OVERALL PLUMBING PLAN

NOT TO SCALE



**D12** SECOND LEVEL PART PLAN

NOT TO SCALE

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<b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b>		
PROJECT: WARREN, ME		
<b>PLUMBING FLOOR PLANS</b>		
DATE		SCALE
AS NOTED		
DRAWN BY	DESIGNED BY	A/E
JPB	JPB	RMW
PROJECT No. 10003_001		
DRAWING No.		REV
<b>P101</b>		

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	PIPING CONNECTIONS				MANUFACTURER	MODEL NO.	MATERIAL	COLOR	MOUNTING	FLUSH VALVE OR FAUCET SET	SEAT	SUPPLIES AND STOPS	P-TRAP	STRAINER	CARRIER	NOTES
		WASTE	VENT	HOT	COLD												
WC-1	TANK TYPE WATER CLOSET - ADA	4"	2"	-	1/2"	AMERICAN STANDARD	"CADET" 215A.A.104	VITREOUS CHINA	WHITE	FLOOR	-	CHURCH 9500SS	MCGUIRE LF2166	-	-	-	1
LV-1	LAVATORY - ADA	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD	"LUCERNE" 0355.012	VITREOUS CHINA	WHITE	WALL	CHICAGO 420-ABCP	-	MCGUIRE LF2165	MCGUIRE 8902C	CHICAGO 337-CP	ZURN Z1231	2
SK-1	BREAK ROOM SINK - ADA	2"	1-1/2"	1/2"	1/2"	ELKAY	LRAD22190465	STAINLESS STEEL	-	DROP-IN	CHICAGO 1102CP	-	MCGUIRE LF2167	MCGUIRE 8912C	ELKAY LKAD35	-	

NOTES: 1. PROVIDE WATTS #LFMMV THERMOSTATIC MIXING VALVE.  
2. PROVIDE TRUEBRO #82194 UNDERSINK LAVATORY COVERS.

DOMESTIC WATER HEATER SCHEDULE

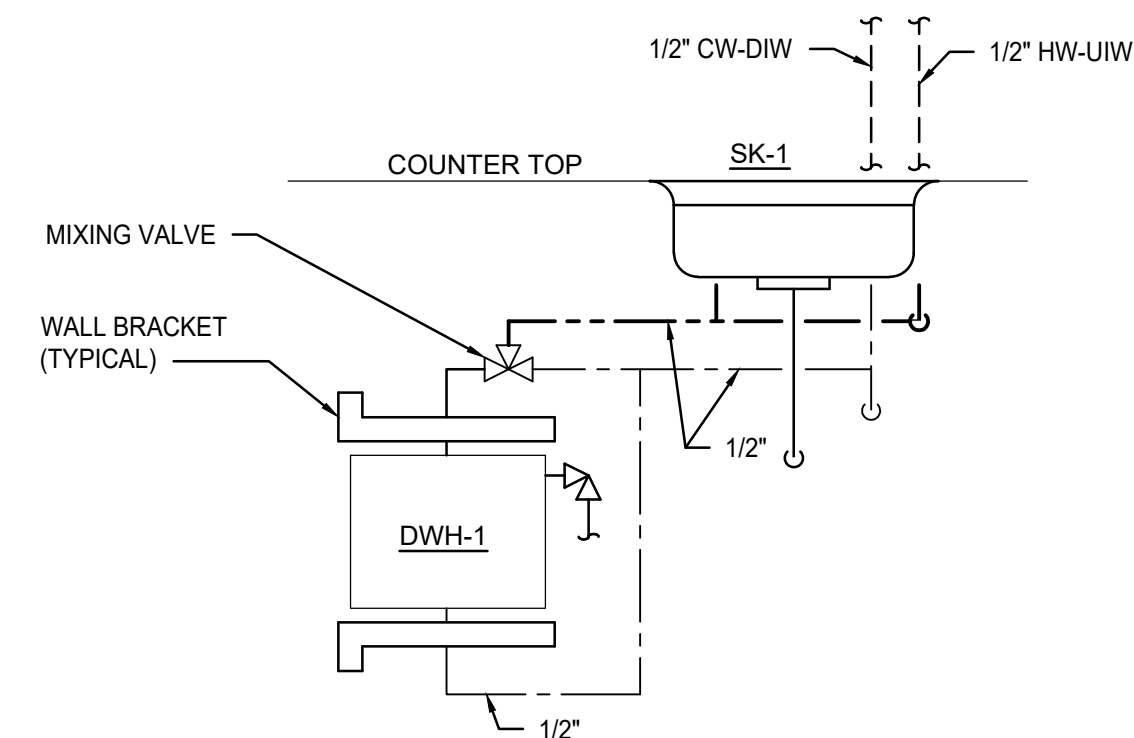
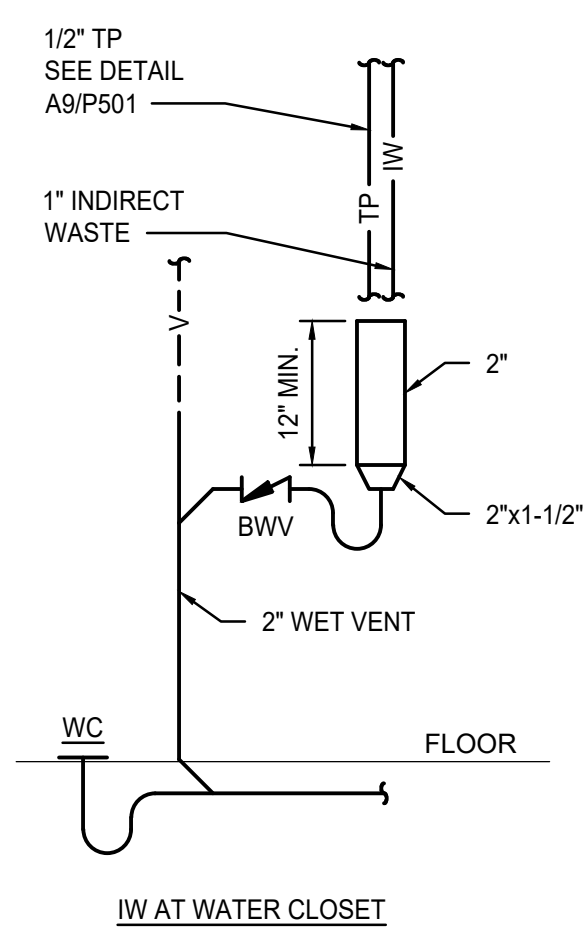
TAG	FUEL	INPUT KW	1 <sup>ST</sup> HR RECOVERY (GPH @ 100°F RISE)	STORAGE TANK SIZE (GAL)	ELECTRICAL DATA			VENT CONNECTION SIZE	OPERATING WT. (LBS)	BASIS OF DESIGN	NOTES
					AMPS	MOCP	V/PH				
DWH-1	ELEC.	1440	5.0	2.5	12	15 A	120/1	-	36	HTP "EVERLAST" EVR02.5A014C	1

NOTES: 1. PROVIDE WATTS #LFMMV THERMOSTATIC MIXING VALVE.

DRAIN SCHEDULE

TAG	APPLICATION	DESCRIPTION	BASIS OF DESIGN	TRAP PRIMER	NOTES
FD-1	FINISHED SPACES	LIGHT DUTY DRAIN, COATED CAST IRON BODY, NICKEL-BRONZE GRATE, 1/2" TRAP PRIMER CONNECTION	ZURN ZN-415B	PRECISION PLUMBING PRODUCTS PR-500	1
RD-1	ROOF DRAIN	15" DIA. ROOF DRAIN, ALUMINUM DOME, UNDERDECK CLAMP, SUMP RECEIVER	ZURN ZA-100-DP	-	2, 3, 4

NOTES: 1. CAULK OUTLET.  
2. NO-HUB OUTLET.  
3. ZURN Z-190 EXPANSION JOINT - REQUIRED WHERE PIPING CONNECTION TO THE DRAIN DOES NOT IMMEDIATELY OFFSET TO THE HORIZONTAL AND RUN MORE THAN 5-FEET.  
4. REFER TO ARCHITECTURAL ROOF PLAN FOR DRAIN LOCATIONS.



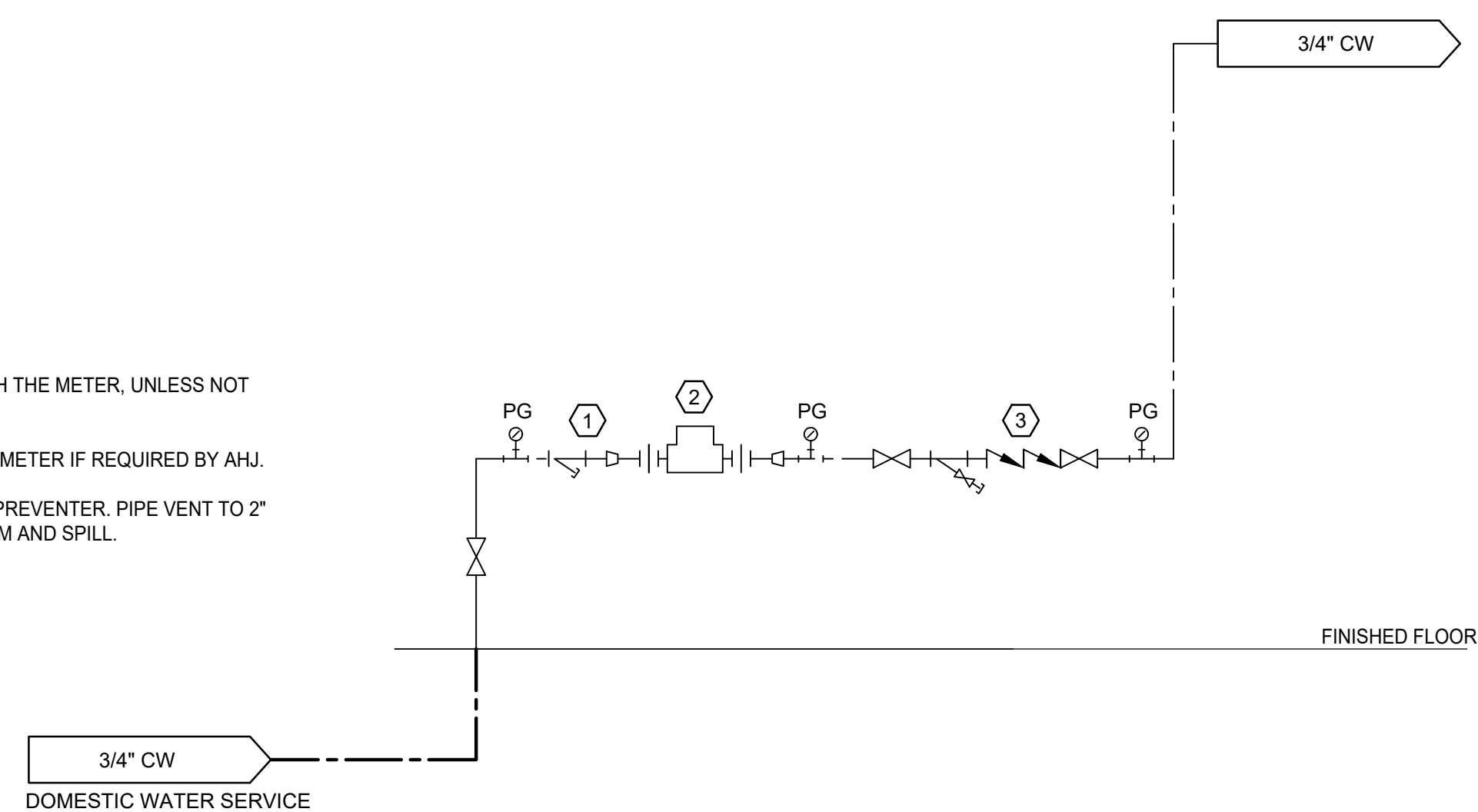
F1 INDIRECT WASTE

F5 DWH-1

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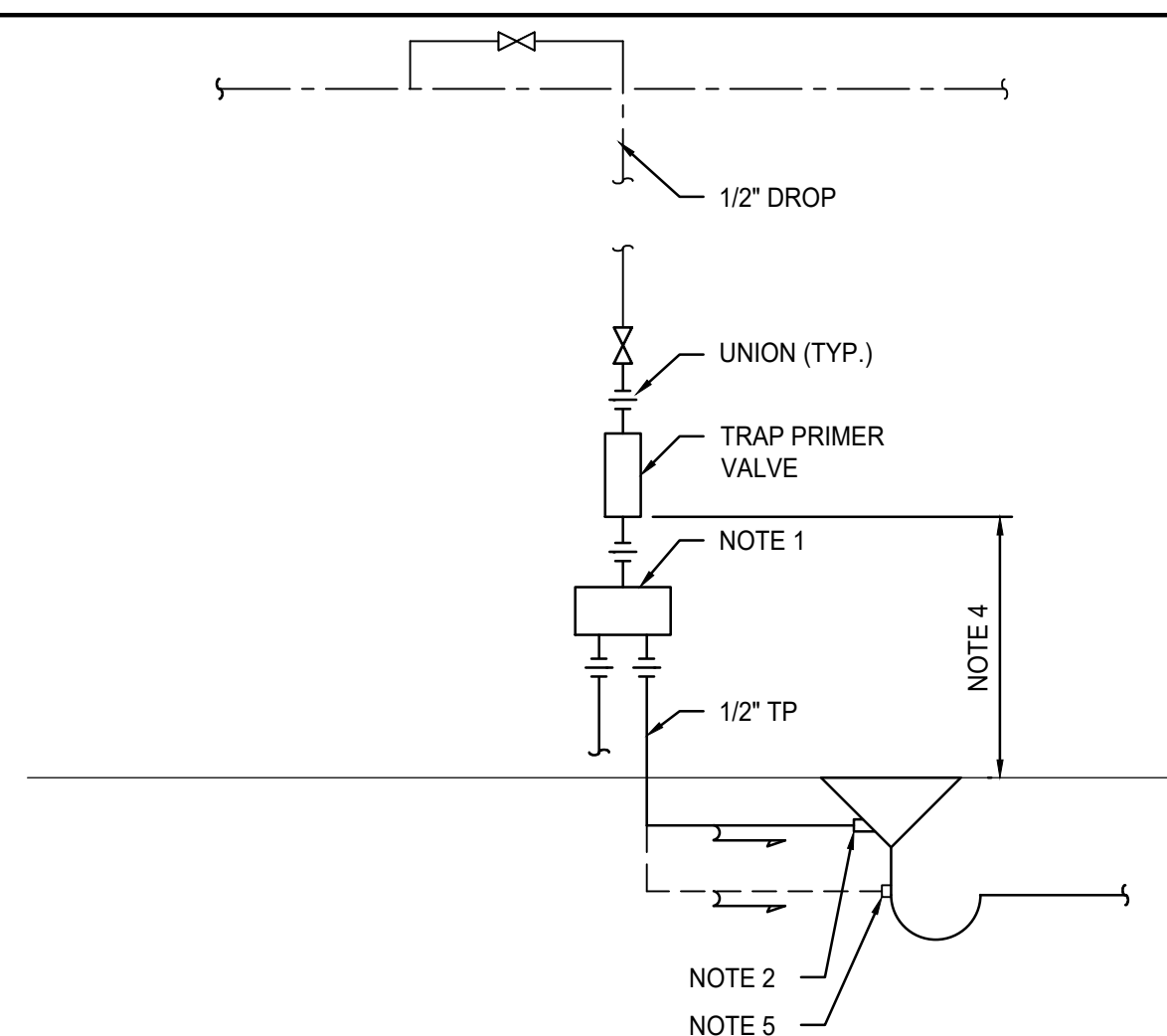
NOT TO SCALE

- NOTES:
- 1 PROVIDE STRAINER INTEGRAL WITH THE METER, UNLESS NOT ALLOWED BY THE AHJ.
  - 2 PROVIDE VALVE BY-PASS AROUND METER IF REQUIRED BY AHJ.
  - 3 3/4" WATTS #LF009-QT BACKFLOW PREVENTER. PIPE VENT TO 2" ABOVE INDIRECT WASTE FLOOD RIM AND SPILL.



A1 WATER ENTRANCE

NOT TO SCALE



- NOTES:
- 1 FOR MULTIPLE TRAP PRIMER APPLICATION. GROUP PRIMERS TOGETHER WHEREVER POSSIBLE.
  - 2 TRAP PRIMER PIPING TO BE INSTALLED BELOW SLAB SLOPED TO DRAIN. PROVIDE A P-TRAP WITH 1/2" PRIMER TAP WHEN FLOOR DRAIN PRIMER PORT IS BURIED WITHIN THE SLAB.
  - 3 WHERE PIPING DROP IS NOT EXPOSED, PROVIDE ACCESS PANEL.
  - 4 INSTALL VALVE AT A MINIMUM DISTANCE ABOVE THE FLOOR AS REQUIRED BY TRAP PRIMER MANUFACTURER, BUT NO LOWER THAN 1 FOOT AFF FOR EACH 20 FEET OF TRAP PRIMER PIPING.

A9 TRAP PRIMER

NOT TO SCALE

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PROJECT: GATEHOUSE - SALLYPORT WARREN, ME		

PLUMBING DETAILS AND SCHEDULES

DATE	SCALE	AS NOTED
DRAWN BY JPB	DESIGNED BY JPB	A/E RMW
PROJECT No. 10003_001		
DRAWING No.		REV
<b>P501</b>		

**DRAWING LIST:**

E000 ELECTRICAL LEGEND AND ABBREVIATIONS  
 E001 ELECTRICAL SPECIFICATIONS  
 E101 FIRST FLOOR LIGHTING PLAN  
 E102 SECOND FLOOR LIGHTING PLAN  
 E201 FIRST FLOOR POWER PLAN  
 E202 SECOND FLOOR POWER PLAN

**LIGHTING SYMBOLS:**

- RECESSED 2X2 LIGHT FIXTURE. LETTER DENOTES FIXTURE TYPE, # DENOTE CIRCUIT #
- RECESSED 2X4 LIGHT FIXTURE
- RECESSED 1X4 LIGHT FIXTURE
- STRIP LIGHT FIXTURE
- RECESSED 6" DOWNLIGHT
- RECESSED 4" DOWNLIGHT
- WALL MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN WITH REMOTE HEADS
- CEILING MOUNTED EXIT SIGN WITH REMOTE HEADS
- CEILING MOUNTED EXIT SIGN
- REMOTE HEADS
- EMERGENCY BATTERY UNIT
- SINGLE POLE SWITCH
- 4 WAY SWITCH
- 3 WAY SWITCH
- OCCUPANCY SENSOR SWITCH
- VACANCY SENSOR SWITCH
- KEYED SWITCH
- LOW VOLTAGE MASTER STATION SWITCH
- DIMMER SWITCH
- OCCUPANCY SENSOR
- PHOTOCCELL
- EMERGENCY BYPASS RELAY
- TIME CLOCK

**POWER SYMBOLS:**

- JUNCTION BOX
- POWER PANELBOARD
- LIGHTING PANELBOARD
- EQUIPMENT ENCLOSURE TYPE AND CONTENTS AS INDICATED
- UNDERGROUND CONDUIT; CONTENTS AS INDICATED
- ABOVE GRADE CONDUIT; CONTENTS AS INDICATED
- EXISTING CONDUIT; CONTENTS AS INDICATED
- MOTOR
- TRANSFORMER
- METER
- SIMPLEX RECEPTACLE, NEMA 5-20R
- SIMPLEX STANDBY RECEPTACLE, NEMA 5-20R
- DUPLEX RECEPTACLE, NEMA 5-20R
- DUPLEX RECEPTACLE, NEMA 5-20R, COUNTERHEIGHT
- DUPLEX GFCI RECEPTACLE, NEMA 5-20R WITH WEATHER RATED IN-USE COVER
- DUPLEX GFCI RECEPTACLE, NEMA 5-20R
- DUPLEX RECEPTACLE, NEMA 5-20R FOR MICROWAVE, COORDINATE MOUNTING HEIGHT AND LOCATION
- DUPLEX RECEPTACLE, NEMA 5-20R MOUNTED HIGH ON WALL ~72" AFF FOR TELEVISION
- QUAD RECEPTACLE, NEMA 5-20R
- SPECIALTY RECEPTACLE; AS INDICATED
- VFD
- MANUAL MOTOR STARTER WITH INTEGRAL THERMAL PROTECTION
- FUSED DISCONNECT SWITCH
- DISCONNECT SWITCH
- COMBINATION MOTOR STARTER DISCONNECT SWITCH
- MOTOR STARTER
- HOME RUN; P DENOTES PANEL OR MCC DESIGNATION, 12 DENOTES CIRCUIT, #16 INDICATES CONDUIT TYPE
- SPD

**ONELINE SYMBOLS:**

- TRANSFORMER; RATINGS AND SIZE AS INDICATES
- UTILITY METER SOCKET
- GROUND CONNECTION
- DISCONNECT SWITCH
- CIRCUIT BREAKER
- TRANSFER SWITCH; AUTOMATIC OR MANUAL AS INDICATED
- WYE WOUND GENERATOR; SIZE AND RATINGS AS INDICATED

**GROUNDING SYMBOLS:**

- GROUNDING SYSTEM CONNECTION; ALL GROUNDING SYSTEM CONNECTIONS ARE EXOTHERMICALLY WELDED TYPE UNLESS OTHERWISE NOTED.
- COPPER CLAD GROUND ROD; SIZE AS INDICATED
- BARE COPPER GROUNDING WIRE; TYPE AND SIZE AS INDICATED

**ABBREVIATIONS:**

- A AMPERE(S)
- AFF ABOVE FINISHED FLOOR
- AIM ADDRESSABLE INPUT MODULE
- AL ALUMINUM
- ATS AUTOMATIC TRANSFER SWITCH
- AWG AMERICAN WIRE GAUGE
- B, BLDG BUILDING
- BATT BATTERY
- C CONDUIT
- CB CIRCUIT BREAKER
- CCTV CLOSED CIRCUIT TELEVISION
- CKT CIRCUIT
- CP CONTROL PANEL
- CU COPPER
- D DEPTH
- DC DIRECT CURRENT
- DIN DEUTSCHES INSTITUT FUR NORMUNG
- DS DISCONNECT SWITCH
- EC ELECTRICAL CONTRACTOR
- EF EXHAUST FAN
- EMT ELECTRICAL METALLIC TUBING
- EOL END OF LINE RESISTOR
- EXIST EXISTING
- FA FIRE ALARM
- FAA FIRE ALARM ANUNCIATOR PANEL
- FACP FIRE ALARM CONTROL PANEL
- FATC FIRE ALARM TERMINAL CABINET
- FC FOOT CANDLES
- G, GND GROUND
- GC GENERAL CONTRACTOR
- GEC GROUNDING ELECTRODE CONDUCTOR
- GEN GENERATOR
- GFCI GROUND FAULT CIRCUIT INTERRUPTER
- GRS HOT DIPPED GALVANIZED RIGID STEEL
- H HORN
- H/S, HS HORN/STROBE
- HP HORSEPOWER
- HZ HERTZ
- J, J.BOX JUNCTION BOX
- KA KILO AMPS
- KAIC KILO AMPERE INTERRUPTING CAPACITY
- KV KILO VOLTS
- KVA KILO VOLT-AMPERES
- KW KILO WATTS
- L LOAD OR LENGTH
- LP LIQUID PROPANE
- LTG LIGHTING
- MAX MAXIMUM
- MBJ MAIN BONDING JUMPER
- MC METAL CLAD
- MCB MAIN CIRCUIT BREAKER
- MDP MAIN DISTRIBUTION PANEL
- MLO MAIN LUGS ONLY
- MIN MINIMUM
- MTS MANUAL TRANSFER SWITCH
- NC, N.C. NORMALLY CLOSED
- NEC NFPA 70; NATIONAL ELECTRICAL CODE
- NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- NF NONFUSED
- NFPA NATIONAL FIRE PROTECTION ASSOCIATION
- NO, N.O. NORMALLY OPEN
- NTS NOT TO SCALE
- NVR NETWORK VIDEO RECORDER
- OC ON CENTER
- OH OVERHEAD
- OIT OPERATOR INTERFACE TERMINAL
- P POLE
- PH, PHASE
- PLC PROGRAMMABLE LOGIC CONTROLLER
- POE POWER OVER ETHERNET
- PRI PRIMARY
- PT POINT
- PVC POLYVINYL CHLORIDE
- R, REC RECEPTACLE
- RGS RIGID GALVANIZED STEEL
- S SOURCE
- SS STAINLESS STEEL
- SCH SCHEDULE
- SEC SECONDARY
- SP SPARE
- SPD SURGE PROTECTIVE DEVICE
- SPST SINGLE POLE SINGLE THROW
- TB TERABYTE
- TELEM TELEMETRY
- TP TWISTED PAIR
- TS THIS SHEET
- TSP TWISTED SHIELDED PAIR
- UG UNDERGROUND
- UPS UNINTERRUPTIBLE POWER SUPPLY
- V, VOLT VOLTAGE
- VA VOLT-AMPERE
- VAC VOLTAGE, ALTERNATING CURRENT
- VDC VOLTAGE, DIRECT CURRENT
- VGA VIDEO GRAPHICS ARRAY CONNECTOR
- W WIDTH, WATT OR WIRES
- WP WEATHERPROOF OR WEATHER RATED
- XP EXPLOSION PROOF
- XFMR TRANSFORMER

**NOTES:**

- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH STATE OF MAINE BUILDING CODES, NFPA 70, NFPA 72, AND THE AUTHORITY HAVING JURISDICTION.
- ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.
- COORDINATE THE INSTALLATION OF ALL NEW UNDERGROUND CONDUITS PRIOR TO STARTING CONSTRUCTION. CALL DIGSAFE (888) 344-7233 TO DETERMINE THE ACTUAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND CONDUITS IN THE AREA PRIOR TO EXCAVATION.

LIGHTING FIXTURE SCHEDULE									
TYPE	DESCRIPTION	MANUFACTURER	CATALOGUE NUMBER	ALTERNATE	LUMENS	MOUNTING	WATTS	VOLTAGE	NOTES
FM1	8" X 8" SURFACE MOUNT LED FIXTURE WITH MATTE ACRYLIC SHADE	PERFORMANCE IN LIGHTING USA	BS4-O-40-BK-35K-UNV-NA	OR EQUAL	2,505	SURFACE	40	120V	COORDINATE FIXTURE FINISH WITH ARCHITECT.
LM1	4"-0" LINEAR FLUSH MOUNT, HIGH ABUSE/VANDAL RESISTANT LED FIXTURE	COOPER	FV54-8-LD4-1HI-40-UNV-P125-EDC1-BK	OR EQUAL	4,443	SURFACE	44.5	120V	COORDINATE EXACT REQUIREMENTS WITH ARCHITECT.
WM1	WALL MOUNTED LED SCNCE	PERFORMANCE IN LIGHTING USA	AS1-RDR-BK-40-ELL-4K-UNV-NA	OR EQUAL	60	WALL MOUNTED	2.1	120V	COORDINATE FIXTURE FINISH WITH ARCHITECT.
TF	LINEAR LED UPLIGHT IP68	NEMALUX	GS-4-50-W-BLK-0-12-68-B	OR EQUAL	1880	SURFACE	33.6	120V	COORDINATE FIXTURE MOUNTING WITH EXISTING TRENCH, PROVIDE WEATHERPROOF JUNCTION BOXES AS REQUIRED FOR WIRING.

**LIGHTING FIXTURE SCHEDULE NOTES:**

- COORDINATE LIGHTING FIXTURE INSTALLATION, HARDWARE, TRIM KITS, ETC. WITH FINAL CEILING TYPE SELECTED.

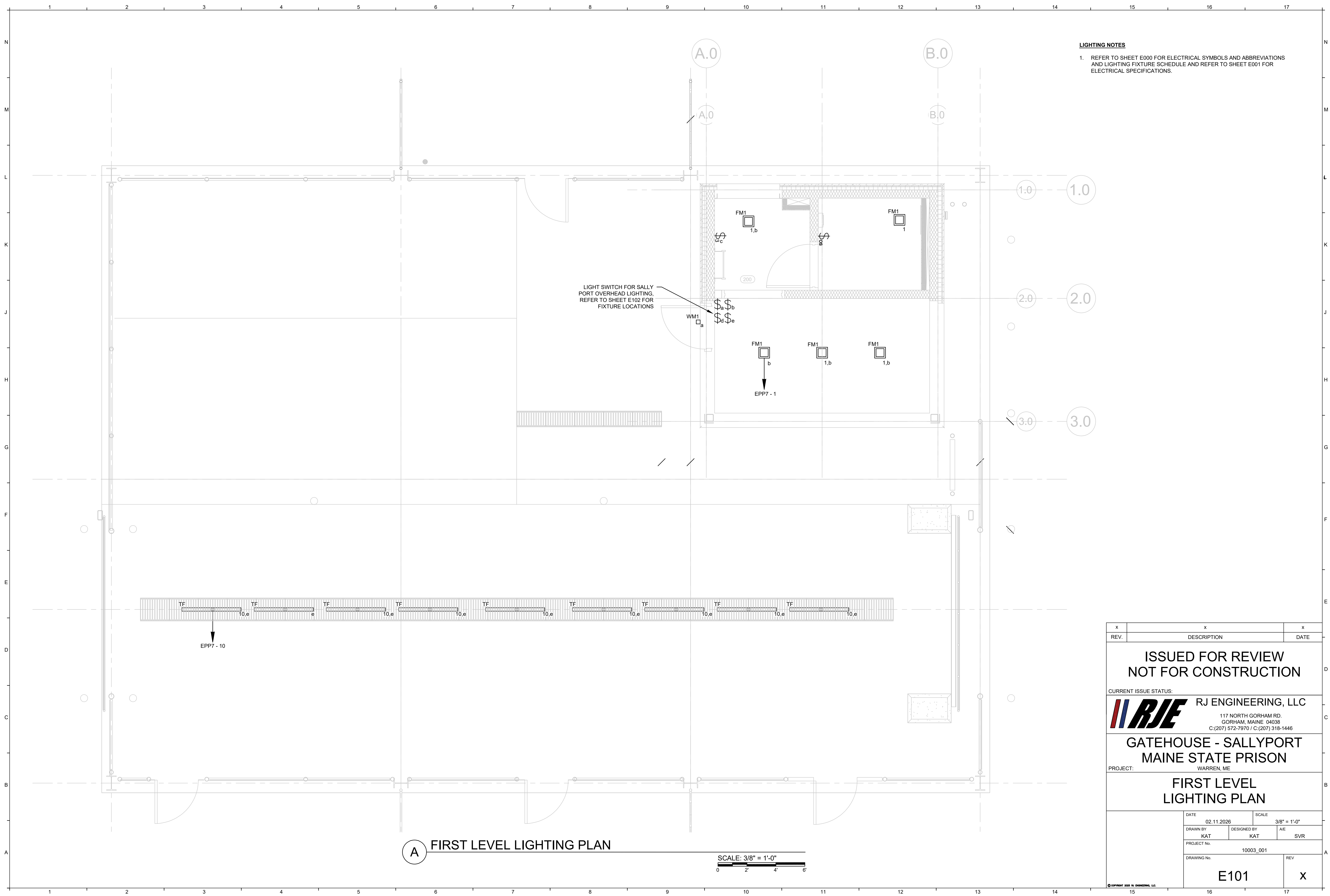
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REV.	DESCRIPTION	DATE
<b>ISSUED FOR REVIEW NOT FOR CONSTRUCTION</b>		
CURRENT ISSUE STATUS:		
117 NORTH GORHAM RD. GORHAM, MAINE 04038 C: (207) 572-7970 / F: (207) 318-1446		
<b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b>		
PROJECT: WARREN, ME		
<b>ELECTRICAL LEGEND AND ABBREVIATIONS</b>		
DATE	02.11.2026	SCALE
DESIGNED BY	KAT	A/E
DRAWN BY	KAT	SVR
PROJECT No.	10003_001	
DRAWING No.	E000	REV
		X

1. DEFINITIONS
  - 1.1. UNLESS OTHERWISE SPECIFIED OR INDICATED, ELECTRICAL AND ELECTRONICS TERMS USED SHALL BE AS DEFINED IN IEEE 100.
2. QUALITY ASSURANCE
  - 2.1. MANUFACTURER QUALIFICATIONS: ISO 9001 OR 9002 CERTIFIED.
  - 2.2. EQUIPMENT QUALIFICATIONS: PROVIDE MATERIALS AND EQUIPMENT THAT ARE PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS WHICH ARE OF EQUAL MATERIAL, DESIGN, AND WORKMANSHIP. ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE NEW, FREE FROM DEFECTS, AND SHALL CONFORM WITH THE STANDARDS OF UL; PRODUCTS MANUFACTURED MORE THAN THREE (3) YEARS PRIOR TO DATE OF DELIVERY TO THE SITE SHALL NOT BE USED. WHERE TWO OR MORE ITEMS OF A SINGLE CLASS OF EQUIPMENT ARE REQUIRED, THESE ITEMS SHALL BE OF A SINGLE MANUFACTURER. MANUFACTURERS OF SIMILAR QUALITY PRODUCTS WILL BE CONSIDERED UNLESS INDICATED OTHERWISE.
3. REGULATIONS AND CODES
  - 3.1. THE CONTRACTOR MUST COMPLY WITH ALL STATE, MUNICIPAL, AND FEDERAL SAFETY LAWS, CONSTRUCTION CODES, ORDINANCES, AND REGULATIONS RELATING TO BUILDING AND PUBLIC HEALTH AND SAFETY. IN ADDITION, COMPLY WITH RULES AND REGULATIONS OF THE STATE FIRE PROTECTION CODE, NATIONAL ELECTRIC CODE (NFPA 70), AND STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E). THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE CODES ADOPTED AND IN EFFECT AT THE TIME THE WORK IS PERFORMED.
4. WARRANTY
  - 4.1. ALL EQUIPMENT ITEMS, MATERIALS, AND THE INSTALLATION SHALL BE WARRANTED FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR AGREES TO REPAIR OR REPLACE EQUIPMENT ITEMS, MATERIALS, OR WORKMANSHIP THAT FAIL WITHIN THE WARRANTY PERIOD.
5. SUBMITTALS/SHOP DRAWINGS
  - 5.1. PROVIDE ONE (1) ELECTRONIC COPY OF ALL EQUIPMENT SUBMITTALS.
  - 5.2. PRODUCT DATA FOR EACH TYPE AND SIZE OF EQUIPMENT ITEM AND MATERIAL TO BE USED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. INCLUDING CUT SHEETS, DRAWINGS, AND DIAGRAMS INDICATING DIMENSIONS, RATINGS, FINISHES, ELECTRICAL CHARACTERISTICS, SCHEDULES, WIRING/INSTALLATION REQUIREMENTS, ETC.
  - 5.3. ANY MODIFICATIONS TO LAYOUTS OR ARRANGEMENTS SHALL BE SUBMITTED IN SKETCH OR DETAIL FORM FOR REVIEW PRIOR TO INSTALLATION.
  - 5.4. CLOSEOUT DOCUMENTS
    - 5.4.1. PROVIDE ONE (1) ELECTRONIC COPY OF OPERATION AND MAINTENANCE MANUALS (O&MS) FOR ALL EQUIPMENT ITEMS AND MATERIALS. O&MS SHALL INCLUDE THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR TESTING, MAINTENANCE, ADJUSTMENT, AND OPERATION AND THE APPROVED SUBMITTAL/SHOP DRAWING.
  - 5.5. FURNISH EXTRA MATERIALS AND SPARE PARTS WHERE INDICATED.
6. DELIVERY, STORAGE, AND HANDLING
  - 6.1. INSPECT ALL EQUIPMENT ITEMS AND MATERIALS UPON ARRIVAL AND NOTE ANY DAMAGE.
  - 6.2. STORE EQUIPMENT ITEMS AND MATERIALS IN LOCATIONS AS RECOMMENDED BY THE MANUFACTURER. PROTECT FINISHES AND EXPOSED SURFACES FROM DAMAGE.
  - 6.3. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR LIFTING AND HANDLING EQUIPMENT.
7. GENERAL REQUIREMENTS
  - 7.1. SCHEDULE WORK IN COORDINATION WITH OTHER TRADES AS NECESSARY FOR THE COMPLETION OF THE PROJECT BY THE OWNER REQUIRED DEADLINE.
  - 7.2. THE CONTRACTOR SHALL REVIEW ALL PROCESS AND MECHANICAL EQUIPMENT REQUIREMENTS FOR CONTROL, POWER, AND COMMUNICATIONS CONNECTIONS AND FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, BOXES, PROTECTIVE DEVICES, SWITCHES, ETC. AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
  - 7.3. ALL EQUIPMENT ITEMS AND MATERIALS FURNISHED SHALL FIT THE SPACE AVAILABLE, WITH CONNECTION IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE MANNER AND METHOD OF THE INSTALLATION, WHILE THE SPECIFICATIONS AND FIXTURE LISTS/SCHEDULES INDICATE THE TYPE AND QUALITY OF THE MATERIAL AND WORKMANSHIP TO BE USED. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE MOST STRINGENT REQUIREMENT SHALL TAKE PRECEDENCE.
8. EQUIPMENT APPLICATIONS AND RATINGS
  - 8.1. LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
  - 8.2. OUTDOORS: APPLY AS SPECIFIED BELOW UNLESS OTHERWISE INDICATED:
    - 8.2.1. EXPOSED CONDUIT: GALVANIZED RIGID STEEL.
    - 8.2.2. BELOW GRADE/UNDERGROUND CONDUIT; PVC SCHEDULE 80, WITH GALVANIZED RIGID STEEL SWEEPS.
    - 8.2.3. CONNECTION TO VIBRATING EQUIPMENT: LIQUID TIGHT FLEXIBLE METALLIC CONDUIT.
    - 8.2.4. BOXES AND ENCLOSURES: NEMA 250, TYPE 3R.
  - 8.3. INDOORS: APPLY AS SPECIFIED BELOW UNLESS OTHERWISE INDICATED:
    - 8.3.1 EXPOSED CONDUIT: GALVANIZED RIGID STEEL
    - 8.3.2 CONCEALED IN WALLS OR CEILING: EMT
    - 8.3.3 CONNECTION TO VIBRATING EQUIPMENT: LFMC
    - 8.3.4 BOXES AND ENCLOSURES: NEMA 250 TYPE 1
9. RACEWAYS
  - 9.1. METAL CONDUIT SHALL BE BY AFC CABLE SYSTEMS, ALLIED TUBE & CONDUIT, CALCONDUIT, WESTERN TUBE AND CONDUIT, OR EQUAL. FITTINGS SHALL BE BY AFC CABLE SYSTEMS, ALLIED TUBE & CONDUIT, CALCONDUIT, WESTERN TUBE AND CONDUIT, OR EQUAL. LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION. COMPLY WITH NEMA FB 1 AND UL 514B.
    - 9.1.1. GALVANIZED RIGID STEEL CONDUIT SHALL COMPLY WITH ANSI C80.1 AND UL 6
    - 9.1.2. EMT CONDUIT SHALL COMPLY WITH ANSI C80.3 AND UL 797
    - 9.1.3. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL HAVE PVC JACKET AND COMPLY WITH UL 360, CONNECTIONS COMPLY WITH NEMA RV 3.
  - 9.2. FITTINGS SHALL BE BY AFC CABLE SYSTEMS, ALLIED TUBE & CONDUIT, CALCONDUIT, WESTERN TUBE AND CONDUIT, OR EQUAL. COMPLY WITH NEMA FB 1 AND UL 514B.
10. WIRE AND CABLE
  - 10.1. WIRE SHALL BE BY ENCORE WIRE CORPORATION, GENERAL CABLE, THE OKONITE COMPANY, SOUTHWIRE, OR EQUAL.
    - 10.1.1. ALL WIRING SHALL BE COPPER. ALL WIRE SIZES ARE BASED ON COPPER CONDUCTORS.

- 10.1.2. COPPER BUILDING WIRE SHALL COMPLY WITH ASTM B 8 FOR STRANDED CONDUCTORS. ACCEPTABLE INSULATION TYPES SHALL BE THHN/THWN-2 COMPLYING WITH UL 83 OR XHHW-2 COMPLYING WITH UL 44.
- 10.1.3. NO WIRE SMALLER THAN NO. 12 AWG, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- 10.1.4. SOLID CONDUCTORS FOR SIZES NO. 12 AWG AND SMALLER. STRANDED CONDUCTORS FOR SIZES NO. 10 AWG AND LARGER.
- 10.1.5. ALL ABOVE GRADE WIRING SHALL BE THWN-2. ALL UNDERGROUND WIRING SHALL BE XHHW.
- 10.2. BOXES
  - 10.2.1. BOXES SHALL BE BY CROUSE-HINDS, EGS/APPLETON, HOFFMAN, O-Z/GEDNEY, OR EQUAL. BOXES INSTALLED IN WET LOCATIONS SHALL BE LISTED FOR USE IN WET LOCATIONS. BOX DIMENSIONS SHALL BE 4 INCHES SQUARE BY 2-1/8 INCH DEEP OR 4 INCHES TALL BY 2-1/8 INCHES WIDE BY 2-1/8 INCHES DEEP.
  - 10.2.2. CAST-METAL OUTLET AND DEVICE BOXES SHALL COMPLY WITH NEMA FB 1, FERROUS ALLOY, TYPE FD, WITH GASKETED COVER.
  - 10.2.3. LUMINAIRE OUTLET BOXES SHALL BE NONADJUSTABLE, DESIGNED FOR ATTACHMENT OF LUMINAIRE WEIGHING 50LB.
11. DEVICES
  - 11.1. DEVICES SHALL BE BY EATON (ARROW HART), HUBBELL, LEVITON, OR EQUAL. DEVICE COLORS SHALL BE WHITE PER NEMA WD 1, WALL PLATES SHALL MATCH DEVICE COLORS. CONFIGURATION SHALL BE AS INDICATED ON THE DRAWINGS.
    - 11.1.1. ALL RECEPTACLES SHALL COMPLY WITH UL 498 AND FS W-C-596; GFCI SHALL ADDITIONALLY COMPLY WITH UL 943 CLASS A.
    - 11.1.2. ALL SWITCHES SHALL COMPLY WITH UL 20 AND FS W-S-896. ALL DIMMING SWITCHES SHALL BE COMPATIBLE WITH THE TYPE OF LOAD THEY SERVE.
    - 11.1.3. WET LOCATION, WEATHERPROOF COVER PLATES SHALL COMPLY WITH NEMA 250, TYPE 3R AND BE WEATHER RESISTANT WHILE-IN-USE TYPE.
12. SAFETY SWITCHES
  - 12.1. SAFETY SWITCHES SHALL BE BY EATON, GENERAL ELECTRIC COMPANY, SIEMENS INDUSTRY, OR EQUAL. SAFETY SWITCHES SHALL COMPLY WITH UL 98 AND NEMA KS 1, HORSEPOWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.
    - 12.1.1. FUSES FOR FUSED SAFETY SWITCHES SHALL BE BY BUSSMANN, MERSEN, OR EQUAL.
13. SERVICE ENTRANCE EQUIPMENT AND PANELBOARDS
  - 13.1. SERVICE ENTRANCE EQUIPMENT SHALL BE PER THE REQUIREMENTS OF THE LOCAL UTILITY AND MUNICIPAL GOVERNING BODY.
  - 13.2. PANELBOARDS SHALL BE BY EATON, GENERAL ELECTRIC COMPANY, SIEMENS INDUSTRY, OR EQUAL. PANELBOARDS SHALL COMPLY WITH NEMA PB 1, WITH DEVICES LISTED TO UL 489.
    - 13.2.1. PANELBOARD SIZE, CONFIGURATION, AND RATING SHALL BE AS INDICATED ON THE EQUIPMENT SCHEDULE. PROVIDE TYPEWRITTEN SHEET INSTALLED ON DOOR IDENTIFYING THE USE OF EACH BRANCH CIRCUIT. ALL PANELBOARDS SHALL BE PROVIDED WITH DOOR-IN-DOOR CONSTRUCTION WITH CONCEALED HINGES, DOOR LOCK, AND TWO KEYS. PROVIDE BOLT-ON CIRCUIT BREAKERS FOR ALL BRANCH OVERCURRENT PROTECTIVE DEVICES.
14. LIGHTING FIXTURES
  - 14.1. LIGHTING FIXTURES SHALL BE AS DETAILED ON THE LIGHTING FIXTURE SCHEDULE OR BY APPROVED EQUAL. COMPLYING WITH UL 1598 AND DLC QUALIFIED.
    - 14.1.1. FIXTURES SHALL BE COMPLETE WITH SUPPORTS, HANGERS, CANOPIES, LAMPS, AND ALL ACCESSORIES REQUIRED FOR PROPER MOUNTING AND A FUNCTIONAL SYSTEM. SUPPORTS FOR PENDANT MOUNTED FIXTURE SHALL BE THROUGH YOKE STYLE AIRCRAFT CABLE ADEQUATELY SUPPORTED FROM CEILING STRUCTURAL MEMBERS.
    - 14.1.2. EXTERIOR LIGHTING FIXTURES SHALL BE LISTED FOR WET LOCATION AND PHOTOCCELL OR TIME CLOCK CONTROLLED WHERE INDICATED.
  - 14.2. SUPPORTS SHALL BE SIZED AND RATED FOR LUMINAIRE WEIGHT, ABLE TO MAINTAIN LUMINAIRE POSITION AFTER CLEANING AND/OR TESTING, CAUSE NO DEFLECT OF CEILING OR WALL, AND CAPABLE OF SUPPORTING A HORIZONTAL FORCE OF 100% LUMINAIRE WEIGHT AND VERTICAL FORCE OF 400% LUMINAIRE WEIGHT. WALL MOUNTED LUMINAIRES SHALL BE ATTACHED TO STRUCTURAL MEMBERS IN WALLS, DO NOT ATTACH LUMINAIRES DIRECTLY TO GYPSUM BOARD.
15. INSTALLATION
  - 15.1. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN. SUPPORT ALL CONDUITS WITHIN 12 INCHES OF CHANGES IN DIRECTION.
  - 15.2. INSTALL RACEWAYS SQUARE TO THE ENCLOSURE AND TERMINATE AT ENCLOSURES WITH LOCKNUTS. DO NOT RELY ON LOCKNUTS TO PENETRATE NONCONDUCTIVE COATINGS ON ENCLOSURES. REMOVE COATINGS IN THE LOCKNUT AREA PRIOR TO ASSEMBLING CONDUIT TO ENSURE CONTINUOUS GROUND PATH. SUPPORT CONDUIT WITHIN 12 INCHES OF ENCLOSURES TO WHICH ATTACHED.
  - 15.3. APPLY LISTED COMPOUND TO THREADS OF RACEWAY AND FITTINGS BEFORE MAKING UP JOINTS PER MANUFACTURER'S WRITTEN INSTRUCTIONS FOR ALL JOINTS EXPOSED TO WET, DAMP, CORROSIVE, OR OUTDOOR CONDITIONS.
  - 15.4. USE INSULATING BUSHINGS TO PROTECT CONDUCTORS SUBJECT TO MOISTURE OR VIBRATION.
  - 15.5. INSTALL INSULATED THROAT METAL GROUNDING BUSHINGS ON SERVICE CONDUITS.
  - 15.6. INSTALL DEVICES TO SEAL RACEWAY AT ACCESSIBLE LOCATIONS WHERE CONDUITS PASS FROM INTERIOR TO EXTERIOR OF BUILDING AND WHERE OTHERWISE REQUIRED BY NFPA 70.
  - 15.7. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS THAT WILL NOT DAMAGE CABLES OR RACEWAY DURING INSTALLATION.
  - 15.8. INSTALL EXPOSED CABLES AND RACEWAYS PARALLEL AND PERPENDICULAR TO SURFACES OF EXPOSED STRUCTURAL MEMBER, AND FOLLOW SURFACE CONTOURS WHERE POSSIBLE. OTHER MEANS OF SUPPORTS THROUGH CABLE TIES, ETC. SHALL NOT BE ACCEPTABLE.
  - 15.9. INSTALL ALL BOXES LEVEL WITH FINISHED FLOOR SURFACE. FASTEN BOXES TO OR SUPPORT FROM BUILDING STRUCTURE, DO NOT SUPPORT BOXES BY CONDUIT.
  - 15.10. MOUNT TOP OF PANELBOARD TRIM 72 INCHES ABOVE THE FINISHED FLOOR UNLESS OTHERWISE INDICATED.
16. LABELING
  - 16.1. LABELS SHALL BE ENGRAVED BLACK ON WHITE PHENOLIC PLASTIC LAMINATE, 1/16 INCH THICK. LABELS SHALL BE SELF-ADHESIVE TYPE WITH HEAVY DUTY ADHESIVE AND FASTENED TO THE EQUIPMENT IN WHICH THEY IDENTIFY.
  - 16.2. LABEL ALL EQUIPMENT WITH NAME, AMPERAGE, VOLTAGE, PHASE, WIRES, SOURCE, AND SUPPLY (E.G. PANEL A, 350A, 3P, 4W, SERVICE DISCONNECT, ALL UNIT LOADS). SUBMIT LIST OF LABELS FOR REVIEW PRIOR TO PROCUREMENT.

- 16.3. EQUIPMENT TO BE LABELED SHALL INCLUDE SERVICE ENTRANCE EQUIPMENT, PANELBOARD, SAFETY SWITCHES, AND MOTOR RATED SWITCHES, LABEL OTHER EQUIPMENT AS NOTED ON DRAWINGS.
17. INSPECTIONS AND TESTING
  - 17.1. THE CONTRACTOR SHALL TEST WIRING AND DEVICES AS COMPLETED AND SHALL REPAIR OR REPLACE ALL DEFECTS IMMEDIATELY AT HIS/HER OWN EXPENSE, INCLUDING DAMAGE TO WALLS, CEILINGS, FLOORS, OR OTHER PORTIONS OF THE BUILDING THAT MAY RESULT FROM REPLACING DEFECTIVE EQUIPMENT.
  - 17.2. FURNISH ALL METERS, CABLES, CONNECTIONS, AND APPARATUS FOR ALL REQUIRED TESTING.
  - 17.3. PREPARE TEST AND INSPECTION REPORTS VERIFYING ALL INSTALLED GFCI RECEPTACLES MEET THE TESTED TRIP VALUES SPECIFIED IN UL 1436 AND UL 943. WIRING DEVICE WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
  - 17.4. MEGGER TEST ALL FEEDER CIRCUITS TO ENSURE INSULATION INTEGRITY. MEGGER TEST ALL SYSTEM NEUTRALS TO ENSURE THE NEUTRAL IS NOT GROUNDED WITHIN THE SYSTEM.
  - 17.5. TEST CONTINUITY OF EACH CIRCUIT PRIOR TO ENERGIZING.
18. AS-BUILT DRAWINGS
  - 18.1. AS-BUILT DRAWINGS SHALL BE SUBMITTED IN THE FORMAT REQUIRED.

x	x	x
REV.	DESCRIPTION	DATE
<p><b>ISSUED FOR REVIEW NOT FOR CONSTRUCTION</b></p> <p>CURRENT ISSUE STATUS:</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> <p><b>RJ ENGINEERING, LLC</b></p> <p>117 NORTH GORHAM RD. GORHAM, MAINE 04038 C: (207) 572-7970 / C: (207) 318-1446</p> </div> </div> <p style="text-align: center; font-size: 1.2em;"><b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b></p> <p style="text-align: center; font-size: 0.8em;">PROJECT: WARREN, ME</p>		
<p><b>ELECTRICAL SPECIFICATIONS</b></p>		
DATE	02.11.2026	SCALE
DRAWN BY	KAT	N.T.S.
DESIGNED BY	KAT	A/E
PROJECT No.	10003_001	
DRAWING No.	E001	REV
		<b>X</b>
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**LIGHTING NOTES**  
 1. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS AND LIGHTING FIXTURE SCHEDULE AND REFER TO SHEET E001 FOR ELECTRICAL SPECIFICATIONS.

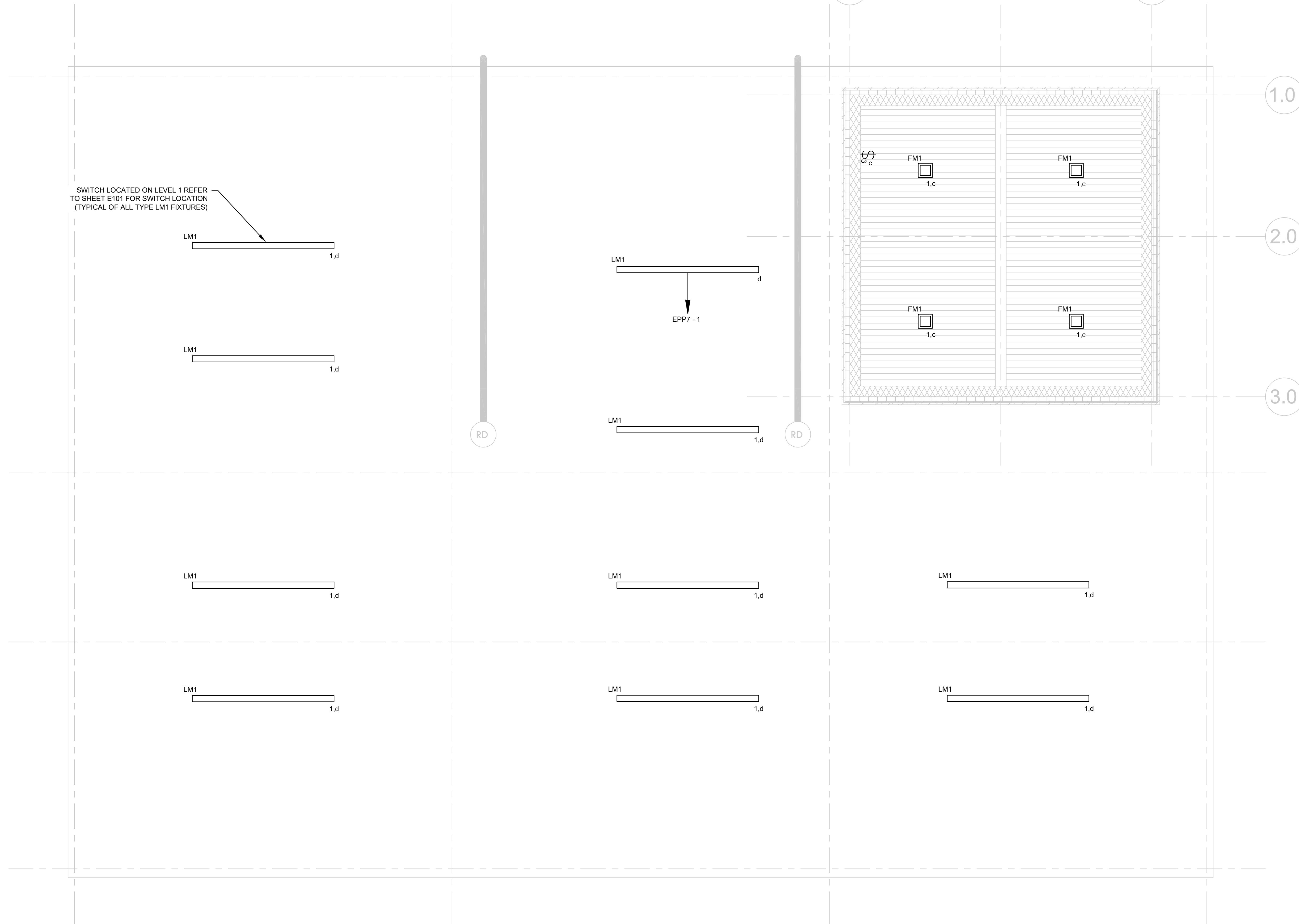
**A** FIRST LEVEL LIGHTING PLAN

SCALE: 3/8" = 1'-0"  
 0 2' 4' 6'

REV.	DESCRIPTION	DATE
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CURRENT ISSUE STATUS:		
<b>RJE</b>		RJ ENGINEERING, LLC
117 NORTH GORHAM RD. GORHAM, MAINE 04038 C:(207) 572-7970 / C:(207) 318-1446		
<b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b>		
PROJECT: WARREN, ME		
<b>FIRST LEVEL LIGHTING PLAN</b>		
DATE	02.11.2026	SCALE 3/8" = 1'-0"
DRAWN BY	KAT	DESIGNED BY A/E SVR
PROJECT No.	10003_001	
DRAWING No.	E101	REV X

**LIGHTING NOTES**

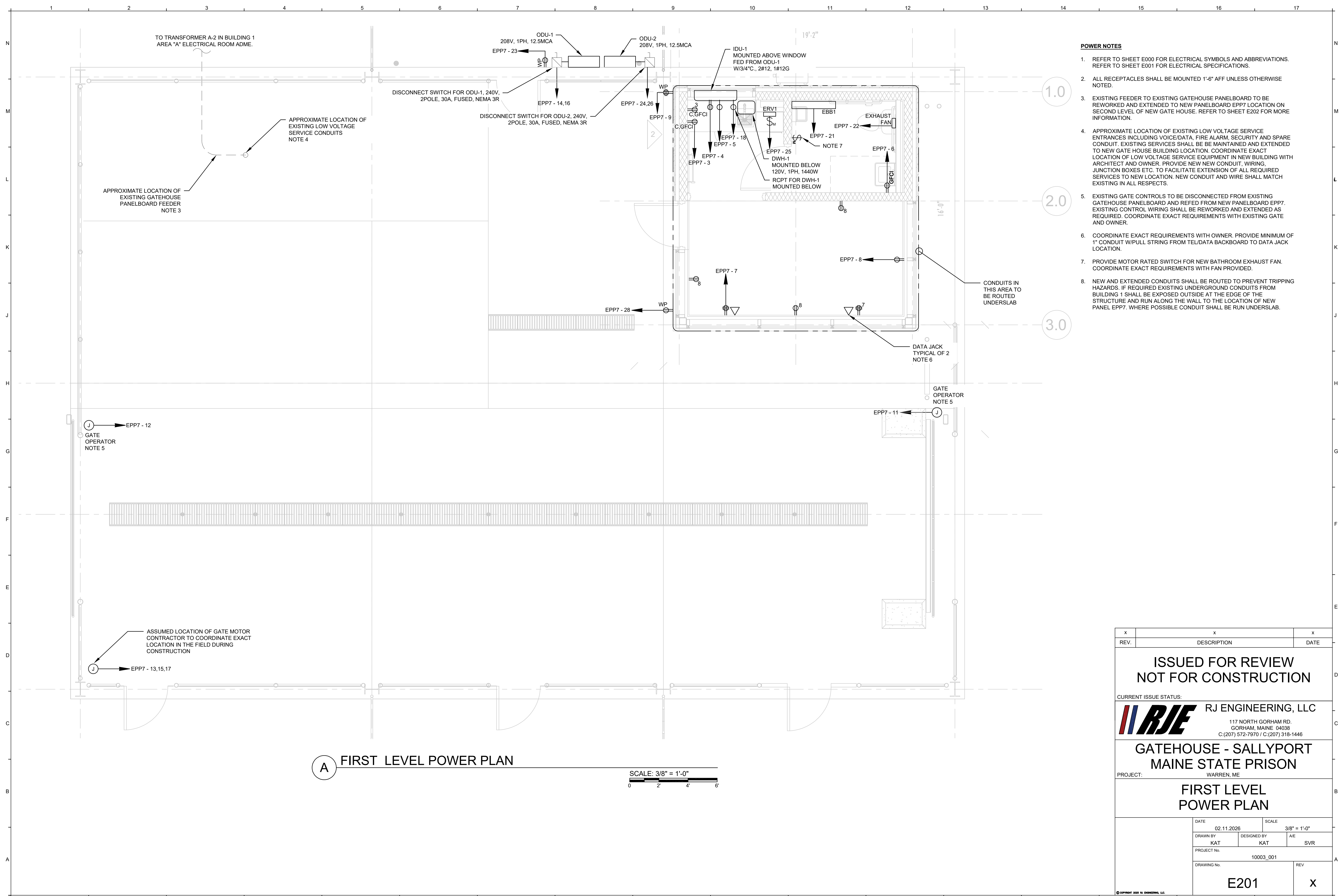
- REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS AND LIGHTING FIXTURE SCHEDULE AND REFER TO SHEET E001 FOR ELECTRICAL SPECIFICATIONS.



**A SECOND LEVEL AND SALLY PORT LIGHTING PLAN**

SCALE: 3/8" = 1'-0"  
 0 2' 4' 6'

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DATE	02.11.2026	SCALE	3/8" = 1'-0"	
DRAWN BY	KAT	DESIGNED BY	A/E SVR	
PROJECT No.	10003_001			
DRAWING No.	E102		REV	X



- POWER NOTES**
- REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS. REFER TO SHEET E001 FOR ELECTRICAL SPECIFICATIONS.
  - ALL RECEPTACLES SHALL BE MOUNTED 1'-6" AFF UNLESS OTHERWISE NOTED.
  - EXISTING FEEDER TO EXISTING GATEHOUSE PANELBOARD TO BE REWORKED AND EXTENDED TO NEW PANELBOARD EPP7 LOCATION ON SECOND LEVEL OF NEW GATE HOUSE. REFER TO SHEET E202 FOR MORE INFORMATION.
  - APPROXIMATE LOCATION OF EXISTING LOW VOLTAGE SERVICE ENTRANCES INCLUDING VOICE/DATA, FIRE ALARM, SECURITY AND SPARE CONDUIT. EXISTING SERVICES SHALL BE MAINTAINED AND EXTENDED TO NEW GATE HOUSE BUILDING LOCATION. COORDINATE EXACT LOCATION OF LOW VOLTAGE SERVICE EQUIPMENT IN NEW BUILDING WITH ARCHITECT AND OWNER. PROVIDE NEW NEW CONDUIT, WIRING, JUNCTION BOXES ETC. TO FACILITATE EXTENSION OF ALL REQUIRED SERVICES TO NEW LOCATION. NEW CONDUIT AND WIRE SHALL MATCH EXISTING IN ALL RESPECTS.
  - EXISTING GATE CONTROLS TO BE DISCONNECTED FROM EXISTING GATEHOUSE PANELBOARD AND REFEED FROM NEW PANELBOARD EPP7. EXISTING CONTROL WIRING SHALL BE REWORKED AND EXTENDED AS REQUIRED. COORDINATE EXACT REQUIREMENTS WITH EXISTING GATE AND OWNER.
  - COORDINATE EXACT REQUIREMENTS WITH OWNER. PROVIDE MINIMUM OF 1" CONDUIT W/PULL STRING FROM TEL/DATA BACKBOARD TO DATA JACK LOCATION.
  - PROVIDE MOTOR RATED SWITCH FOR NEW BATHROOM EXHAUST FAN. COORDINATE EXACT REQUIREMENTS WITH FAN PROVIDED.
  - NEW AND EXTENDED CONDUITS SHALL BE ROUTED TO PREVENT TRIPPING HAZARDS. IF REQUIRED EXISTING UNDERGROUND CONDUITS FROM BUILDING 1 SHALL BE EXPOSED OUTSIDE AT THE EDGE OF THE STRUCTURE AND RUN ALONG THE WALL TO THE LOCATION OF NEW PANEL EPP7. WHERE POSSIBLE CONDUIT SHALL BE RUN UNDERSLAB.

**A FIRST LEVEL POWER PLAN**  
 SCALE: 3/8" = 1'-0"  
 0 2' 4' 6'

REV.	DESCRIPTION	DATE

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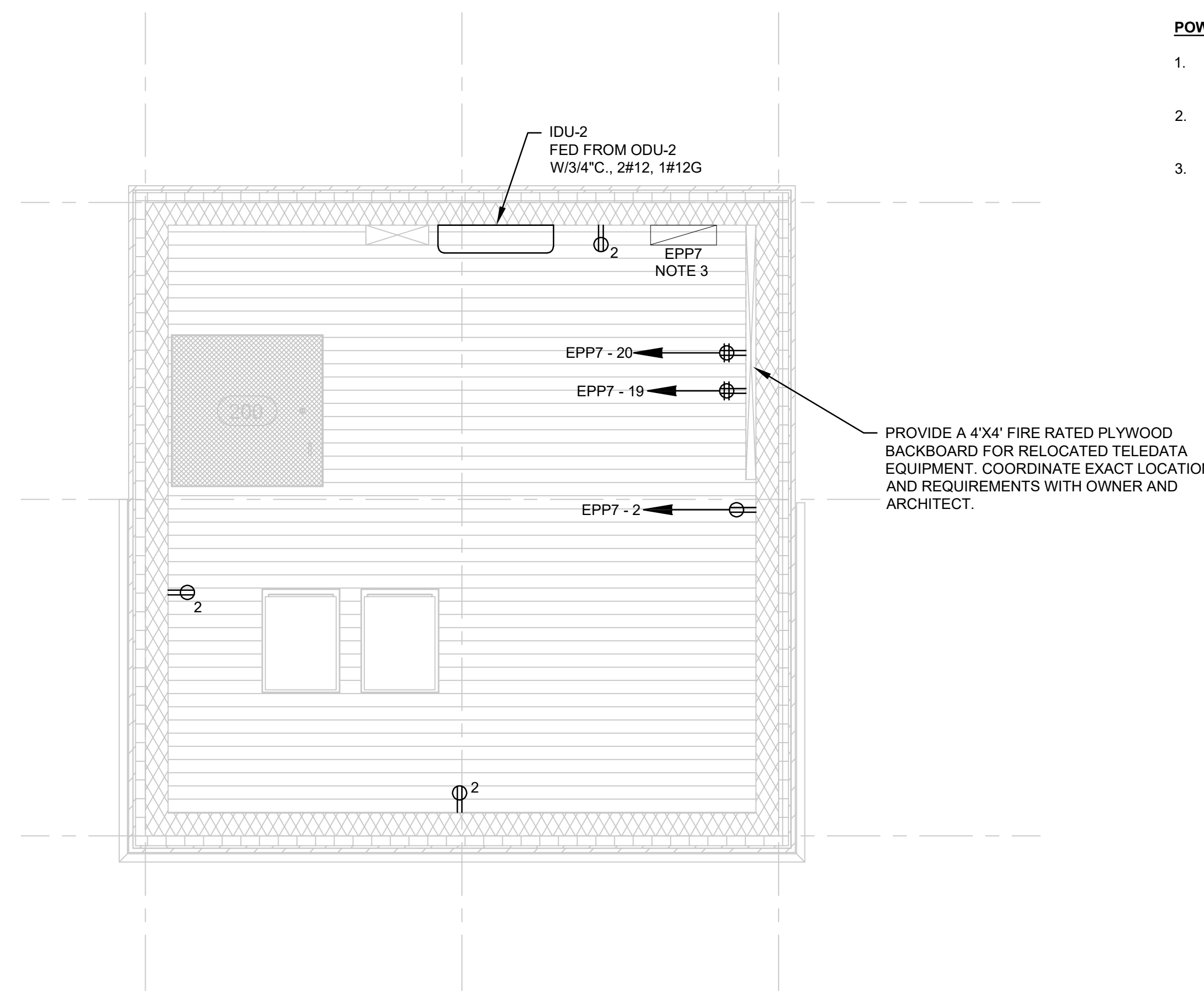
**RJE** RJ ENGINEERING, LLC  
 117 NORTH GORHAM RD.  
 GORHAM, MAINE 04038  
 C:(207) 572-7970 / C:(207) 318-1446

**GATEHOUSE - SALLYPORT  
MAINE STATE PRISON**  
 PROJECT: WARREN, ME

**FIRST LEVEL  
POWER PLAN**

DATE	02.11.2026	SCALE	3/8" = 1'-0"
DRAWN BY	KAT	DESIGNED BY	A/E SVR
PROJECT No.	10003_001		
DRAWING No.	E201		REV
			X

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- POWER NOTES**
- REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS. REFER TO SHEET E001 FOR ELECTRICAL SPECIFICATIONS.
  - ALL RECEPTACLES SHALL BE MOUNTED 1'-6" AFF UNLESS OTHERWISE NOTED.
  - PROVIDE NEW PANELBOARD TO SERVE GATEHOUSE. NEW PANELBOARD SHALL BE FED FROM EXISTING FEEDER TO GATEHOUSE PANELBOARD PREVIOUSLY LOCATED ON LEVEL 1 FED FROM BUILDING 1 AREA A TRANSFORMER T-A2 IN ELECTRICAL ROOM ADME. REWORK AND EXTEND EXISTING CONDUIT AND WIRING. NEW CONDUIT AND WIRING SHALL MATCH EXISTING IN ALL RESPECTS. MINIMUM WIRE SIZE SHALL BE 1 1/2 C. W/4#1, 1#6G. REFER TO PANELBOARD SCHEDULE THIS SHEET FOR ADDITIONAL INFORMATION. REFER TO SHEET E201 FOR APPROXIMATE LOCATION OF EXISTING FEEDERS. COORDINATE EXACT LOCATION OF PANELBOARD TO ENSURE REQUIRED WORKING SPACE AND DEDICATED SPACE CLEARANCES ARE MAINTAINED. MECHANICAL AND PLUMBING PIPING SHALL NOT BE LOCATED ABOVE OR BELOW THE PANELBOARD IN THE DEDICATED SPACE.

**A SECOND LEVEL POWER PLAN**

SCALE: 3/8" = 1'-0"  
0 2' 4' 6'

100 AMP MAIN BREAKER 100 AMP BUS RATING 42 POLES 208/120 VOLTS 3 PHASE 4 WIRE 60 Hz.						PANELBOARD EPP7 10 KA SHORT CIRCUIT RATING ELECTRONIC GRADE NO						LOCATION: GATEHOUSE ENCLOSURE RATING: NEMA 1 MOUNTING: SURFACE					
CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	LOAD KVA	BREAKER AMPS/POLES	NOTES	CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	LOAD KVA	BREAKER AMPS/POLES	NOTES		
1	LTG - LVL 1, LVL 2 & SALLYPORT OH	0.807				20 / 1	1	2	RCPT - SECOND LEVEL	0.72				20 / 1	1		
3	RCPT - KITCHENETTE		0.36			20 / 1	1	4	RCPT - MICROWAVE		1.5			20 / 1	1,2		
5	RCPT - FRIDGE			0.6		20 / 1	1,2	6	RCPT - BATHROOM			0.18		20 / 1	1		
7	RCPT - OFFICE	0.36				20 / 1	1	8	RCPT - OFFICE	0.36				20 / 1	1		
9	RCPT - SALLY PORT		0.36			20 / 1	1	10	LTG - TRENCH		0.302			20 / 1	1		
11	GATE OPERATOR					20 / 1	1	12	GATE OPERATOR					20 / 1	1		
13								14	ODU-1	1.3				20 / 2	1		
15	GATE MOTOR					15 / 3	3	16			1.3						
17								18	DWH-1			1.44		15 / 1	1,2		
19	RCPT - TELEDATA	0.36				20 / 1	1	20	RCPT - TELEDATA	0.36				20 / 1	1		
21	EBB1		0.45			20 / 1	1	22	BATHROOM EF		0.2			20 / 1	1		
23	RCPT - EXTERIOR			0.18		20 / 1	1	24	ODU-2			1.3		20 / 2	1		
25	ERV-1	0.00415				20 / 1	1	26		1.3							
27	SPARE					20 / 1	1	28	RCPT - PORTABLE SUMP PUMP					20 / 1	1		
29	SPARE					20 / 1	1	30	SPARE					20 / 1			
31	SPARE					20 / 1	1	32	SPARE					20 / 1			
33	SPARE					20 / 1	1	34	SPARE					20 / 1			
35	SPARE					20 / 1	1	36	SPARE					20 / 1			
37	SPARE					20 / 1	1	38	SPARE					20 / 1			
39	SPARE					20 / 1	1	40	SPARE					20 / 1			
41	SPARE					20 / 1	1	42	SPARE					20 / 1			
TOTAL PHASE KVA THIS SIDE		1.53115	1.17	0.78				TOTAL PHASE KVA THIS SIDE		4.04	3.302	2.92					
								TOTAL KVA PER PHASE		5.57115	4.472	3.7					
								TOTAL THREE PHASE KVA		13.74315							

NOTES:  
1. BRANCH CIRCUIT WIRING: 3/4" C., 2#12 & #12G  
3. BRANCH CIRCUIT WIRING: 3/4" C., 3#12 & #12G

NOTES CONT.:  
2. PROVIDE GFCI TYPE CIRCUIT BREAKER.

x	x	x		
REV.	DESCRIPTION	DATE		
<p><b>ISSUED FOR REVIEW NOT FOR CONSTRUCTION</b></p> <p>CURRENT ISSUE STATUS:</p> <p><b>RJE</b> RJ ENGINEERING, LLC 117 NORTH GORHAM RD. GORHAM, MAINE 04038 C:(207) 572-7970 / C:(207) 318-1446</p> <p><b>GATEHOUSE - SALLYPORT MAINE STATE PRISON</b></p> <p>PROJECT: WARREN, ME</p> <p><b>SECOND LEVEL POWER PLAN</b></p>				
DATE	02.11.2026	SCALE	3/8" = 1'-0"	
DRAWN BY	KAT	DESIGNED BY	A/E	
		SVR		
PROJECT No.	10003_001			
DRAWING No.	E202		REV	X